

Veles Water Weekly Report

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October 21st 2021

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WATER FUTURES MARKET ANALYSIS

Welcome to ***WATERTALK***

by Joshua Bell standing in for Robin Bieber

CLICK THE LINK BELOW

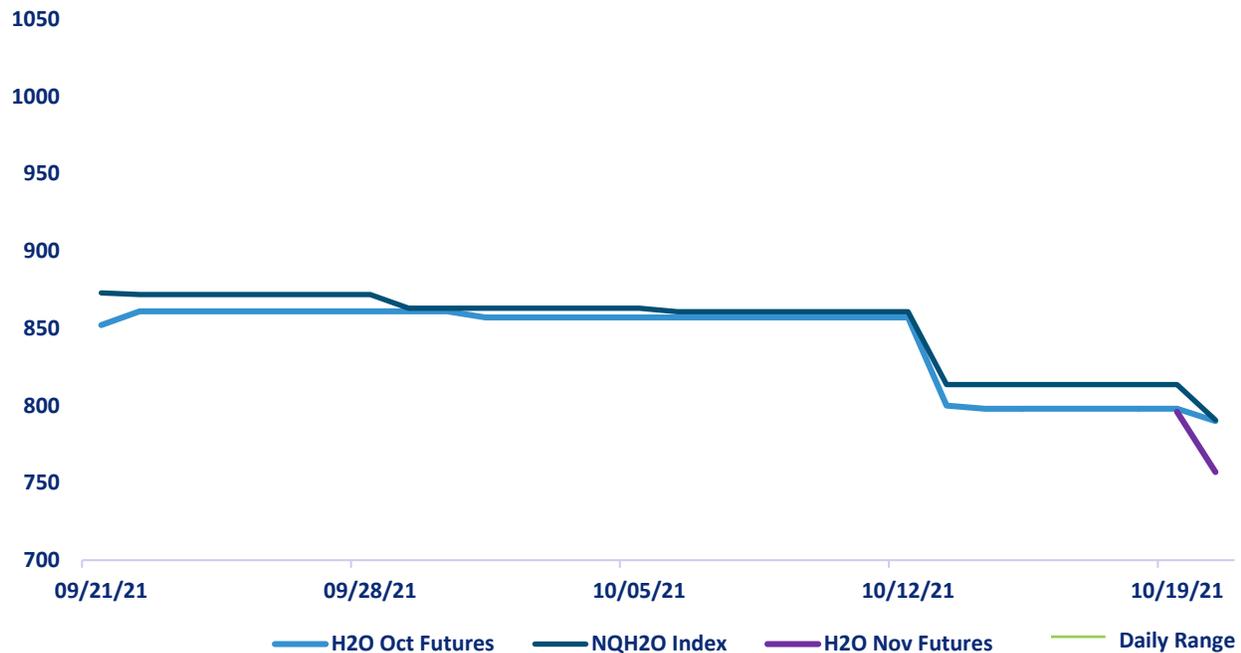
“A 2 minute technical analysis video of H2O futures”

<https://vimeo.com/637378816>



NQH2O INDEX PRICE vs H2O FUTURES PRICE

1 Month Price Performance NQH2O Index vs H2O Futures



Price Chart Based upon Daily Close

The October Futures contract expired at \$791 on the 21th Sept, the Index was down \$22.95 or 2.82% from the previous week. The new index level was published \$790.65. Over the past week the October contract had been closing at a discount to the index of \$13.60 - \$15.60. The November contract is now the front month contract and started trading on October 19th at \$769. With yesterday's new index level being published, the November contract closed at \$757.

NQH2O is up 58.18% YTD.

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

November 755@760

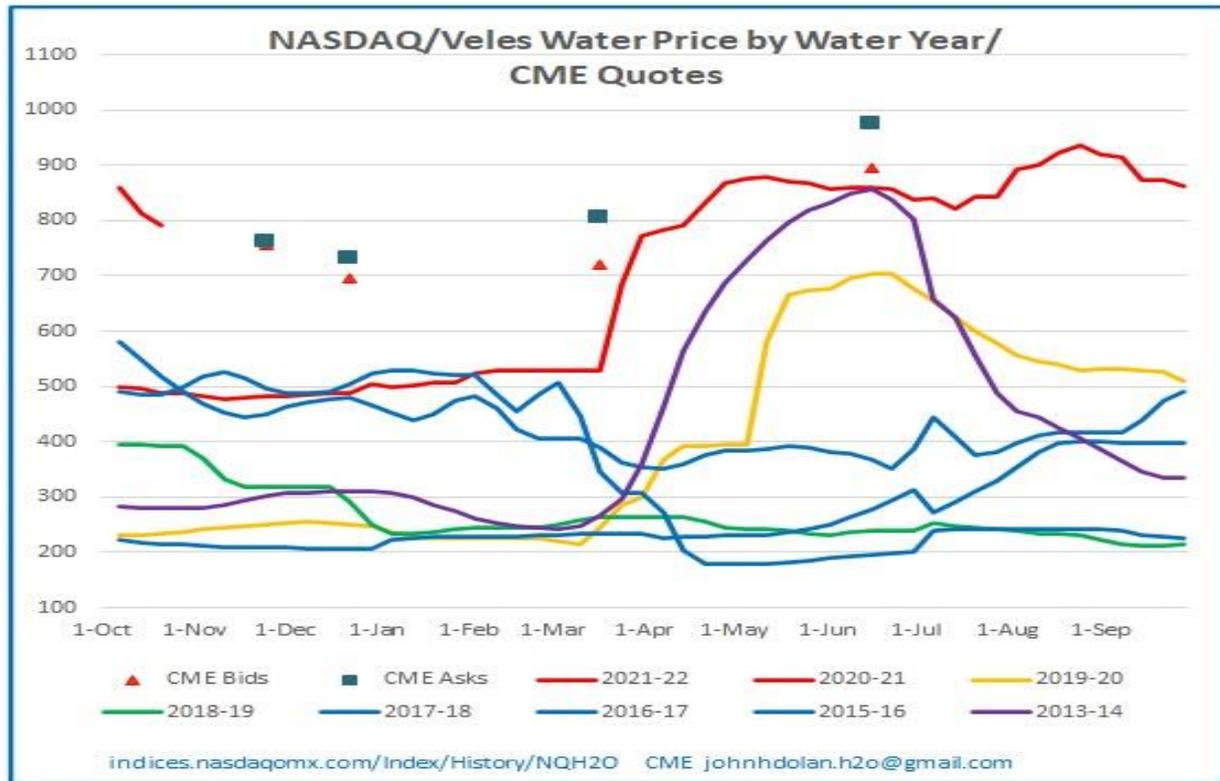
December 695@730

March 22 720@805

June 22 895@975



NQH2O INDEX HISTORY



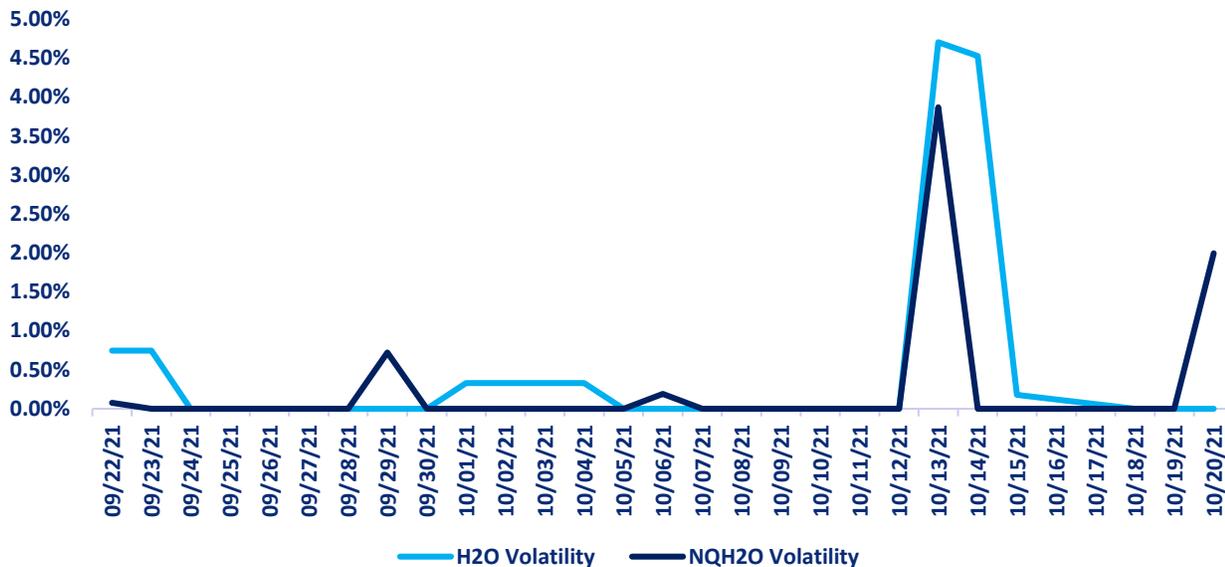
The graph above lays out the Nasdaq Veles water index by year, showing 2013- 2022. In very dry years, prices clearly rise through the spring, peaking in May to July (with the exception of 2015) as demand for water from farmers peaks. Prices then taper off heading into the winter on reduced demand, and 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.

(Reference: John H Dolan, CME Market Maker)



Daily H2O Futures Volatility vs Daily NQH2O Index Volatility



DAILY VOLATILITY

Over the last week the October future volatility high has been 4.53% on October 14th and 0.18% on the 15th, with lows of 0% for the rest of the week.

ASSET	1 YEAR (%)	2 MONTH (%)	1 MONTH (%)	1 WEEK (%)
NQH2O INDEX	34.34%	7.03%	4.62%	2.650%
H2O FUTURES	N/A	8.73%	6.63%	6.03%

For the week ending on the 20th October the two-month futures volatility is at a premium of 1.70% to the index, down 0.90% from the previous week. The one-month futures volatility is at a premium of 2.01% to the index, up 0.21% from last week. The one-week futures volatility is at a premium of 3.38% to the index, up 2.51% from the previous week. These volatility moves are reflecting the moves in the underlying index with further moves expected.

*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 Precipitation Index



Central Valley average is calculated using data from 19 weather stations in the Central Valley, California.
Data as of 21/10/2021

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)	0.7	0.28	33.36%	1	57
TULARE 6 STATION (6SI)	0.32	0.24	26.48%	0	28
NORTHERN SIERRA 8 STATION (8SI)	0.82	0.66	28.04%	0	46
CENTRAL VALLEY TOTAL	1.84	1.18	29.29%	0	43.67

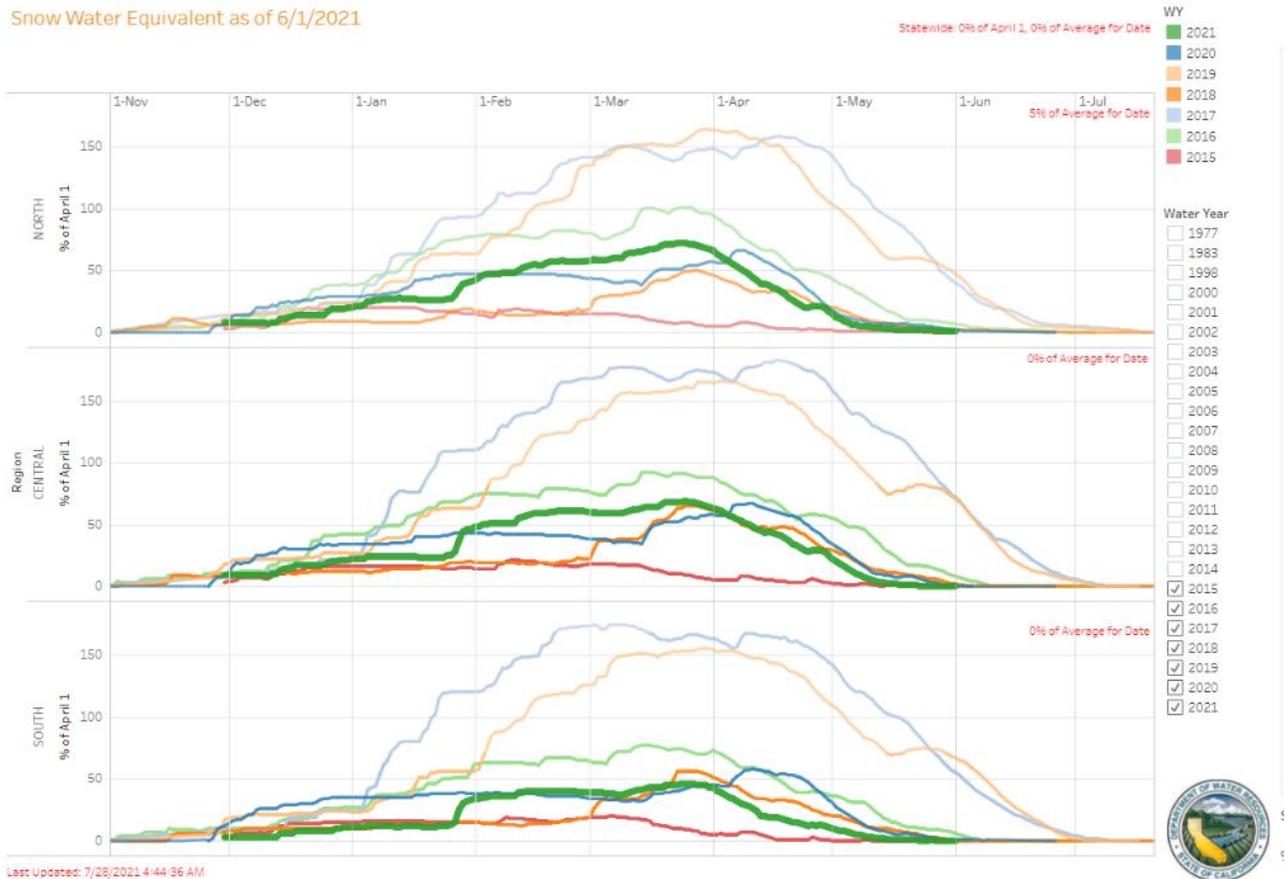
RESERVOIR STORAGE

RESERVOIR	STORAGE (AF)	% CAPACITY	LAST YEAR % CAPACITY	HISTORIC ANNUAL AVERAGE CAPACITY %
TRINITY LAKE	646,138	26	54	40
SHASTA LAKE	981,905	22	47	36
LAKE OROVILLE	789,459	22	44	37
SAN LUIS RES	205,392	10	47	20



SNOWPACK WATER CONTENT

Snow Water Equivalent as of 6/1/2021



Last Updated: 7/28/2021 4:44:36 AM



REGION	*SNOWPACK WATER EQUIVALENT (INCHES)	WEEK ON WEEK CHANGE %	% OF AVERAGE LAST YEAR	% OF 20 YEAR HISTORICAL AVERAGE	% OF HISTORICAL **APRIL 1ST BENCHMARK
NORTHERN SIERRA	0	0.00%	0	0	0
CENTRAL SIERRA	0	0.00%	0	0	0
SOUTHERN SIERRA	0	0.00%	0	0	0
STATEWIDE	0	0.00%	0	0	0

*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.

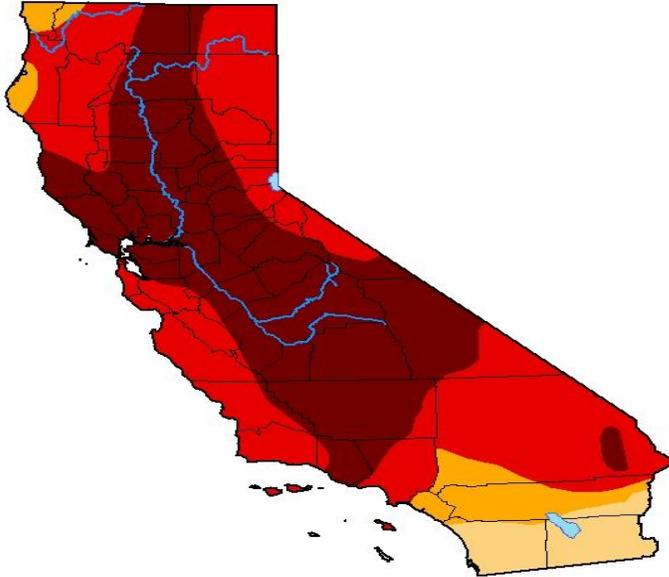
** April 1st is used as the benchmark as it when the snowpack in California is generally deepest. It has been used the benchmark date since 1941 by DWR and can be used to predict spring river flow.



DROUGHT MONITOR

U.S. Drought Monitor California

October 12, 2021
(Released Thursday, Oct. 14, 2021)
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	93.93	87.18	45.66
Last Week 10-05-2021	0.00	100.00	100.00	93.93	87.88	45.66
3 Months Ago 07-13-2021	0.00	100.00	100.00	94.75	85.73	33.32
Start of Calendar Year 12-29-2020	0.00	100.00	95.17	74.34	33.75	1.19
Start of Water Year 09-28-2021	0.00	100.00	100.00	93.93	87.88	45.66
One Year Ago 10-13-2020	15.40	84.60	67.54	35.61	12.74	0.00

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>

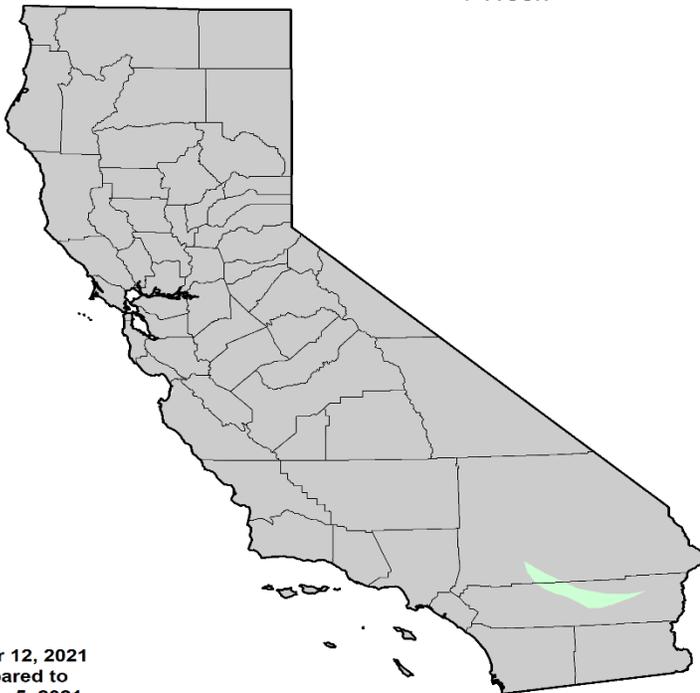
Author:

Adam Hartman
NOAA/NWS/NCEP/CPC



droughtmonitor.unl.edu

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



October 12, 2021
compared to
October 5, 2021



- 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

droughtmonitor.unl.edu

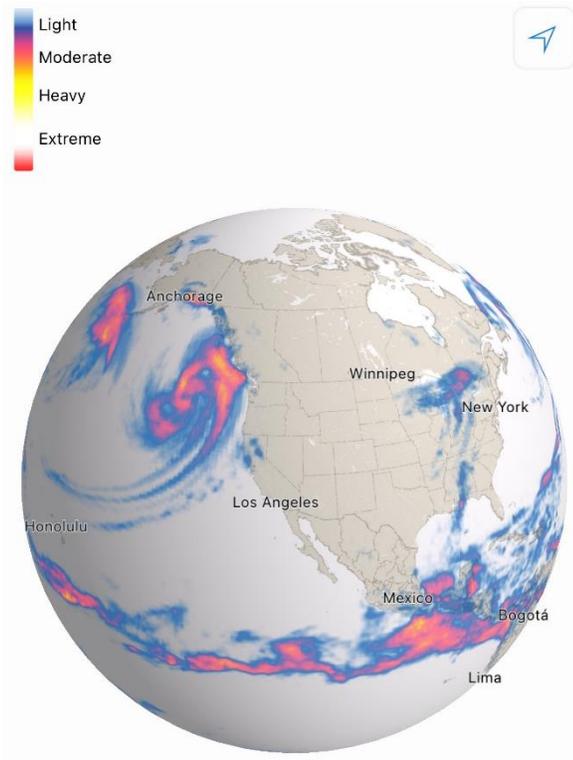
The US Drought Monitor release their statistics with a 1-week lag to this report. Over the past week there has been 0.7 improvement in Extreme (D3) drought condition in Southern CA.

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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



The current satellite picture shows a frontal system off the Northwestern region of the US. This frontal system will bring significant precipitation to this region and should bring rain as far south as the Los Angeles area.

At present over Alaska there appears to be a further frontal system brewing which should follow a similar path bringing further precipitation to the region.

Monsoonal effects are not prevalent on this satellite picture at present as it appears this moisture inflow from the South may have ceased for the year.

Our long-term models are still showing the potential for greater precipitation to reach the SW and Western US this winter.

Ref. Dark Sky



VELES WATER WEEKLY REPORT

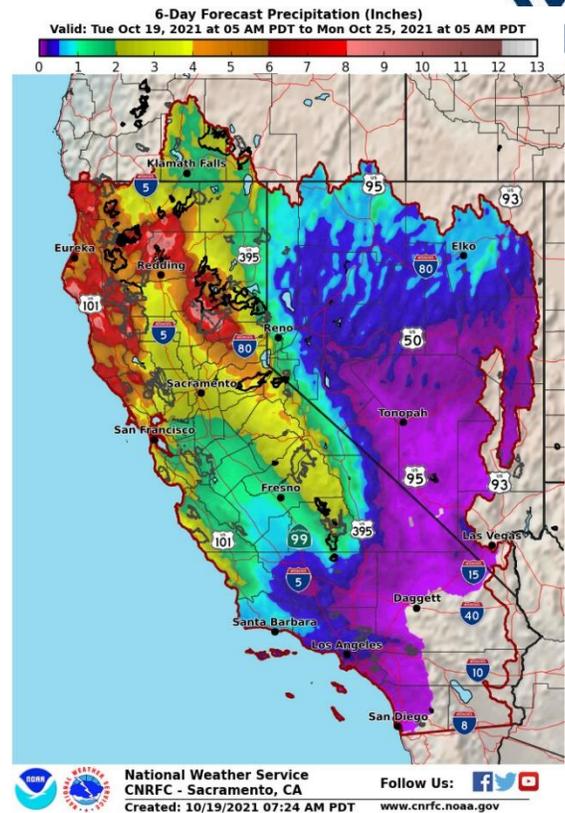
10 Day Outlook

Expect moderate to locally heavy precipitation over the North Coast Thursday night into Friday morning, with heaviest amounts from Cape Mendocino Northward through Friday am, shifting into Shasta and the Northern Sierra Friday late morning, then quickly fizzling through the remainder of the day. This wave remains more shallow than the previous, with the majority of precipitation staying well to the north of the I-80 corridor.

Saturday will see a weak short wave rotate through the back side of the last trough, bringing light showers to areas north of I-80, with much lower amounts than the previous days. The strongest system looks to be setting up for Saturday night into Monday, though models disagree significantly on timing. The EC sends heavy precipitation into the North Coast Saturday evening, into the Central Coast and Sierra by Sunday evening, with a secondary wave bringing additional moderate to heavy precipitation Sunday night into Monday. This Monday period extends south into Southern CA, with the Southern Sierra and Coastal ranges of SoCal seeing locally heavy amounts through the day on Monday. The GFS is a bit different, holding off on any uptick in precipitation until Sunday afternoon, but keeping the same pattern of moderate to heavy precipitation over much of the state, especially coastal areas of Central and Southern CA Sunday night into much of Monday, along with the Sierra.

Overall, this looks to be a very wet 8 days for the region, with the North Coast and Northern Sierra potentially seeing 5-10" precipitation through Monday, The Central Coast may see 2-4" through early Monday, with much more possible after the current forecast period. Sacramento Valley could see 2-5" precipitation, and 0.5-1.5" over the San Joaquin. As for freezing levels, expect this series of systems to be on the warmer side, due to the moisture streaming in from the Pacific and relatively shallow trough. Freezing levels generally 7-9-kft near the CA/OR border, 8-10-kft for the Northern Sierra, and over 10-kft for Central CA and Sierra southward.

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





An active storm track across the western U.S. this week brought seasonal to cooler than normal temperatures and beneficial precipitation to much of the region. Improvements were mainly limited to portions of the Pacific Northwest and Four Corners due to improving soil moisture conditions. For the Four Corners region, this precipitation was on the heels of an active Southwest Monsoon season, so reduced evaporative demand coupled with above-normal precipitation led to immediate improvements. For much of the remainder of the West, more precipitation is needed to recharge soil moisture and increase groundwater levels, stream flows, and reservoir levels. The only minor degradations of drought in the Western Region was in southeastern New Mexico and western Montana, where above-normal temperatures and high evaporative demand warranted expansion of D0 (abnormally dry) and D3 (extreme drought) areas, respectively.

Reference: Brad Rippey, U.S. Department of Agriculture
Richard Heim, NOAA/NCEI

WATER NEWS

CALIFORNIA WATER NEWS

Newsom Declares A Drought Emergency In California

Gov. Gavin Newsom today declared a drought emergency for the entire state of California, as conservation efforts continue to fall far short of state targets.

Newsom also authorized California's water regulators to ban wasteful water use, such as spraying down public sidewalks, and directed his Office of Emergency Services to fund drinking water as needed. But he stopped short of issuing any statewide conservation mandates.

"As the western U.S. faces a potential third year of drought, it's critical that Californians across the state redouble our efforts to save water in every way possible," Newsom said in a statement.

Today's announcement extends drought emergencies, already declared in 50 counties, to the eight remaining counties where conditions had thus far not been deemed severe enough: Los Angeles, Orange, Riverside, San Bernardino, San Diego, Imperial, San Francisco and Ventura.

The emergency declarations are aimed at easing responses to the deepening drought — such as emergency bottled water purchases or construction to bolster water supplies —



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by reducing environmental and other regulations. Under the proclamation, local water suppliers must begin preparing for the possibility of a dry year ahead.

“We think we’ll be able to manage through this year,” said David Pettijohn, director of water resources at the Los Angeles Department of Water and Power. “Next year is the issue. And we don’t know what the water year is going to look like. Nobody can predict the weather.”

But California’s water watchers say that without a conservation mandate, California is losing time, and water. “We know mandates are more effective than voluntary calls,” said Heather Cooley, director of research at the Pacific Institute, a global water think tank. “It takes time to ramp up, and because of the delay in asking Californians to save water this spring, we are further behind than we should be.”

Conservation Improving, But Still Short Of Goals

New data released today by the State Water Resources Control Board reveals that Californians cut their water use at home by 5% in August compared to August 2020, an improvement over the reductions of less than 2% in July but still far short of the voluntary 15% cuts Newsom urged in July.

The hard-hit North Coast, where the state’s first drought emergencies were declared in April, continued to show the biggest drops in household water use — with an 18.3% decrease compared to August of last year. Conservation numbers tapered off moving south, with the San Francisco Bay Area conserving nearly 10% more water than last August.

The South Coast region — which includes Los Angeles, Orange, San Diego and Ventura counties — showed an improvement over July, when water use was roughly even with last year. In August, residents used about 3.1% less water than they did in August 2020.

Original Article: [LAist/ CalMatters by Rachel Becker](#)

Water budgets and drought fees coming to 1 million residents in San Jose and neighboring communities

In the latest fallout from the worsening drought, residents of San Jose — which received the lowest rainfall in its recorded history last year — and surrounding communities are about to be given tougher water conservation rules than any major city in California.

The San Jose Water Company, a private firm that provides drinking water to 1 million people in San Jose, Cupertino, Campbell, Los Gatos, Saratoga and Monte Sereno, has begun sending notices to residents informing them it is moving forward with mandatory rules to set monthly residential water budgets with financial penalties for homeowners who exceed them.

The system, which the company last put in place in 2015 and 2016 during California’s previous drought, will require residential customers to cut water use 15% from 2019 levels or pay \$7.13 in surcharges for each unit of water they use above that amount.

Each unit of water is 100 cubic feet, or 748 gallons — the standard measurement on most water bills.



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The last drought was for five years. We're in the second year of this one," said John Tang, vice president of San Jose Water Company. "We don't know how long it will go on. Every drop of water that we can save now is going to blunt the pain that we feel next year."

Tang noted that reservoirs around Northern California and in Santa Clara County are at record low levels.

"We're taking this very seriously," he said. "We're hopeful Mother Nature is going to deliver this winter. But hope is not always a good strategy."

The company will hold a public hearing on Oct. 28, and if its proposed rules are approved by the California Public Utilities Commission, as expected, they will take effect on Nov. 15.

The water conservation target comes from Silicon Valley's largest water provider, the Santa Clara Valley Water District, a government agency in San Jose. The district is the wholesale water provider for the county. It buys water from federal and state agencies, maintains groundwater and 10 local reservoirs and sells it to cities and private water companies such as San Jose Water that deliver it to homes and businesses.

"We're all in this together," said Rick Callender, CEO of the district, on Thursday. "Everybody needs to do their part. This drought is super serious."

On June 9, the district's seven-member elected board of directors declared a water-shortage emergency and told cities and private water companies in the county to cut water use 15% from 2019 levels, the most recent non-drought year.

That cut is the equivalent of a 33% reduction from 2013 levels — the baseline before the prior drought. In response, local cities and other water providers have asked the public to conserve by such measures as watering landscaping no more than twice a week. But there is almost no enforcement. And so far county residents are failing to meet the 15% conservation target.

In August, they cut water use by 9% from August 2019 levels, up from 6% in July.

Original Article: [Mercury News by Paul Rogers](#)

La Niña brings more worries amid drought

Though it's unclear what the effects of the La Niña climate expected this winter will be for Northern California, drought-ending rain is likely not among them.

The climate pattern brought on by cooler-than-usual surface water in parts of the Pacific Ocean creates varying weather globally, but historically the phenomena has meant drier conditions in the southern part of the state and wetter conditions in the Pacific Northwest.

"Where Northern California is, it's kind of in an awkward spot for La Niña," National Weather Service meteorologist Anna Schneider said. "It can kind of go either way. It's difficult to tell but there's equal chances of above and below normal precipitation."



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Currently, the Climate Prediction Center has a La Niña watch, and La Niña is favored to carry through the winter, Schneider said. But even in the event of above average rain, an amount required to get out of the current drought is very unlikely, she said.

The majority of the state, 88% including San Mateo County, is in an “extreme drought” which entails a year-round fire season and the potential for fires to occur in typically wet areas, according to the National Integrated Drought Information System.

The drought is already “up there with some of the worse ones,” Schneider said.

Rainfall is commonly measured in the 12-month period from July 1 to June 30. The most recent period was the driest in recorded history — which includes 126 seasons dating back to 1895, according to data compiled by Jan Null, a forecaster who runs Golden Gate Weather Services.

The San Francisco Bay hydrologic region, which includes San Mateo County, had the lowest percentage of rainfall out of normal levels for the state, at 39% for the most recent period. Statewide, rainfall was 49% of normal. The two most recent years combined accounted for 60% of normal rainfall for a two-year period, the second driest two-year period on record, according to the data.

Original Article: [The Daily Journal by Corey Browning](#)

Central Valley Project begins 2022 water year with 3.21 million acre-feet of storage

As severe drought conditions continue, the Bureau of Reclamation’s Central Valley Project began the 2022 water year with 3.21 million acre-feet of water—one of the lowest starting points in recent years. CVP major reservoirs include: Trinity, Shasta, Folsom, New Melones, Millerton, and the federal share of San Luis Reservoir—approximately 52% of a 15-year average. The water year begins Oct. 1 each year and ends Sept. 30.

“After a dry 2020 water year, a critically dry 2021, and beginning the 2022 water year with one of the lowest carryover storage amounts in recent years, Reclamation remains all hands on deck and fully committed to planning for another dry year,” said Regional Director Ernest Conant. “We will continue to collaborate with our water users, stakeholders, and agency partners to develop and implement proactive measures and creative solutions to get through the coming water year together and best manage our critical water resources.”

Water years 2020 and 2021 are the second driest two-year period on record, behind 1976-1977. Although the Sacramento and San Joaquin valleys received well-below average rainfall, the snowpack in March 2021 indicated that sufficient reservoir inflow was likely available to meet CVP requirements. Conditions significantly changed at the end of April 2021, however, when reservoir inflow from snowmelt was significantly less than expected. Inflow to Shasta Reservoir, California’s largest reservoir, was the lowest on record during the 2021 water year.



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The table below shows reservoir capacities and end-of-year storage amounts for water years 2020 and 2021 for major CVP reservoirs. The following table compares end-of-year storages from water year 2017 to 2021. The amount of stored water at the end of the water year reflects the amount carried over into the new water year. One acre-foot is the volume of water sufficient to cover an acre of land to a

CVP Reservoir (Million Acre-Feet)	Total Capacity (Million Acre-Feet)	2021 WY Ending Storage (Million Acre-Feet)	2020 WY Ending Storage (Million Acre-Feet)
Trinity	2.45	.71	1.35
Shasta	4.55	1.08	2.20
Folsom	.97	.23	.42
New Melones	2.42	.84	1.52
Federal San Luis	.96	.04	.36
Millerton	.52	.31	.16
Total	11.8	3.21	6.01

Comparison of Previous End-of-Year Storage in Major CVP Reservoirs (Million Acre-Feet)						
2021	2020	2019	2018	2017	1977 (Driest Year)	1983 (Wettest Year)
3.21	6.01	9.02	6.8	10.3	1.5	9.8

depth of one foot.

The CVP is the largest single source of irrigation water in California, typically supplying water to about 3 million acres of agricultural land in the San Joaquin and Sacramento valleys. The CVP also provides urban water for millions of people and industrial water essential to the San Francisco Bay Area's economy. Water from the CVP is also essential for the environment, wildlife and fishery restoration, and hydroelectric power production.

During the 2021 water year, CVP powerplants generated about 2.9 billion kilowatt-hours; well below an average year, which is about 4.5 billion kilowatt-hours. Project use is anticipated to have consumed about 20 percent of this energy; the remaining energy was made available to public agency contractors serve by the Western Area Power Administration.

Reclamation continues to work with federal and state partner agencies and CVP water and power customers to prepare for potentially ongoing drought conditions. Another consecutive dry water year would present extreme operational challenges for the CVP. Original Article: [The US Bureau of Reclamation](#)

California Has Driest Year Since 1924



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California recorded its driest year in a century amid a period of above-average wildfires, extreme heat and extended droughts.

The 12-month period from Oct. 1 through Sept. 30 when surface-water supply is tracked, known as a water year, was the second driest on record based on precipitation and runoff, according to the California Department of Water Resources. Only in 1924 was there even less rain and snowfall in a year.

California and other parts of the American West are suffering through one of the worst droughts on record. Dry weather, warmer temperatures, reduced snowmelt and population growth have all contributed to drought conditions, which have put added strains on water resources.

“Extreme conditions that once were rare are occurring with increased frequency,” the California Department of Water Resources said in a report. “California’s climate is transitioning to a warmer setting in which historical relationships among temperature, precipitation, and runoff are changing.”

Most of California is experiencing extreme or exceptional drought, according to the U.S. Drought Monitor, which publishes a map of drought conditions that is updated weekly. Almost half the state falls in the worst category.

Gov. Gavin Newsom has asked Californians to cut their water use by 15% in light of the conditions. The state is home to about 70,000 farms and ranches, with a combined output of about \$50 billion a year. Many farmers have had to scramble to find enough water.

Several heat waves over the summer blistered California, as well as other parts of the West. High temperatures, combined with the drought, left vegetation, branches and downed trees tinder-dry and easily combustible, accelerating the speed at which fires can spread. As of Oct. 6, 7,883 fires have burned through more than 2.48 million acres in California, according to the most recent state and federal data. The five-year average over that same period is 7,312 fires and more than 1.2 million acres.

As winter approaches, there is little indication that weather patterns are going to change significantly.

The weather phenomenon La Niña is expected to alter the U.S. winter for a second year in a row, according to the National Oceanic and Atmospheric Administration. La Niña winters, which are generally drier and warmer in parts of the U.S., could have a particularly devastating effect on the Southwest if dry weather continues to strain the region.

Original Article: [The Wall Street Journal by Steven Russolillo](#)

Los Angeles shifts water supplies as drought hammers State Water Project

Cities in Southern California rely largely on water flowing through aqueducts from the Colorado River and the Sierra Nevada. But some parts of the region, such as Ventura County and northwestern L.A. County, don’t have access to Colorado River water and



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depend entirely on the water that comes from the Sierra through the State Water Project.

With the project's supplies now severely limited due to the drought, Southern California's water agencies have begun shifting these precious supplies to areas that need it most, while Los Angeles is taking less from the State Water Project and instead receiving Colorado River water to fill the gaps.

Los Angeles Mayor Eric Garcetti announced an agreement on Tuesday, saying the city's Department of Water and Power is assisting the region by taking less water from the State Water Project, helping to preserve those supplies so that other districts will get the water. In turn, Los Angeles is receiving additional Colorado River water that has been stored by the Metropolitan Water District of Southern California.

"This partnership is about more than how we respond in a dry year — it's about how we prepare our region for tomorrow," Garcetti said.

Garcetti announced the city's participation in shifting water supplies during a news conference at the Los Angeles Reservoir, standing beside officials from the MWD and other water agencies. They urged people across Southern California to redouble their conservation efforts and continue to reduce water use.

The shift in water supplies by the Metropolitan Water District is making an extra 20,000 acre-feet of water available from the State Water Project for communities that don't have access to other supplies, and will make an additional 40,000 to 50,000 acre-feet available next year, said Gloria Gray, chairperson of the MWD board.

"That's water that is available for 150,000 homes. That's significant," Gray said.

This year, with California's largest reservoirs at some of their lowest levels ever, water agencies in Southern California received just 5% of their full allocations from the State Water Project.

Original Article: [News Nation USA by Oliver Moure](#)

California Federal water officials ask judge to OK water restrictions amid pressure to rollback Trump plan

Amid the fallout of California's worst water year in its history, the state will find its two primary water arteries under the management of a temporary, plan tendered to a Federal judge on Thursday, throwing out 2019 environmental rules that boosted water supplies to the Central Valley and Southern California.

The plan, which comes amid a cacophony of lawsuits waged both by the Newsom administration and environmental interest groups, was prepared by representatives of the California Department of Water Resources, California Department of Fish and Wildlife, U.S. Bureau of Reclamation, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service.

From a legal standpoint, the so-called "interim operations plan" attempts to halt the pending suits to allow the Biden administration to begin – and hopefully complete – a



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new set of environmental rules, known as biological opinions, governing water supplies via the Central Valley Project.

The Trump administration tendered a set of biological opinions in 2019 governing the Central Valley Project, which are the subject of the suits and the sudden, Biden-led bureaucratic rewriting effort.

The newly-drafted plan would be come operational and supersede the 2019 biological opinions for upon a court order.

If ordered, the interim plan for water deliveries through the Federally-operated water system would run through Sept. 30, 2022, the conclusion of the water calendar year.

Among a litany of state and Federal initiatives to be undertaken during the 2022 water year, the interim plan prioritizes water deliveries for municipal and industrial water users on the basis of meeting minimum health and safety requirements.

Original Article: [The San Joaquin Valley Sun by Alex Tavlian](#)

US WATER NEWS

White House launches climate initiatives to arm communities against floods, extreme weather

The White House announced Tuesday that it would work to revise building standards for flood-prone communities across the country in the face of climate change, while launching tools to make climate information more accessible to the public.

The move is part of the Biden administration's broader effort to push the United States to reckon with the costs of global warming by factoring in the long-term consequences of decisions being made today.

"As our communities and companies grapple with climate risk, we need to arm them with better climate data — empowering decision-makers across our country and economy with information and insights on how to operate in our 'new normal,' " said Ali Zaidi, White House deputy national climate adviser, in a statement.

The Federal Emergency Management Agency issued a request for information Tuesday to guide how it would update the National Flood Insurance Program's flood plain management standards, which have not been changed substantially since 1976. It is also seeking input on better protecting the habitats and populations of threatened and endangered species in the face of these risks.

The agency said it will gather public comments "to inform potential revisions that protect households from flood damage, make communities more resilient, and reduce a major source of financial risk to the country," according to the White House.



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The program requires communities to adopt these standards, which are intended to reduce flood damage to properties, as a condition of eligibility for federal flood insurance.

Despite the increasing risks, some flood-prone communities have continued unchecked development, which updated standards could halt.

Original Article: [The Washington Post by Kasha Patel](#)

Southern California, Arizona water suppliers collaborate on water recycling concept

The Metropolitan Water District, which provides water to six counties in Southern California, announced a partnership on Wednesday, Oct. 13 with Arizona water agencies to collaborate on planning for what could become one of the nation's largest water recycling plants, producing up to 150 million gallons daily to serve more than 500,000 homes.

Central Arizona Project will provide \$5 million and the Arizona Department of Water Resources will provide \$1 million for environmental planning of the Regional Recycled Water Program, which will purify treated wastewater to produce a new, drought-proof water supply for Southern California. If the full project is developed, it would cost \$3.4 billion and improve sustainability of Colorado River water supplies.

Environmental planning for the project began last year and will cost about \$30 million over three years. Officials said the investment by Arizona agencies could lead to a long-term agreement to fund the project's construction and operation, in which the Arizona agencies help offset the project's cost for Metropolitan, and in return receives Colorado River water.

"This project could help the entire Southwest. We know that eliminating the supply-demand imbalance that threatens the Colorado River will take both reducing demand, through conservation, and adding new supplies, like recycled water," Metropolitan Water District General Manager Adel Hagekhalil said in a statement. "That's why our partners in the Lower Basin are interested in helping us develop the project."

The feasibility of developing the project will be determined following the environmental planning process.

Original Article: [The Daily News by City News Service](#)

What Facebook's Water-Positive Goal Means for Water-Stressed Communities

About 95 percent of the western U.S. is now under drought conditions, and southwestern states — Arizona, Nevada and Utah, as well as parts of California, Colorado and New Mexico — are suffering a "megadrought" that has been building for over 20 years. The megadrought already outstrips the Dust Bowl of the 1930s and is the worst drought in the region in 500 years. According to scientists, this is the first megadrought caused and exacerbated by climate change. Unfortunately, getting back to pre-drought levels would likely require a decade of wet years, which under current climate scenarios is unlikely.



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For people and businesses in the southwest, this means they will need increased emphasis on water conservation and watershed restoration. Luckily, conservation strategies and policies had been ramping up even before the drought lurched into megadrought status over the past few years. In addition to shifting behaviors of consumers — for example, shifting away from water-intensive landscaping — thirsty businesses will need to reconsider their strategies in the region. To that end, Facebook recently announced an aggressive company-wide water goal, including efforts focused on the watersheds in the southwest where Facebook has operations.

On August 19, Facebook announced a new goal to be “water positive” by 2030 — that is, it intends to restore more water than it consumes globally. The company had already worked to reduce water consumption at its data centers through increased deployment of renewable energy: In 2020, the footprint of the tech company’s global office and data centers reached the milestone of being supported by 100 percent renewable energy. The added benefit is that wind and solar photovoltaic power systems use negligible amounts of water, reducing the company’s water footprint as well. According to Facebook, the renewable energy switch alone has led to a savings of 1.4 billion cubic meters (over 380 billion gallons) of water, enough to fill 560,000 Olympic-size swimming pools.

“Facebook’s data centers on average already use 80 percent less water than the industry standard,” Stefanie Woodward, water program lead for Facebook, told TriplePundit. “Now with this new goal, we will restore more water than we consume through conservation and ecosystem restoration, water supply and access, and investing in technology solutions to sustain watersheds into the future.” The company has started working in areas identified as those with high levels of water stress: New Mexico, Arizona, Texas, Utah, Oregon and California.

In order to reach its ambitious goal, Facebook has to partner with stakeholders in the watershed. “One thing that’s unique about our water restoration is that we work not just with local nonprofits, but also with utilities,” Woodward said. When looking to establish water restoration and conservation projects, the company tries to find on “projects that have a social justice or climate resilience component” in the watersheds where Facebook has operations, she continued. To that end, so far the company is engaged with 14 different water restoration projects across six basins, which restored 595 million gallons of water in 2020.

Original Article: [Yahoo Finance by Kate Zerrenner](#)

Different water projects require different funding plans

Water works projects of all kinds can be costly, especially ones that are major.

Oftentimes projects are just for routine maintenance or replacing waterlines that are old and cities and towns use funds set aside from their monthly fees to cover the costs.

But in some cases, a project can end up being major that requires local municipalities to borrow to cover the higher costs.



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At a recent city council meeting in Ligonier, council members approved the final reading on an ordinance that begins the process of selling bonds to cover some water improvements in the city.

Jeff Boyle, water works superintendent, said the bonds will be used for projects that involves maintenance and painting being done on the water tower and upgrades to the water lines on Second and Third streets.

Ligonier's water department operating fund is currently at \$660,035.88 and its depreciation for capital and larger expenses is at \$65,032.37.

Municipal bonds are a financing mechanism available to local governments allowing them borrow money, usually at very low interest rates, and pay the amount back with future tax or fee revenue.

Those municipal bonds are an investment for buyers, who purchase the debt and then make a return on the interest. Since bonds secured by tax dollars — and a local government can raise its tax rate to ensure it makes the payments — municipal bonds are extremely low risk as compared to stocks or other debt investments.

When communities tap bond revenue for a project, it's usually because the size and scope of the project is something that can't be afford out of pocket.

Scott Mosley, Kendallville's water superintendent, said municipalities use bond funds for projects that are more expensive and don't have enough funds in their regular budgets. One example he pointed out was maintenance done on water towers. The paint along with sandblasting can cost up to \$180,000. This type of maintenance is usually done every 10-20 years.

If you add that up along with facility upgrades, the total amount can rise up to \$300,000. "Since you only do it about every 20 years, the rules and regulations change a lot," he said. "This is regarding what types of safety features you need to have, how big the catwalk needs to be and things that keep people from falling into the center of the tank. That's how much has changed over the last 20 years."

Another challenge comes from the Indiana Utility Regulatory Commission. He said the IURC used to pose a number of difficulties for municipalities like Kendallville when it came to holding onto funds to do major projects back when the city was under their jurisdiction.

"They're afraid that's too much money hanging around," he said.

The city has been out from under the agency's control for nearly 15 years.

He said the IURC often pushed municipalities to sell bonds in order to fund projects because they often didn't trust them with holding onto to their own funds and they would be tempted to waste their money on other things.

Kendallville's Water department budget for 2021 is \$2,648,000, \$2,418,000 of it for operations and \$230,000 for improvements. The city currently has \$1,093,437.06 in its Water Operation Fund, so it has a healthy balance available for capital work.

"We're going to try to paint those (water) towers out of our own coffers," he said.



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He added that the department's budget is pretty healthy right now, but having to do upgrades and maintenance on the city's three water towers will be very expensive to do and they won't be able to do all three at the same time.

Unexpected events can get the department's incoming projects for the year out of order. He referred to the water main break that occurred on South Main Street back in 2019, where five different mains broke along the water lines that run through South Main Street to Waits Road.

The cost to repair those main lines were \$230,000.

"Even though that kicked us to the side, we've recovered from it pretty well and it took us about a year to recover from that," he said.

The city keeps 10% of its budget set aside for routine maintenance for the year. He said in the past, the state mandated that municipalities reserve 10% of its water department's budget for repairs and maintenance.

"That's no longer in place and they now just recommend that to us," he said.

The water lines in Kendallville were first installed in 1887 and Mosley said many of those lines are still being used today. The repairs between South Main Street and Waits Road was only a half mile of water lines and the city has a total of 65 miles.

He said the city can't afford to change out water lines due to the high costs, so they just repair them instead.

"Every now and then, one will totally break and you have no choice but to change it," he said.

In the case of doing major projects, he said the state doesn't often help local water works departments with funding and makes them sell bonds to fund them on their own.

The state would only come in to help if the situation involves water being contaminated and considered unsafe.

Original Article: [KPC News by Joe McQueen](#)

Flooding could leave billions of US municipal debt under water

About a quarter of all US infrastructure is at risk of serious flooding, new research shows, which could hit prices in the \$4tn municipal bond market and jeopardise the creditworthiness of city and state issuers. New York-based climate research firm First Street Foundation last week published data showing that US infrastructure — including roads, hospitals and power stations — is at a greater risk of flooding than has previously been estimated. This has serious implications for state and city coffers, for property values, and for mortgage-backed securities and municipal bonds. Louisiana, Florida and West Virginia have some of the worst flood prospects in the contiguous US, the First Street Foundation data show. In Louisiana, 45 per cent of all critical infrastructure facilities, a category which includes hospitals, fire stations, airports and power plants, are at risk of being rendered inoperable by flooding this year. Also at risk of shutdown are 39 per cent of roads and 44 per cent of social infrastructure — schools, government buildings and houses of worship. In some cities in Louisiana, such



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as Metairie and New Orleans, the risk for all those categories is near 100 per cent. Municipal debt has long been a haven asset class, popular with long-term investors including pension funds and insurance companies. While the default rate on muni bonds has historically been low, it could rise as cash-strapped cities struggle to keep up with the costs of extreme weather damage. Muni bonds also tend to have maturities between 15 and 30 years; the average muni maturity issued last month was 18.6 years, according to the Securities Industry and Financial Markets Association. With the climate changing so quickly, that leaves a lot of time for disaster to strike. Investors also face the risk of geographic concentration. Owning munis issued by the state in which you live affords investors certain tax benefits, so muni investors tend to have high degrees of exposure to certain regions. A severe weather event could therefore quickly wipe out a huge amount of value in a muni portfolio. “It is clear (climate) is a risk factor” in the municipal debt market, said Peter DeGroot, head of municipal bond research at JPMorgan. “The increasing frequency and intensity of weather events is a costly and complex issue for the federal government — and for state and local governments as well.”

Original Article: [The Financial Times by Kate Duguid](#)

Harris argues for Biden climate agenda at sinking Lake Mead

Vice President Kamala Harris stood before the record-low water levels of Nevada’s Lake Mead on Monday and made the case for the Biden administration’s climate change agenda by warning that “this is where we’re headed.”

“Look at where the water has receded over just the last 20 years,” she said, referring to the “bathtub ring” of minerals that marks where the reservoir’s water line previously stood. “That space is larger than the height of the Statue of Liberty.”

The vice president pitched the administration’s infrastructure and social safety net agenda as critical to tackling the effects of climate change — which scientists say intensify extreme weather events such as heatwaves and droughts.

Democrats have struggled to win support for that plan from some members of their party, who want to winnow down its \$3.5 trillion price tag.

Harris made the case for the package by connecting human-caused climate change to the scene she stood near, saying emissions are “part of what is contributing to these drought conditions.”

“The bipartisan infrastructure deal — combined with the ‘Build Back Better’ agenda is about what we need to do to invest in things like water recycling and reuse, what we can do in terms of water desalination, what we can do in terms of implementation of drought contingency plans,” Harris said.

Water levels at Lake Mead — created in the 1930s by the damming of the Colorado River — have fallen to record lows. Federal officials in August declared the first-ever water shortage in the Colorado River, which means Arizona, Nevada and Mexico will receive less water than normal next year amid a gripping Western drought.



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In September, Reclamation released projections showing an even worse outlook for the river.

While California is spared from next year's cuts, the nation's most populous state has experienced one of its driest years on-record while battling scores of catastrophic wildfires.

In arguing for the \$1 trillion public works infrastructure deal, Harris referenced the “good union jobs” that the spending package would create, naming pipefitters, electricians and plumbers as examples. That plan passed the Senate months ago and is awaiting House approval.

It contains roughly \$8 billion for Western water projects, including desalination technology to make sea water usable, modernizing rural water infrastructure and building greater capacity to recycle wastewater.

Original Article: [ABC News by Suman Naishadham](#)

UC Davis to Lead Groundwater and Irrigated Agriculture Sustainability Study

Researchers from the University of California, Davis, have been awarded a \$10 million grant by the U.S. Department of Agriculture’s National Institute of Food and Agriculture to find ways to sustain irrigated agriculture while improving groundwater quantity and quality in the Southwest under a changing climate.

Isaya Kisekka, associate professor of agrohydrology and irrigation at UC Davis, is leading a team of more than two dozen climate, plant and soil scientists; hydrologists; engineers; economists, educators and extension specialists from UC Davis and other institutions in California, Arizona and New Mexico. They will develop climate change adaptation management strategies that ensure sustainability of groundwater and irrigated agriculture.

Kisekka says the project team in California will work with Groundwater Sustainability Agencies to develop tools and data to enhance water management at both the farm and groundwater basin scales to improve crop production and achieve sustainability goals under the state’s Sustainable Groundwater Management Act, which provides a statewide framework to help protect groundwater resources over the long-term. The research team will also work with grower coalitions to achieve the groundwater quality goals of the Central Valley Salt and Nitrate Management Plan.

“For farmers, the biggest challenge threatening their business is water,” Kisekka said. “Our project is going to develop climate-smart adaptation management practices to help growers achieve their production goals while addressing the co-benefits for the environment and human health. We are going to develop cutting edge tools to manage groundwater quantity and quality as well as study how policies impact behaviors such as water use in agriculture.”

The practices, models and tools developed will be used by growers or their advisors, policymakers, irrigation districts, coalitions and groundwater sustainability agencies to address climate change extremes such as drought or floods.



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Growers have increasingly depended on groundwater during multi-year droughts and heat stress. Part of the five-year project includes looking into aquifer systems in California's Central Valley, central Arizona and the lower Rio Grande basin in New Mexico. These regions have all experienced unprecedented overdraft, which happens when more water is pumped from a groundwater basin than is replaced from sources, including rainfall.

"For a long time, a lot of farmers would use groundwater as an insurance policy whenever there was a drought," Kisekka said. "The negative consequences of that became obvious: groundwater levels declined, we had subsidence which causes land to sink, we had deterioration in water quality and so on. What are growers going to do when we have another drought like we are now? We have to think more broadly."

Kisekka says they will also come up with management practices to improve soil health, develop alternative water supplies and reduce water demand so the region can continue to produce various agriculture commodities, such as vegetables, grapes and almonds.

"We grow crops in California that we cannot shift to another part of the country because they won't grow well there," Kisekka said. "We can't grow almonds in the Southeast where they have a lot of water because they require a certain climate. We want to ensure food and nutritional security of the United States by sustaining irrigated agriculture in the Southwest."

Project researchers will also establish innovative education and extension programs to teach students of all backgrounds and ages, as well as the public, about the importance of water in agriculture.

Original Article: [UC Davis by Tiffany Dobbyn](#)

FACT SHEET: Biden-Harris Administration Launches Plan to Combat PFAS Pollution

President Biden believes every American deserves to breathe clean air, drink clean water, and eat safe food — free of chemicals and pollutants that harm the health and wellbeing of children, families, and communities. Today, to advance that commitment, the Biden-Harris Administration is announcing accelerated efforts to protect Americans from per- and polyfluoroalkyl substances (PFAS), which can cause severe health problems and persist in the environment once released, posing a serious threat across rural, suburban, and urban areas. To safeguard public health and protect the environment, the efforts being announced will help prevent PFAS from being released into the air, drinking systems, and food supply, and the actions will expand cleanup efforts to remediate the impacts of these harmful pollutants

As part of this government-wide approach, EPA Administrator Regan launched EPA's PFAS Roadmap, a comprehensive strategy that outlines concrete actions over the next three years, including steps to control PFAS at its sources, hold polluters



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accountable, ensure science-based decision making, and address the impacts on disadvantaged communities.

The Administration is also continuing work to pass President Biden's Bipartisan Infrastructure Deal and Build Back Better Agenda, which both include dedicated funding to address PFAS contamination in drinking water. Specifically, the Bipartisan Infrastructure Deal includes \$10 billion in grants to address emerging contaminants, including PFAS, through the State Revolving Funds and small and disadvantaged community programs. The President's Build Back Better Agenda also includes investments for EPA to conduct monitoring across the country for 29 PFAS compounds in drinking water through the Unregulated Contaminant Monitoring Rule program.

To advance critical progress on securing clean air, safe food, and clean drinking water:

- EPA is launching a robust, new PFAS Roadmap that will guide the agency's current and planned activities in 2021-2024 to research, restrict, and remediate harmful PFAS. The Roadmap includes regulatory and administrative actions and enforcement approaches that EPA intends to take, using existing authorities, to comprehensively address PFAS throughout the environment. Actions include a new national testing strategy to accelerate research and regulatory development, a proposal to designate certain PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and actions to broaden and accelerate the cleanup of PFAS. The roadmap is the product of the EPA PFAS Council, which Administrator Regan established shortly after being confirmed. Administrator Regan unveiled the Roadmap today in North Carolina, where during his prior service as Secretary of the Department of Environmental Quality, he oversaw the state-driven cleanup of PFAS contamination into the Cape Fear River.

EPA's new Roadmap builds on actions that EPA has already taken this year to confront PFAS, including updating a PFBS toxicity assessment that had been marked by error and improper, non-scientific influence and issuing a new assessment backed by career scientists. Consistent with President Biden's commitment to enforce a limit for PFAS in drinking water, EPA has also begun to develop a national primary drinking water regulation, improve understanding of 29 PFAS chemicals in the nation's water systems, and take actions to stop polluters from discharging PFAS into America's waterways and wastewater systems.

- The Department of Defense (DOD) is moving swiftly to address PFAS at DOD sites throughout the country. The Department is currently conducting PFAS cleanup assessments at the nearly 700 DOD installations and National Guard locations where PFAS was used or may have been released, and expects to have completed all initial assessments by the end of 2023.



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Last month, EPA and DOD research efforts also resulted in expanded testing capabilities to detect more types of PFAS in a variety of environmental media (soil, groundwater, etc.), which will dramatically expand DOD's and the nation's ability to detect and ultimately address PFAS. Earlier this year, DOD also initiated quarterly public outreach by senior officials with stakeholders to discuss the Department's PFAS-related work, in an effort to provide transparency and accountability. DOD manages the largest research and development program in the nation devoted to PFAS detection, treatment, and destruction—with over \$150 million in investments and another \$70 million devoted to a PFAS-free replacement firefighting foam. This program works closely with the best research academic institutions in the nation to develop the science to help address PFAS.

- The Food and Drug Administration (FDA) is continuing to expand its testing of the food supply to significantly advance its work to estimate dietary exposure to PFAS from food. Over the next three years, FDA will proactively engage with and continue to support states when suspected areas of PFAS contamination may impact food and expand its PFAS analysis method development. In the coming months, this will include announcing additional testing results from the general food supply and targeted testing of seafood. FDA will also report on the verification process for the 3-year phase out of sales of certain PFAS from food contact uses, following agreements reached with certain manufacturers in 2020.

FDA earlier this year announced the results from its first round of expanded representative testing of the food supply to detect potential PFAS contamination, including in processed foods. The Agency has analyzed 440 Total Diet Study (TDS) samples for PFAS, in four waves of analysis, and is currently analyzing additional collections as well as conducting a targeted survey of the most commonly consumed seafood in the United States. FDA also continues to support state and local governments in responding to known and possible contamination events that may impact human food or animal food. Over the past few years, FDA has provided technical assistance to approximately seven states and has analyzed over 400 samples as a part of these engagements. The FDA has also broadened its outreach to industry to ensure that companies are reminded of packaging requirements that are intended to reduce human exposure to PFAS and is monitoring the presence of and potential exposure to PFAS in cosmetics.

- The Department of Agriculture (USDA) is supporting research on PFAS in the food system and taking action to prevent and address contamination. USDA's Agricultural Research Service researchers are investigating the causes and implications of PFAS in the food system. USDA will also continue to support extramural research on environmental contaminants including PFAS, with a focus on PFAS in the environment and food supply, as well as animal and human health. USDA's Food Safety and Inspection Service has developed and is deploying analytical methods for testing for PFAS in meat and poultry products.



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- The Department of Homeland Security (DHS) is driving forward a set of initiatives to investigate and remediate PFAS and protect emergency responders. DHS conducted the first-ever inventory of PFAS use and prior releases from its facilities, including uses in firefighting foams and other PFAS-containing materials, and possible water source contamination. To address the known or suspected presence of PFAS at DHS facilities, a recent Policy Directive establishes procedures for alerting the Office of the Chief Readiness Support Officer, conducting follow-up investigations, and taking appropriate response actions. Going forward, a new DHS-wide Emerging Contaminants Working Group will coordinate additional steps to remediate PFAS and other contaminants of emerging concern.

Also within DHS, the Federal Emergency Management Agency (FEMA) is addressing PFAS usage in firefighting foams, personal protective equipment, and other emergency response settings. Through the National Fire Academy, FEMA is working to better understand and mitigate PFAS exposure from fire training exercises and equipment use. FEMA also awarded a \$1.5 million grant to the University of Arizona to study the extent of firefighter exposure to PFAS and resulting health impacts.

- The Department of Health and Human Services continues to review the rapidly evolving science on human health and PFAS, including through a groundbreaking study by Centers for Disease Prevention and Control (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) in eight states that will provide information about the health effects of PFAS exposure.

In May 2021, ATSDR released the final version of the Toxicological Profile on Perfluoroalkyls. ATSDR is currently developing reports for 10 PFAS exposure assessments, which looked at exposures in more than 2,300 individuals from over 1,400 households. ATSDR is also partnering with EPA to expand on the environmental measurements gathered as part of the exposure assessments in order to identify significant non-drinking water sources of exposure. In partnership with the National Academies of Science, Engineering, and Medicine, HHS is developing guidance for clinicians on PFAS testing, how test results should inform clinical care, and how to advise patients on exposure reduction. CDC's National Institute for Occupational Safety and Health (NIOSH) is conducting a study that will address PFAS exposures among career firefighters and includes measurement of PFAS levels in gear. The National Institute of Environmental Health Science (NIEHS) is supporting an aggressive program of research, funding 40 active academic research projects to date. Through its Superfund Research Program, NIEHS is funding research and development of tools to remediate PFAS and better understand the fate and transport of PFAS chemicals once they are released into the environment. NIEHS and EPA are collaborating to develop a chemical class-based approach that would allow a quicker and more efficient understanding of potential health effects across the breadth of PFAS chemicals. Also, at EPA's request, NIEHS is evaluating the published literature on specific PFAS to determine whether exposure



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could have immune effects that would weaken responses to vaccination. The National Toxicology Program (NTP) has previously completed 4-week rodent studies to compare the toxicity of short- and long-chain PFAS. NTP has also published a two-year rodent study of PFOA to compare cancer and toxicity outcomes from exposures at different stages of life. Additionally, a systematic review was conducted to assess the immune effects of exposure to PFOA and PFOS.

- Key scientific agencies are advancing much-needed innovation. The Federal Aviation Administration (FAA) is conducting research on the use of firefighting foam containing PFAS in emergencies and using technology to reduce PFAS discharges in testing of firefighting equipment. Additionally, the FAA and DOD are working to find a PFAS-free firefighting foam alternative. The National Institute of Standards and Technology are working to identify and quantify the relative risk to first responders of PFAS in firefighting gear, while the National Science Foundation recently awarded \$4.1 million through its Engineering Research to Advance Solutions for Environmental PFAS (ERASE-PFAS) program to nine projects, anchored at 13 research institutions, that present an innovative approach to tackling the persistent challenge of PFAS contamination. In addition, the White House Office of Science and Technology Policy is mobilizing the National Science and Technology Council to form a team focused exclusively on coordinating and further accelerating this federal scientific work on PFAS.
- The White House Council on Environmental Quality (CEQ) is kicking off a high-level interagency capacity focused on PFAS actions. To facilitate the coordination of PFAS response activities across government, Administration officials today convened a first meeting of the newly-formed Interagency Policy Committee on PFAS, which is being led by White House Council on Environmental Quality Chair Brenda Mallory. At the meeting, agency leaders discussed their progress and plans for addressing PFAS contamination and reducing the risks to American families. The newly-formed Interagency Policy Committee on PFAS will work to coordinate and help develop new policy strategies to support research, remediation, and removal of PFAS in communities across the country.

Cities or farms: Who gets the water?

University of Utah economist says the state, which is trying to recover from severe drought, has enough water to deal with a growing population, if we just make some changes — difficult changes that probably won't be popular with farmers.

Associate Professor Gabriel Lozada's idea is to reallocate some water now used for agriculture.

According to a 2015 report, Utah residents use about 12% of the state's water supply — about a third of that for indoor use and two-thirds for outdoor irrigation.

Meanwhile, agriculture, which accounts for 2% of the state's economy, uses about three-fourths of the water supply — most of it to grow alfalfa hay.



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Farmers export a sizable portion of that hay overseas.

According to Lozada's calculations, if Utah reallocated the water that's used to grow hay for residential use, the state — which now has a population of 3.3-million — would, on paper, have enough water for 20 million people.

If all residents stopped watering their lawns and yards, there would be enough water for 60 million people.

He suggests the state could pay farmers not to grow hay.

"If you diverted a small percentage of Utah's agricultural water to urban areas, Utah's population could increase quite a bit," said Lozada.

He said that, of course, infrastructure would need to be built, and water laws and regulations would need to be rewritten to make this happen.

Right now, Utah is moving ahead with the controversial proposed Lake Powell Pipeline, designed to water a growing Washington County and Bear River Development Project in the northern end of the state.

Farmer Clay Carter agreed the status quo isn't sustainable, but says the answer is increased efficiency on the part of both cities and agriculture.

Carter looks at the problem both as a farmer — he grew up on a Box Elder County farm and returned to his roots a few years ago — and as an engineer.

At his day job, he runs a Logan automation company — Specialized Analysis Engineering.

Carter grew up irrigating crops with inefficient dirt canals and metal syphons.

A lot of water is lost as it soaks into the dirt in the canal, and a lot is lost because of overwatering.

Original Article: [KSL TV by Peter Rosen](#)

Environmentalists secure water rights for Great Salt Lake

In an effort to help save the shrinking Great Salt Lake, environmentalists are attempting a novel idea: securing water rights for a terminal system.

The Great Salt Lake is now nearly a foot below its last recorded level in 1963, alarming environmentalists and Utah's policymakers.

"Right now, Great Salt Lake is facing its lowest recorded levels ever since 1847. We're anticipating even lower levels. We hope we don't see that. With climate change and the serious drought and continued desires to divert more water, this is going to be a challenge," said Marcelle Shoop, the director of the Audubon Society's saline lakes program.

Legally speaking, the lake is considered to have "no beneficial use" because it's a terminal system — water that enters the Great Salt Lake ends there. That has historically contributed to some of the pressure to divert water away from it for agriculture, development and other needs.

In an effort to help the Great Salt Lake recover, a coalition of environmental groups have partnered with Rio Tinto Kennecott and the Central Utah Water Conservancy District in a first — securing water rights for the lake itself.



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“Kennecott has a water right that’s currently in excess of our demands for our mining and industrial operations,” Ted Balling, Rio Tinto Kennecott’s senior advisor for water resources, said in an interview with FOX 13. “We’re able to donate this water right, let it go down the Jordan River out to Farmington Bay to benefit the wildlife and habitat out there.”

The donation, about 21,000-acre feet of water, took years to secure.

“It took two years to work through those issues,” Neville said. “It was really hard, really asking hard questions, using the existing laws and making sure we cross all the T’s, dotted all the I’s.”

Utah’s Division of Wildlife Resources, which will help administer the water rights, said it is believed to be the first time this has happened.

“Water rights are a complicated issue, so we’re grateful for the partnerships that did donate to sort of benefit and restore the Great Salt Lake water levels,” said Faith Heaton Jolley, a spokeswoman for DWR.

Rio Tinto Kennecott also paid for the legal paperwork. Because it is technically a donation, water rights are not permanently transferred and can be taken back if needed. Instead, they will donate the 21,000-acre feet every year for the next 10 years. Balling said conservation and water efficiency measures at their copper mine allow for it to happen.

Original Article: [The Titusville Herald by Ben Winslow](#)

GLOBAL WATER NEWS

Warning of where China’s next war could start

China’s next war might not start in the South China Sea or be set off by squabbling between superpowers over the status of Taiwan.

It may have nothing to do with contested lands or international influence. Rather it could be over something far more mundane but nonetheless vital.

A high altitude clash could break out over water – or the increasing lack of it due to climate change.

And it could create a series of “failed states”, warns a report on future climate conflicts. While Australia might be far from the action, a former top military leader has said the country might find itself dragged into the conflict as millions flee Asia for safe harbour elsewhere.

“History shows that when people are starving, when they are without water, they’re desperate and they will do desperate things,” former Chief of the Australian Defence Force (ADF) retired Admiral Chris Barrie told news.com.au.



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Admiral Barrie is now an executive member of the Australian Security Leaders Climate Group (ASLCG), a body that includes former high ranking members of the ADF and Department of Defence.

In a report released last month, the ASLCG said that instability caused by climate change could pose major issues for Australia both militarily, diplomatically and economically. One of the direst scenarios is that up to a billion people could be displaced, with some of those heading to Australia.

Research by the group has looked at a possible conflict high in the Himalayas between India and China over water access.

That flash point would be centred on the vast Hindu Kush Himalayan and Tibetan Plateau regions – often known as the “third pole” due to their vast ice sheets.

Here glaciers are the starting point for some of the region’s most important rivers. Waterways such as the Yangtze and Yellow rivers that flow into China; the Ganges, Brahmaputra and Indus rivers into India as well as the Irrawaddy to Myanmar and the Mekong which exits into the sea in Vietnam.

Original Article: [AU News by Benedict Brook](#)

Iraq to reduce winter crop area by 50% due to water shortage - ministry statement

Iraq's agriculture ministry said on Sunday it would reduce its 2021-2022 winter crop planting area by 50% due to a water shortage.

The available water in dams and reservoirs can only irrigate around 250,000 hectares of land, a statement by the ministry said.

Original Article: [Reuters by Moayed Kenany](#)



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