ASSEMBLY THIRD READING
AB 2521 (Papan)
As Amended April 15, 2026
Majority vote

SUMMARY

Requests that the California Council on Science and Technology (CCST) undertake two watershed-wide water availability studies to help facilitate groundwater recharge permitting.

Major Provisions

1) Requires the Department of Water Resources (DWR), in consultation with the State Water Resources Control Board (State Water Board) and the Department of Fish and Wildlife (DFW), to select two watersheds that drain into the Central Valley for a watershed-wide water availability study.

2) Requests that CCST, upon appropriation of funding for this purpose by the Legislature, undertake and complete watershed-wide water availability studies in the watersheds selected by DWR.

3) Requires the watershed-wide water availability study to accomplish the following:

   a) Determine daily flow rates in rivers and streams over the past 30 years;

   b) Quantify maximum allowable diversion under existing permits, licenses, and claims in the watershed;

   c) Quantify water diverted under existing permits, licenses, and claims over the past 30 years, to the extent data is available;

   d) Identify and quantify any water quality or environmental flow requirements on rivers and streams in the watershed; and

   e) Determine when and under what conditions water is available in excess of existing claims and regulatory requirements.

4) States that it is the intent of the Legislature that the watershed-wide water availability analyses be used for future applications to divert water to underground storage.

COMMENTS

Groundwater is an important source of supply for California's communities, economy, and diverse natural resources. Groundwater recharge occurs when water on the Earth's surface percolates down through layers of soil and earth into aquifers. Recharge occurs naturally when it rains and when water moves through rivers, streams, and creeks. It can also occur through active management when individuals or agencies divert water from a waterway to farmland or a settling basin where the water can gradually percolate down into the aquifer. Rates of recharge vary by soil type and conditions, but it is generally not a rapid process. Active groundwater recharge requires advance planning and infrastructure to be successful.

Interest in expanding groundwater recharge has increased since the passage of the Sustainable Groundwater Management Act (SGMA) in 2014. In a 2020 study reviewing groundwater sustainability plans (GSPs) developed under SGMA and submitted for critically overdrafted basins in the San Joaquin Valley, the Public Policy Institute of California (PPIC) shows that, collectively, the GSPs intend to recharge nearly 1 million acre-feet (MAF) of water annually to address groundwater overdraft. This is significant given that PPIC estimates that groundwater overdraft in the San Joaquin Valley for the 1987-2017 period was nearly 2 MAF annually. Further analysis by PPIC found that in 2023 as much as 11.2 MAF from the Sacramento River and 3.4 MAF from the San Joaquin River may have been available for groundwater recharge.

The importance of groundwater recharge has also been recognized in numerous state plans and strategies including, *The California Water Plan: Update 2023,* Governor Newsom's *California's Water Supply Strategy: Adapting to a Hotter, Drier Future* (August 2022), the *Water Resilience Portfolio* (2020), and the *California Water Action Plan* (2014).

A water right or permit is required to capture water during high-flow or flood events and store it for later use. A permanent right takes a great deal of time and resources to obtain; as a result, many entities interested in groundwater recharge have pursued a temporary (180-day) permit instead. Whether pursuing a permanent (a process that can take more than seven years) or temporary permit, stakeholders have expressed frustration with the permitting process for groundwater recharge. A 2023 survey on groundwater recharge in the San Joaquin Valley conducted by PPIC indicates that 32% of respondents report a "permitting or regulatory barrier" to implementing groundwater recharge projects (contrast with 49% of respondents that report an "infrastructure" barrier and 23% that report a "cost or funding barrier").

A water availability analysis is a necessary part of any water right application and helps to determine whether there is actually water available to be diverted from the stream, river, or water body subject to the application. This information is required per Water Code § 1260: An applicant for a permit to appropriate water shall set forth all of the following: … "(k) Sufficient information to demonstrate a reasonable likelihood that unappropriated water is available for the proposed appropriation."

CCST was uniquely established at the request of the Legislature in 1988 for the specific purpose of offering expert advice to state government on public policy issues significantly related to science and technology. CCST's mission is to "serve as a trusted, nonpartisan source of expert science and technology advice for California policymakers, powered by a world-class partner network." CCST draws from a network of California's major research institutions including the University of California, the California State University system, the California Community Colleges, Stanford University, the University of Southern California, and the California Institute of Technology as well as the National Laboratories in California (e.g., Lawrence Berkeley and Lawrence Livermore). The Legislature has formally requested that CCST complete various studies and analyses in the past (see Existing Law) and partners with CCST on the Science and Technology Policy Fellowship program to place a cohort of PhD scientists and engineers directly into policymaker offices in the Legislature and Executive Branch. This bill requests CCST undertake the development of watershed-wide water availability analyses, subject to an appropriation of funding for that purpose.

According to the Author
California's hydrology is altering before our eyes as a result of the changing climate. This shift is causing not only extreme swings between the wet and dry periods that have always been a characteristic of California's climate, but is also leading to a diminished snowpack, our largest, natural water reservoir. California's system of reservoirs and conveyance was designed to capture runoff from a gradually melting snowpack to ensure sufficient water supplies for the dry summer months; however, as the runoff comes earlier or not at all due to warming temperatures, we need to adapt and change our water management approach.

One key strategy in making this shift is to significantly increase the amount of water we recharge into our aquifers during wet periods so that we have water during the dry summer months and inevitable droughts. While progress is being made to expedite permitting processes for groundwater recharge, we are not getting the job done. One key hang-up is determining when there is water in excess of what is necessary to satisfy existing water rights and regulatory requirements that can be diverted for recharge. This bill will alleviate this choke point by calling for the completion of a watershed-wide water availability analysis that water right applicants can use to determine how much and when water is available for recharge. This programmatic approach to groundwater recharge will help us meet our ambitious goals and make us more climate resilient.

Arguments in Support
None on file.

Arguments in Opposition
None on file.

FISCAL COMMENTS

According to the Assembly Appropriations Committee, this bill has the following fiscal impact:

1) DWR anticipates costs to select watersheds and consult with CCST to be relatively minor, primarily because DWR is already actively engaged in conducting watershed studies, which provide a basis for strategies that state, federal, and local agencies can use to better coordinate, prepare for climate extremes, and safeguard communities, farms, and ecosystems into the future.

   For example, DWR's San Joaquin Basin Flood-MAR Watershed Studies cover the Calaveras, Stanislaus, Tuolumne, Merced, and Upper San Joaquin watersheds and evaluate how the basin can better manage water resources in extreme wet years and long dry periods. DWR utilized eight different models to develop the watershed studies for the San Joaquin Basin, which generated more than eight million data points.

   While these studies do not juxtapose water that may be available in the watershed to the uses and desired uses of water – which would be pertinent to using this information for future underground storage permits – DWR notes they could serve as a starting point for CCST's comprehensive study.

2) State Water Board estimates ongoing annual General Fund costs of about $500,000 to consult and coordinate with DWR and CCST. State Water Board notes it would first need to assist CCST with understanding information related to water right permits, licenses, and

claims and help ensure the study produces information that could potentially be used in future permit applications. After the release of the study, State Water Board anticipates ongoing work to assist applicants in making use of the study – and the resulting water availability analysis – in their applications to the board for standard or temporary permits for diversion of water to underground storage in the watersheds selected by DWR.

3) CCST estimates a one-time General Fund cost of about $1.5 million for an 18-month study of two watersheds. CCST receives funding from a variety of sources, such as philanthropic foundations, public and private higher education institutions, federally funded research institutions, the state, investment income, and donations from individuals. CCST reported $8.4 million in revenues in 2025.

4) DFW anticipates costs to consult with CCST are minor and absorbable.

The Legislative Analyst's Office recently warned of General Fund structural deficits of around $35 billion per year in the 2027-28 fiscal year and ongoing.

VOTES

ASM WATER, PARKS, AND WILDLIFE: 8-0-5
YES: Papan, Alvarez, Ávila Farías, Bennett, Boerner, Caloza, Hart, Rogers
ABS, ABST OR NV: Jeff Gonzalez, Alanis, Bains, Gallagher, Celeste Rodriguez

ASM APPROPRIATIONS: 11-1-3
YES: Wicks, Aguiar-Curry, Calderon, Caloza, Fong, Mark González, Krell, Pacheco, Pellerin, Sharp-Collins, Solache
NO: Tangipa
ABS, ABST OR NV: Hoover, Dixon, Ta

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