

Veles Water Weekly Report

1. **WATERTALK**
TECHNICAL ANALYSIS BY JOSHUA BELL
2. **NQH2O INDEX VS H2O FUTURES PRICE PERFORMANCE**
3. **NQH2O INDEX HISTORY**
4. **NQH2O INDEX AND H2O FUTURES VOLATILITY ANALYSIS**
5. **CENTRAL VALLEY PRECIPITATION REPORT**
6. **RESERVOIR STORAGE**
7. **SNOWPACK WATER CONTENT**
8. **CALIFORNIA DROUGHT MONITOR**
9. **CLIMATE FORECAST**
10. **WESTERN WEATHER DISCUSSION**
11. **WATER NEWS**
 - I. CA WATER NEWS
 - II. US WATER NEWS
 - III. GLOBAL WATER NEWS

April 21st 2022

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VelesWater



WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell

CLICK THE LINK BELOW

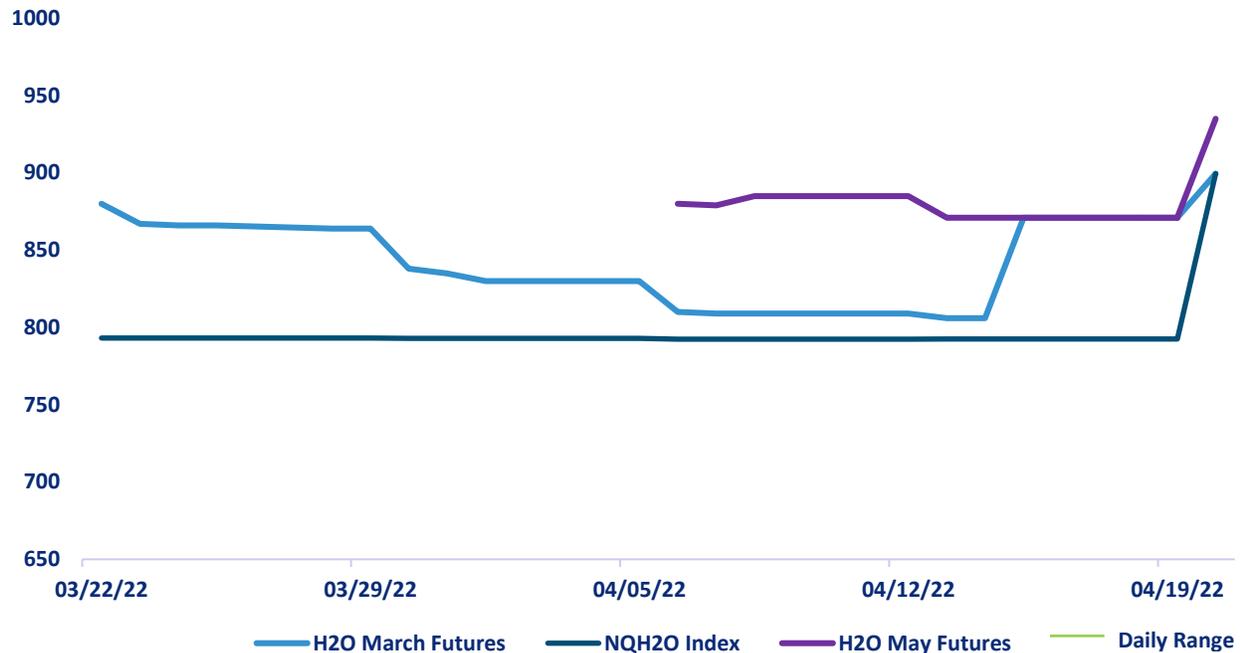
"A 2 minute technical analysis video of H2O futures"

<https://vimeo.com/701580532>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures



Price Chart Based upon Daily Close

The new NQH2O index level of \$899.50 was published on the 20th of April, up \$106.89 or 13.49%. The April Contract settled at the new index level and over the last week has been trading at a premium ranging from +\$13.39 to +\$78.39 to the index.

The May contract is now considered the front month contract and have been trading at premium of +\$78.39 to the index over the past week, however with yesterday's new index level the premium has narrowed to +\$35.50.

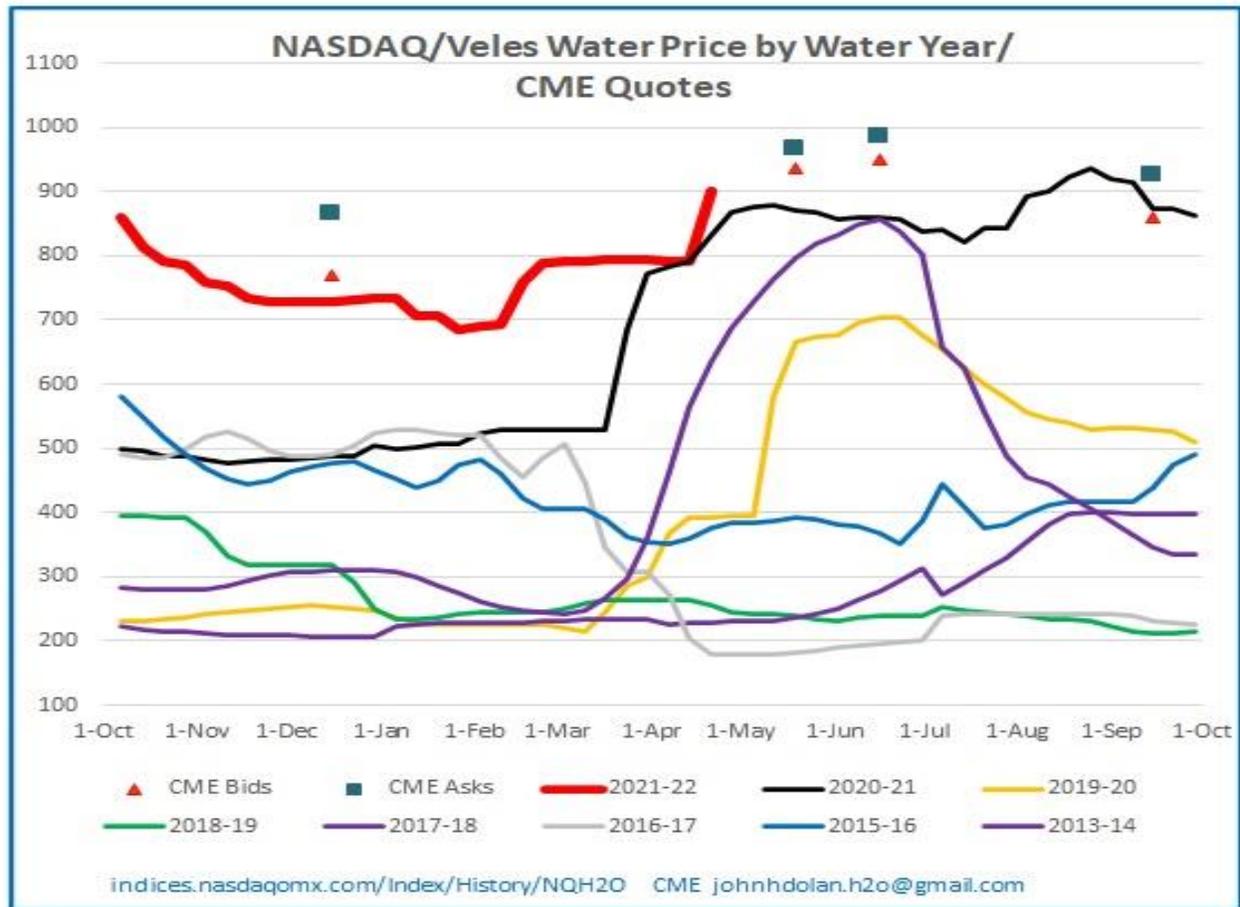
NQH2O is up 27.34% Year to Date.

Below are the bid offer prices on different expiries being quoted in the market.

May 22	935@965
June 22	950@985
Sept 22	860@925
Dec 22	770@865



NQH2O INDEX HISTORY



The graph above lays out the Nasdaq Veles water index by year, showing 2013- 2022. In very dry years, prices clearly rise through the spring, peaking in May to July (with the exception of 2015) as demand for water from farmers peaks. Prices then taper off heading into the winter on reduced demand, and the possibility of rain/snow. The restricted ability to “carry” water, much like one can do with financial contracts, gives this index the same type of seasonal pattern that one sees on some other commodities.

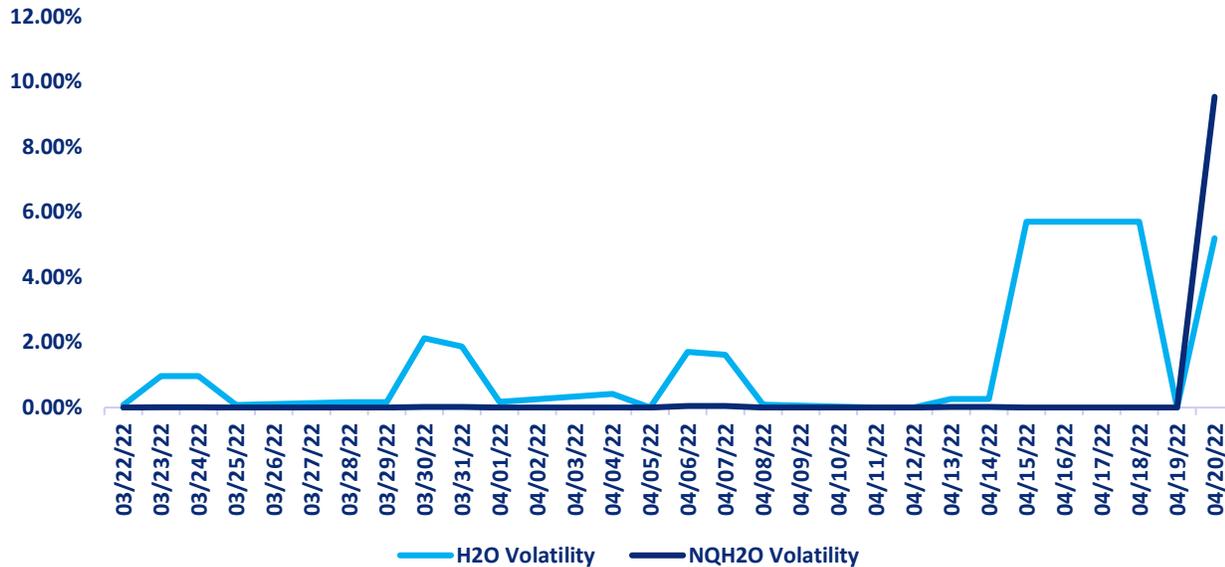
The graph for 2021 is highlighted in red. It shows the same seasonal climb, but at record-high values above each of the last eight years since February. Current bids and offers in the market are still higher than historic prices showing that expectations are that this is an exceptionally dry year and prices may not fall seasonally as much as they have in prior dry years.

(John H Dolan, CME Market Maker)



H2O FUTURES AND NQH2O INDEX VOLATILITY ANALYSIS

Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the April daily future volatility high has been 5.70% on April 18th and a low of 0% on April 19th

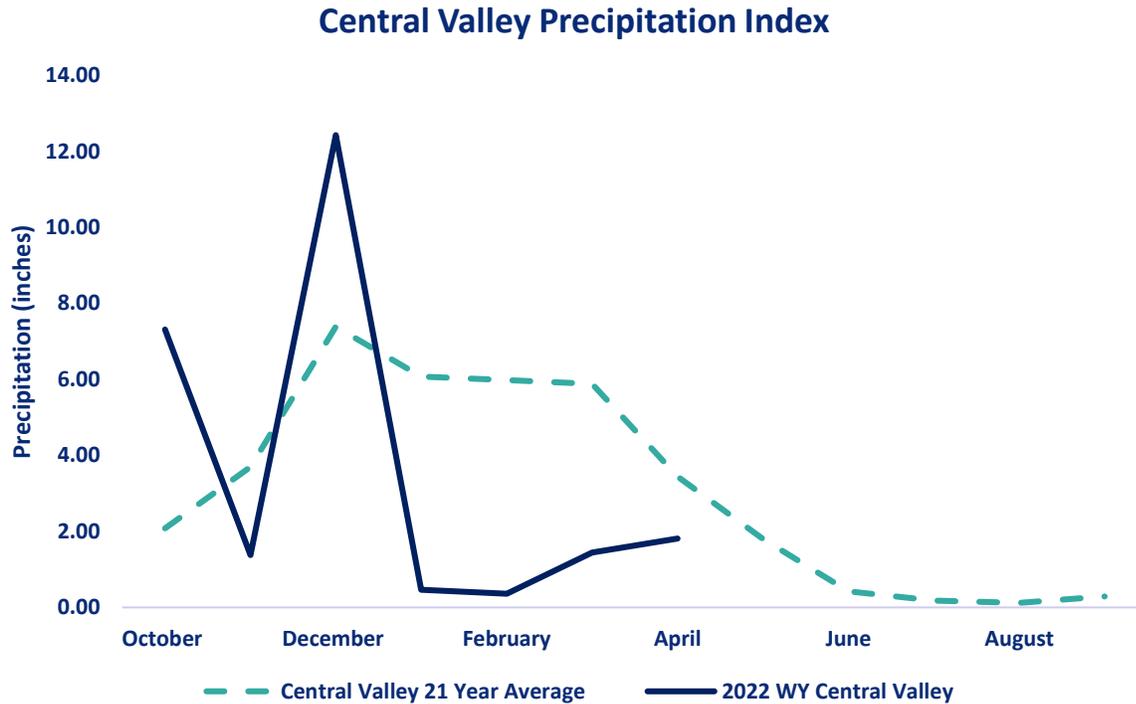
ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	22.17%	13.69%	13.51%	13.462%
H2O FUTURES	N/A	14.64%	11.75%	9.46%

For the week ending on the April 20th the two-month futures volatility is at a premium of 0.95% to the index, down 4.20% from the previous week. The one-month futures volatility is at a discount of 1.76% to the index, a reversal of 5.90% from last week. The one-week futures volatility is at a discount of 0.26% to the index, a reversal of 4.27% from the previous week. The index volatility has increased as the 1 month and 1 week futures volatility are now both at a discount to the index. The most likely scenario is some convergence where index volatility increases and futures volatility decreases.

*Above prices are all **HISTORIC VOLATILITIES** and **IMPLIED VOLATILITIES** will be introduced once an options market has been established. All readings refer to closing prices as quoted by CME.*



CENTRAL VALLEY PRECIPITATION REPORT



Central Valley average is calculated using data from 19 weather stations in the Central Valley, California.
Data as of 13/04/2022

STATION	MTD (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF 20 YEAR AVERAGE MTD	2022 WYTD VS 2021 WYTD %	2022 WY VS 20 YEAR AVERAGE TO DATE %
SAN JOAQUIN 5 STATION (5SI)	0.98	0.44	27.50	50	65
TULARE 6 STATION (6SI)	0.29	0.17	11.29	37	60
NORTHERN SIERRA 8 STATION (8SI)	4.18	3.82	99.24	47	79
CENTRAL VALLEY AVERAGE	1.82	1.48	46.01	45	68

RESERVOIR STORAGE

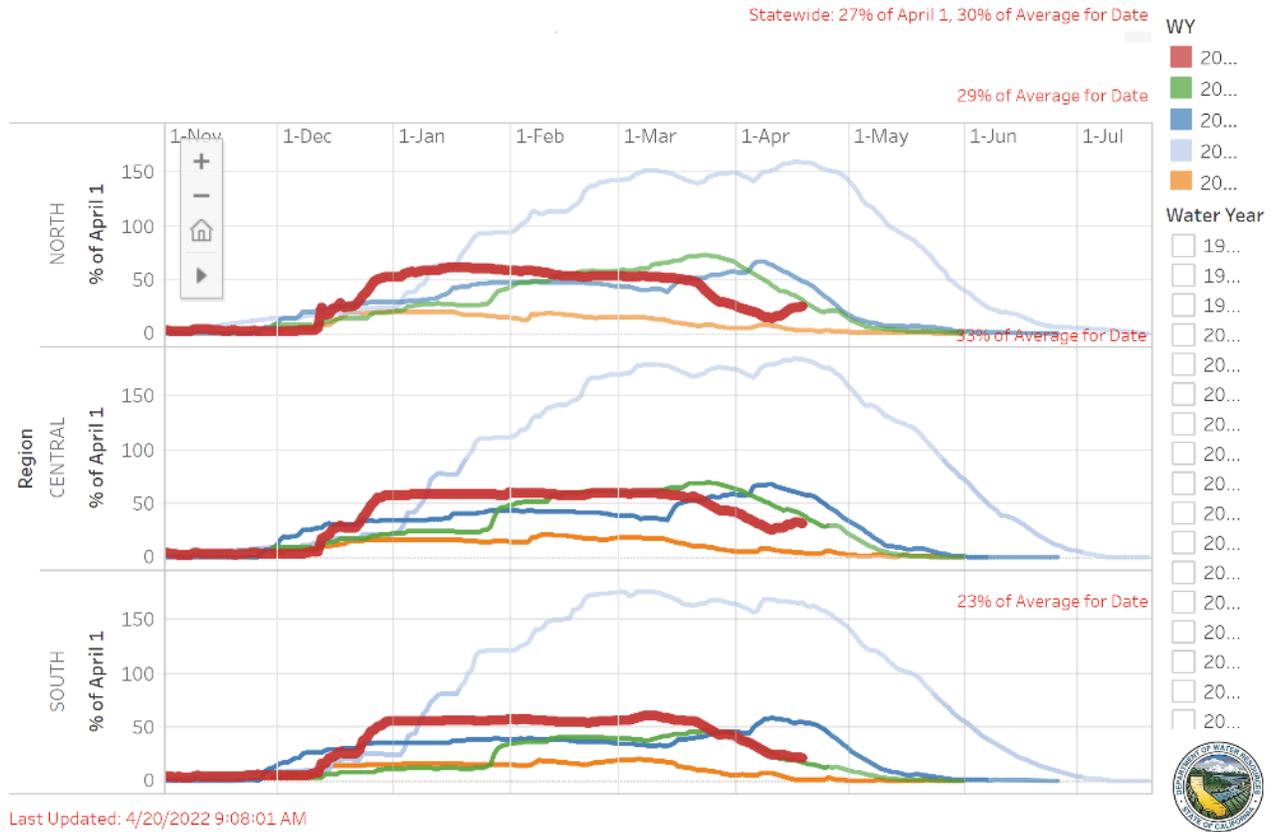
RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	799,108	33	53	43
SHASTA LAKE	1,762,879	39	52	47
LAKE OROVILLE	1,781,620	50	42	67
SAN LUIS RES	940,910	46	52	55

Reference: [California Water Data Exchange](https://www.waterdataexchange.com/)



SNOWPACK WATER CONTENT

Snow Water Equivalent Dashboard



Last Updated: 4/20/2022 9:08:01 AM

REGION	*SNOWPACK WATER EQUIVALENT (INCHES)	WEEK ON WEEK CHANGE (INCHES)	% OF AVERAGE LAST YEAR	% OF 20 YEAR HISTORICAL AVERAGE	% OF HISTORICAL **APRIL 1ST BENCHMARK
NORTHERN SIERRA	7	0.70	33	29	25
CENTRAL SIERRA	9.5	-0.90	40	35	32
SOUTHERN SIERRA	5.2	-3.50	18	23	21
STATEWIDE	7.6	-0.90	32	30	27

*Snow Water Equivalent, or SWE, is a commonly used measurement used by hydrologists and water managers to gauge the amount of liquid water contained within the snowpack. In other words, it is the amount of water that will be released from the snowpack when it melts. SWE has regional variance.

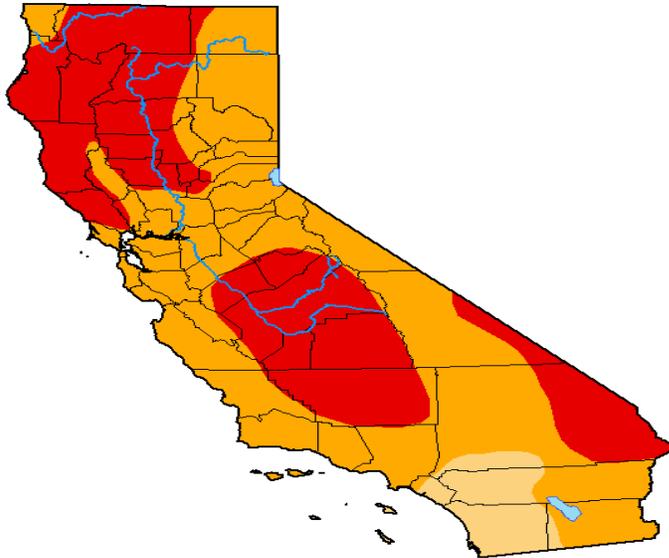
** April 1st is used as the benchmark as it when the snowpack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

U.S. Drought Monitor
California

April 5, 2022
(Released Thursday, Apr. 7, 2022)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	93.65	40.67	0.00
Last Week 03-29-2022	0.00	100.00	100.00	93.65	40.25	0.00
3 Months Ago 01-04-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Calendar Year 01-04-2022	0.00	100.00	99.30	67.62	16.60	0.84
Start of Water Year 09-28-2021	0.00	100.00	100.00	93.93	87.88	45.66
One Year Ago 04-06-2021	0.77	99.23	92.65	69.68	35.42	5.36

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

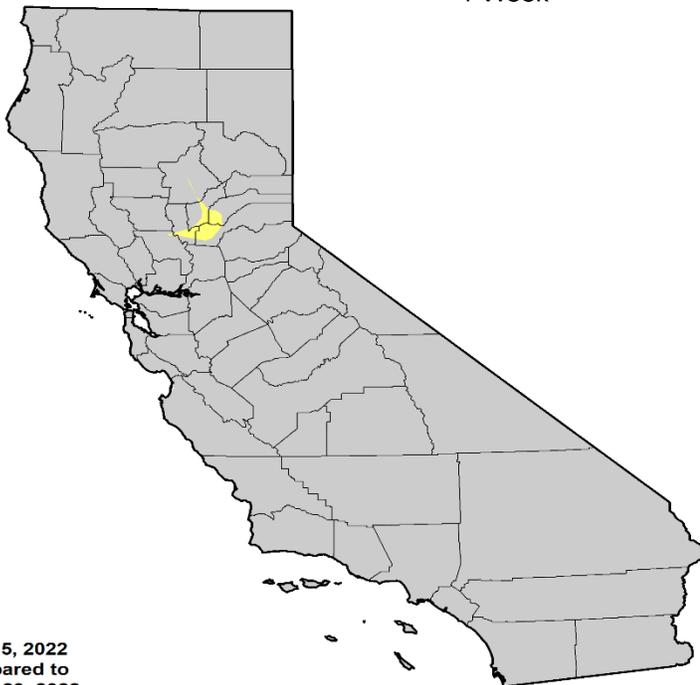
Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - California
1 Week



April 5, 2022
compared to
March 29, 2022

droughtmonitor.unl.edu



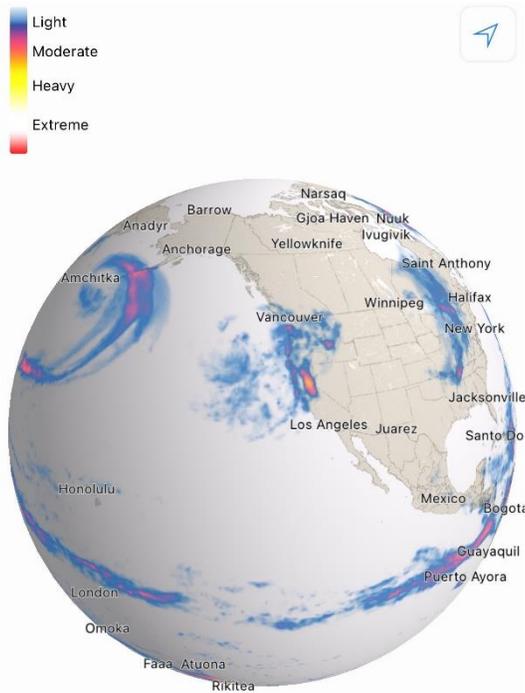
- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

The US Drought Monitor release their statistics with a 1-week lag to this report. Over the past week the has been 0.42% Class 1 degradation in D3 extreme drought conditions.

The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC.



CURRENT SATELLITE IMAGERY



Map Ref: Dark Sky

The satellite picture shows a frontal system hitting the Northern and Western US coast reaching the Central Valley region tomorrow but falling short of precipitation in Los Angeles. This will bring precipitation to the Northwestern US, plus the Northern and Central Sierra ranges and move eastward across the Northwestern and Northern regions of the US.

There is a further storm brewing in the Northwestern Pacific, and this is expected to reach the Canadian and US coastline during next week.

These are some of the last weather systems to arrive for the year and the frequency of arrival is expected to dissipate.

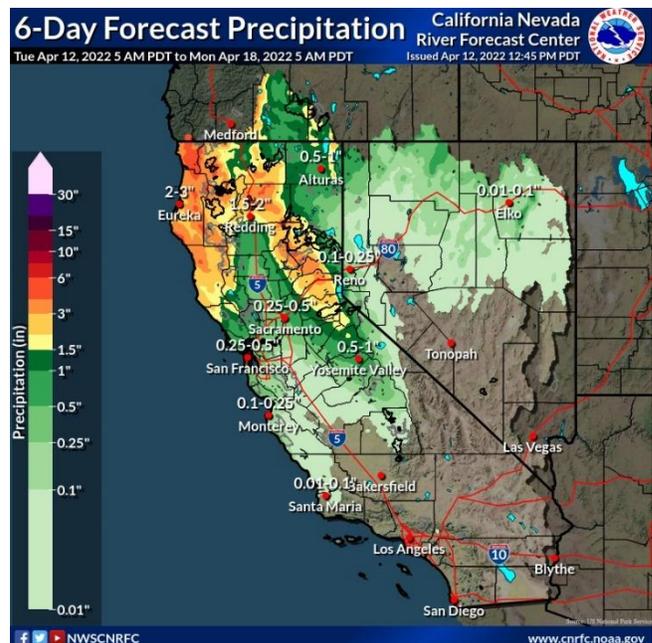
The Eastern US has a long weather system stretching from Tennessee northwards into Canada

and this is expected to continue moving eastward bringing precipitation to the Eastern areas.

The center of the US is relatively dry dominated by the high pressure system that is ridged over the Central and Western areas of the US. There is no Monsoon activity prevalent and this weather system is not active at this time

10 Day Outlook

The next system moves into the North Coast Friday evening, spreading southward and inland by Saturday morning. This s/w will mainly bring precipitation to areas North of I-80, though some precipitation will make it into the Central and Southern Sierra, with very light amounts along the Central Coast. The 12Z GFS has come in a little wetter than the previous run, while the latest EC is basically the same. Overall felt it was warranted to increase amounts a little, especially over the north coast and northern sierra. Still expect precipitation to wind down Saturday night. Over the North Coast, expect to see 1.25-2.25"





VELES WATER WEEKLY REPORT

precipitation, as well as over the Northern Sierra. Over the Russian/Napa expect 0.5-1", and 0.25-0.75 over the Central Sierra and Sacramento Valley. South of I-80, expect 0.1-0.3" down to Kern county, with little to no precipitation further south. Freezing levels are expected to fall to around 5500-6500 ft near the OR/CA border, and similarly over the Sierra as the front approaches. Another system is expected to move in on Monday, but this is just outside of the forecast window for now.

Reference: National Weather Service / California Nevada RFC / Sacramento CA

WESTERN WEATHER DISCUSSION

Parts of the Northwest saw a healthy dose of precipitation and mountain snow during the past week. In most cases, this precipitation fell over areas free from drought or simply wasn't enough to bring relief to drought impacted areas. Only southwest Oregon saw improvement with a small decline in moderate drought (D1). Oregon also saw an expansion of drought of severe (D2) and extreme (D3) drought. Water-year-to-date (October 1 to April 5) precipitation fell short and warmer-than-normal temperatures caused rapid and early melt out to the state's snowpack. Soil moisture and shallow groundwater indicators are reflecting the worsening conditions. In the southeast part of the state, the drought monitoring team noted impacts including extremely dry soil conditions, a lack of surface water, and poor pasture forage conditions. Central Washington, Idaho, and northwest Montana also saw increases in drought extent or severity as short-term dryness continues to build upon long-term moisture deficits extending back to last year. Many parts of southern Idaho, and the rest of the West, have set records for the driest 3-month period (January to March) going back 100 years or more. Meanwhile near record warmth increased evaporative demand from plants and soils. Farther south, extreme drought (D3) expanded in parts of California, Nevada, and New Mexico while moderate (D1) and severe (D2) drought expanded across Arizona. In California, Cooperative Extension reports impacts to agriculture including reduced forage, livestock stress, decreased water allocation, and the selling livestock earlier than normal. Data such as reduced stream flows and declines in satellite-based vegetation health and soil moisture indicators confirm these reports.

Reference:

Deborah Bathke, National Drought Mitigation Center
Brad Rippey, U.S. Department of Agriculture



WATER NEWS

CALIFORNIA WATER NEWS

Gov. Newsom to ask legislature for \$750M as state looks to conserve water

During Gov. Gavin Newsom's visit to Butte County on Tuesday, Newsom said he will ask the legislature for \$750 million to help with drought conditions.

At the Hyatt Powerplant at Lake Oroville, which shut down last year due to record low lake levels, Newsom spoke about how the state needs a different approach to water conservation.

Newsom already invested \$5.2 billion in the past three years for water security for all Californians.

"This year we're asking the legislature for another three-quarters of a billion dollars, likely more," Newsom said. "I don't want to preview too much, we're not waiting to do bonds because we have the resources to do general fund contributions."

Newsom said the state is more prepared for this summer than it has ever been. He says his office is already working to increase outreach for water conservation. Action News Now asked Newsom if he foresees any strict restrictions if the summer turns out dry.

"As it relates to worst-case scenario, we're modeling all those scenarios, I assure you," he said. "We're entering this year with the expectation we can move through this year without those draconian impacts."

In a news release, Assemblyman James Gallagher criticized Newsom's conference on Tuesday, saying his administration "is holding up construction of new water storage needed to combat the drought."

"In fact, I'm very proud of the work we've done on sites," Newsom said. "I'm not aware of any work he's done on the project but I'm very aware of the work our administration has been doing on that project. We've been meeting consistently, we're making tremendous progress. We've been working with the Biden administration to actually draw down federal support."

Original Article: [Action News Now by Jafet Serrato and Brandon Downs](#)

State Water Board Staff Proposes Readoption Of Emergency Drought Regulation In Bay-Delta

With three consecutive years of drought reducing water levels in the Sacramento-San Joaquin Delta watershed to alarming lows, the State Water Resources Control Board today released the draft of an emergency regulation to continue curtailments adopted last year to preserve water storage in reservoirs, protect drinking water supplies, prevent salinity intrusion and minimize impacts to fisheries and the environment.



VELES WATER WEEKLY REPORT

A staff workshop to discuss the proposed draft and solicit public feedback will be held May 12.

The existing regulation, which authorizes the Division of Water Rights to curtail diversions for specific right holders when water levels are low, will expire this summer unless readopted by the State Water Board and approved by the Office of Administrative Law.

“Readopting the emergency measure is critical to protecting water stored in the Delta for human health and the environment, especially as we enter a third consecutive year of extreme drought,” said Diane Riddle, an assistant deputy director with the board. “Toward that end, we are continuing to update our method for determining when water is unavailable to ensure an efficient and equitable process for right holders.”

The first quarter of 2022 was the driest on record in the Sierras, and the state has received less than half of its yearly average rain and snowfall. While only a small number of the more than 17,000 water rights in the Delta watershed are currently curtailed, diminished snowpack and hydrologic forecasts indicate that supplies will diminish in coming months and that all right holders – including those with older or riparian rights – should prepare accordingly.

While notices of water unavailability were first issued in May of 2021, curtailments did not become effective until the emergency regulation was adopted in August. This year, water users should expect curtailments to be imposed much sooner and to affect more senior right holders and claimants since supplies may be the most limited during the peak irrigation period of June and July.

Without continued emergency measures, drinking water for 25 million individuals and irrigation supply for over three million acres of farmland could be further threatened. The 1,153 square-mile watershed also supports 80% of the state’s commercial salmon fisheries and is an important habitat for more than 750 animal and plant species, including waterfowl, birds of prey and threatened or endangered fish such as the Delta smelt, Chinook salmon and steelhead.

In response to persistent dry conditions almost a year ago, on May 10, 2021 Gov. Gavin Newsom declared a drought emergency for 41 counties, including those within the Delta, and outlined various actions the board and other agencies should consider, including curtailments when water is not available. The governor expanded the emergency declaration statewide on Oct. 19.

Original Article: [News Release from the State Control Board](#)

Governor Newsom Highlights State Action to Address Water and Energy Challenges Amid Changing Climate

As Western states continue to experience intensifying drought conditions, Governor Gavin Newsom today visited Lake Oroville to highlight efforts to advance long-term water resilience and bolster the state’s drought response. Though storms returned to



VELES WATER WEEKLY REPORT

Northern California this week, the small amounts of rain and snowfall expected will not make a significant dent in the water deficit the state faces.

“With the climate crisis threatening communities across the West, we must double down on our work to build water resilience in our communities for the long haul,” said Governor Newsom. “All of us must do our part to tackle the intensifying drought conditions felt across the state. We’re investing critical resources to battle the drought’s impacts on our communities and ecosystems and finding innovative solutions to deal with these new realities.”

Dry conditions resulting from extreme weather impact multiple aspects of state operations, including increased fire risk and reduced energy production capacity. Today, the Governor visited Hyatt Powerplant at the Oroville facilities, which produces enough hydroelectric power to supply a city the size of San Francisco. Last year, State Water Project operations managers took the powerplant offline due to falling lake levels, but the facility resumed hydropower operations again in January.

The Governor and the Legislature have invested \$5.2 billion over three years to support the immediate drought response and build water resilience statewide, and the Governor is proposing \$2 billion to spur clean energy projects across the state and bolster grid reliability. The budget includes funding to secure and expand water supplies; bolster drought contingency planning and multi-benefit land repurposing projects; support drinking water and wastewater infrastructure, with a focus on small and disadvantaged communities; advance Sustainable Groundwater Management Act implementation to improve water supply security and quality; and support wildlife and habitat restoration efforts, among other nature-based solutions.

“As this drought persists into a third year, we are experiencing drier and hotter weather than ever before,” said California Natural Resources Agency Secretary Wade Crowfoot. “These conditions diminish our water supplies but also threaten energy reliability. We are adapting to these unprecedented conditions and working to find flexibilities where possible to safeguard both water supplies and grid reliability.”

“We are now in a third consecutive year of drought, driven by climate change. We’re seeing the realities of our warming climate on our water supply and our power supply as evident by conditions at Lake Oroville,” said California Department of Water Resources Director Karla Nemeth. “The State is taking action to balance the water supply needs of residents, businesses and agriculture, and the environment. We are stepping up our policy efforts and educating the public about the need to make water conservation a way of life to stretch our water supply as much as possible.”

The Governor last week announced the expansion of the state’s Save Our Water campaign to encourage Californians to reduce water use as drought conditions worsen. The campaign rolled out new multilingual ads across several media platforms as part of their ongoing efforts, and briefed more than a dozen influencers and content creators calling on them to support the statewide education campaign. The state has also



VELES WATER WEEKLY REPORT

launched the California WATER WATCH website to inform Californians about hydrological conditions in their own communities and connect residents with local water suppliers to learn about available incentives and rebates that support water-saving upgrades in the home and yard.

Governor Newsom, through an executive order last month, called on local water suppliers to move to, at a minimum, Level Two of their Water Shortage Contingency Plans, which require locally-appropriate actions that will conserve water across all sectors. The Executive Order also directed the State Water Resources Control Board to consider a ban on the watering of decorative grass at businesses and institutions.

In March, the Governor advanced an additional \$22.5 million to bolster the state's drought response. Of this funding, \$8.25 million will be used to increase educational and outreach efforts, including through the Save Our Water campaign, which is providing Californians with water-saving tips via social media and other digital advertising. Governor Newsom's California Blueprint proposal includes \$750 million in additional drought funding, \$250 million of which was set aside as a drought reserve to be allocated in the spring, based on conditions and need.

In 2020, Governor Newsom released the Water Resilience Portfolio, the Administration's blueprint for equipping California to cope with more extreme droughts and floods, rising temperatures, declining fish populations, over-reliance on groundwater, and other challenges. The Administration released a progress report in January 2022.

Original Article: [Office of Gov. Newsom](#)

Russian River water curtailment likely to continue

Due to ongoing drought and a limited water supply, farmers and ranchers in Mendocino and Sonoma counties are awaiting adoption of an amended emergency order that would extend last year's curtailment of water rights in the Russian River watershed.

With the 2021 curtailment order set to expire in July, the State Water Resources Control Board Division of Water Rights is proposing to continue restrictions for an additional year. It plans to revise the regulation in early May.

Farmers say they are readying for what is coming, while they seek to negotiate the details and mitigate potential impacts.

"The curtailment regulations adopted last year affected all water-right holders regardless of seniority," said Frost Pauli, a vineyard manager in Potter Valley and chair of the Mendocino County Farm Bureau water committee. "What we're trying to accomplish, working with the State Water Resources Control Board, is to have some sort of implemented curtailments."

Pauli added, "No one is saying, we don't need curtailments or that we don't recognize that there's a drought. We can do it in a way that is beneficial for everyone, including



VELES WATER WEEKLY REPORT

the environment, and have a stepped-up curtailment, not just a wide-sweeping (regulation) and slam the door on everybody."

Pauli said every ranch that he farms has different water rights, and generally this varies from farmer to farmer and location to location.

"Some (ranches) have riparian rights. Some have regular water rights. Some have no water rights. Some have contract water. Some have recycled water. So it's very, very complicated," he said.

One significant change to the proposed regulation is inclusion of a voluntary, locally driven water conservation program that would work with curtailments.

Original Article: [Ag Alert by Christine Souza](#)

Zone 7 board to consider \$4.75M for Delta Conveyance Project

The Zone 7 Water Agency's Board of Directors is set to consider continuing to fund and participate in the planning phase for the Delta Conveyance Project at its regular board meeting on Wednesday, following an initial approval to participate for two years in late 2020.

"The DCP would support the Agency's mission to deliver safe, reliable, efficient, and sustainable water to the residents of the Tri-Valley," Zone 7 officials said in an announcement. "In addition to the primary benefit of increased reliability through alternative Delta conveyance, the DCP could also provide benefits in water supply and water quality."

The DCP is of significance to the Zone 7 service area, which includes Livermore, Pleasanton, Dublin, and San Ramon's Dougherty Valley, given that the water wholesaling agency receives approximately 70% of its water through the Sacramento-San Joaquin Delta. The project is aimed at improving the water delivery system of the State Water Project, which Zone 7 is a contractor with.

"Delta conveyance" refers to the travel of water through the Sacramento-San Joaquin Delta, which functions as the "hub of the State Water Project." A majority of the state's water comes from snowmelt in the Sierra Nevada before being conveyed to the nearby Tri-Valley and as far away as San Diego.

The current infrastructure in the region has stood since the 1960s, making it not only aging, but also not fortified to sustain shifts in weather patterns over recent years that have meant an increase of both drought conditions and large storms. The DCP seeks to provide upgrades that will address this, as well as sea level rise and seismic activity.

"The State Water Project infrastructure can be improved to be more resilient to climate change and more flexible in its ability to take advantage of big storms by moving water when it's available without harming threatened and endangered species," the agency's announcement said.

In addition to making SWP infrastructure more reliable, the conveyance project would include an alternate conveyance system for a majority of the water for Zone 7.



VELES WATER WEEKLY REPORT

With the four-year planning process heading into its second year, the Zone 7 board faces the decision of whether or not to continue for the duration of the process following the two-year approval on Nov. 18, 2020. Costs for continuing to participate are estimated at \$4.75M, which would be 2.2% of the price tag of the overall planning process throughout 2023 and 2024.

For the first two years of the planning process, the share of environmental planning costs for Zone 7 was \$2.8 million.

Zone 7 directors received an update at their March 16 meeting on the progress of the DCP so far, and upcoming work throughout the end of the year, in addition to plans for the next two years of the four-year planning phase, set to end in December 2024. Currently, the project is in keeping with plans that the board approved in 2020.

The draft environmental impact report for the project, which aims to mitigate any substantial impacts of the DCP by offering potential project alternatives, is set for release to the public in the middle of this year, with the final EIR planned for release next year, and additional environmental review processes set to be completed in 2024. This would mark the end of the planning phase of the DCP. Pending the approval of necessary permits and compliance with legal requirements, the project would then enter the design and construction phase.

Advantages of continuing in the next two years of the planning phase for Zone 7 would include being able to participate in these future developments in the planning process, as well as giving the board an opportunity to influence the project based on the needs and concerns of Tri-Valley residents, according to agency officials.

Committing to continue in the planning process for an additional two years would not mean committing to participate in the final project. The decision to continue funding and participating in the DCP beyond 2024 would be informed by the results of the upcoming environmental planning process, and community engagement, according to the agency's announcement.

Only agencies engaged in the planning process would be allowed to continue to participate in the DCP at its later stages.

Original Article: [Pleasanton Weekly by Jeanita Lyman](#)

Sonoma County unveils first-ever proposed well water fees under pioneering California groundwater law

In a dramatic shift from California's history of allowing landowners to freely pump and consume water from their own wells, Sonoma County's rural residents and many others will soon begin paying for the water drawn from beneath their feet.

In the sprawling 81,284-acre Santa Rosa Plain groundwater basin, the proposed regulatory fee for a rural resident is \$18 to \$25 a year, much lower than the rates in the more sparsely populated Petaluma and Sonoma valleys.



VELES WATER WEEKLY REPORT

In the 44,846-acre Sonoma Valley basin, the fee would be \$48 to \$80 a year, and in the 46,661-acre Petaluma Valley basin, it would be \$115 to \$200 a year.

The residential fees are based on an assumption that rural residents typically pump a half-acre foot of well water a year. Most homes do not have water meters and none will be installed under the fee program.

Large groundwater water users — including ranches, cities, water districts and businesses — would pay fees based on the volume of water drawn from their wells.

Fees in the Santa Rosa basin would be \$35 to \$50 per acre foot, in Sonoma Valley \$95 to \$160 per acre foot and in Petaluma Valley \$230 to \$400 per acre foot.

The proposed fees, unveiled in a series of public Zoom meetings last month, stem from a state law mandating payments to support locally tailored plans to sustain groundwater resources for the next 50 years, including a 20-year drought.

The Sustainable Groundwater Management Act of 2014 required 94 of California's 515 groundwater basins to form agencies to implement the plans.

Those basins, combined with areas that have already established groundwater oversight, account for 98% — 20 million acre feet — of pumped water within the state's groundwater basins, according to the Department of Water Resources.

Sonoma County's groundwater sustainability agency governing boards — appointed by agency members, including cities, towns, water and conservation districts, county supervisors and the county water agency — will consider various fee proposals at their meetings this month.

The three boards must adopt funding plans in June and if any regulatory fees are approved they would most likely be included in the fall property tax bills, said Ann DuBay, a Sonoma Water manager who is administrator of the Petaluma Valley and Sonoma Valley Groundwater Sustainability Agencies.

Should any basin decline to set groundwater fees, the state would impose a flat fee of \$40 per acre foot. An acre foot of water is enough to supply about 2.3 households for one year.

Sustainability involves monitoring of groundwater conditions to “ensure clean and plentiful groundwater for future users ... while allowing for reasonable and managed growth,” DuBay said.

“We have to close the (groundwater) data gap and fix all the problems,” she said. “It starts to add up to some significant dollars in each basin.”

The operating cost of the Santa Rosa and Petaluma agencies is about \$1.1 million a year and the Sonoma Valley agency, already faced with declining groundwater, costs about \$1.2 million — not including any capital costs.

The wide range of proposed fees for rural residents and large water users is due to the number of well owners in each basin, with 9,000 well parcels in the Santa Rosa basin, 1,250 in the Petaluma Valley and 3,000 in Sonoma Valley.



VELES WATER WEEKLY REPORT

A well parcel is property assumed to be using groundwater because it has no other water source or may be receiving water from another source, such as a city, but is known to have a well.

In each basin, the lower fee assumes grants will cover 40% of the costs and the higher figure applies if no grant funds are available.

Each basin has received more than \$2 million in grants to cover work from 2017 to this year. “That’s been great,” DuBay said.

Since 2017, existing local agencies have been paying the sustainability program costs that must now be covered by the three groundwater basin agencies.

The proposed regulatory fees are one of several revenue options, including well head fees (a flat fee per well), parcel taxes that would require two-thirds voter approval and benefit assessment districts, which also require voter approval.

David Noren, a Sebastopol area resident and member of the Santa Rosa Groundwater Sustainability Agency Advisory Board, considers the proposed fees entirely reasonable.

“We’re talking about a shared common resource,” he said. “It’s not your groundwater, it’s our groundwater. We’re all drinking out of the same milkshake.”

Given the impacts of climate change, Noren said “it is incumbent on us to collectively manage our resources.”

The sustainability program is “not meant to be punitive at all,” he said, noting that “nobody’s going to come out and put a meter on your well.”

Each basin agency has assessed groundwater conditions and identified the projects and actions needed to ensure it is sustainable by 2042 and can maintain that status to at least 2072.

An environmental professional who works for a Santa Rosa engineering firm, Noren represents rural residents on the advisory board.

He finds negative and often inaccurate comments about the groundwater sustainability program on the Nextdoor social media platform disturbing.

“A lot of people get on there to rant and rave,” Noren said.

Rural residents, who install and maintain their own wells, should not have to pay for the sustainability program, County Supervisor David Rabbitt said.

Original Article: [Press Democrat by Guy Kovner](#)



US WATER NEWS

Oregon Tribe Opposes Water Release for Farmers

A Native American tribe in Oregon said Tuesday it is assessing its legal options after learning the U.S. government plans to release water from a federally operated reservoir to downstream farmers along the Oregon-California border amid a historic drought.

Even limited irrigation for the farmers who use Klamath River water on about 300 square miles of crops puts two critically endangered fish species in peril of extinction because the water withdrawals come at the height of spawning season, The Klamath Tribes said. This summer's water allocation plan, released by the Bureau of Reclamation last week, will send about 50,000 acre-feet of water to farmers in the Klamath Reclamation Project — less than 15% of what they would get in a normal year.

An acre-foot is the amount needed to cover one acre of land with water one foot deep. It's the third year in a row that extreme drought has affected the farmers, fish and tribes that rely on the 257-mile-long Klamath River in a region where, even in a good year, there's not enough water to satisfy competing demands. Last year, no water at all flowed through the Klamath reclamation project's main irrigation canal, and the water crisis briefly became a political flashpoint for anti-government activists.

At the same time, critically endangered sucker fish central to the Klamath Tribes culture and religion didn't have enough water to spawn and thousands of downstream juvenile salmon died without reservoir releases to support the Klamath River's health.

Original Article: [US News by Gillian Flaccus AP](#)

Governor Hochul Announces \$638 Million in Grants for Water Infrastructure Improvements Across New York State

Governor Kathy Hochul today announced the state Environmental Facilities Corporation has awarded \$638 million in grants to municipalities and public authorities for 199 water infrastructure projects across the state that protect public health or improve water quality. Nearly \$601 million in Water Infrastructure Improvement Act grants and over \$37 million in additional federal subsidies will support approximately \$1.6 billion in total infrastructure investment. The grants are projected to contribute over 35,000 jobs to New York's economy and save taxpayers an estimated \$1.4 billion.

"Modernizing our state's water infrastructure is critical to ensuring every New Yorker has access to clean drinking water," Governor Hochul said. "Protecting the public health of New Yorkers will always be a top priority for my administration and this funding is a testament to that commitment. We will continue working collaboratively with every level of government to empower localities with the funding they need to improve water quality statewide."



VELES WATER WEEKLY REPORT

Today's announcement marks the largest-ever award of Water Infrastructure Improvement Act (WIIA) grants. The full list of awardees and project descriptions can be found on EFC's website, where you may also view awards by region as well as an interactive map.

Environmental Facilities Corporation President & CEO Maureen A. Coleman said, "This historic level of grant funding from EFC will provide transformational benefits for 151 communities as the State implements the water quality goals championed by Governor Hochul. Grants from EFC provide relief for taxpayers and help local governments get shovels in the ground for critical projects that protect public health and the environment, create jobs, and spur economic development. EFC is poised to support many more water quality infrastructure projects through the initiatives in the enacted State Budget and the infusion of federal funding from the Bipartisan Infrastructure Law."

Department of Environmental Conservation Commissioner and Environmental Facilities Corporation Board Chair Basil Seggos said, "New York State is making generational investments to help build more resilient communities that are better prepared to meet the challenges of climate change by supporting upgrades and improvements to water infrastructure in municipalities across the state. With Governor Hochul's sustained commitment to safeguarding water quality, DEC is helping to advance projects essential to providing access to clean drinking water, protecting water supplies, and promoting continued economic growth."

Department of Health Commissioner Dr. Mary T. Bassett said, "Replacing outdated infrastructure and implementing treatment for emerging contaminants in New York State's public drinking water systems are critical components of ensuring equity in public health. Communities that have borne the brunt of decades-old industry pollution or historical neglect are utilizing these funds to help off-set project costs and tackle the larger issues of clean water delivery."

Highlights of the 199 Projects Funded in this Round of Grants Include:

More than \$426 Million Awarded for Drinking Water Projects; Awards for Eligible Projects that Treat Emerging Contaminants Will Fund 60 Percent of Project Costs

More than \$220 million has been awarded to improve drinking water systems and an additional \$206 million to projects that treat emerging contaminants. Eligible projects that address emerging contaminants above the State determined Maximum Contaminant Level (MCL) are being awarded 60% of net eligible project costs.

Original Article: [Office of Gov. Kathy Hochul](#)

Feds' plan for depleted Colorado River helps Powell but hurts Mead

If the federal government goes through with its proposal to cut Colorado River releases from Lake Powell, water users in Arizona, California and Nevada won't feel it this year — but Lake Mead will.



VELES WATER WEEKLY REPORT

Due to what some observers call an accounting trick, the reduced releases from Lake Powell wouldn't translate into immediate cuts or deeper water shortages for the three Lower Basin states.

Instead, the Interior Department's plan would lower the already depleted Lake Mead to prop up the even more depleted Lake Powell. That's so Glen Canyon Dam can keep generating electricity and avoid possible collapse of its concrete walls or other damage to its operations that could be caused by Lake Powell's water level dropping too low.

It will be a different story for Arizona and other Lower Basin water users, however, if conditions stay bad enough on the Colorado River so that this cut has to be repeated next year and the years afterward.

Then, if Lake Mead continues to fall faster than it otherwise would have fallen, it could speed the pace at which it drops to "dead pool" — where no water could be removed — or to a higher but still dismal level where Hoover Dam could no longer generate power, said Sarah Porter, a high-level ASU water researcher.

But many observers agree that with the river's chronically declining flows, the Interior Department may have no choice but to take such drastic action at least for this year.

Specifically, the department's proposal would hold at Lake Powell 480,000 acre-feet of water this year that it would have otherwise released to Lake Mead.

That wouldn't translate into additional, immediate cuts in deliveries to the 336-mile-long Central Arizona Project canal that delivers drinking water to the Tucson and Phoenix areas. The CAP is already suffering its first involuntary cuts this year, under previously approved plans to respond to river water shortages caused by drought and climate change.

The goal is to make the immediate impact on water users here "operationally neutral," said Tanya Trujillo, an assistant interior secretary whose April 8 letter conveyed the proposal to water officials in all seven river basin states, including the Upper Basin states of Utah, New Mexico, Colorado and Wyoming.

The department's purpose would be to keep Powell above 3,490 feet. If the lake level falls below that, Glen Canyon Dam's eight turbines couldn't generate electricity — power that serves 5 million customers in Arizona and five other Western states.

"We're faced with a situation where we want to take swift, responsive action with respect to Glen Canyon Dam protection (but) we don't want to do that in a way that will adversely impact the lower basin contractors," Trujillo said Tuesday in an interview with the Star.

But as many other water officials and experts acknowledged, if our taps and lettuce and alfalfa fields are spared from this year's cut, Lake Mead won't be so lucky. A loss of 480,000 acre-feet could push the lake down another 7 or 8 feet, based on past federal estimates. Mead is now 32% full while Powell is 24% full.

If the river's condition remains poor and Interior's Bureau of Reclamation makes a similar cut in releases to Lake Mead next year and beyond, Mead will drop lower and



VELES WATER WEEKLY REPORT

lower. Trujillo declined to speculate on whether that will happen, but just the prospect of it draws concerns if not shock from other water officials, outside experts and advocates.

“If we make these kind of adjustments we are putting Mead into peril faster,” said Porter, director of Arizona State University’s Kyl Center for Water Policy. “We are in a situation where we don’t have a choice this year, but we are worried about Lake Mead getting to a point where it may not be feasible to generate hydropower or get water out of it.”

Guidelines that basin states and the feds approved in 2007 to operate the reservoirs, and the 2019 drought contingency plan, were aimed at preventing that from happening, Porter said. This proposal would reduce and, if continued in the future, remove that protection against those two eventualities, she said.

Beyond that, if such delivery cuts from Powell are needed, “The problem is that if it’s every year, there have to be substantial water use reductions throughout the basin,” said John Fleck, author of two books on the river and former head of the University of New Mexico’s Water Resources Research Program.

“You can’t solve this problem in future years by moving this water from one reservoir to another. Eventually we run out of water to use that way,” Fleck said.

Added Sharon Megdal, director of the University of Arizona’s Water Resources Research Center, “I think it’s a shock to the system to hear that so much water would be held back that’s expected to flow into Lake Mead. It’s another indication of the sorry state of the basin.”

Trujillo’s letter is obviously concerning and eye-opening about how serious the river’s situation is, said Mark Taylor, a CAP board member from Tucson.

“Every time we have some poor hydrology, it has a greater and greater effect on the system as a whole,” Taylor said. “As they get lower and lower water levels, every time this happens it has more serious consequences and they have to take drastic action like this.”

Original Article: [Tucson.com by Tony Davis](#)

Gov. Ricketts signs two bills to protect Nebraska’s water rights

Governor Pete Ricketts signed two bills on Monday meant to protect Nebraska’s water rights for generations.

The \$200 million LB 1023 is aimed at improving already existing water resources. This has money to build 3,600 acre lake off the Platte River between Lincoln and Omaha to construct Marina at Lake McConaughy and expand the Marina at Lewis And Clark Lake. LB 1015 allows Nebraska to build a canal on the South Platte River which flows from Colorado to Nebraska. This is better known as the Perkins County Canal Project. The Governor said it’ll protect Nebraska’s water flow from Colorado for the future.



VELES WATER WEEKLY REPORT

"It emphasize the importance of these projects, especially this Perkins county Canal project, to assure we'll continue to have the water resources for the future," said Gov. Pete Ricketts. "If we allow Colorado to take our water, it's that much less water we'll have for Lincoln drinking water."

Original Article: [10 11 Now by Madison Pitsch](#)

Northern Arizona may see drinking water cutoff as Lake Powell continues to dry up

Arizona's top water official says he never thought this day would come so soon. Federal officials are warning that the West's escalating water crisis could put some Arizona communities' "health and safety" at risk, by cutting off their supply of drinking water.

"This is really getting to (be) a health and safety issue... the health and safety of those who want to turn on the tap and have water," Tom Buschatzke, Arizona's director of water resources, said in an interview on this weekend's "Sunday Square Off."

Arizona and other Western states have until Friday to respond to an emergency request to postpone their water deliveries from the Colorado River, in order to shore up a rapidly diminishing Lake Powell.

If Lake Powell's levels continue to fall, the letter says, access to drinking water would be cut off for the 7,500 residents of Page, at the southwestern tip of the reservoir, and the neighboring Navajo community of LeChee.

"I never thought this day would come this quickly," Buschatzke said. "But I think we always knew that this day was potentially out there."

"We're going to have to learn to live with less water," he said.

The goal is to keep water levels at Lake Powell high enough to support power generation at the lake's Glen Canyon Dam and future water supplies to Lake Mead.

The two reservoirs on the Colorado River provide 40 percent of Arizona's water supply. But the lake levels have declined precipitously over the last 20 years, owing to a historic megadrought and the effects of human-caused climate change.

"Our task is to avoid the outcome in which the reservoirs are empty... and it's getting more difficult," said Buschatzke, who's shepherded Arizona water resources for 40 years.

Buschatzke did say the state would respond to the Interior Department's request to delay water deliveries.

"We will take actions to protect Arizona," he said. "I just can't say if it will be the specific action that the secretary proposed, but we will act."

Original Article: [12 News by Brahm Resnik](#)



VELES WATER WEEKLY REPORT

Western US scrambles to secure water supplies as it faces historic drought

Leaders in the Western U.S. are scrambling to secure precious water supplies for their states and cities as they battle the worst drought conditions in 1,200 years with little, if any, relief on the horizon.

Irrigation districts in many parts of the Southwest are already warning farmers to expect less water from rivers such as the Rio Grande this year, even as demand has surged following months of below-average precipitation. And in the Pacific Northwest, experts are forecasting one of the driest summers on record, noting that more than 70% of the region is already considered to be in drought, with nearly one-quarter experiencing "extreme drought."

To that end, federal water managers gathered for a virtual meeting on Thursday to share their proposals for keeping rivers flowing, including the Rio Grande, a major water source for millions of people, as well as thousands of miles of farmland stretching across Colorado, New Mexico, and Texas.

That effort includes offering compensation to farmers in some areas who forgo their annual irrigation allotments, as state and regional water managers seek to keep water flowing.

So far, over 200 irrigators in New Mexico and the Middle Rio Grande Conservancy District have enrolled in the program, according to the Associated Press. But officials concede that the fallowing program is only a temporary solution.

Casey Ish, a water resources specialist with the Middle Rio Grande Conservancy District, told the Associated Press on Thursday that officials there are now targeting fields that are "less productive" or that need to be rested. "For us, this is just one tool and one way the district is trying to help the state manage the state's compact debt, but we certainly don't anticipate pulling a third or half the district into a fallowing program year over year," Ish said Thursday. "That's not sustainable from a price point or an ag point."

Still, it's unlikely the West will receive an abundance of new water supplies in the near future, so officials have been forced to work with what they have.

Last month, the National Oceanic and Atmospheric Administration warned of a drier-than-average spring season ahead in its annual spring outlook and said historic drought conditions will likely "worsen" in the West in the coming months.

"Severe to exceptional drought has persisted in some areas of the West since the summer of 2020 and drought has expanded to the southern Plains and Lower Mississippi Valley," Jon Gottschalck, of NOAA's Climate Prediction Center, said in a news release.

"With nearly 60% of the continental U.S. experiencing minor to exceptional drought conditions, this is the largest drought coverage we've seen in the U.S. since 2013."

Original Article: [The Denver Gazette by Breanne Deppisch](#)



Fires then floods: Argentina province under water months after blazes

Argentina's northeastern province of Corrientes has been hit by widespread floods, leaving cattle fields under water and inundating roadways, just months after widespread wildfires ripped through the region and burned important wetlands.

The floods began in the last week after torrential rains for about seven days, mainly in the towns of San Luis del Palmar and Ituzaingó, near the provincial capital some 800 kilometers (497 miles) north of Buenos Aires.

Images from a Reuters visuals reporter showed areas covered in water that had been scorched and engulfed by fire amid a prolonged drought at the start of the year. In places, animals that fled flames were forced to swim through the deluge.

"We came out of the fire and a month later a flood hit us," Orlando Bertoni, head of Civil Defense Operations of Corrientes, told Reuters. Still, he added, the water was a relief despite road closures and having to evacuate some residents.

"It is welcome because there was a lack of water. But we have to be careful that it does not continue to rain. The big problem was the fire, which scorched everything, left everything burned. This rain has brought good relief."

The heavy rains of some 500 millimeters in a few days did not affect the provincial capital badly due to better drainage, but caused flooding in fields and rural towns, where streams overflowed their banks on their way to the mighty Parana River.

The fires that devastated the province from January to March affected more than 1 million hectares, leaving millions of dollars in losses and damaging protected plant and animal wildlife in Iberá National Park, an important wetland.

"Where we had the area most affected by the fires, we've now had loads of rain," Bertoni added.

The rains have abated in recent days, however, allowing water to drain and relieving some of the flooding.

"The water is running away, it is draining and it is slowly going down," Daniel Bertorello, commander of the Corrientes Volunteer Firefighters, told Reuters. "Hopefully the beautiful weather continues."

Original Article: [Investing.com/ Reuters by Sebastian Toba and Lucila Sigal](https://www.investing.com/news/world-news/argentina-floods-after-wildfires-2020)

India's PM Modi Turning Water Conservation Into A Mass Movement

India has embarked on a serious initiative on water conservation, turning it into a mass movement.

The initiative led by Prime Minister Narendra Modi is resonating well with the idea of 'Vasudhaiva Kutumbakam' — the world as one family.

India has already taken numerous measures in creating a focused ministry for water resources to implement a holistic conservation approach. With the renewed emphasis



VELES WATER WEEKLY REPORT

of this government, the issue received a shot in the arm with the boost to the cause in the last few years.

Apart from the river interlinking projects, the government has supported an innovative approach towards schemes with the 'Pradhan Mantri Krishi Sinchai Yojana', 'Per Drop More Crop', 'Namami Gange and Jal Jeevan Mission'. With the Jal Jeevan Mission's launch in 2019, around 90 million households have been provided with similar water connections at a rapid pace over the last two years alone, reported Oman Observer.

At this stage, around 125,000 villages in 100 districts can boast of adequate infrastructure to have enabled water supply in every household. Therefore, one could state with confidence that India has been able to manage the tough balancing act of meeting the expectations and well-being of over a billion lives as well as ensuring ecological advancement.

An interesting initiative to help with such conservation has been the newly-launched campaign 'Catch the Rain.' Simply put forth to prepare public awareness programs and special action plans for rainwater conservation in the country, the emphasis is laid on ensuring arrangements for rainwater harvesting before the onset of the monsoon.

Original Article: [Capital News](#)

Note the attachment is not an inducement to trade and Veles Water does not give advice on investments.