

Crescenta Valley Water District

Weekly News Articles

January 29, 2023



January 30, 2023

How Much Rain is L.A. Capturing?

Local measures like Measure W are working. But more needs to be done to capture stormwater and rainwater.



A very full Ballona Creek after a rain event earlier this month.

At least nine atmospheric rivers blasted California between December 20th and January 15th, causing flooding and extensive damage, while also delivering much needed precipitation to our parched state. The Los Angeles County Public Works Department [announced](#) recently that more than 33 billion gallons of stormwater have been captured in the early months of the winter storm season, which will be enough to supply 816,000 people with enough water for an entire year. These capture efforts are a part of Los Angeles' scheme to build local water resilience and implement stormwater capture projects throughout the county. Officials are making progress, but there's still a long way to go.

This post takes stock of Los Angeles' performance in meeting its stormwater capture goals and discusses rainwater capture as another opportunity to enhance local water supply. First, let's settle on some definitions.

Stormwater vs. Rainwater

There's an important distinction between stormwater and rainwater. [Stormwater](#) is the water that drains off a land surface from rainfall before it reaches a natural water body. It occurs when the rate of precipitation is greater than the rate at which it can infiltrate or soak into the soil (in other words, when the soil is saturated). It includes rain that falls on rooftops, directed through gutters and downpipes onto land or into drains, and rain falling on ground surface areas, such as roads, driveways, gardens, footpaths, and lawns. Collecting and reusing stormwater can conserve potable water, diminish downstream environmental impacts, and help prevent overflowing of the stormwater system. Stormwater after being treated is safer, and as such becomes a "recycled water" supply.

[Rainwater](#) refers only to the rain that can be captured in a storage tank prior to any contact with the ground. Rainwater quality is much higher, given that groundwater generally contains more contaminants, including soil, organic matter, fertilizers from gardens, and oil residue from driveways. Rainwater has many benefits and potential uses, such as washing clothes, watering gardens, flushing toilets, and washing cars.

Stormwater Capture in L.A.

Stormwater capture plays an important role in the city and county of Los Angeles' [overall plan](#) to conserve and source water locally. In 2018, Los Angeles County voters approved [Measure W](#), a special parcel tax funding the Safe Clean Water Program. The program allocates \$280 million annually for multi-benefit stormwater projects throughout the county. California Natural Resources Secretary Wade Crowfoot called Measure W a "[world-leading](#) policy," that can also help reduce pollution [flowing into](#) oceans and bays. As a result of Measure W, L.A. has more resources

than almost any other place in the country to harness rainfall to recharge groundwater basins for future use.

Measure W is working. Since its approval, the Los Angeles County Department of Public Works has awarded \$400 million to over 100 regional infrastructure [projects](#), such as the Rory M. Shaw Wetlands Park Project to convert a 46-acre landfill into a wetlands park that can collect stormwater runoff. And updates to the [Tujunga Spreading Grounds facility](#) in the San Fernando Valley doubled its ability to capture stormwater from 8,000 acre-feet per year to 16,000, which can potentially provide enough water for 64,000 households each year. This month, Vice President Kamala Harris [joined](#) state and local leaders at the Tujunga Spreading Grounds to highlight the work taking place at the facility and in California as a paradigm for the rest of the nation.

Despite the implementation of these successful projects, county officials have said it will take [three to five decades](#) to build a stormwater capture system that will provide enough water for the area. The ultimate goal is to capture 300,000 acre-feet, or roughly 98 billion gallons, of water annually. Last year, L.A. collected [only about 8%](#) of the water the county consumes in a given year. Part of the challenge is that L.A.'s current hundred-year-old system was built with flood protection, rather than drought, in mind. City planners placed millions of barrels of concrete to get rid of water as fast as possible, channelizing the L.A. River, Ballona Creek, and nearly every other waterway in the area. Although a few regional watersheds, like the Upper San Gabriel River, possess good soils and systems for capturing stormwater, they are few and far between.

Managing the influx of water in a historic drought is tricky. During normal rain events, green infrastructure projects such as parks and gardens can help capture and store more water. But during extreme events, like the recent atmospheric rivers, larger infrastructure investments are necessary. It can also be difficult to garner public and political support for building big stormwater projects during dry times. A silver lining of the recent storms is that they have motivated the State Water Resources Control Board to fast-track stormwater capture efforts. "The state is capturing more water supply by accelerating groundwater recharge permitting and projects that mitigate the impacts of prolonged

drought and support long-term sustainable groundwater management,” [said](#) Department of Water Resources Director Karla Nemeth.

Because Los Angeles County has 88 cities and 200 water agencies, it is important to have regionwide policies like Measure W that prioritize collaboration among water managers and ensure that funds are being distributed throughout the county. As Bruce Reznik, Executive Director of LA Waterkeeper, [stated](#), urban stormwater runoff is “death by 1,000 cuts,” and it requires solving “with 1,000 different solutions.” Achieving the county’s stormwater capture goals calls for continued regionwide efforts, regarding stormwater as an asset rather than a liability, and prioritizing water resilience even in the absence of catastrophe.

Rainwater Capture

Collecting rainwater is another way for Angelenos to build local water resilience. Households can install rainwater systems that catch rain from the roof of their properties and siphon it to a large barrel, tank, or cistern. [Underground capture systems](#) can also be used, which works by capturing rain that lands on a permeable surface and filtering it through several layers of rock before it collects in underground containers.

For many years, rainwater collection was actually illegal in California to prevent commercial entities from disrupting natural ecosystems by constructing large reservoirs with the capacity to amass millions of gallons of water that would normally flow to a watershed. The State Water Resources Control Board used to require all would-be appropriators to apply for and acquire a permit to appropriate water from any source, including water falling in the form of precipitation. But in 2012, Governor Brown passed Assembly Bill 1750, or the [Rainwater Capture Act](#), which allows private citizens to install, use, and maintain systems for collecting rainwater for specific purposes, assuming they meet certain requirements. Homeowners can collect rainwater for non-potable uses, including gardening, landscaping, and washing vehicles. The State of California does not regulate the number of gallons of rainwater that homeowners can collect as long as there are no threats to public health.

In 2015, the State Legislature passed [Proposition 1](#), which allocates state funds for water supply infrastructure projects, including rainwater harvesting systems. The law is intended to hold businesses accountable for their water usage by requiring them, through new construction codes, to use captured rainwater in their toilets and for irrigation.

Additionally, [Proposition 72](#), which amended the State Constitution, aims to encourage rainwater catchment by excluding the value of rainwater capture systems installed between January 1, 2019 and December 31, 2028 from property tax assessments. The value of the catchment system would be included in the value of the home when it is sold. The savings for homeowners under Prop. 72 varies. An inexpensive system may result in only a few dollars saved in property taxes. But bigger, more expensive systems can cost thousands to install and would otherwise raise property taxes a noticeable amount.

Harvesting rainwater has many benefits. Because rainwater tanks have limited capacity, rainwater collectors are forced to be careful with how they use the water they capture, which can significantly help reduce water waste, relieve the pressure on local reservoirs, and lower municipal water bills. Additionally, because [one fifth](#) of California's electricity is consumed by pumping and processing water, rainwater collection reduces demand on public potable water supplies and lowers energy consumption for water treatment and distribution. Harvesting rainwater also decreases the volume and velocity of stormwater runoff, leading to decreased flooding, reduced stream bank erosion, and fewer pollutants entering waterbodies. In addition, the use of untreated rainwater for irrigation reduces the amount of chemicals needed to make municipal water supplies safe, preventing more chemicals from leaching into local groundwater. Rainwater capture can help households achieve water self-sufficiency, which is particularly valuable in light of the [state's](#) and [county's](#) adopted water restrictions.

Although rainfall isn't always reliable in Southern California, Los Angeles receives around [15 inches](#) of rain per year, and every inch of rain yields around 625 gallons of water on a 1000-foot roof. Installing rainwater capture systems can also be expensive, but [rebates](#), like the SoCal Water\$mart Rebate Program, can help offset costs for residential and commercial owners seeking to obtain a rain barrel or cistern. The City

of [Santa Monica](#) also offers a rebate of up to \$2,000 for property owners to install rainwater harvesting systems, depending on the size of the system. Measures may need to be taken to keep contaminants, like dust or mosquitos, out of the rainwater. Households should also check their Homeowners Association bylaws for any restrictions on rainwater capture systems.

Takeaways

L.A. has implemented municipal and regional infrastructure projects throughout the county to capture and clean up stormwater with robust funding from Measure W. But continued regionwide efforts are necessary to meet the county's ultimate water supply goals. Rainwater capture presents another opportunity to enhance local water supply, with the added benefits of lowering municipal water bills, cutting energy consumption for water treatment and distribution, and reducing pollution in surrounding waterbodies and local groundwater.

<https://legal-planet.org/2023/01/30/how-much-rain-is-l-a-capturing/>

January 31, 2023

California, other states reach impasse over Colorado River

Despite a federal deadline today, California — the largest user of Colorado River water — has refused to cut back as much as six other states proposed in a new plan today. Imperial valley growers have the most to lose.

California and other Western states that import water from the parched Colorado River failed to reach an agreement today on how to cut their use despite a deadline from federal officials.

Six states presented the federal government with a proposal to slash the lower basin's use by 2.9 million acre-feet from their historic allotments—including more than 1 million acre-feet from California, or 25% of its entitlements. But California, the largest user of Colorado River water, refused to sign onto the proposal and, instead, hours later issued its own — which mirrors its offer last fall to cut imports by 9%, or 400,000 acre feet.

The impasse is over water delivered to Imperial Valley farmers and cities in six Southern California counties.

A severe mega-drought — the driest conditions in 1,200 years — has forced the states to find ways to reduce their imports since they are now consuming far more water than the river contains: Allocations to the United States and Mexico based on historic rights total 16.5 million acre-feet a year, and in most years, they are using around [13 million acre-feet](#) — significantly more than the river's 11 million acre-feet. Its reservoirs are at record low levels and are expected to keep dropping.

U.S. Interior Department officials, who enforce the river's allocations, did not weigh in on the proposals today or even mention the deadline.

Spokesperson Tyler Cherry said in a statement that Interior “remains committed to pursuing a collaborative and consensus-based approach.” He called it the “strongest immediate tool” to reach an agreement to sustainably manage the river’s water supply.

The dispute pits the Imperial Irrigation District, the Metropolitan Water District, the Coachella Valley Water District, the Palo Verde Irrigation and the Quechan Tribal Council against Arizona, Nevada, Colorado, Wyoming, New Mexico and Utah. The Imperial Irrigation District is by far the largest user in California, with senior rights to 3.1 million acre-feet per year.

Imperial Valley growers have [resisted following their fields](#), saying they have rights to the water and already have cut their usage.

In a statement, JB Hamby, chairman of the Colorado River Board of California, said the proposal from the other states “is inconsistent with the Law of the River and does not form a seven-state consensus approach.” Hamby also serves as [vice-president of the Imperial Irrigation](#) District’s Board of Directors.

The [Law of the River](#) refers to the system of allocating water to each state based on decades-old agreements and court rulings. That process favors California, since its users have senior rights.

By importing Colorado River water, Imperial County has become the ninth largest agricultural producer in California, reporting \$2.3 billion in sales in 2021, led by cattle and lettuce.

Alfalfa and other forage grasses — water-intensive crops used to feed dairy cows and cattle — dominate the acreage, carpeting more than half of the farmland. Imperial also produces [two-thirds of the vegetables](#) consumed in the U.S. during winter months.

Instead of signing the proposal from the other states, the Imperial Irrigation District and the other Southern California water agencies presented their own plan today. It closely resembles [a similar offer they made in October](#) to cut annual withdrawals by 400,000 acre-feet per

year at least through 2026. That 9% reduction is much less than the 15% to 30% cuts that federal water managers are waiting for.

Hamby said California's proposal is "based on what is practical, voluntary, and achievable through 2026 in a way that works within the existing body of laws, compacts, decrees, and ... the Law of the River."

The steep decline in the river's supply has induced an escalating panic during the past five years. Last summer, Bureau of Reclamation Commissioner Camille Touton asked the states in the Colorado River basin for a plan to reduce use of the river's water by 2 to 4 million acre-feet each year within 60 days. The soft deadline passed quietly. In December, Touton repeated the order at a water users conference in Las Vegas, calling on the seven states for a plan to cut their use of Colorado River water "before the end of January."

Some water policy experts consider it fair for California to give up more water that it has agreed to since it uses the most. [John Fleck](#), water policy expert at the University of New Mexico School of Law's Utton Center, said the six-state proposal "broadly shares shortages across all the water users. California would prefer to stick with their interpretation of old legal agreements, because they come out on top."

The six-state proposal suggests that lower basin states – California, Arizona and Nevada – plus Mexico cut their usage by 1.5 million acre-feet when the elevation of Lake Mead drops below 1,145 feet, to account for water lost to evaporation, which current allocation systems do not consider. [Mead currently stands at 1,046 feet](#) and by volume is three-fourths empty.

The proposal suggests further water cuts as the lake declines past specific trigger points. At a level below 1,020 feet, California would retain 3 million of its full 4.4 million acre-foot entitlement.

Representatives of other states stressed the importance of coming to a consensus among all seven states but added that they produced the plan because the situation is urgent.

“We need to continue discussions among all 7 Basin States and to engage directly with tribal leaders and others as we prepare to move forward with the components,” said Estevan Lopez, New Mexico Colorado River Commissioner in a statement.

But U.S. Senators Alex Padilla and Dianne Feinstein of California said in a joint statement that “six other Western states dictating how much water California must give up simply isn’t a genuine consensus solution — especially coming from states that haven’t offered any new cuts to their own water usage. The proposal further fails to recognize California’s senior legal water rights.”

Fleck said past Colorado River water management has been hasty and haphazard.

“We’ve avoided legal conflict by just allowing California and Arizona to take a whole lot of water, and now Lake Mead is at these low levels,” he said.

Cuts have occurred in the past, he said, though usually with little impact on California. “They were the best we could do without triggering this sort of conflict,” Fleck said.

Now unrelenting drought, combined with overuse of the river, have taken things to the next level.

“What we’re seeing is a real manifestation of the urgent need to solve this problem, one way or another,” Fleck said.

<https://calmatters.org/environment/2023/01/california-colorado-river-water-2/>

LA Times

February 1, 2023

Battling to avoid massive water cuts, California offers proposal on Colorado River crisis



The Colorado River flows near Hite Overlook, Utah, upstream from Lake Powell.

(Carolyn Cole / Los Angeles Times)

California has given the federal government its own proposal for making cuts in Colorado River water use, saying a plan offered by six other states would disproportionately burden farms and cities in Southern California.

Water agencies that depend on the river submitted their proposal to the Biden administration on Tuesday, the same day federal officials had set as a deadline for the Colorado River Basin states to reach agreement on how to prevent reservoirs from dropping to dangerously low levels.

The state put forward its proposal a day after Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming [released their alternative](#). A large portion of the cuts they proposed would be made by accounting for evaporation and other water losses along the lower portion of the river — a calculation that would translate into especially large reductions for California, which uses more Colorado River water than any other state.

“The six-state proposal directly and disproportionately impacts California,” said Wade Crowfoot, the state’s natural resources secretary. “It doesn’t seem like a constructive approach for some states to fashion a proposal that only impacts the existing water security and water rights of another state that’s not part of that proposal.”



[Climate & Environment](#)

States miss deadline to address Colorado River water crisis; pressure builds on California

States dependent on Colorado River supplies have missed yet another deadline for agreeing to water cuts. Will the federal government step in?

Jan. 31, 2023

Crowfoot said the other states had devised an approach that would go beyond anything established in the agreements and laws that govern [how the Colorado River is managed and used](#). He said the proposal by California water agencies, in contrast, lays out practical and achievable changes that can be made starting this year to stabilize reservoir levels.

The state's proposal builds on a previous commitment by four Southern California water agencies to cut water use by 400,000 acre-feet per year, a reduction of about 9%, through 2026. The federal government has asked the states to reduce their total usage by 2 million to 4 million acre-feet.

On top of the planned reductions in California and other states, the proposal calls for taking measures aimed at keeping reservoirs above certain levels, including making additional cuts on a tiered scale if the level of Lake Mead, the country's largest reservoir, continues to decline toward critically low levels.

In the proposal [letter](#), J.B. Hamby, chair of California's Colorado River Board, said the state's alternative "provides a realistic and implementable framework to address reduced inflows and declining reservoir elevations by building on voluntary agreements and past collaborative efforts in order to minimize the risk of legal challenge or implementation delay."

California agencies including the Imperial Irrigation District and the Palo Verde Irrigation District, which deliver water to vast farmlands, have high-priority senior water rights dating back more than a century. California officials have insisted that these rights and the existing law of the river must be upheld in any plan for reducing water use.

“California is not wavering from our legal position,” Hamby said. “We continue to look forward to developing a seven-state consensus if possible, but in the absence of that, it defaults to the law of the river.”



Climate & Environment

[Colorado River in Crisis: A Times series on the Southwest's shrinking water lifeline](#)

Colorado River in Crisis is a series of stories, videos and podcasts in which Los Angeles Times journalists travel throughout the river's watershed, from the headwaters in the Rocky Mountains to the river's dry delta in Mexico.

Jan. 6, 2023

If any legal disputes erupt, that could complicate efforts to come up with solutions. The states are submitting their proposed alternatives as the Interior Department and the Bureau of Reclamation begin a review

process to revise the current rules for dealing with Colorado River shortages.

Hamby said California is focused on “practical solutions that can be implemented now to protect volumes of water in storage without driving conflict and litigation.”

“As of this point in time, we were not able to reach that consensus, but we hope to achieve that moving forward,” Hamby said. “We need to be able to reach consensus among the seven basin states to come up with voluntary approaches where each state is comfortable with the direction.”

Even after the federal government’s deadline, managers of water agencies have more talks scheduled to continue negotiating.

The Colorado River, which supplies cities, farming areas and tribal nations from the Rocky Mountains to the U.S.-Mexico border, has been pushed to a breaking point by chronic overuse, drought and the effects of global warming.

Over the last 23 years, the watershed has been desiccated by [the worst drought in centuries](#), which has been intensified by rising temperatures.

Lake Mead and Lake Powell now sit about three-fourths empty. And although the Rocky Mountains have seen an above-average amount of snow so far this winter, it’s not nearly enough to lift the reservoirs out of the severe water deficit.

Federal officials in June called for the seven states to come up with plans to reduce water diversions by approximately 15% to 30%. But negotiations among the states grew acrimonious and didn’t produce a deal.

In October, the Biden administration announced plans to revise the current rules for dealing with shortages and to pursue a new agreement for major reductions in water use.



Climate & Environment

In California's Imperial Valley, farmers brace for a future with less Colorado River water

As the federal government pushes states to reduce usage of dwindling Colorado River water, Imperial Valley farmers fear a “worst-case” scenario.

Jan. 27, 2023

After the latest round of talks reached an impasse, the six states released their proposal. They called it an “alternative framework” for the Bureau of Reclamation to consider as part of its review while preparing what is called a supplemental environmental impact statement.

The six states urged federal officials to begin accounting for more than 1.5 million acre-feet of water losses, primarily caused by evaporation, which would mean major cuts for Southern California.

“I don’t think there is disagreement on the magnitude of the reductions that are needed,” said John Entsminger, general manager of the Southern Nevada Water Authority. “We need this magnitude of cuts in order to stabilize the system.”

The question is how those cuts will be divided, he said, and the talks among the states will continue.

“I think there’s still a strong commitment by all seven states to continue to work in good faith towards a solution,” Entsminger said.

Federal officials aim to release a draft review of alternatives by the end of March, followed by a decision in the summer.

Entsminger said even though the states haven’t reached a consensus yet, he’s hoping “we can come up with something everybody can live with.”

Crowfoot said California’s proposal, while specifying reductions, also focuses on protecting “baseline water needs of communities across the West by prioritizing water supplies for human health and safety.”

While negotiating on immediate plans, the seven states are also due to begin talks soon on rules for managing shortages after 2026.

Crowfoot said those talks would be more suited to discussing any changes in the established allocation system, like the six states’ proposal to focus on water losses from evaporation.

“To do that in a matter of months on a system that’s been built over a century, we think is not the approach to build consensus,” Crowfoot said. “Let’s focus on the task at hand ... which is making changes in water conservation here in the coming months.”

California Sens. Alex Padilla and Dianne Feinstein supported the state’s proposal, saying no state will be spared from water reductions as drought and climate change shrink the flow of the river.

The two Democratic senators said in a joint statement that “six other Western states dictating how much water California must give up simply isn’t a genuine consensus solution — especially coming from states that

haven't offered any new cuts to their own water usage." They added that the six states' proposal "fails to recognize California's senior legal water rights."

A leader of one California tribe joined water managers in supporting the state's proposal. Quechan Tribal Council President Jordan Joaquin said the proposal "reflects a meaningful effort to address the hydrologic challenges facing the [Colorado River] Basin while respecting the senior water rights of the Tribe and others and ensuring that the Colorado can continue to exist as a living river."

Managers of the Metropolitan Water District of Southern California said they plan additional steps to reduce usage of Colorado River water this year.

"But we must do it in a way that does not harm half of the people who rely on the river — the 19 million people of Southern California," said Adel Hagekhalil, MWD's general manager. "We must do it in a way that does not devastate our \$1.6-trillion economy, an economic engine for the entire United States. We must do it in a way that can be quickly implemented, adding water to lakes Mead and Powell without getting mired in lengthy legal battles."

In December, leaders of the water wholesalers [declared a regional drought emergency](#) and called for local suppliers to reduce water use. MWD's managers have been discussing plans for moving to mandatory conservation measures throughout the region by starting to allocate supplies for all of the district's 26 member agencies.

Adán Ortega, chair of the MWD board, said the district is preparing to take these measures to "do our part in saving the Colorado River."

"We've actually begun preparing our member agencies and the public for this possibility, and so that's a good faith gesture that we hope the other states will take seriously," Ortega said.

Ortega said the six states' proposal would lead to disputes over calculations of evaporation losses, "not to mention the disputes that you're going to get into over changing the rule on the river."

He said that would be a “very ill-advised shortcut.”

<https://www.latimes.com/environment/story/2023-02-01/california-offers-proposal-on-colorado-river-crisis>

February 1, 2023

Despite an ‘incredible’ snowpack, drought not over in California

Californians must be cautious of a return to drought conditions, despite a string of recent, very helpful rainstorms.



Sean de Guzman, manager of the California Department of Water Resources Snow Surveys and Water Supply Forecasting Unit, conducts the third media snow survey of the 2022 season at Phillips Station in the Sierra, approximately 90 miles east of Sacramento off Highway 50 in El Dorado County. (Ken James/California Department of Water Resources)

LAKE TAHOE, Calif. (CN) — California may celebrate having double the expected snowpack after a string of atmospheric river storms, but state

water experts warn that more needs to come to offset years of record-breaking drought.

At the season's second monthly snowpack survey conducted Wednesday at Phillips Station — at the intersection of Highway 50 and Sierra-at-Tahoe Road — the California Department of Water Resources measured current snow depths and water content. Snow Surveys and Water Supply Forecasting Unit Manager Sean de Guzman told the gathered crowd his team found snow with a 85.5” depth or 193% of the location’s average — already 137% of the expected average for April.

Statewide, the snowpack is at 205% of average, de Guzman told the excited crowd. He said this winter is outpacing the wettest year on record going back many years, 1982-1983, leading to an “impressive” increase in reservoir storage to 9 million acre-feet statewide.



Snow Surveys and Water Supply Forecasting Unit Manager Sean de Guzman tells a crowd at Lake Tahoe that the California snowpack is at double its average amount for February. (Department of Water Resources / Screenshot via Courthouse News)

“Our snowpack is off to an incredible start, and it is exactly what California needs to really break from our ongoing drought,” he said.

“However, every day it doesn’t rain or snow, we gradually return to drier conditions. California is such a large state and you really need to analyze those impacts on a regional scale.”

Department of Water Resources director Karla Nemeth said measurements taken on April 1 will truly determine the water year, because “our traditional wet months are still ahead of us.” She said if the state returns to dry conditions for two months — as happened in 2022 — a significant snowpack can quickly disappear.

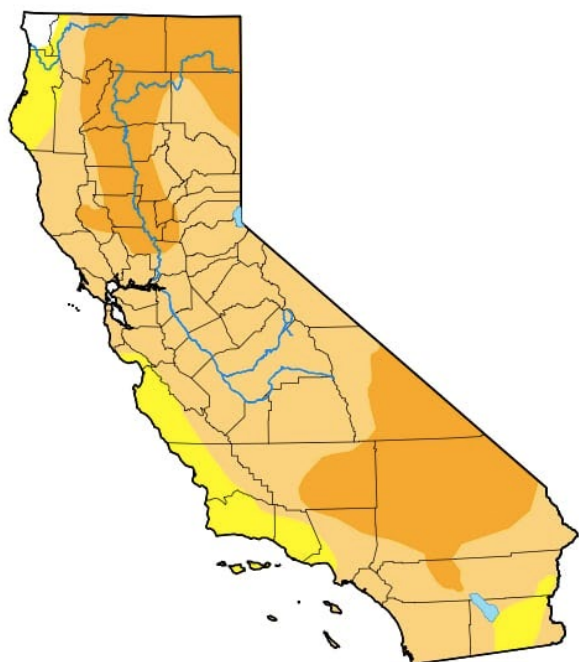
Periodic rain and snow over the next several months will be key to maximizing benefits to the state’s water supply, especially by pushing water into groundwater basins which take much longer to recharge, and can hold about ten times more water than surface water reservoirs.

“California has always experienced some degree of swings between wet and dry, but the past few months have demonstrated how much more extreme those swings are becoming,” Nemeth said.

She said that while Wednesday's results are good news for water supplies, the past shows how quickly snowpack can disappear if dry conditions return.

“When we think about drought, and does our big January actually bust the drought in California, it’s too soon to tell,” Nemeth said. “I don’t want to be a downer here, but I do want to make sure that everyone understands we need to exercise caution. There’s a lot more that needs to play out over the next several months for us to really capture our full water supply here.”

Asked about how quickly the snow might melt this year, she and de Guzman said the forecasts show it is not likely the snow will melt into the ground as quickly as in 2021 because the soils are currently wetter. Nemeth added her department is next analyzing whether regional water allocations can be increased again, and she expects another adjustment to be announced in late February.



Map released: Thurs. January 26, 2023

Data valid: January 24, 2023 at 7 a.m. EST

Intensity

None	None
D0 (Abnormally Dry)	D0 (Abnormally Dry)
D1 (Moderate Drought)	D1 (Moderate Drought)
D2 (Severe Drought)	D2 (Severe Drought)
D3 (Extreme Drought)	D3 (Extreme Drought)
D4 (Exceptional Drought)	D4 (Exceptional Drought)
No Data	No Data

Authors

United States and Puerto Rico Author(s):

Rocky Bilotta, NOAA/NCEI

Pacific Islands and Virgin Islands Author(s):

Richard Tinker, NOAA/NWS/NCEP/CPC

California remains in a moderate to severe drought as of late January. (The California Drought Monitor / Screenshot via Courthouse News)

The state's data exchange center [reports that](#) as of Tuesday, many of the state's key reservoirs are still below historic average levels including Lake Shasta. However, one of the largest reservoirs, Lake Oroville, is at 112% of its historic average, and about five others have also topped their historic average highs.

The state drought monitor, which will be updated Thursday, shows that [as of Jan. 26](#) most of the state remains in a moderate to severe drought. That includes most of the agricultural havens of the Sacramento and Central valleys.

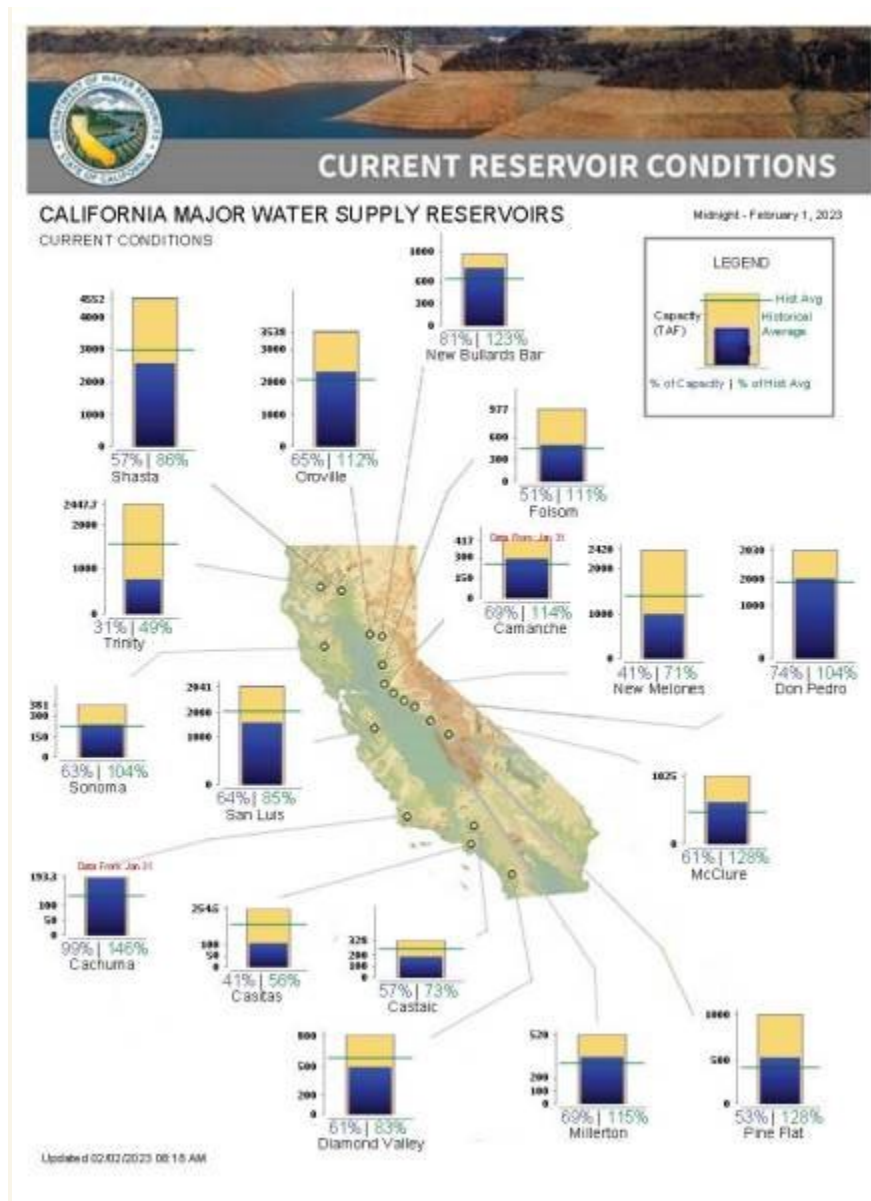
The next snowpack survey will take place March 1.

<https://www.courthousenews.com/despite-an-incredible-snowpack-drought-not-over-in-california/>

Maven's Notebook

February 2, 2023

MONTHLY RESERVOIR REPORT for February 2



Prepared by Robert Shibatani

The New Year's [Atmospheric River](#) storms of 2023 have abated and catchments across the State are draining as exemplified by continuing baseflows through their [hydrograph](#) recession limbs. River flows are still elevated, but releases have been incrementally curtailed and stage levels continue to drop.

Despite early positive signs, however, the reality of what this storm (or series of storms) brought in terms of drought relief is made eminently clear by reviewing various data sources. The State precipitation indices for the Northern Sierra, San Joaquin, and Tulare Basin regions, for example, provide a comparative inspection of how this water-year (WY) stacks up against previous WYs in terms of accumulated precipitation totals.

Without another similar prolonged wetting front encroaching California this winter/spring, it is doubtful whether the State will even reach average-year precipitation totals for the Northern Sierra. In fact, based on the State's Northern Sierra Precipitation [8-Station Index](#), an additional 15.7 inches of precipitation would be required just to meet the 1991-2020 average. Not impossible, but it likely cannot happen without another AR. See **Figure 1**.

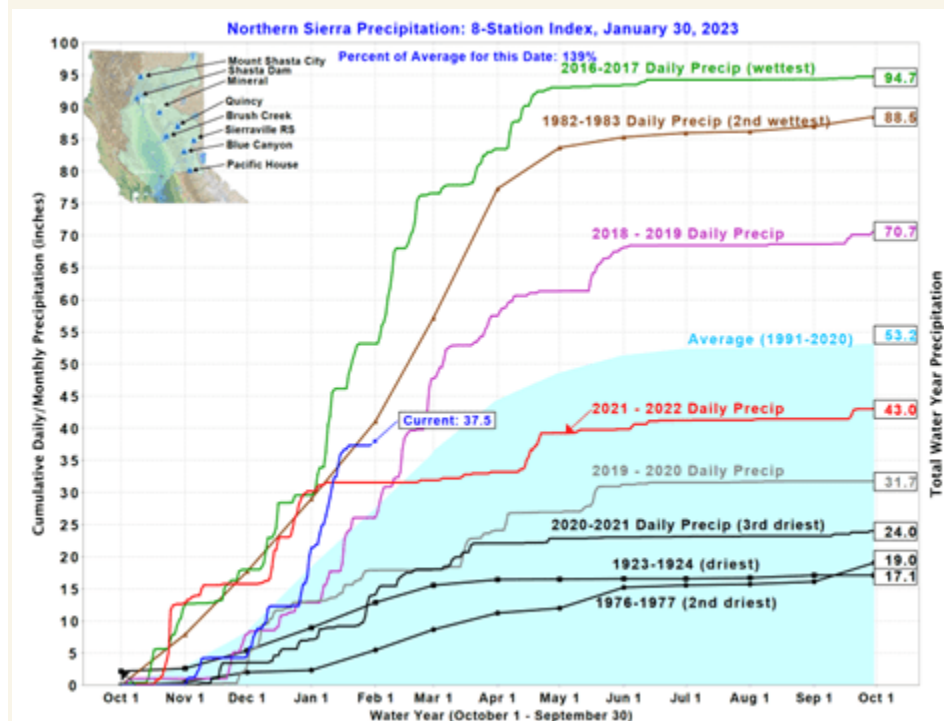


Figure 1.

Northern Sierra Precipitation: 8-Station Index, January 30, 2023

Source: California Department of Water Resources

A similar situation occurs south of the delta when reviewing the San Joaquin Precipitation: [5-Station Index](#) which currently stands as 33.7 inches, some 6.2 inches below the long-term (1991-2020 average) as well as the Tulare Basin Precipitation: 6-Station Index which currently shows 24.4 inches, only 3.9 inches below its long-term average.

The 2022-23 WY has been unique in that snow accumulations are much more pronounced in the south and central Sierra Nevada this year than in the northern regions, as is typical. Relative to existing conditions, SWE across the State is significantly above average.

While some have referenced the rather robust cumulative snowpack, closer inspection reveals that the numbers really are not that impressive. As most snow hydrologists will caution; early-season snowpacks typically bear little resemblance to their final snowmelt contribution during the annual freshet.

Reservoir storage across the State has been stymied by capacity limitations. This is a real shame, particularly in following protracted water-short periods, since much of the storm- and floodwater surpluses resulting from the recent New Year ARs have already been evacuated to the Pacific Ocean. That valuable water supply has, for all intents and purposes, been lost.

So, where does reservoir storage currently stand?

CVP reservoir storage is about 5.6 million acre-feet (MAF) as of late last week or, 47% of total system capacity. Reservoirs such as Shasta are filling nicely (e.g., 2.57 MAF as of yesterday). Other reservoirs are, for a number of reasons, languishing in their refill objectives. Trinity and New Melones reservoirs, each over 2.4 MAF in storage capacity, both remain significantly below 1 MAF.

What is the immediate hydroclimatic outlook?

There are a few days of periodic showers and light rains forecast for next week, but nothing notable in the way of major frontal systems on the horizon. Unless California receives another Atmospheric River-type incursion, I doubt that the residual hydrology will be sufficient to avert another “water-constrained” year. In systems with limited capacity, reservoirs have a significantly lower likelihood of filling, particularly when left to the narrowing window of the spring freshet. Under such conditions, it is more by blind luck than anything else that reservoirs fill. Ideally, reservoirs should be filling the ENTIRE rainy season, especially after protracted droughts; when reservoirs cannot due to size limitations, it severely hampers water managers’ ability to establish, let alone retain water security and sustainability.

We are closely monitoring daily CVOC actions to observe how integrated CVP/SWP operations are responding to hydroclimatological threats, both in the long- and short-terms. The bulk of the wet season remains; February and March alone can provide more than ample opportunity to meet the reservoir refill targets for the 2022-23.

<https://mavensnotebook.com/2023/02/02/monthly-reservoir-report-for-february-3/>

The Hill

February 2, 2023

California snowpack deepest in four decades



Kenneth James/California Department of Water Resources via AP
Sean de Guzman, right, Manager of the California Department of Water Resources Snow Surveys and Water Supply Forecasting Unit, inserts the long aluminum snow depth survey pole into the deep snow, as left, Jacob Kollen and Anthony Burdock, center, both Department of Water Resources Engineers in the Snow Surveys and Water Supply Forecasting Unit, take...

California's snowpack levels are at their highest point in four decades, after a series of severe storms deluged the region last month, according to state water officials.

The total snow water equivalent accumulated has risen to 33.7 inches, or [205 percent of the average](#) for this time of year, the California Department of Water Resources announced on Wednesday.

These results, tabulated from 130 electronic snow sensors statewide, are outpacing the 1982-1983 season which previously set the record.

The agency warned, however, that “two months still remain” until state snowpack usually peaks and that “every day it does not rain or snow, the conditions are drying.”

“California has always experienced some degree of swings between wet and dry, but the past few months have demonstrated how much more extreme those swings are becoming,” Karla Nemeth, director of the California Department of Water Resources, said in a statement.

Nine storm systems known as “atmospheric rivers” began battering California and other Western areas with heavy rains and snow over a three-week period starting in late December, according to [a recent update](#) from the National Integrated Drought Information System.

During these storms, 80 percent of full seasonal snowpack was deposited in California, the report found. Statewide, the precipitation accumulated over those three weeks amounted to 11.2 inches, or 46 percent of a full year.

The Department of Water Resources acknowledged on Wednesday that these atmospheric rivers provided “a significant boost” to California snowpack, following the driest three-year period on record.

But if the Golden State returns to dry weather over the next two months — similar to the conditions last season — the significant early snowpack could disappear, the Department of Water Resources cautioned.

Periodic bouts of precipitation over the next few months will therefore be critical to achieving the biggest water supply benefits from the snow and rain that has already fallen, the agency noted.

On average, snowpack from the Sierra Nevada mountains — known as California's "frozen reservoir" — fulfills about 30 percent of the state's water needs and helps determine how water administrators manage supplies, water officials explained.

"Large snow totals like today are a welcome sight but also present new challenges for water managers as they walk the fine line between water supply and flood control," Sean de Guzman, the Department of Water Resources's unit manager for snow surveys and water supply forecasting, said in a statement.

"As we move into the snowmelt season in the spring, water managers will work to manage flood risk and optimize the snowpack's water supply benefits during peak demands in the summer," de Guzman added.

Despite the welcome wet weather thus far, the agency stressed that Californians should continue to use water wisely and actively conserve it.

"California is preparing for more intense and dangerous climate swings by bolstering both drought and flood preparation," Nemeth said.

"While today's results are good news for water supplies, we know from experience how quickly snowpack can disappear if dry conditions return in the months ahead," she added.

<https://thehill.com/policy/equilibrium-sustainability/3840922-california-snowpack-deepest-in-four-decades>

Curbed

February 2, 2023

L.A.'s 'Green Alley' Experiments Are Working



For most of the three decades Rosendo Mendez has lived in his South Los Angeles bungalow, the alley behind it had been a problem. The strip of asphalt that neighbors used to access their garages was riddled with potholes that attracted all kinds of garbage and became massive puddles whenever it rained. “A lot of water and a lot of trash,” Mendez says. Then, about 15 years ago, the city came to Mendez with a proposition: Let a team of civic engineers and landscape architects tear up the asphalt and replace it with a “[green alley](#)”: A smoothly paved corridor with brightly painted murals, new greenery, and more places to stroll. These changes, beyond making the alleys beautiful, would help drain rain away from

Mendez's and his neighbor's homes after storms, recharge the groundwater system that would keep the neighborhood cool, and could even be used as a local water source in times of drought.

The project, built in collaboration with the Trust for Public Land, was part of a [bigger vision](#) for a network of similar infrastructure throughout the neighborhood. South L.A. has about 300 miles of alleyways — about one-third of all the alleys in the city — and due to the combination of low-lying land, paved-over surfaces, and aging sewer infrastructure, it also has the city's second-highest rate of flooding complaints. The green alleys, once there were enough of them, could help. Mendez said yes, his neighbors did the same, and within two years, the muddy, uneven asphalt was gone. Now just beyond Mendez's back fence is an attractive right-of-way signified by green-and-white-striped poles planted with citrus trees at each entrance. Students from the elementary school across the street help maintain the alley through regular clean-ups, and Mendez says he feels comfortable walking his dog there, even late at night.

As wave after wave of atmospheric river storms slammed the city over the last month, green alleys like Mendez's were put to their first real test. The city received as much rainfall between the start of the rainy season in October and the end of January as it usually gets by the end of April. But as that deluge pummeled South L.A., the resulting stormwater had more opportunities to sink back into the earth: filtering through a row of permeable pavers, directing to pocket planters where creeping fig vines twirl up garage walls, or vanishing into grates labeled "drains to groundwater." One alley even has a center-running bioswale where tiny notches along the curbs nudge water into rectangles of drought-tolerant landscaping. Mendez's corner of the neighborhood fared well — no water issues, he said: "Right now, it's okay."

Before the interventions made by the city and the Trust for Public Land, the alleys were designed to flush water away using a center-running gutter, but most of what those hardscape surfaces ended up doing was transferring water to the street, where it was just as likely to encounter pothole puddles and blocked drainage on its journey downhill. But a single green alley is able to capture enough stormwater per year to store it in dry wells below the pavers where it can slowly percolate into the

groundwater, says Allen Compton, founder of the landscape architecture firm [SALT](#), which designed these alleys. (One small challenge has been maintenance related, he says: Even the permeable pavers sometimes get clogged.)

In addition to absorbing water better, the alleys also zigzag around another notable piece of green infrastructure that collects water from the neighborhood: the [South L.A. Wetlands Park](#), a ten-acre former transit yard transformed in 2013 into a marshy lake frequented by both joggers and turtles. Compton, whose firm is at work on another batch of alleys about a mile away, says projects like this are creating a new “urban vocabulary” for L.A., putting the focus on not only water but also wildlife habitats and walking networks. “Every project we touch has some stormwater strategy to it now,” he says. This is more or less the gold standard for withstanding the extremes of California weather to come: a network of lush, green, and porous blocks that feed into what is essentially a big, beautiful sponge.

What happens in the absence of such drainage networks became frustratingly clear in the last month: Widespread flooding [closed roads](#). Sinkholes [swallowed cars](#). L.A.’s Union Station [filled like a wading pool](#). (The danger of these floods is also not borne equally — L.A. County’s Black residents are [79 percent more likely to experience waist-high flooding](#) than white residents.) There’s also a tremendous amount of water wasted: Most of the rain that falls is sent surging through the city’s over 1,000 miles of drains and channels — including the most famous one, the L.A. River — carrying a stew of plastic bags, oil slicks, dog poop, discarded antibiotics, and tiny chunks of car tires to the Pacific Ocean.



The [city-as-sponge plan](#) will take time, but L.A. is making strides: Preventing the local flooding that used to plague Mendez's alley is a microcosm of the changes the region is trying to make to its flood-control infrastructure, only on a bigger scale — a delicate balance of [collecting and storing water in reservoirs](#) and releasing it to other facilities that allow it to infiltrate underground aquifers. The Big Tujunga Dam, for example, which prevents the northern part of L.A. from being overwhelmed by runoff from the San Gabriel Mountains, is able to [divert stormwater into the nearby Tujunga Spreading Grounds](#), replenishing a critical groundwater reserve in the San Fernando Valley instead of flushing it out to sea. And now, like other flood-prone parts of the U.S., L.A. County is doubling down on major flood-control projects that double as parks or recreational areas, like [Houston's Buffalo Bayou](#) and [Atlanta's Rodney Cook Sr. Park](#) (though the [best examples are still outside of the U.S.](#)).

This is the direction L.A. needs to be moving, [especially as our water sources are drying up](#). Officials are recognizing the importance of conserving water locally and making the region as a whole more climate-

resilient. But stormwater capture projects have, historically, taken a very long time. Outreach for the green alleys in South L.A. began in 2008 with the first alley completed in 2015. Nearly a decade after the first project was permitted, a majority of the six-block area envisioned in the plan still does not have the recommended stormwater improvements. Other water improvements in the neighborhood have been just as slow. Teresa McDonald, the founder of the South L.A. organization Ultimate Restoration Unlimited, is part of a coalition doing outreach for water projects in underserved neighborhoods. The projects were eligible for funding through a 2014 state ballot proposition that allocated \$7.1 billion for these updates, and McDonald wanted to ensure that money helped transform her own neighborhoods. “We wanted to get into this idea of healing our communities through water,” she says. In the end, McDonald’s work helped to get funding for two stormwater projects at an elementary school and community garden — both of which [still have yet to break ground](#).

But other work *is* happening around the neighborhood; it’s just not the kind of storm-resilient transformation it so desperately needs. McDonald looks around the surrounding area where city crews are repairing streets and sidewalks to last-century standards — adding concrete, more concrete, and [piles of river rocks set in concrete](#) — without adding interventions like more trees or bioswales that the residents now know will also protect them from extreme heat and pollution from adjacent freeways, she says. It’s like the city draws up ambitious sustainability plans and puts out calls for big projects but isn’t taking its own advice to implement crucial infrastructure to prepare for its water future block by block.

Because stormwater is still erroneously classified as a waste product, its management is handled by the same department that picks up the trash. And the fact that L.A.’s stormwater interventions are mostly concentrated in places like parks or spreading grounds instead of the places where people live is largely due to the lack of coordination between agencies. The city is working on streamlining this process in the form of an interagency stormwater plan that would require better coordination with the Department of Water and Power and the Bureau of Street Services, says Michael Scaduto, senior civil engineer at the

Department of Sanitation. “Wherever we can collaborate, we can make our stormwater funds go much further,” he says. “If we can find a project that they’re willing to do the paving or they’re willing to resurface, then we just bring in the stormwater funding.” More of that funding is coming, too: a [2018 L.A. County ballot measure](#) placed a small tax on impermeable surfaces that prevent proper drainage. If homeowners replace them with infrastructure that aids in water capture — permeable pavers or drought-tolerant gardens — their tax rate goes down. The funds are then put towards [100 stormwater projects](#), including [new green alleys in L.A. city](#). By Measure W’s own estimates, L.A. County’s captured stormwater could provide 70 percent of its water needs locally, yet [it will take decades](#) to achieve this goal.



Which means how the city prioritizes projects is crucial, says Melanie Winter, founder and director of [The River Project](#). Winter envisions a new strategy in which every community gets its own neighborhood project similar in scale to the South L.A. Wetlands, but where more focus is on the city’s streets, medians, and sidewalks, which are arguably its [biggest and best-distributed assets](#): “Every parkway becomes a habitat

that recharges groundwater, mitigates flood risk, and supports street trees without potable water.” Winter’s team worked with the city to transform nearly a mile of parkway near the Tujunga Wash from a concrete median into a [naturalized bioswale](#) that opened in 2015. (Like the alleys, the process also took a long time — about five years.) The most important technology deployed here is not a complex underground cistern or even interlocking permeable pavers, says Winter, it’s those tiny notches in the curb that allow runoff from the gutter to filter over some stones and into a native-planted garden with decomposed granite and sycamore trees. These projects can cost a few thousand dollars and be completed in a matter of months. The smaller interventions have also been proven to work — the city of San Francisco reported that its bioswales [helped to mitigate flooding](#) after the recent storms — and when put to the test in a bigger storm, they can also save lives. But Winter says there’s only one median like this in all of L.A. city. “It’s probably the most cost-effective project in that vein that’s been done,” she says. “They’ve not replicated it because it’s too simple — simple scares them. Hell, nature scares them.”

<https://www.curbed.com/2023/02/los-angeles-green-alleys-stormwater-flooding.html>

Triple Pundit

February 3, 2023

Researchers Propose a Plan for California's Water Woes





Water in the American West is making the news once again. This time, in a nail-biter of a deadline for water cuts from the highly stressed Colorado River, six states [agreed to reduce their withdrawals](#). California, which uses the most water from the river, followed up with its own plan [a day later](#). But in light of the multi-year drought and recent torrential rains and atmospheric rivers in the state, water remains a constant stressor.

Despite the [32 trillion gallons of water](#) the recent storms dumped on the state, California [remains in drought](#) — albeit a much less severe one compared to a few months ago. But it's a temporary reprieve at best. The state will continue to need to cut its water consumption and demand given the impacts of climate change. Further, the intensity of the rainfall indicates another instance of the severity of climate impacts on the state: wetter wet periods and drier dry spells.

Infrastructure woes compound California's water troubles

On top of the climate impacts, California's [water infrastructure](#) is dire need of an upgrade. This matters for many reasons, not least of which is

the fact that the state is the [leader in agricultural output](#). It's that sector which will likely get [hit the hardest](#) with conservation measures when they come.

Lake Mead and Lake Powell, fed by the Colorado River and the two largest reservoirs in the U.S., are reaching [dead pool](#) status, meaning water levels become too low to flow downstream. About [75 percent](#) of the reservoir's water goes to agriculture, with the rest going toward residential and commercial uses, including power generation.

California researchers offer solutions to boost water infrastructure in the state

A [recent report](#) from the Milken Institute, a nonpartisan economic think tank based in Santa Monica, offers some potential solutions to California's challenges around water infrastructure.

"On top of mounting drought-related challenges, lack of governance collaboration, project acceleration and financial solutions threatens vital systems reliant on California's water infrastructure, like the state's \$50 billion agriculture economy," Matt Horton, director at the Milken Institute's Center for Regional Economics, told TriplePundit.

All of this has added up to stalled infrastructure investments and inadequate ability to respond to extreme water events. While California remains one of the leaders in tackling climate mitigation challenges through its cap-and-trade program and renewable energy investments, the equivalent investment in resilience and adaptation has not materialized to the degree needed.

The report, entitled *Sharing the Cost: Accelerating Water Resilience Through Infrastructure Finance in California*, aims to address that gap with a number of targeted recommendations. Those include improved coordination at the state and federal levels, as well as at the regional level across the Central Valley, where the bulk of the agricultural sector is centered, particularly around the urban/rural divide when it comes to water demand and consumption.

Researchers also note that addressing the financial imbalance related to water investments can help. "California spends about \$37 billion on its water system annually with most funding (84 percent) coming from local utilities, followed by state (13 percent) and federal (3 percent) contributions," Horton said.

This imbalance goes right to the heart of the title of the report, and researchers note that collaboration between well-funded and underfunded water districts could help equalize the water stresses. One of the ways they recommend coordination is through a Water Excellence Center, which could act as both a data clearinghouse for funding gaps as well as a centralized tool to accelerate financing and technical assistance.

While much of the recommendations center on improving public investment in water infrastructure, the private sector remains a key player. Public money will never be enough to address the state's water needs, so some mechanism for improving the options for public-private partnerships remains vital. When it comes to water, engaging the private sector can sometimes cause alarm. Water is, after all, an essential public good. Because of the pressure placed on water sources, however, private investment must factor into the solutions. Further, more companies are seeing their own [risks related to water demand and consumption](#) and starting to look at watershed health and [water stewardship](#) more seriously in their sustainability plans.

"A whole state approach"

Water is often very local, but that is more complicated in California. The northern part of the state is much wetter than the southern part, and [water must be delivered](#) — at high energy and water costs. The system is set up according to needs many decades ago. A state rich in natural resources, diverse in economies and populations, and feeling the hard impacts of climate change must look how it balances the whole. Horton and the Milken Institute see the answer in a "whole state approach."

He quoted from the state's 1957 water plan: "California is presently faced with problems of a highly critical nature — the need for further control,

protection, conservation and distribution of her most vital resource, water. ... Unless correct action is taken -and taken immediately – the consequences may be disastrous."

And he takes that warning, made long before anyone understood climate change, as "a good reminder that we are going to have to collectively marshal the style of governance, coordination and political will that was harnessed in the past in order to build a water infrastructure system to meet the needs of the 21st century – one that is prepared for drier dries and wetter wets."

The bottom line

California's water challenges do not exist in isolation. The recent deadline for Lake Powell and Lake Mead was just the reminder that California is part of a larger water ecosystem. But the state also has an outsized impact on demand and must consider how to do things differently if it is to be able to provide safe, reliable water for all its residents and sectors.

Image credit: [Silvia Fang](#)/Unsplash

<https://www.triplepundit.com/story/2023/california-water-infrastructure/765461>