

RANCHO MURIETA IS AT RISK OF RUNNING OUT OF WATER!

The current CSD Integrate Water Master Plan (IWMP) Story Maps are inaccurate. The study's water demand is understated and the water supply is overstated.

Here's where, why and how:

There are approximately 451 homes MISSING from the study, creating the appearance of a lower water demand.

The study assumes recycled water will supplement residential usage and the golf courses will be irrigated with raw river water. There's insufficient river flows to keep the golf courses alive during summer months and a 1990 CSD study states there will be insufficient supplemental recycled water for residential usage (even at full buildout). The IWMP Story Map overstates the recycled water supply. The future supply number (955 Acre Feet) is mathematically impossible to achieve, as it is more than double the existing supply number (437 Acre Feet) even though the study indicates the community will increase in size by less than half. An average rainfall year's supply number is used when analyzing severe drought conditions. The correct drought supply figure would indicate there's insufficient recycled water for this assumption to work. By assuming recycled water is available for existing and future homes, the study gives the appearance there's less potable water demand than actually exists.

This study assumes Lake Clementia is part of the community's water supply, giving the appearance of an increased supply. Rancho Murieta's current permits do not allow this usage. Lake Clementia is permitted for recreational purposes only and is fed almost entirely by runoff (resulting in poor quality water that RM's treatment plant may be unable to process). River water pumping is only allowed to replace water lost through evaporation and seepage. Any attempt to change the existing (two) permits would take years, be costly and most likely end in defeat, as downstream entities blocked Lake Clementia's potable water usage years ago.

The study assumes a backup well is possible. Here's why this assumption is likely unachievable. RM's underlying rock formations have little to no well potential. The CSD has not applied for a permit with the Cosumnes Groundwater Authority to implement a groundwater augmentation program. Ten test sites have been drilled. The most promising well locations tested high in arsenic, iron and manganese, exceeding safety levels. Even if the water can be successfully treated, the report suggests that two wells would be needed to generate an output of **370 gpm** (gallons per minute). The IWMP Story Map states a well generating **1,200 gpm is needed for the existing community and 2,000 gpm is needed for full buildout**. The well report also estimates the cost to transport water - from one well - to the treatment facility (as of 2013) may exceed \$300,000.00 for the conveyance pipeline alone. All ten test sites are located near the Cosumnes River. If river water is present in any RM well water samples, use of the well/s would be a direct violation of CSD's Cosumnes River pumping permit and could lead to revocation.

The study's reservoir evaporation seepage rate is inaccurate. The analysis used the Folsom test pan site instead of the Department of Water Resources recommended Davis site when calculating this number. The Folsom test site generates a lower/inaccurate rate.

The study assumes the reservoirs are at their flashboard capacity, which is NOT an acceptable practice (when planning for future development). Doing so gives the appearance of an increased water supply. Flashboards are temporary boards placed in the reservoir spillways to increase the reservoir storage capacity. These boards must be left out for all but six weeks of Rancho Murieta's pumping season. A dry winter or spring, or wet/warm winter (with minimal snow pack), or a pump going offline could make it impossible to fill the reservoirs' flashboard capacity.

The study understates the system loss rate (water lost to breaks and leaks). The current study assumes a 12% current and FUTURE system loss rate for an aging infrastructure (prone to leakage), when a 1990 study stated a LOW 10% loss rate was used, due to the fact that the infrastructure was relatively new (and less prone to leakage).

Title 22 Regulations were NOT followed when calculating Rancho Murieta's current potable water usage. That number is understated.

An industry standard EDU Factor was NOT used to calculate future potable water usage. That number is understated.

The study assumes a higher drought conservation rate (30%) than the industry standard rate (15-20%), used when planning for future development.

The reservoir levels are rounded to the closest ten acre feet instead of the closest acre foot, as past studies have done. Although that is a small discrepancy, this change gives the appearance of enough water for a few more homes.

Also note worthy: Between 1989 and 1990 the CSD was in litigation with the developers. During that period four studies were completed. The first study stated that the existing water supply could safely support 1800 DU (Dwelling Unit - A Dwelling Unit represents the water usage of the average home). The next study increased this number to 2400 DU. Followed by another study that determined the water supply could support 3500 DU, and finally a study completed by the developers increased the number to 4,728 DU. **It's very important to point out that the study conclusions ranged from 1800 DU to 4,728 DU (the number of DU's that the existing water supply could "safely" support) and took place over a matter of months. The water supply did NOT increase during this timeframe and has not increased since. The only change that occurred was that the study assumptions were altered. The current IWMP uses ALL of the assumptions in the developer study (which CSD's earlier engineer stated - in 1990 - place the community at risk of running out of water). In addition, recent reservoir drone surveys have concluded that Lake Calero and Lake Chesbro contain less water than previously thought. That means ALL of CSD's studies (from the inception of Rancho Murieta up until 2023) assumed a greater water supply than actually exists.**

Finally, CSD's IWMP does not address how surface and ground water over pumping is altering the Cosumnes River flows, resulting in the riverbed drying up earlier in the spring and remaining dry longer into the fall. The Cosumnes River is Rancho Murieta's only source of water. These flow changes directly impact Rancho Murieta's ability to pull water from the river, due to permit pumping restrictions.

To date, these are the inaccuracies and omissions discovered. The CSD has dodged my questions for more than fifteen months. Those unanswered questions will likely lead to discovering more inaccuracies.

This study must be rewritten to address these omissions and inaccuracies or Rancho Murieta's residents will be at risk of running out of water.

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References (All documents can be found on the Rancho Murieta CSD website):

- 1) *State of California, The Resources Agency, State Water Resources Control Board, Division of Water Rights, Diversion Permit for and Use of Water, Permit #16762*
- 2) *State of California, State Water Resources Control Board, Division of Water Rights, License for Diversion and Use of Water, Permit #16765*
- 3) *Analysis of Rancho Murieta Water Supply System by Giberson & Associates, May 22, 1989*
- 4) *Rancho Murieta Community Services District, Policy Statement 89-, District Water Supply (2400 DU Muti-Tier) October 18, 1989*
- 5) *Rancho Murieta Water Supply: Planning for Future Droughts by Giberson & Associates, February 1990*
- 6) *Supplemental Report, Rancho Murieta Water Supply: Planning for Future Droughts, April 27, 1990, by Giberson & Associates*
- 7) *Rancho Murieta Community Services District, Policy Statement 90-2, District Water Supply, July 18, 1990*
- 8) *Integrated Water Master Plan, Rancho Murieta Community Services District, November 2006, by HDR*
- 9) *Appendix 4-A, Letter to CSD Board from Richard Brandt (CSD's former Board Present and Former Legal Counsel), May 31, 2009*
- 10) *Technical Memorandum, (County ordered) Review of Rancho Murieta Planning Documents, January 4, 2010, by West Yost Associates*
- 11) *Email from Polly Boissevain, West Yost Associates, July 22, 2010, (explaining industry standard drought conservation rate policies)*
- 12) *Email from the Department of Public Health, Michael Tolin, July 16, 2010, (regarding the use of reservoir flashboard capacity, when planning for future development)*
- 13) *Letter to the CSD Board from Richard Brandt, August 12, 2010 (former CSD Board President and former Legal Counsel)*
- 14) *2010 Integrated Water Master Plan Update by Brown and Caldwell*
- 15) *2020 Compliance Plan, by Brown and Caldwell, September 15, 2010*
- 16) *Letter to CSD from the California Department of Public Health, Kim Wilhelm, Chief, Northern California Drinking Water Section, October 5, 2010, (challenging study's drought conservation rate and potable water usage of Lake Clementia)*
- 17) *Letter to CSD from the California Department of Public Health, Kim Wilhelm, Chief, Northern California Drinking Water Section, November 16, 2012, (regarding recycled water usage on residential property)*
- 18) *Technical Memorandum Production Water Well Assessment, by Dunn Environmental, Inc., December 12, 2013*
- 19) *Technical Memorandum - Water Supply Assessment - Rancho Murieta North Project Maddaus Water Management, Inc. January 18, 2016*
- 20) *Rancho Murieta CSD Town Hall 2023 Integrated Water Master Plan Update: Supply & Demand, November 2, 2023*
- 21) *Rancho Murieta Community Water Demands, Integrated Water Master Plan Update, November 2, 2023*
- 22) *Rancho Murieta CSD Board Meeting - 2024 Integrated Water Master Plan Update, April 17, 2024*
- 23) *Rancho Murieta Shared Vision Planning Scenarios, Integrated Water Master Plan Update, May 30, 2024*
- 24) *CSD's Response to Town Hall Questions, March 18, 2023*
- 25) *Transfer of Rancho Murieta Properties, Inc., Reservoir Recreational Use Rights to Rancho Murieta Association, and Agreement*
- 26) *Letter to the CSD Board, from Greg Wheeler (geologist - regarding ground water concerns) May 30, 2024*
- 27) *Calero Lake Bathymetric Survey and Stage-Storage Curve, by Adkins Engineering and Surveying, July 5, 2022*
- 28) *Chesbro Lake Bathymetric Survey and Stage-Storage Curve, by Adkins Engineering and Surveying*

Cosumnes River flow studies can be found online.

