BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

June 4, 2021

Correspondence and media coverage of interest between May 24, 2021 and June 3, 2021

Correspondence

From: Steven R. Ritchie, SFPUC Asst. General Manager, Water
To: SFPUC Wholesale Customers
Date: June 2, 2021
Subject: Regional Water System Supply Reliability and UWMP 2020

From: Los Vaqueros Reservoir Expansion Project
Date: May 28, 2021
Subject: Monthly Report

Media Coverage

Drought/Water Supply Conditions

Date: June 3, 2021
Source: San Francisco Chronicle
Article: Here's where the Bay Area's water actually comes from, and what to expect during California's drought

Date: June 2, 2021
Source: SF Gate
Article: The numbers California's drought manager wants you to see

Date: June 1, 2021
Source: SF Gate
Article: California's snowpack is 0% of June 1 average. Here's what that means

Date: June 1, 2021
Source: Los Altos Town Crier
Article: Senator's online forum highlights California's ongoing water crisis

Date: May 24, 2021
Source: San Jose Mercury News
Article: What's causing California's drought?

Water Supply Management

Date: June/July 2021
Source: The Bay Area Monitor
Article: Bay Area Builds Regional Drought Resilience

Date: May 29, 2021
Source: San Francisco Chronicle
Article: Opinion: San Francisco doesn't have a sustainable drought plan

Date: May 28, 2021
Source: San Francisco Chronicle
Article: Dennis Herrera: Why I sued the California water board

Water Supply Management, cont'd.

Date: May 28, 2021
Source: San Joaquin Valley Water News
Article: Drought driving up water prices

Date: May 27, 2021
Source: San Francisco Chronicle
Article: Mandatory water restrictions likely for Santa Clara Cunty residents as feds cut supply

Date: May 25, 2021
Source: The Hill
Article: Lack of water efficiency funding undercuts fight against drought

Date: May 24, 2021
Source: San Francisco Chronicle
Article: Could California's drought crisis block Bay Area housing construction?

Date: May 24, 2021
Source: SF News
Article: San Francisco Water Use Has Declined Since Last Drought – What Else Can You Do to Conserve?

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TO: SFPUC Wholesale Customers

FROM: Steven R. Ritchie, Assistant General Manager, Water

DATE: June 2, 2021

RE: Regional Water System Supply Reliability and UWMP 2020

This memo is in response to various comments from Wholesale Customers we have received regarding the reliability of the Regional Water System supply and San Francisco's 2020 Urban Water Management Plan (UWMP).

As you are all aware, the UWMP makes clear the potential effect of the amendments to the Bay-Delta Water Quality Control Plan adopted by the State Water Resources Control Board on December 12, 2018 should it be implemented. Regional Water System-wide water supply shortages of 40-50% could occur until alternative water supplies are developed to replace those shortfalls. Those shortages could increase dramatically if the State Water Board's proposed Water Quality Certification of the Don Pedro Federal Energy Regulatory Commission (FERC) relicensing were implemented.

We are pursuing several courses of action to remedy this situation as detailed below.

Pursuing a Tuolumne River Voluntary Agreement

The State Water Board included in its action of December 12, 2018 a provision allowing for the development of Voluntary Agreements as an alternative to the adopted Plan. Together with the Modesto and Turlock Irrigation Districts, we have been actively pursuing a Tuolumne River Voluntary Agreement (TRVA) since January 2017. We believe the TRVA is a superior approach to producing benefits for fish with a much more modest effect on our water supply. Unfortunately, it has been a challenge to work with the State on this, but we continue to persist, and of course we are still interested in early implementation of the TRVA.

Evaluating our Drought Planning Scenario in light of climate change

Ever since the drought of 1987-92, we have been using a Drought Planning Scenario with a duration of 8.5 years as a stress test of our Regional Water System supplies. Some stakeholders have criticized this methodology as being too conservative. This fall we anticipate our Commission convening a workshop

regarding our use of the 8.5-year Drought Planning Scenario, particularly in light of climate change resilience assessment work that we have funded through the Water Research Foundation. We look forward to a valuable discussion with our various stakeholders and the Commission.

Pursuing Alternative Water Supplies

The SFPUC continues to aggressively pursue Alternative Water Supplies to address whatever shortfall may ultimately occur pending the outcome of negotiation and/or litigation. The most extreme degree of Regional Water System supply shortfall is modeled to be 93 million gallons per day under implementation of the Bay-Delta Plan amendments. We are actively pursuing more than a dozen projects, including recycled water for irrigation, purified water for potable use, increased reservoir storage and conveyance, brackish water desalination, and partnerships with other agencies, particularly the Turlock and Modesto Irrigation Districts. Our goal is to have a suite of alternative water supply projects ready for CEQA review by July 1, 2023.

In litigation with the State over the Bay-Delta Plan Amendments

On January 10, 2019, we joined in litigation against the State over the adoption of the Bay-Delta Water Quality Control Plan Amendments on substantive and procedural grounds. The lawsuit was necessary because there is a statute of limitations on CEQA cases of 30 days, and we needed to preserve our legal options in the event that we are unsuccessful in reaching a voluntary agreement for the Tuolumne River. Even then, potential settlement of this litigation is a possibility in the future.

In litigation with the State over the proposed Don Pedro FERC Water Quality Certification

The State Water Board staff raised the stakes on these matters by issuing a Water Quality Certification for the Don Pedro FERC relicensing on January 15, 2021 that goes well beyond the Bay-Delta Plan amendments. The potential impact of the conditions included in the Certification appear to virtually double the water supply impact on our Regional Water System of the Bay-Delta Plan amendments. We requested that the State Water Board reconsider the Certification, including conducting hearings on it, but the State Water Board took no action. As a result, we were left with no choice but to once again file suit against the State. Again, the Certification includes a clause that it could be replaced by a Voluntary Agreement, but that is far from a certainty.

I hope this makes it clear that we are actively pursuing all options to resolve this difficult situation. We remain committed to creating benefits for the Tuolumne River while meeting our Water Supply Level of Service Goals and Objectives for our retail and wholesale customers.

cc.: SFPUC Commissioners
Nicole Sandkulla, CEO/General Manager, BAWSCA

LOS VAQUEROS RESERVOIR EXPANSION PROJECT

MAY 28, 2021

UPCOMING ACTIVITIES

May 28 – LAP Comments due on EBMUD Usage Fee Report

June TBD – LAP Workshop on MPA Amendment No. 3

August TBD – CCWD Authorize Amendment No. 3 to Multiparty Agreement

UPCOMING LAP BOARD COORDINATION

TBD – Local Agency Partner Board meetings to consider approval of the JPA Agreement

TBD – Valley Water Storage Committee

ADDITIONAL PROJECT INFO

https://www.ccwater.com/lvstudies

https://www.usbr.gov/mp/vaqueros/

https://cwc.ca.gov/Water-Storage/WSIP-Project-Review-Portal/All-Projects/Los-Vaqueros-Reservoir-Expansion-Project

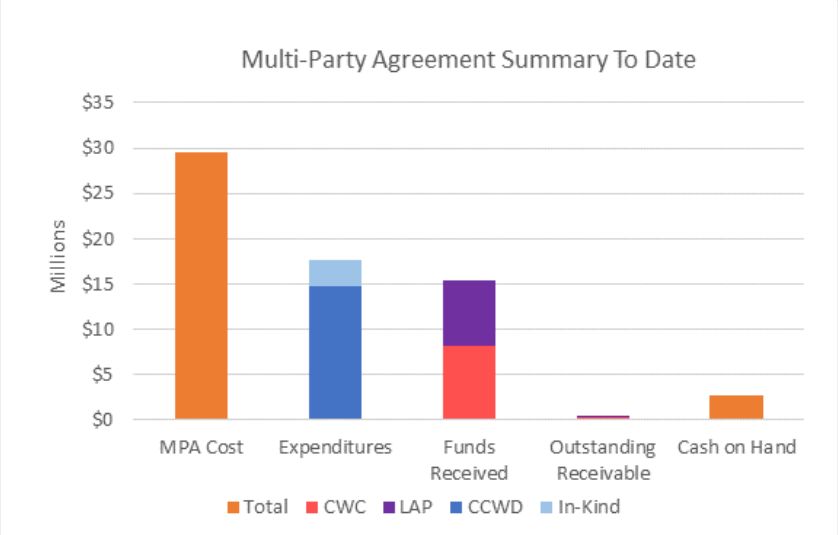
MONTHLY REPORT

FUNDING

CCWD is working with Reclamation to develop an assistance agreement for a portion of the federal funding that will be administered by CCWD for preconstruction activities. It is anticipated that the agreement will include approximately $7 million of federal funding for the Project. The current Federal funding request includes the remainder of the full federal share of 25 percent of the total project cost (approximately $211 million). Subsequent agreements would be needed to fund construction.

CCWD is currently preparing a draft of Amendment No. 3 to the Multi-party Cost Share Agreement (MPA) to extend the MPA beyond the current termination date of December 31, 2021 and determine cost share for activities in 2022. The MPA is intended to be replaced with an Interim Funding Agreement through the Los Vaqueros Reservoir Joint Powers Authority (JPA) once the JPA has been formed and is ready to take on LVE financial management on behalf of the LAPs. A workshop will be scheduled with the LAPs in June to review schedule, assumptions and cost estimates for the proposed amendment.

The following chart provides an overview of the MPA expenditures through April 30, 2021. The in-kind services, funds received, outstanding receivable, and cash on hand are shown through May 17, 2021. All LAPs remain in good standing on progress payments. The next invoice will be sent to the LAPs in July 2021.



JPA FORMATION

The Legal and Financial Work Groups met jointly on May 24 to resolve outstanding issues on the terms of the JPA Agreement. The target date for execution of the JPA Agreement is Summer 2021. LAP Board approval of the JPA Agreement will be scheduled following completion of the final form of the JPA Agreement.

On May 19, the CCWD Board appointed President Lisa Borba to represent CCWD as Director on the JPA Board of Directors and Vice President Ernie Avila to serve as Alternate.

COST ALLOCATION

Partners have provided comments at the recent cost allocation workshop and subsequent workshops are in the process of being scheduled. Clean Energy Capital provided additional information to the LAPs in response to questions and comments on the Proforma Financial Model.

OTHER AGREEMENTS

Amendment No. 1 to the 2011 Coordinated Operations Agreement with Reclamation for the Phase 1 LVE Project was developed to extend the term of the agreement through 2031 and is in the process of being executed. The agreement will be further updated or replaced with a new coordinated operations agreement as needed to incorporate the Phase 2 LVE Project. District staff continue to coordinate with Reclamation and the California Department of Water Resources (DWR) to develop coordinated operations agreements. As noted above, the District is in the process of developing an Assistance Agreement with Reclamation to fund pre-construction activities.

PERMITTING

Reclamation is continuing the review of the aquatic Biological Assessment (BA). The State Historic Preservation Officer is continuing consultation under Section 106 of the National Historic Preservation Act. The Incidental Take Permit application was submitted to the California Department of Fish and Wildlife (CDFW) on April 30, 2021. U.S. Army Corps of Engineers (USACE) and Central Valley Regional Water Quality Control Board (CVRWQCB) continue review of their respective permit packages. The Draft Wetland Mitigation Plan and Restoration and Revegetation Plan, required by the USACE and CVRWQCB, are continuing to be developed. On May 7, CCWD staff held a joint meeting with the State Water Resources Control Board and Reclamation to discuss the terms of upcoming change petitions included in CCWD and Reclamation's water rights.

DESIGN

On April 29, the District conducted a workshop with LAPs to review the dam design and updated cost for the dam raise construction. A technical briefing is being scheduled to respond to questions raised during the workshop. Dam expansion design work and coordination with the Division of Safety of Dams continues, with 90-percent design planned for July. CCWD staff provided final comments on the Pumping Plant No. 1 Replacement Project preliminary design report and prepared the scope and budget for final design. Transfer-Bethany Pipeline alignment evaluations continued with an assessment of land rights through parcels south of Vasco, and CCWD staff obtained additional information from other landowners. Preliminary design of the Turn-in to the California Aqueduct continues to progress.

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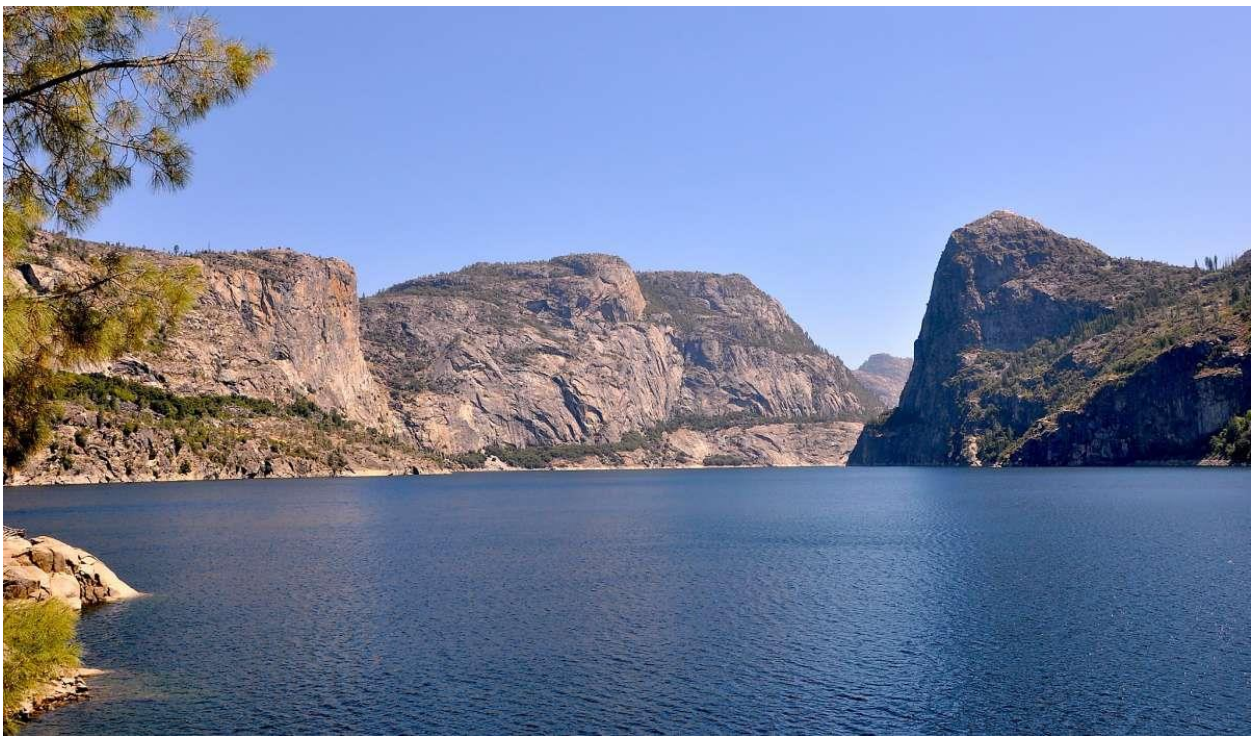
Here's where the Bay Area's water actually comes from, and what to expect during California's drought

San Francisco Chronicle | June 3, 2021 | Yoohyun Jung, Nami Sumida



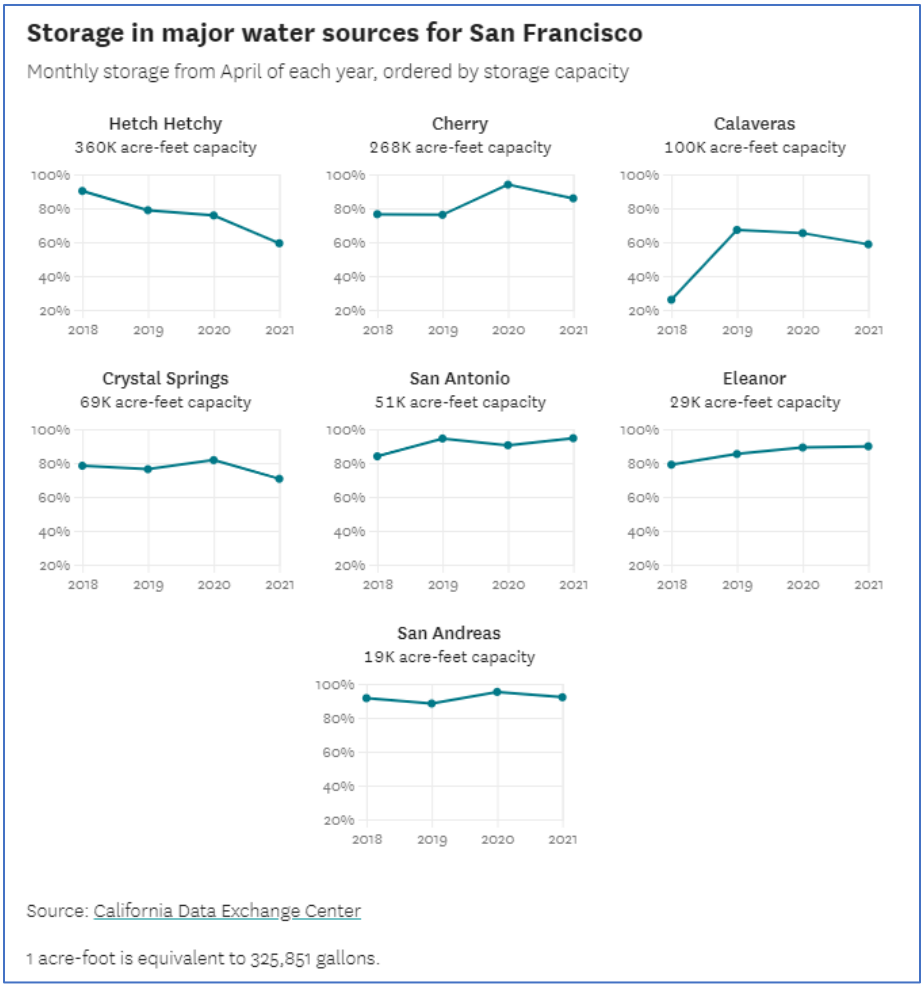
Hetch Hetchy Reservoir viewed from the trail that passes over the dam and beyond along the lake to Wapama FallsTom Stienstra / Lisa Mayo / Special to The Chronicle

With three quarters of the state now in extreme drought zones, dwindling water supplies are forcing many California water agencies to take restrictive measures to conserve water. In the Bay Area, Marin County was the latest to declare a state of emergency as parched conditions had ranchers trucking in water from elsewhere.

Yet compared to rural parts of California, the water supplies for San Francisco and the East Bay, are in healthier shape. But it’s not because San Francisco or the East Bay are getting much more rain than the rest of the state.

Both the San Francisco Public Utilities Commission (SFPUC) and the East Bay Municipal Utility District, which serves Oakland, Berkeley and other surrounding areas, rely on networks of water sources that sprawl far beyond their service areas to other parts of the region.

Some of those water sources, including the Hetch Hetchy and Pardee reservoirs, show declining storage levels at the end of the wet season in April compared to previous years, a Chronicle analysis of reservoir data showed. But overall, officials say there is still ample supply of water for the rest of the year and more snowmelt and rain to further fill the reservoirs.



Though there is likely to be more than enough water to serve Bay Area residents in the short-term, officials say that's no reason to be complacent. Both water districts are voluntarily asking customers for a 10% reduction in use as they monitor the drought's evolving conditions.

"The consequences of running out of supply are too great," said Steve Ritchie, assistant general manager for water at the San Francisco Public Utilities Commission. "That cannot happen."

San Francisco draws its water from two major watersheds — the Tuolumne, which includes the Hetch Hetchy reservoir, Cherry Lake and Lake Eleanor, and the Alameda and Peninsula watersheds. Hetch Hetchy, a reservoir located in Yosemite National Park, provides about 85% of the city's water supply.

The storage levels at the end of April, which typically marks the end of the wet spring season, have been gradually falling at Hetch Hetchy over the last several years. Storage was at 59% this year following a disappointing wet season, compared with 90% during the same time in 2018 and 79% in 2019. But the month of May has been good to Hetch Hetchy, delivering much needed snowmelt and precipitation. Storage levels recovered to 89% as of June 1.

However, Ritchie said the scale of the decline at Hetch Hetchy hasn't been large enough to cause alarm. There tends to be a fluctuation of wet years, then dry years. Besides, there's still more snowmelt to come. "We're in reasonably good shape," Ritchie said.

However, what he is seeing more of in recent years is "extremes" — more of the extremely wet years and extremely dry years, which make it difficult to stabilize supply. "It's just a matter of how long those wet periods will last and those dry periods will last," he added.

The SFPUC also has the benefit of a water bank agreement, through which it can store excess water of up to 570,000 acre feet in wet years at Don Pedro Reservoir. This extra storage is a good insurance policy in case of an increasingly severe drought, according to Ritchie.

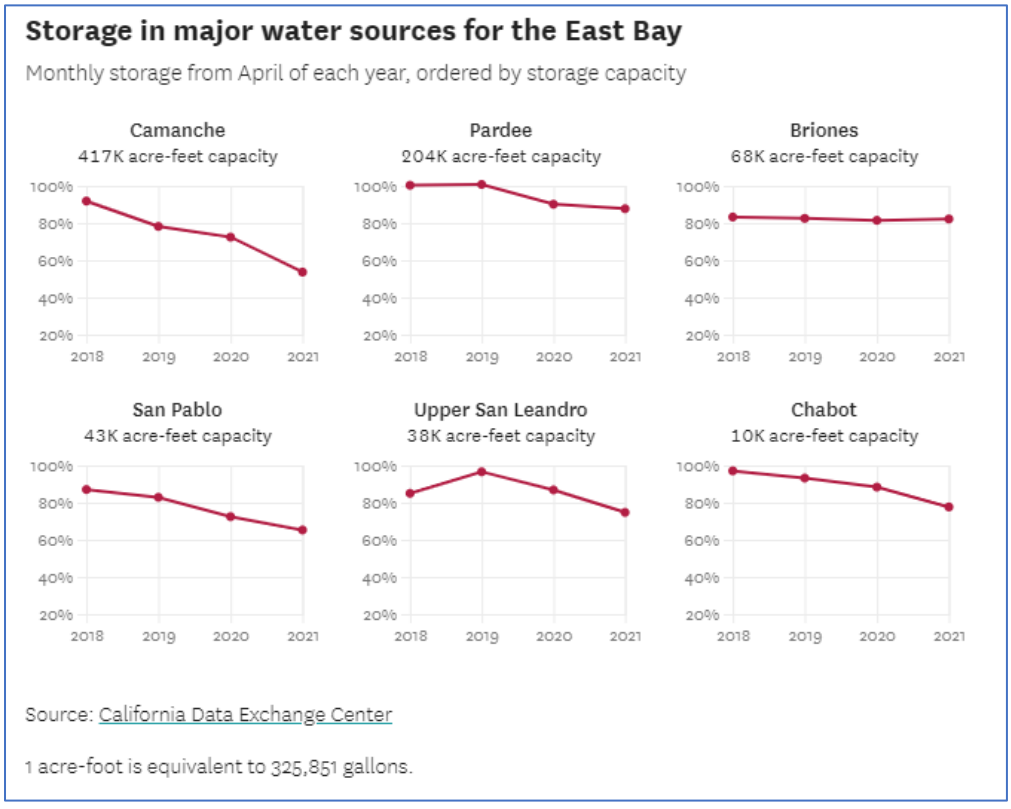
Ritchie said with many businesses now opening with COVID-19 falling, he wants customers to be able to get back to work, but that doesn't mean San Francisco water officials aren't searching for additional water conservation opportunities. "We're in a drought period and we need to be careful of water use."

The East Bay Municipal Utility District (EBMUD) is also keeping a close eye on it supply as it navigates the second driest year on record since 1977, according to Andrea Pook, a spokesperson. Its board has declared a stage 1 drought status, which means they are asking residents voluntarily reduce water use by 10. They also voted to purchase supplemental water.

"We want to be in the best position," she said. "We want to save those drops of water. We have a lot of people in our service area who do a very good job already. We're asking them to keep it up."

EBMUD's water supply breaks down into two broad categories — the Mokelumne River watershed, which includes Pardee and Camanche reservoirs, and a local reservoir system that includes several smaller systems. Most of the East Bay's drinking water comes from Pardee, Pook said.

District-wide, East Bay was at about 65% capacity for water supply, she said Tuesday. With the 10% voluntary restrictions and purchased water, its customers will have enough supply for now, but that could change. "We're definitely taking measures to deal with the situation that we're in," she added.



EBMUD's main reservoirs — Pardee and Camanche — have also shown declines in April storage levels. Pardee went from being completely full in 2018 and 2019 to about 88% in 2021, whereas Camanche

went from 92% in 2018 to 54% in 2021. Pook said EBMUD looks at April figures to determine how the wet season fared and to make projections for the rest of the year, and this year is not looking good.

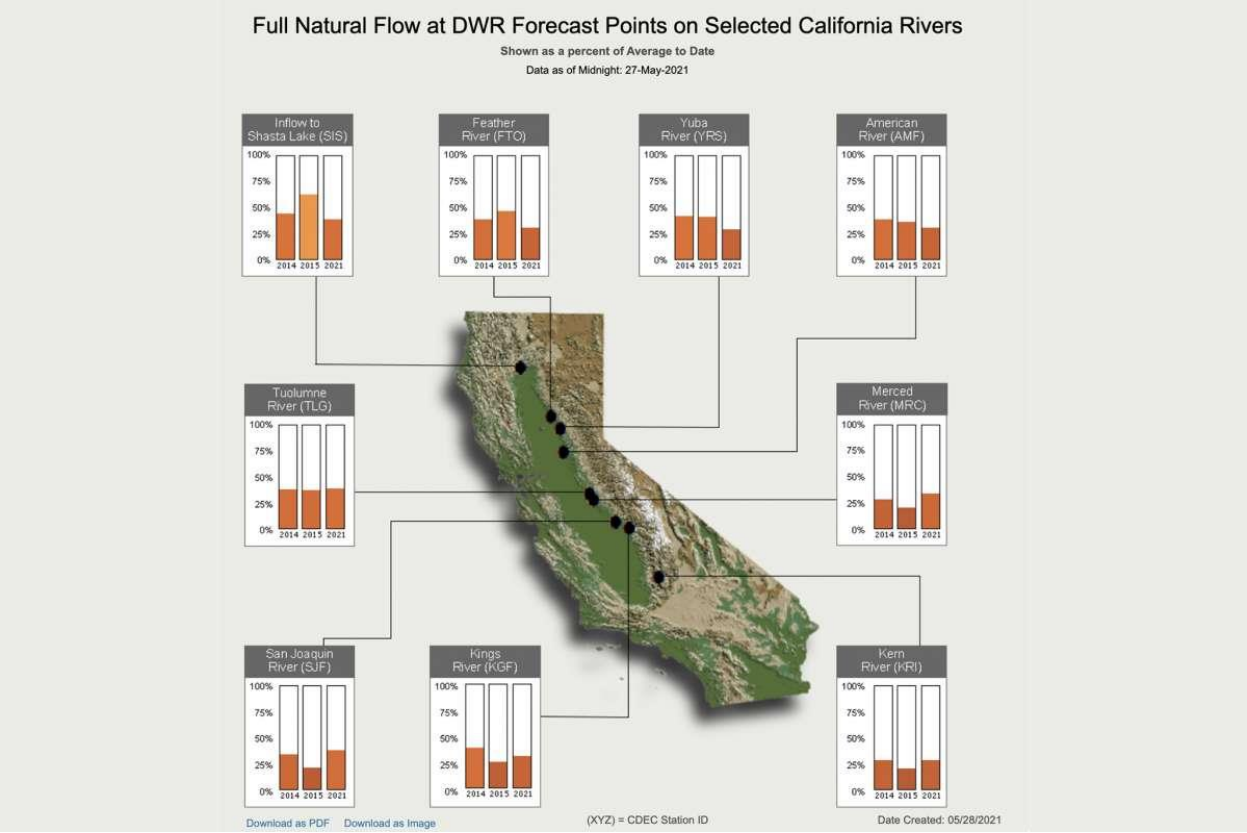
“It’s not as rosy,” she said. “Reality is showing us lower numbers than our predictions.”

Despite the low storage levels, the East Bay district hasn’t taken more drastic restrictive measures because of how people’s water use habits have changed over the years. East Bay residents use a lot less water than much of the rest of California, and much less than they did in previous decades, she said. Not only that, people have more efficient infrastructure and appliances.

“We’re in better shape than we were then,” Pook said. “Nonetheless, we need to take steps now. If we find that the situation worsens, East Bay MUD may ask for more restrictions.”

# # #

The numbers California's drought manager wants you to see
SF Gate | June 2, 2021 | Amy Graff



A series of bar graphs from the California Department of Water Resources compare the accumulated natural flow at state reservoir locations this water year with that of the same timeframe in the 2014 and 2015 water years.
California Data Exchange Center/Department of Water Resources

With California's rivers running low after two consecutive dry winters, state officials and local water agencies have pumped out a steady stream of drought declarations and calls for water conservation in recent weeks.

It's clear the Golden State is in a drought and it could escalate to a crisis, but, you may be wondering, just how bad is it?

For an answer to that question, the California Department of Water's Resource's drought manager Jeanine Jones pointed to a series of bar graphs (see above) that she asked her web team at the department to create earlier this year and post online.

The one-pager conveys the perilous state of California's water supply and reveals that the situation is especially dire in the Northern California watersheds that provide drinking water to nearly 30 million Californians and irrigate hundreds of thousands of acres of farmland that supply more than a quarter of the nation's food supply.

"This is data that we already had and we didn’t have it in a graphical format," said Jones. "I could see what was happening just by looking at the numbers, but I had our web team put it in this format. As we started out and got into the wet season, it wasn’t very wet, it was very dry. People were commenting on how dry it was. This was a second dry season. I thought a good way for people to help understand that data was to compare it to the two driest years of our driest drought."

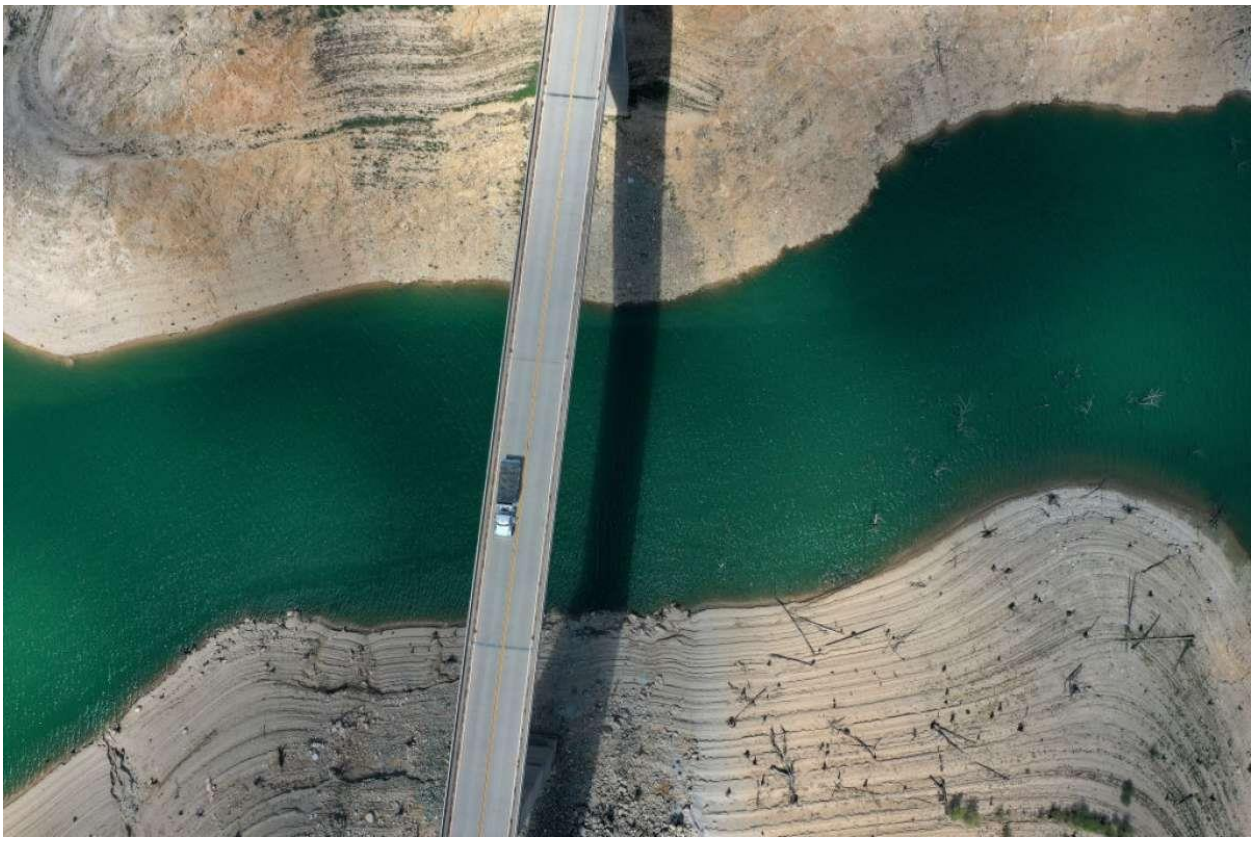
To fully understand the graphs, it helps to know two terms used by water managers who monitor supply and balance the demands of everyone from farmers to urban water districts.

The first is "water year." Everyone from researchers to government agencies report hydrologic data across a water year, a period of 12 months running from October to September. It differs from the calendar year because part of the precipitation that falls in late fall and early winter accumulates as snow and does not drain until the following spring or summer. So when experts refer to the 2020-2021 water year, they're looking at the time frame between Oct. 1, 2020, and Sept. 31, 2021.

Another term is "natural flow" — a calculated value that takes the flow of water measured at a stagnant point, such as a stream gauge on a river or a dam on a reservoir, and adjusts that number to reflect the amount of water that would exist without quantifiable human interventions.

"For example, there are many locations in the Sierra Nevada where there is a hydropower diversion that moves water from one watershed via a canal, pipeline, or tunnel into an adjacent watershed where a power plant is located," Jones explained. "This allows the power plant operators to increase generation by running more water through the plant. To calculate the natural flow in the 'donor' watershed, we measure the flow at some point such as a major reservoir, and add back in the measured quantity of water that was diverted to the adjacent watershed."

Jones offered another example that occurs when storing water in a reservoir affects runoff downstream from the reservoir by altering the timing: "If we want to calculate natural flow at some point downstream from the reservoir, we measure the flow at that point and then adjust it by adding or subtracting the quantity of water affected by reservoir operations," she explained. "We can measure the flow coming into the reservoir, so we know what would have happened had the reservoir not been there."



In an aerial view, a truck drives on the Enterprise Bridge over a section of Lake Oroville on April 27, 2021, in Oroville, Calif. Four years after then-California Gov. Jerry Brown signed an executive order to lift the California's drought emergency, the state has re-entered a drought emergency with water levels dropping in the state's reservoirs.
Justin Sullivan/Getty Images

With this background knowledge, you can begin to wrap your head around the bar graphs that compare "accumulative natural flow" at key locations in California's watersheds since the start of the 2020-2021 water year with natural flow in the same timeframe in 2013-2014 and 2014-2015 water years.

The most alarming takeaway from the graphs is that this year's water supply in Northern California's four largest watersheds is tracking below the most severe years in the last drought. The 2021 numbers are below the 2014 and 2015 ones on the Feather River that pours into Lake Oroville, the Yuba River that feeds into the Feather River, the American River that runs into Folsom Lake and the system of rivers that flow into Shasta Lake, the state's largest reservoir.

"The drought of water years 2012-16 is still fresh in peoples' minds," Jones said. "Water years 2014 and 2015 were the driest years of that drought and we are comparing the present water year 2021 to those years to provide perspective regarding relatively recent dry periods."

While the outlook in 2021 is better on the water systems in Central and Southern California, these are less important in the overall picture. Northern California rivers are the linchpin in the

state's supply as the state receives 75% of its rain and snow in the watersheds north of Sacramento, according to the department.

These watersheds feed into two massive government projects — the federal Central Valley Project and the State Water Project — designed to capture flows and transport water as far south as San Diego.

These systems are dependent on rainfall and snowmelt, and in the past two winters, precipitation has been far below normal. Much of the rain and snowmelt has been absorbed by the dry, parched ground instead of running off into the rivers that feed reservoirs.

As of Tuesday, the state Department of Water Resources reported the 154 major reservoirs across the state were 66% of average and the snow water equivalent of the snowpack was just 0% of normal for June 1.

Earlier this month, Gov. Gavin Newsom expanded a drought emergency declaration to 41 of California's 58 counties and said more counties will likely be added with conditions expected to worsen.

The U.S. Bureau of Reclamation, which supplies water in California through the Central Valley Project, said Wednesday it expects to cut its delivery to the urban areas it serves by more than half, allocating 25% of the contracted amount rather than the 55% that was announced earlier. (Read more on SFGATE.)

Water districts in the San Francisco Bay Area that have contracts with the Central Valley Project and are affected by the cut are Contra Costa Water District, East Bay Municipal Utility District and Santa Clara Valley Water District.

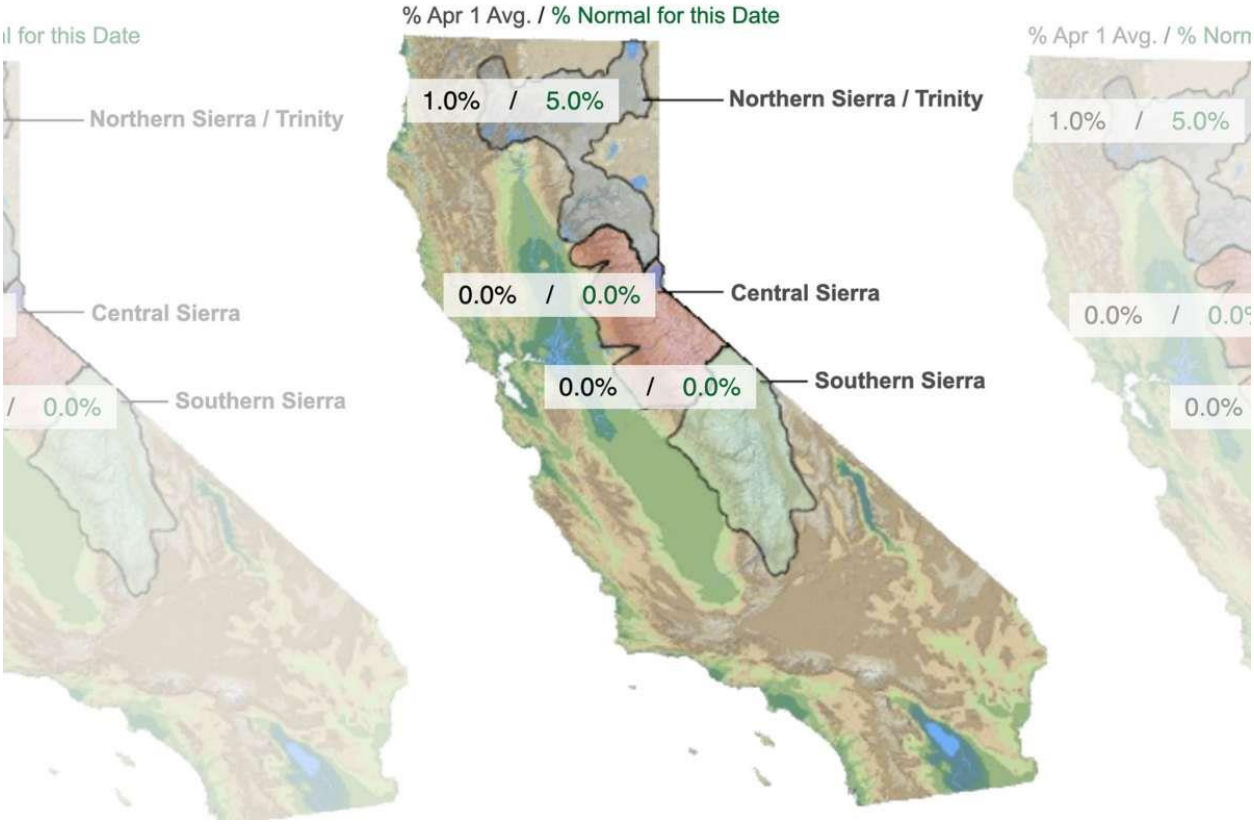
Santa Clara County's district told the San Jose Mercury News that the reduced allocation will lead to mandatory water restrictions across Santa Clara County. The district asked its South Bay customers in May for a 25% voluntary reduction in their water use; in June, the board will vote on which mandatory rules to impose, the Mercury News reported.

The federal government also announced that their water allocations to farm-irrigation districts in the Central Valley will be reduced to zero. In February, the bureau allocated farmers 5% of their contract supply.

The last time this happened was in 2015 amid historic drought. But based on the way things look today, this next drought could be even more severe.

# # #

California's snowpack is 0% of June 1 average. Here's what that means.
SF Gate | June 1, 2021 | Amy Graff



The state's snowpack, a primary source of water, is at 0% of average for June 1 after a historically dry winter, according to the California Department of Water Resources.
California Data Exchange Center/Department of Water Resources

It's another sign that California is in a drought with a historic crisis looming.

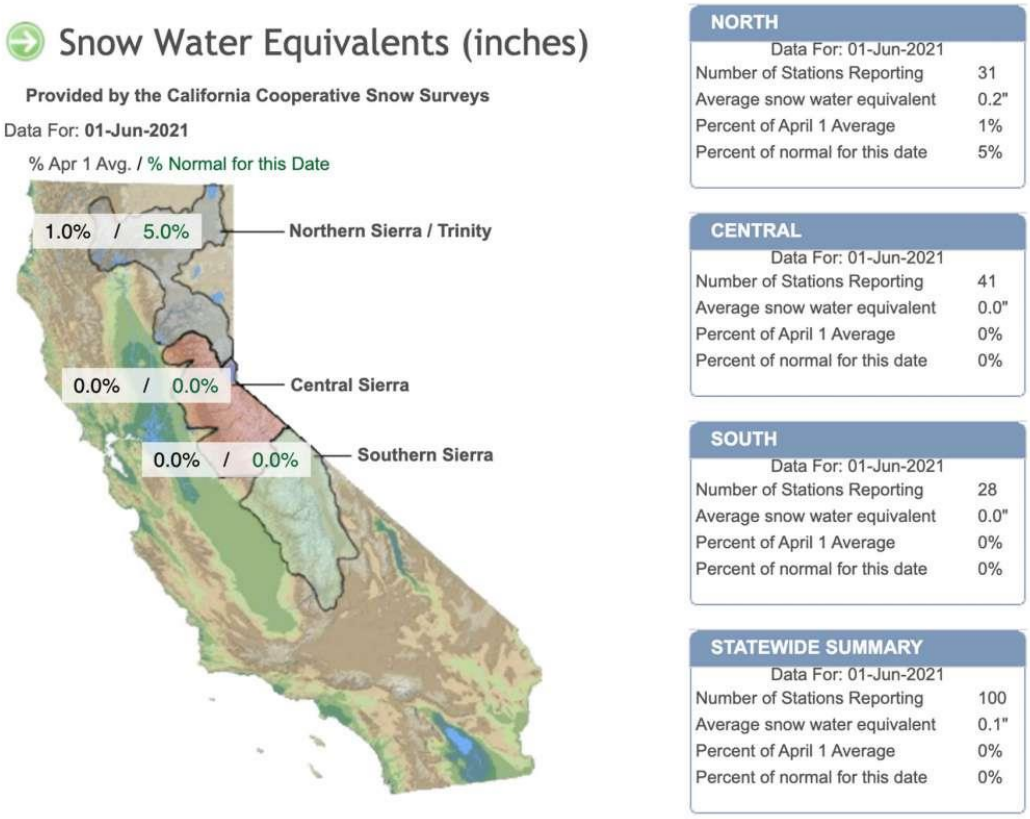
The state's snowpack, a crucial source of water for the state, is at 0% of average for June 1 after a historically dry winter, according to the California Department of Water Resources.

This doesn't mean that there isn't any snow across the Sierra Nevada range. Rather it indicates that snow has entirely melted at the majority of the electronic survey stations used to monitor snow water equivalent.

The state's water agency monitors readings at 131 stations at different elevation levels across the Trinity Mountains, the Cascades and the Sierra Nevada range, though the majority of sensors are in the Sierra. The statewide average is a composition of those readings.

Sean de Guzman, chief of the department's Snow Surveys and Water Supply Forecasting section, said as of Tuesday morning there was snow at only three of the stations at higher elevations: Lower Lassen Peak, Leavitt Lake and Independence Lake.

"This is not unusual in a dry year," said de Guzman. "We really only look at June snow in really wet years. In a dry year, we'd expect a lot of the snow to be melted out toward the end of May."



The state's snowpack, a primary source of water, is at 0% of average for June 1 after a historically dry winter, according to the California Department of Water Resources.
California Data Exchange Center/Department of Water Resources

The 2019-2020 winter was also dry, and last year on June 1, the snowpack was at 3% of average. But if you go back to June 1, 2019, the snowpack was 202% of average after a winter marked by record-breaking snowfall that led to the fifth-largest snowpack on record.

The Sierra snowpack is one of California's most important water sources, with its spring and summer runoff feeding rivers and reservoirs, watering crops and filling bathtubs and water glasses. Mountain snowpack provides about 30% of the yearly freshwater supply for California.

De Guzman said that while the dwindling snowpack is concerning, what's even more alarming is the low runoff levels. He explained that the snowmelt is being absorbed by a parched landscape rather than pouring into rivers and reservoirs.

"Based off the snowpack we had at its peak in March, we would have expected more runoff to date," he explained. "A lot of that runoff was sucked into the ground. It never made it into the reservoirs. It got sucked up by the plants and the trees and the shrubs. The runoff we would expect in a normal year didn’t make it into the rivers and reservoirs."

The diminutive snowpack and low runoff have led to below-normal reservoir levels, with the state's most important 154 reservoirs at 67% of capacity as of Monday, according to the Department of Water Resources. The reservoirs in Northern California are all below half capacity.

# # #

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Senator's online forum highlights California's ongoing water crisis
Los Altos Town Crier | June 1, 2021 | Megan V. Winslow

Godzilla made a cameo appearance at California State Sen. Josh Becker's forum on water resiliency last week. In a slide presented by panelist Felicia Marcus, the bipedal lizard lurked behind San Francisco skyscrapers swathed in the orange haze of Sept. 9, 2020, the day Bay Area wildfire smoke obscured the sun.

To Marcus, the William C. Landreth Visiting Fellow at Stanford University, the monster represents both the abrupt "wake-up call" of the 2011-2014 California drought as well as the uncertainty of what the current fire season has in store for residents.

"The only question is which Godzilla of wildfires are we going to get?" she asked. "How big is it going to be?"

While part of Thursday's hourlong forum highlighted potential relief to come, including Bay Area water recycling projects in progress and a $5.1 billion drought response package proposed by Gov. Gavin Newsom, panelists shared sobering statistics and commentary about the state's ongoing water crisis.

The Bay Area is dependent on water from the Sierra Nevada snowpack and the Sacramento-San Joaquin River Delta, both of which are threatened resources due to diminishing precipitation and rising demand.

As of Thursday, the National Drought Mitigation Center classified the entire state as experiencing some degree of drought, measured on a scale from "abnormally dry" to "exceptional." The center described conditions within 73.3% of California, including along the Bay Area Peninsula, as "extreme," a designation signifying the persistence of a year-round fire season and an insufficient supply of water to support agriculture, wildlife and urban needs.

Currently, endangered fish populations are threatened, wells are running dry and fields are going fallow, Marcus said in summary.

Panelist Gary Kremen, Santa Clara Valley Water District Board vice chairman, offered a local perspective.

While 30% of Santa Clara County's water is sourced from groundwater aquifers and reservoirs, 50% is imported, and there are obstructions blocking retrieval, including the depleted snowpack, historically low upstream reservoirs and state and federal regulations that reserve water for protecting wildlife, according to his presentation.

Recycled water, 5% of the county bucket, requires an initial water source to start with, Kremen said, and conservation, 15%, is contingent on the behaviors of residents and businesses.

The district traces the majority of local water consumption to homes with an even split of 27.5% drained for both indoor and outdoor activity, Kremen said. He further broke down indoor demand: toilets, 24%; showers, 20%; faucets, 19%; clothes washers, 17%; leaks, 12%; and “other,” 8%.

“Most of it, 55%, is used by residential, and that’s good because that’s something we can control,” he said, addressing the virtual attendees. “You, personally, can do something about it.”

Panelist Newsha Ajami, director of Urban Water Policy with Stanford University’s Water in the West program, emphasized a needed transition to reliance on groundwater basins for storage rather than snowpack.

Californians can’t simply assume another wet year around the corner will offer relief, Ajami said.

# # #

For more information on water conservation, visit the Santa Clara Valley Water District website at valleywater.org. To alert water district officials to water wasting, call (408) 630-2000 or email waterwise@valleywater.org.

What's causing California's drought?

The state depends heavily on just a few big storms a year, scientists say, and they haven't been arriving

San Jose Mercury News | May 24, 2021 | Paul Rogers

California is in a new drought, with the last two years ranking as the driest two-year period since 1976-77. Lake Oroville, shown here on April 27, 2021 in Oroville, California, is just 40% full, and other major reservoirs across the state are below normal. (Photo by Justin Sullivan/Getty Images)

California's new drought is worsening. After two severely dry winters, reservoirs are shrinking, fire danger is rising and water supplies are looking more tenuous.

The past two years have been the driest in nearly half a century, since 1976-77. How did the state find itself in a new crisis just as the COVID pandemic is fading? Scientists say California's parched plight largely comes down to two words: "atmospheric river."

An increasing body of research is showing that the state's water supply each year depends almost entirely on a handful of big make-or-break storms. And the last two winters, too few arrived.

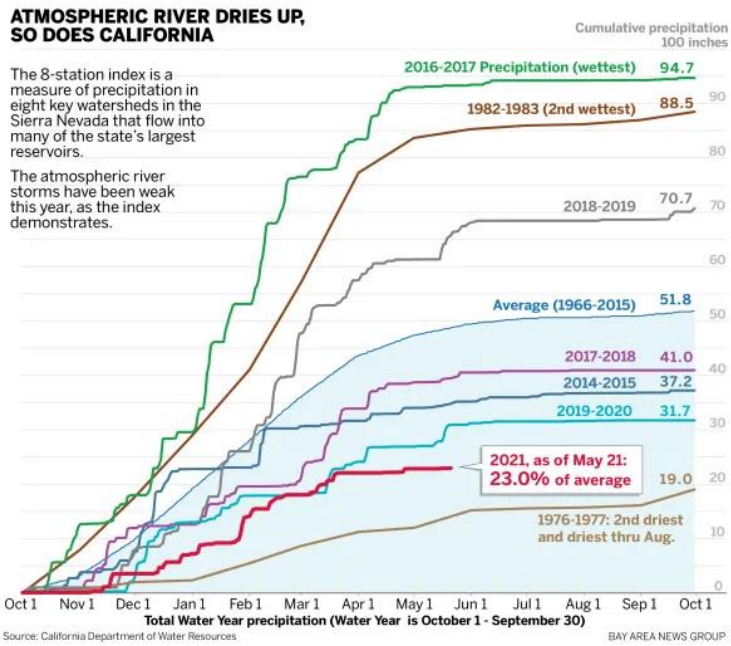
These moisture-rich atmospheric river events — also called Pineapple Express storms — barreling in off the Pacific Ocean each winter can provide up to 50% of the state's annual rainfall. If California receives more atmospheric river storms than normal, as it did in 2017, reservoirs fill, roads wash out and floodwaters rise. Fewer than normal for a couple of years in a row, like this winter and last winter, and California is high and dry.

Cars sit in the middle of Nordale Avenue, Wednesday, Feb. 22, 2017, during the Coyote Creek flood in San Jose, Calif. (Anda Chu/Staff Archives)

In other words, the water outlook for the nation's most populous state each year is like a gambler putting his whole paycheck down on the roulette wheel. Hit the right atmospheric river number? Happy days are ahead. But miss the mark and hard times follow.

"Atmospheric rivers literally make or break the water supply for California," said Marty Ralph, director of the Center for Western Weather and Water Extremes at UC San Diego. "If we don't get enough, we descend into drought."

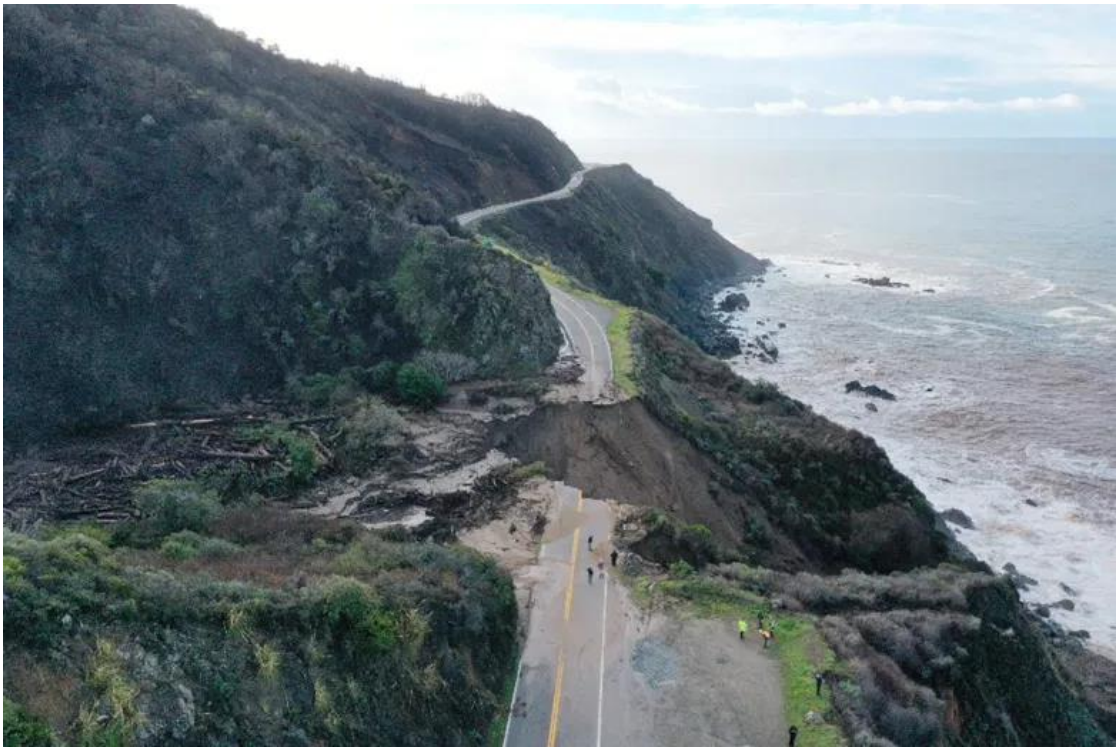
Four years ago, in the winter of 2017, California was pummeled by 51 atmospheric river storms, 14 of which were classified as strong or extreme by the volume of moisture they carried. So much rain fell that year the state's historic 5-year drought was broken. Downtown San Jose suffered $100 million in flood damage. And the spillway at Butte County's Oroville Dam, the nation's tallest, collapsed that year during a downpour, prompting the evacuation of 188,000 people.



But during the winter of 2019-20, there were fewer such storms — 43. And most important, just one was strong or extreme. This past winter saw more of the same: 30 atmospheric river storms, but only

two were considered strong, Ralph said. One, on Jan. 28, dumped 15 inches of rain on Big Sur, washing out Highway 1. It also delivered more than 7 feet of snow to the Sierra Nevada. But it was an endangered species.

“Strong or extreme atmospheric rivers can produce copious rainfall and snowpack,” Ralph said. “Weak and moderate ones can add up. But we’re starting to think the stronger ones are most impactful and are the biggest drivers of the water supply.”



A section of Highway 1 is washed out following a heavy rainstorm near Big Sur, Calif., on Friday, Jan. 29, 2021. (Jonathan Rivas/AIO Filmz)

The feast-or-famine impact is astounding. One study done by Ralph and his colleagues Maryam Lamjiri and Michael Dettinger in 2018 looked at 20 years of rainfall records from 176 weather stations around California.

They found that 50% of the entire year’s rainfall in Southern California occurs in less than 40 hours, on average, and in Northern California, it’s between just 60 and 120 hours, depending on the location. In fact, the single biggest storm each year provides 15% of the annual rainfall in Northern California on average and 30% in Southern California. That doesn’t happen in most other states.

“This is one of the most remarkably California things you’ve ever seen,” said Dettinger, a visiting researcher at the Scripps Institution of Oceanography in San Diego and the Desert Research Institute in Reno.

In an aerial view, boat docks at the Browns Ravine Cove sit on dry earth at Folsom Lake on May 10, 2021 in El Dorado Hills, California. Folsom Lake is currently at 38 percent of normal capacity. (Photo by Justin Sullivan/Getty Images)

Why has California had such bad luck the past two winters?

A high-pressure ridge of air parked off the state's coastline, diverting many big storms northward. Alaska suffered widespread landslides and floods that destroyed roads and homes this winter, and Seattle and British Columbia saw major snowstorms.

A similar weather pattern from 2012 to 2016 was dubbed "the ridiculously resilient ridge" by Daniel Swain, a climate scientist at UCLA. So many storms were diverted away from California then that the state endured its most severe drought since statehood in 1850.

"I think the ridiculously resilient ridge made a comeback this year," Swain said.

Scientists are still debating whether climate change is increasing the frequency and strength of such ridges off California.

But there is wide agreement that warming temperatures are making droughts worse. Because temperatures are about 2 degrees Fahrenheit hotter, on average, now than 50 years ago, soil moisture is drying out more quickly. That means higher fire risk in shrubs and trees. And less water from melting Sierra snow flows into rivers and reservoirs, instead soaking into the arid ground.

Low water levels reveal a stone building foundation in the Nicasio Reservoir near Nicasio, Calif. on Wednesday, May 5, 2021. (Alan Dep/Marin Independent Journal)

“If you got the same amount of water falling from the sky now as in 1976, a lot of it is evaporating,” Swain said. “It just doesn’t go as far.”

California’s last two winters have been the driest two-year period since the state’s intense drought of 1976-77, when Marin County, Santa Barbara and other urban areas nearly ran out of water completely.

Since July 1, 2019, San Francisco has received just 23.6 inches of rain — 52% of normal. Eight key weather stations in the Sierra Nevada, located in watersheds that feed many of California’s biggest reservoirs, like Shasta Lake, received 57.9 inches over the same time period — 54% of normal. Southern California has fared slightly better, with Los Angeles at 72% of normal. Computer models show that in years to come, the dry years will be drier, and the wet years will be wetter, because when atmospheric river storms develop, they soak up more moisture in warmer air. To cope, California must do more to capture floodwater in wet years and save it for dry years, experts say. In other words, more projects to channel stormwater onto open land, orchards and farmland so it can soak into aquifers rather than running into the ocean. More off-stream reservoirs. More groundwater banks.

“One of the long-term solutions,” Swain said, “is to fight drought with flood.”

# # #

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BAY AREA BUILDS REGIONAL DROUGHT RESILIENCE
The Bay Area Monitor | June/July 2021 | Robin Meadows

The Bay Area Regional Reliability partnership has discussed expanding Los Vaqueros Reservoir, shown here in July 2012. Photo by George Miller.

It feels like California's 2011-2016 drought, our worst on record, had barely ended when the next one began. This is our second dry year in a row and, according to the state Department of Water Resources, the past winter tied for the third-driest on record. "Right now, California is dealing with a pretty severe and deepening drought," said UCLA climate scientist Daniel Swain. He calls this our second major drought within a decade and, if you're like me, you're wondering if we've done anything since the last one to help keep water flowing from our taps. The answer is yes.

Early during that record-breaking dry stretch, eight Bay Area water agencies that collectively serve six million people formed a partnership — called Bay Area Regional Reliability (BARR) — to bolster regional drought preparation. "Unlike in some places, Bay Area agencies have developed ties including relationships and infrastructure," explained BARR co-project manager Bradley Ledesma, an East Bay Municipal Utility District (EBMUD) civil engineer. "When we hit record drought, it caused agencies to think about the bigger picture: how can we work together to increase resilience for the Bay Area?"

This collaboration will be even more critical in the future. California has naturally swung between deluge and drought for millennia. But climate change will intensify these swings, making droughts even more frequent and even more severe.

Funded partly by a $400,000 U.S. Bureau of Reclamation grant, the BARR team identified ways to boost the reliability of the Bay Area's water supply. One idea is a shared desalination plant that treats brackish water from the Sacramento-San Joaquin River Delta. Another possibility is transferring water from EBMUD to Marin County via a pipeline across the Richmond-San Rafael Bridge or along the bottom of the San Francisco Bay. Most of the options are in the conceptual phase. "Large projects can take decades," Ledesma said. But one is well underway: the expansion of Los Vaqueros Reservoir, which is owned by the Contra Costa Water District and sits in hills near Altamont Pass, overlooking the city of Livermore.

Los Vaqueros Reservoir has already been expanded once. Built in 1998, the reservoir originally stored 100,000 acre-feet, enough to supply about 200,000 households for a year. The first expansion raised the dam 34 feet, increasing storage to 160,000 acre-feet. The proposed second expansion would raise the dam another 55 feet, increasing storage to 275,000 acre-feet. Currently, the Contra Costa Water District uses all the water stored in Los Vaqueros Reservoir. But the BARR team thinks the upcoming expansion could also benefit other water agencies, including Valley Water in Santa Clara County. "This is a test case — can one agency store water in another agency's facility?" Ledesma said.

Valley Water could easily get water into Los Vaqueros Reservoir. This is because the reservoir ties into a federal water delivery system called the Central Valley Project (CVP), and Valley Water has rights to CVP water. The problem is that the reservoir doesn't tie into Valley Water's own delivery system. "There's no way to get water out of Los Vaqueros Reservoir and into the Valley Water system," Ledesma explained. The expansion project would solve this problem by building a new eight-mile pipeline that connects the reservoir with an aqueduct that transports water to the South Bay.

Benefits of the Los Vaqueros expansion to Valley Water are clear. The agency would gain 30,000 acre-feet of storage, or 10 percent of its annual water use. That could help the agency take advantage of winters when water is plentiful. "If there's a really wet year, we could grab that supply and put it in Los Vaqueros," said Samantha Greene, Valley Water's lead on the expansion project.

This extra water could come in handy if the Delta, which supplies about 40 percent of the agency's water, was too salty. Water in the Delta could be undrinkable if rising tides pushed sea water further inland, or if a levee break pulled sea water further in. "If a levee goes, it could be out for a year or two," Greene said. "The expansion project could buy us a little time — when people want water, they usually want it now."

That said, Valley Water has a long list of other options for building such redundancy into Santa Clara County's water supply and is weighing the benefits of the Los Vaqueros Reservoir expansion against its cost. And the project's price tag is eye-popping: The Contra Costa Water District puts it at $895 million. "Building a dam is very expensive," Greene noted. An estimated $223 million would come from federal sources including the Water Infrastructure Improvements

for the Nation Act that Congress passed in 2016; $470 million from state sources including Proposition 1, the water bond that California voters passed in 2014; and $202 million in local sources. The expansion project is scheduled to begin the design and construction phase in 2022, and is scheduled for completion in 2029.

Valley Water is one of several Bay Area water agencies considering partnering with the Contra Costa Water District on — and shouldering a share of the local cost of — the Los Vaqueros Reservoir expansion. “The question is whether it is the best option for the buck,” Greene said. “Is it the best use of ratepayer money?” Other possible partners on the expansion include the Alameda County Water District, EBMUD, the San Francisco Public Utilities Commission, and the Zone 7 Water Agency, which serves the cities of Dublin, Livermore, and Pleasanton.

These agencies are also all BARR members and so, whatever their decisions on this particular project, are committed to building regional drought resilience. Moreover, the other options identified by the BARR team remain on the table for if and when they are needed in California’s hotter, drier future. “We all experience drought in different ways,” Ledesma said, referencing the fact that each agency has its own mix of water sources, from Sierra Nevada snow melt to regional rainfall to local groundwater recharge. “We want to make it easier for Bay Area water agencies to share water.”

# # #

The Bay Area Monitor, A Publication of the League of Women Voters of the Bay Area
Robin Meadows covers water for the Monitor.

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Opinion: San Francisco doesn't have a sustainable drought plan
San Francisco Chronicle | May 29, 2021 | Peter Drekmeier

Hetch Hetchy Reservoir, viewed from airplane, collects water from the Grand Canyon of the Tuolumne in Yosemite National Park
Tom Stienstra/ The Chronicle

Two weeks ago, the “greenest city in America” sued California’s State Water Board to prevent measures that would restore the beleaguered San Francisco Bay-Delta.

After more than a decade of studies based on the best available science, the state wants to require San Francisco to release more water from its dams into the Tuolumne River — the source of our Hetch Hetchy drinking water — to benefit fish, wildlife and downstream water quality.

The San Francisco Public Utilities Commission, meanwhile, wants a “voluntary agreement” for the Tuolumne River. Instead of providing the river with desperately needed flow, the city is proposing power-washing spawning gravel, building a fish barrier that would somehow block undesired fish, but allow “good” fish to pass unmolested, and restoring a small amount of floodplain habitat for baby fish. These half-measures are doomed to fail. Floodplains without

enough water to inundate them are useless. A peer review commissioned by the National Marine Fisheries Service debunked the science behind the SFPUC's proposal.

City Attorney Dennis Herrera, who Mayor Breed wants to appoint as the new General Manager of the SFPUC, is leading the lawsuit charge. The litigation is based on a Trump-era rule that has been challenged in court by California's Attorney General and is likely to be abandoned by the Biden administration. It aims to weaken the state's authority to safeguard water quality, an outcome that could have repercussions nationwide.

Is this really the position San Francisco wants to be in, siding with Trump to block the state's ability to protect our environment?

If the SFPUC were serious about stewardship, the Tuolumne would not be in such dire straits. Where over 100,000 salmon once spawned, barely 1,000 returned last year. Gone are the millions of pounds of ocean-derived nutrients the salmon faithfully transported to upland habitats where they fueled the food web and fertilized the soil. The fact that 4 out of every 5 gallons of water are diverted from the Tuolumne is the leading cause of its demise.

The negative impacts of these unsustainable water diversions ripple throughout the Bay-Delta. Six fish species are listed as endangered or threatened as a result of insufficient freshwater inflow. San Francisco's lawsuit increases the likelihood we will experience a mass extinction in the not too distant future. It also increases the risk that the commercial salmon fishing industry at Fisherman's Wharf will be relegated to the history books, and that delta communities will continue to suffer from toxic algae blooms tied to insufficient river flows.

# # #

Dennis Herrera: Why I sued the California water board
San Francisco Chronicle | May 28, 2021 | Dennis Herrera

City Attorney of San Francisco Dennis Herrera on Feb. 5.
Gabrielle Lurie/The Chronicle

San Francisco, like much of our state, is in an extreme drought. As the water provider to 2.8 million Bay Area residents and businesses, the San Francisco Public Utilities Commission is ready to do its fair share to navigate this historic dry period while preserving and improving the Tuolumne River ecosystem that provides us with the majority of our water supply.

Unfortunately, at this stage, it lacks a state partner willing to do the same.

California's State Water Resources Control Board has advanced a plan for the Tuolumne River that SFPUC modeling shows could result in the near-total depletion of San Francisco's water supplies during drought. That's not just a San Francisco problem. That's a problem for the more than two dozen cities, water districts and counties that get their water from San Francisco's regional water system.

The state board wants to impose much stricter flow conditions upon San Francisco — even more onerous than those in the 2018 Bay Delta Plan Amendment that the city is already challenging in court. On top of the Bay Delta Plan's 40% unimpaired water flow requirement, the state is now trying to divert more water based on temperature and water salinity requirements, among other things. Under current customer demand levels, the SFPUC estimates its regional

water system would experience shortages equivalent to approximately 75% rationing during a drought under these new state requirements.

Crucially, there is no assurance that the water San Francisco is being told to give up under the state's new plan wouldn't simply be snapped up and sent to Southern California or elsewhere. That is why, in consultation with the SFPUC, I sued the water board to stop its misguided plan.

While San Franciscans can and will conserve more during this drought, we already have among the lowest per capita water usage in the state. In fiscal year 2020, the residential per capita water use in San Francisco was about 42 gallons per day, which is less than half the statewide average residential use of 89 gallons per day.

The SFPUC has worked hard to be a responsible steward of our water supply. The city shares the goal of protecting the environment, including native fish species. We can do that while maintaining a sustainable water supply. This is not an either-or situation.

The SFPUC has proposed increased river flows and habitat improvement measures on the Tuolumne River to benefit native fish species. Not only is San Francisco willing to implement these measures, we're already taking action. In February, the SFPUC authorized $1.5 million to fund early implementation of habitat improvement projects on the lower Tuolumne River. We can preserve chinook salmon and other river wildlife during a drought without the state unfairly staunching San Francisco's water supply.

San Francisco is aggressively diversifying its water sources. We now require recycled water systems in large-scale residential and commercial developments. We're developing groundwater sources and building a recycled water treatment facility that can save up to 2 million to 4 million gallons of drinking water per day.

But diversifying our water supply further will take time. We're in a drought now. Brokering an agreement with the state is the best way to resolve our varying concerns and lawsuits.

The SFPUC continues to negotiate in good faith, despite the state's actions. In the middle of an extreme drought, we should all be working to ensure regions across California do their fair share to increase water efficiency. But singling out one of the most responsible water users is not the answer.

# # #

Dennis Herrera is the City Attorney of San Francisco.

Drought driving up water prices
San Joaquin Valley Water News | May 28, 2021 | Lois Henry

A rope swing hangs over a dry Kern River in this 2020 file photo. And 2021 is even drier. CREDIT: Lois Henry

If you were looking for some bargain priced water this year, you're out of luck.

"We got out of the market when we started seeing prices north of $900 an acre foot," said Jason Gianquinto, General Manager of Semitropic Water Storage District in western Kern County. "That's just too much for us. We had some reserves and we'll use those this year."

Prices being discussed by sellers and buyers are all over the place from a low of $425 per acre foot all the way up to $1,250 per acre foot. But even on the low end, that's higher than what water typically sells for through the federal and state projects, about $40 and $120 per acre foot, respectively. Those prices don't reflect how much contractors pay for upkeep to the system and other costs, especially for state water contractors who have to pay the full cost of their contracts regardless of how much water they receive.

But state and federal contract prices are a starting point for water buyers and sellers. And it's definitely a sellers market right now.

The Buena Vista Water Storage District, in Kern, sold 3,000 acre feet in early spring to several districts in western Kern for $1,000 an acre foot, or $3 million. It would have sold more, but with its meager Kern River supply, the district decided to back "way off" from further sales, according to General Manager Tim Ashlock.

That price is a bit more than Rosedale-Rio Bravo Water Storage District got for 5,000 acre feet it sold, also to western Kern districts, in April for $850 per acre foot, or $4.25 million. But it still made a significant profit. Rosedale-Rio Bravo had originally purchased that 5,000 acre feet on the spot market a few years ago for what was then considered a pricey $300 to $350 an acre foot, according to General Manager Dan Bartel.

In Fresno County, the Westlands Water District will be buying water this year for $1,200 to $1,250 an acre foot, said Water Resources Manager Russ Freeman. The district will be seeking nearly 120,000 acre feet to fill growers' requests. Westlands, along with other agricultural water contractors that get water from the Bureau of Reclamation north of the Sacramento-San Joaquin Delta, will not receive any of their contracted water allotments this year.

The district anticipates its sellers will all be north of the delta. As the buyer, Freeman said, Westlands will absorb all the "carriage losses," or seepage and evaporation of water as it moves through the system. And it assumes all the risk in the event water can't be moved because of ecological concerns, which has happened in previous dry years when water was held back in Shasta Lake to maintain a cool enough environment for salmon.

"There's no way to avoid Shasta," Freeman said. Some of Westlands' biggest purchases are coming from Sacramento River Contractors. "That water remains in Shasta until the transfer window opens July 1. If our farmers can't get the water in July, August and September, then it becomes a problem. It's a risk."

The San Luis & Delta-Mendota Water Authority, made up of more than 20 federal contract agencies from Fresno to Santa Clara counties, has been buying water from north-of-delta sellers for the better part of a decade and has proposals to buy more than 68,000 acre feet up for review by the Department of Water Resources. The authority is buying water at between $425 and $575 an acre foot. While that's lower than other prices, the authority typically buys water in the $300-per-acre-foot range, according to an authority spokesman.

The potential to make money selling water, especially this year when the emergency drought declaration eased some water transfer restrictions, has attracted a few newbies.

"This is our first year putting in for this," said John Taylor, president of the Tudor Mutual Water Company, which provides irrigation water to farmers about 10 miles south of Yuba City in Sutter County.

Tudor Mutual uses groundwater and has a small water right on the Feather River. But that right was cut in half this year because of the drought. The company is hoping to sell about 1,200 acre feet of its Feather River water down stream for $630 an acre foot, or $756,000.

“Our little district has had financial issues, so we started looking at water sales to help improve efficiencies in irrigation and general maintenance without raising assessments on our growers,” Taylor said. “But we have to do quite a bit of work to get state approval.”

A few years ago, ag folks would have been shocked by $630 an acre foot.

“Ten years ago, these prices would have been astronomical to us,” said Eric R. Quinley, General Manager of the Delano Irrigation District. “But given how dry it is, and (the state’s new Sustainable Groundwater Management Act) and growers just trying to keep permanent plantings alive, well, it’s more understandable when you look at all the factors on the table.”

# # #

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Mandatory water restrictions likely for Santa Clara County residents as feds cut supply
San Francisco Chronicle | May 27, 2021 | Kurtis Alexander

An aerial view of the dam and homes below it at Anderson Reservoir in February 2020. Anderson Lake is Valley Water's largest reservoir and is now drained for earthquake repairs.

Santa Clara County is likely to be the next Bay Area locale to face mandatory water restrictions as California's drought escalates.

Officials at the Santa Clara Valley Water District said Wednesday they're worried about meeting the region's water demands after the U.S. Bureau of Reclamation announced earlier in the day that it was reducing water shipments to the district by more than half.

At its June 8 meeting, the Valley Water board is expected to consider what restrictions will be necessary to preserve the county's water supply. The constraints will almost certainly include cuts to outdoor watering — amounting to at least a 10% reduction over last year's total household use — and could go further.

The district is already asking county residents to cut consumption voluntarily by about 10%, which would amount to a 25% cut from what was used in 2013, the year that preceded the past drought.

"Today's announcement regarding another reduction in the amount of water Valley Water receives from the federal Central Valley Project directly, and adversely, impacts our county's water supply," Valley Water Board Chair Tony Estremera said in a statement. "Valley Water is deeply concerned about what this means for our communities and our region."

In addition to getting about 55% of its water from imports, the South Bay district pumps from local creeks and aquifers.

Since Valley Water is not a retail water supplier, instead selling to other agencies and private companies, it cannot unilaterally impose restrictions and will have to work with retailers to achieve the desired cuts. The wholesaler provides water to more than a dozen communities in the county, from Gilroy to Palo Alto.

The district's largest retailer, the San Jose Water Co., said Wednesday it would follow Valley Water's guidance. If San Jose Water proceeds with cuts, it would be the biggest retailer in the Bay Area to impose restrictions. The company serves just over 1 million people.

The Marin Municipal Water District and a handful of smaller suppliers in the North Bay have already moved forward with restrictions.

On Wednesday, officials at the federal Bureau of Reclamation announced that they were reducing water deliveries because their many reservoirs in the Sierra foothills, part of the Central Valley Project, were running low.

The agency reduced allocations for municipal contractors to 25% of what was requested, down from 55% projected earlier this year. For agricultural contractors, the allocation dropped from 5% to no water.

The cutbacks are especially hard for Valley Water because the district's largest reservoir, Anderson Lake in Morgan Hill, is drained for earthquake repairs, leaving less water in storage.

# # #

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Lack of water efficiency funding undercuts fight against drought
The Hill | May 25, 20121 | Ron Burke, Mary Ann Dickinson
The views expressed by contributors are their own and not the view of The Hill

© *Getty Images*

With the current drought already impacting over 90 million people in the U.S. and with water scarcity likely to get worse because of population growth and climate change, there is an urgent need to invest in water efficiency. This threat goes well beyond the arid west. Thirty-three states have been hit by drought since 2000, including ones located in the Great Plains, Midwest, Southeast and Mid-Atlantic regions. And scientists warn that most of the country is on pace to experience water shortages if we don't manage water better.

Water efficiency not only helps ensure access to clean, affordable water amidst a changing climate, it's also a cost-effective way to control the root cause of climate change in the first place. That's because water-saving strategies reduce the amount of energy used to heat, pump and treat water, which in turn reduces emissions of heat-trapping carbon dioxide.

Using less water also helps protect our rivers, bays and aquifers, and it saves consumers money. Water efficient plumbing products can save an average family hundreds of dollars each year. This is especially important today with COVID-19 leaving millions of Americans unable to pay water bills.

Like energy efficiency, water efficiency supports many of the important goals that Congress and the Biden administration are discussing — climate resiliency, sustainability, public health, equity and affordability. Unlike energy efficiency, however, federal funding for water efficiency — such

as rebates to buy water efficient plumbing/irrigation and installing leak detection meters — has been a drop in the bucket.

An analysis by our non-profit organization, the Alliance for Water Efficiency, found that federal spending on energy efficiency and renewable energy has outpaced spending on water efficiency and water reuse by approximately 80 to one since 2000. This discrepancy is surprising given that water efficiency not only protects water resources and saves money, it's also a cost-effective way to save energy. For example, an analysis by UC Davis found that in 2015-2016, water conservation was a more cost-effective way to reduce energy use in California than traditional energy efficiency programs.

The U.S. government has made significant investments to tackle the nation's energy crisis, while the tab for averting the water crisis falls to local water agencies that can be cash-strapped in the best of times, not to mention now with the pandemic leaving customers unable to pay their bills. The federal government pays less than 5 percent of the cost for drinking water and wastewater, according to the National Association of Clean Water Agencies, relying instead on loans to local communities.

The climate is changing, droughts are getting worse and water supplies are increasingly at risk. Water efficiency and conservation are the most immediate, cost-effective and environmentally beneficial ways to meet these challenges. It's time for Congress to take the water crisis seriously and make significant investments to help communities cope.

# # #

Ron Burke is the president and CEO of the Alliance for Water Efficiency (AWE), a non-profit organization dedicated to promoting the efficient and sustainable use of water in the United States and Canada. Mary Ann Dickinson is the founding president and CEO of AWE.

Could California's drought crisis block Bay Area housing construction?
San Francisco Chronicle | May 24, 2021 | Emma Talley

The water level is historically low at Phoenix Lake in Kentfield. The Marin Municipal Water District is considering pausing new water hookups.
Scott Strazzante/The Chronicle

The Marin Municipal Water District is considering banning new water service hookups to homes in response to worsening drought conditions. But the move could hurt future housing development in an area already in dire need of more homes.

The move would come amid historic drought conditions in the area, with county officials declaring a local drought emergency last week in light of a “grim and deteriorating” situation. The National Drought Mitigation Center’s drought monitor recently deemed most of the Bay Area as extreme drought zones for the first time since 2015.

“We need to do everything that we can to save water,” said Jeanne Mariani-Belding, spokesperson for the water district.

The water district board expressed support for a potential ban at its meeting on May 18, but also wanted to take time to explore alternatives, including allowing developers to pay a fee funding local water conservation efforts to offset demand created by the new connection. The board is expected to consider an official proposal at its June 1 meeting.

While Marin County typically issues permits for fewer than 100 new housing units a year, the state is asking the cities and county to plan for roughly 17,600 units over the next eight years. While it might not seem like much compared to the almost half a million units that should be planned for in the Bay Area, a long-term ban would affect Marin County's ability to meet state goals.

"We're in a crisis moment, and I think we do need to act with some urgency," MMWD director Larry Bragman said at the meeting, adding that a ban is "going to have real-world effects."

"It's going to inconvenience people," he said. "It's going to ripple out into our economy. I know none of us are taking it less than very seriously but it's a serious decision."

Water district staff said they plan to meet with local planning committees to gain feedback on the potential impacts before finalizing any proposed ban.

This wouldn't be the first time the district has paused new service hookups during a drought. Bans have been enacted twice before, most recently from February 1989 to March 1993.

"We don't see this as a development issue, we see this as a water shortage emergency," Mariani-Belding said.

Restrictions on housing production in the form of service hookups could strain the market in Marin, making it even more unaffordable. Tom Lai, director of the Marin County Community Development Agency, said if the area cannot meet its state mandates for permitting new housing, the deficit could also perpetuate racial inequalities with respect to where housing is located, what types of housing are available, and who lives in that housing.

"Marin is a slow-growth, almost built-out community," Lai said via email, explaining that the area issues permits for fewer than 100 new units of housing (including accessory dwelling units, otherwise known as granny flats or in-law units) each year. While most of Marin's development is composed of remodel or reuse of existing structures, Lai said most cities and counties typically won't issue building permits if a water provider won't supply water.

In Lai's opinion, an outright ban on all new service connections for an extended time would be shortsighted.

"I would urge those making decisions to ban new hookups to look holistically at the problem," he said, including reevaluating existing and new conservation programs.

"There are so many other options that we can consider," said Newsha Ajami, director of urban water policy with Stanford University's Water in the West program. She explained "it's much better to think more strategically about how we want to be more water conscious and have a smaller water footprint."

Compared to the rest of the Bay Area, Marin County is in a particularly dry position. The water district, which serves about 190,000 residents from Sausalito to San Rafael, relies completely on local water supply in the form of rain-filled reservoirs, making it particularly vulnerable to dry spells. The area is “an interesting case,” said Ajami because unlike most of the Bay Area, the county does not have a tie-in to state or federal water projects or draw supplies from snow in the Sierra.

The MMWD became the first major water agency in the Bay Area to impose a number of restrictions on customers in late April, including bans on car washing and power washing homes and driveways. By considering a ban on hookups, the district is taking these measures to the next level.

“It's not something we look forward to, obviously, but the conditions are such that we’re in a severe shortage,” Mariani-Belding said.

While “there's always this tension between development and water use,” Ajami advocates for connecting land-use planning and water-use planning, explaining that often the two are considered separately. She said when considering new developments, cities should focus on building structures that are “much more efficient in the way they use water.”

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San Francisco Water Use Has Declined Since Last Drought — What Else Can You Do to Conserve?

SF News | May 24, 2021 | Jay Barmann

We're once again going to be having conversations this summer about water use, and hearing about ever more strict mandates coming down from counties and the state about what we use water for. But is San Francisco's household water use really the problem?

The drought is bad, and it's getting worse. A big swath of the Bay Area was just put in the "exceptional" drought tier last week by the U.S. Drought Monitor, and the rest of the Bay Area is in the second-worst or "extreme" drought category, along with about three-quarters of California.

A new piece in the Chronicle based on some outdated data from the California Department of Water Resources and some comments from experts reminds us, once again, how agriculture is far and away the biggest user of water in the state. And when it comes to per capita water usage in the Bay Area, San Francisco uses the least, and Contra Costa and Santa Clara counties use the most.

Despite the city's ten golf courses, San Francisco used the least water per capita in the region to irrigate large landscapes in 2016 — which is the last year for which this data is available. Being a big and largely arid county, Santa Clara County was tops when it comes to commercial water use by offices and businesses. And with its small population and large amount of agriculture, Napa County comes in a very close third in terms of per capita water use, which is almost evenly split between residential interior use, residential exterior use, commercial, and large landscape watering.

While residential interior use likely shot up in all Bay Area counties last year during shelter-in-place orders, and commercial use likely went down, the overall trend in California has been downward for water use since the last drought, according to experts.

Ellen Hanak, director of the Public Policy Institute of California’s Water Policy Center, tells the Chronicle that despite some rebound in water use during the more recent wet years, California has not rebounded to pre-drought levels of usage. This is thanks, in part, to the public responding to calls to buy water-efficient appliances, get rid of lawns, and plant drought-tolerant plants in their yards.

"We’re shifting toward a future where we’re going to be using water more judiciously and having to manage it in a way that still makes it more available during the drought," Hanak said, in comments to the Chronicle.

So, aside from encouraging our suburban friends to plant some agave and cacti and try to go without washing our cars, what can San Franciscans do to help the drought situation at home?

Mandatory water-use restrictions are not likely in our future, at least this year. The Hetch Hetchy Reservoir, which supplies much of San Francisco's water along with providing water to Alameda, San Mateo, and Santa Clara counties along its 160-mile delivery system, is expected to reach full capacity in the coming weeks. The water level continues to rise from snow melt, as KTVU reports, despite the relatively slim snowfall during the winter, and the reservoir is expected to meet the needs of all its customers.

While it won't fill up three times over the way it would in a normal year, it will reach its 117 billion gallon capacity — more than 30 billion gallons more than the level it was at in the height of the last drought in 2015.

Currently, there are voluntary water-use restrictions being called for in San Francisco for 1,600 irrigation customers — primarily golf courses and parks. But water customers are not being asked to take shorter showers, etc., like we were in the last drought.

Still, curbing those lengthy showers, and being judicious in how you water your gardens won't hurt. And if next winter doesn't bring a ton of rain, we may be looking at more restrictions next summer.

In Marin County, where water supplies are in much worse shape already, mandatory restrictions on residential water use took effect on May 1. These include no washing cars at home, watering lawns only once a week, and refraining from refilling backyard pools.

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