



COUNTY OF LAKE WATER RESOURCES

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Memorandum

TO: Honorable Eddie Crandell, Chair, Lake County Board of Supervisors

FROM: Pawan Upadhyay Water Resources Director

DATE: September 23, 2025

SUBJECT: Response to the 2024-25 Lake County Civil Grand Jury's Report, "The State Of Groundwater in Lake County"

Grand Jury Findings

1. Finding #1: In 2042, Lake County is projected to be out of compliance with the Sustainable Groundwater Management Act.
 - a. **Disagree partially with the finding:** The projection that Lake County will be out of compliance with SGMA in 2042, would require substantial deviations from normal groundwater trends over the last 30 years, and does not account for the groundwater management efforts currently in effect. The Grand Jury summary stated that "Lake County is facing a significant potential groundwater deficit in the Big Valley Basin, projected to be a loss of as many as 25,000 acre-feet per year by 2024 if steps are not taken to meet the requirements of the Sustainable Groundwater Management Act (SGMA). For context, the 2024 annual water report for Big Valley stated that total groundwater extractions for 2024 totaled 25,100 acre-feet, and this includes all withdrawals, from agriculture, municipal users, small water systems, and all of the groundwater taken up by vegetation within the basin. For Lake County to be in such a significant deficit per year by 2024 would require enormous changes to the existing system, including large population increases, record level groundwater pumpings, and prolonged drought conditions beyond the scope of what has been experienced, or likely anticipated. That is not to say that changes and fluctuations in climate, population, and agricultural activities cannot make significant impacts to groundwater levels, but a projected deficit of 25,000 acre-feet per year does not take into account usage trendlines in the valley, or management decisions meant to keep Lake County's groundwater resources in balance. For instance, as the Groundwater Sustainability Plan of 2022 states, "Despite seasonal and climate-influenced short-term fluctuations, groundwater levels in the basin remained stable over the last three decades", with an average annual change in groundwater storage of 200 acre-feet per year, a small increase over time. This, despite multi-year droughts, changes in agricultural products and production, and increases in population over that time period. Estimates of a 25,000 acre-feet deficit also do not reflect the ongoing

work our department is doing to manage groundwater resources for long-term viability. Lake County Department of Water Resources is undertaking multiple actions to ensure groundwater levels remain substantial and available for generations. The department conducts well readings to monitor groundwater levels across the county, in particular, Big Valley and Scotts Valley, where drinking water is sourced for county residents and important agricultural activity is dependent on adequate groundwater reserves. We also have a number of grant projects underway or developed for near-future action, including conjunctive use studies (diverting surface water to recharge groundwater levels), infrastructural fixes to existing water detention structures (please see below), and other projects designed to study groundwater basins throughout the county to determine recharge capabilities and expanded holding capacity potential. Management decisions, expanded monitoring, and projects meant to aide in groundwater recharge and retention, all work to maintain our compliance in SGMA, and for the long-term management of our groundwater resources.

2. Finding #2: The Big Valley Basin is the only Lake County Basin being monitored by the State of CA.
 - a. **Agree with the finding**, but long-term monitoring and data collection have been undertaken by the County to provide oversight and understanding of our basins in Lake County. While it is true that the State has focused solely on Big Valley because it is considered a medium priority basin, California Department of Water Resources is expanding its focus to groundwater recharge, in particular, surface water diversions to supplement existing groundwater. If, or when, the State determines to expand their focus on additional groundwater basins, Lake County will have the data developed to make appropriate management decisions.

Recommendations:

1. R-1: That the BOS designate flood-managed aquifer recharge areas in the Big Vally water basin
 - a. **Agree, will be implemented within** the next 1-2 years. The Lake County Water Resources Department has been working to implement new statewide directives towards replenishing groundwater through intentional surface diversions. Just this month, Lake County has finalized a funding package called the “Big Valley Fish Habitat Improvement and Groundwater Recharge Project” from Congressman Mike Thompson’s office that provides \$500,000 in funding for two key pieces of work related to groundwater recharge. The first objective of the project is a feasibility study that will be conducted to assess potential modifications to Adobe Creek Reservoir to address the annual reduction in stream flows throughout Adobe Creek and the reduction of suitable wet habitat for the Clearlake Hitch, a state-listed endangered minnow species. While a conjunctive use study (diverting surface water for groundwater recharge) has been conducted on the neighboring reservoir and stream system in Highlands Creek, it is yet unknown how feasible

modifications to the Adobe Creek reservoir will be for contributing to enhanced surface storage, surface flow, and groundwater recharge in the Big Valley Basin. The study will determine the viability of modifying the Adobe Creek Reservoir, or dam, in structure, size, and/or operation, to increase or enhance:

- i. Surface water storage of Adobe Reservoir
 - ii. Groundwater storage, and associated groundwater recharge
 - iii. Environmental stream flow downstream to Adobe Creek to maintain flows sufficient for mid to late season Clear Lake Hitch spawning and hatching.
 - b. The second objective of the project is the rehabilitation of the Kelsey Creek Detention Structure, which includes both structural repair and enhancement of real time monitoring and flow management. The Kelsey Creek Detention Structure is a key piece of surface stream flow and groundwater management infrastructure that provides essential water for both consumption and for a major agricultural area for the County. The structure consists of three gates that, when lowered, provide temporary storage of the flows in Kelsey Creek to help recharge the groundwater aquifer in the Big Valley Basin. When the gates are closed, the pooled water percolates into the underlying subsurface groundwater basin. In 2021, the structure was damaged due to operator error, and the facility has not worked since. Once the structure is repaired, we will regain our ability to capture and divert surface water, and to reestablish our water rights reporting compliance.
2. R-2: That the BOS conduct a comprehensive review of agricultural water use in the Big Valley Basin
- a. **Disagree, will not be implemented.** Agriculture admittedly uses the lion's share of the groundwater pumped from Big Valley, with 77% of all diversions going to agriculture, as documented in the 2024 annual water report required by SGMA. But this paints an inaccurate picture of groundwater overuse and depletion across Big Valley. It is worth remembering that, in terms of existing groundwater conditions, despite seasonal and climate-influenced short-term fluctuations, groundwater levels in the basin remained stable during the last three decades, and in terms of water budgets (the inflows to and outflows from a basin), between 1989 – 2019, the average annual change in groundwater storage over the historical water budget period was about 200 acre feet per year (an increase in storage). The primary reason for this is that the basin is inherently stable, despite periodic droughts and increased population. Another reason is that pears, once the dominant crop across Big Valley and Lake County, have been replaced by wine grapes which require less water to produce. In fact, as the Grand Jury transcript recognizes, wine grapes use only 2.85-acre feet per acre, less than pasture cover, citrus and deciduous fruits, alfalfa, potatoes, and even onions and garlic. The switch to wine grapes has been a positive development for groundwater sustainability over the years and will hopefully continue into the future. Given the basin is sustainable, including a net increase in groundwater supplies over the last 30 years, It

appears our agricultural demands are in balance with our resources. We are lucky to have a mature, farming community, growing products in balance with our groundwater reserves, and providing substantial economic benefits to the region.

3. R-3: The BOS evaluate the feasibility of implementing hydro filtration technologies in the Big Valley Basin.
 - a. **Agree:** Hydro filtration is another option to increase the amount of water available for residents and agricultural interests and is something that can be implemented on a small or large scale. I would like to see a feasibility study that could outline the different methods to capture water through this method, and how to implement it at a scale that reduces our reliance on groundwater in Big Valley, and the surrounding Lake County aquifers.