

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING**

March 15, 2018

Correspondence and media coverage of interest between February 13, 2018 and March 8, 2018

Correspondence

Date: March 6, 2018
To: SFPUC Wholesale Customers
From: Steven R. Ritchie, Assistant General Manager, Water
Subject: Updated Water Supply Availability Estimates

Date: February 14, 2018
To: State Water Resources Control Board
From: Coalition of Agencies
Subject: Comment Letter – Changes to Proposed Regulation Prohibiting Wasteful Water Use Practices

Date: February 13, 2018
To: The Hon. Felicia Marcus, Chair, and Members of the State Water Resources Control Board
From: Nicole Sandkulla, CEO/General Manager
Subject: Comments on Prohibiting Wasteful Water Use Practices

Media Coverage

Water Supply Conditions:

Date: March 8, 2018
Source: Water Deeply
Article: Despite Wet Weather, California Should Prepare for Drought Again

Date: March 6, 2018
Source: Mercury News
Article: Sierra snowpack up 80 percent from last week, but still below normal

Date: March 3, 2018
Source: SF Gate
Article: Soggy storm boosts Bay Area rainfall totals, but not enough

Water Supply Management:

Date: March 7, 2018
Source: Maven's Notebook
Article: State Water Board adopts regulations for augmenting reservoirs with treated recycled water

Date: March 6, 2018
Source: San Francisco Chronicle
Article: Hetch Hetchy water's long trip from Sierra to San Francisco

Water Infrastructure:

Date: March 8, 2018
Source: The Independent
Article: Alternative Water Projects Feasible, but Cost is Barrier


Date: March 7, 2018
Source: The Press
Article: Pressure mounts on WaterFix agencies

Date: March 5, 2018
Source: Los Angeles Times
Article: Jerry Brown's grand California water solution remains in jeopardy as he prepares to exit

Date: March 1, 2018
Source: The Press
Article: California WaterFix project picking up speed

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TO: SFPUC Wholesale Customers 

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

DATE: March 6, 2018

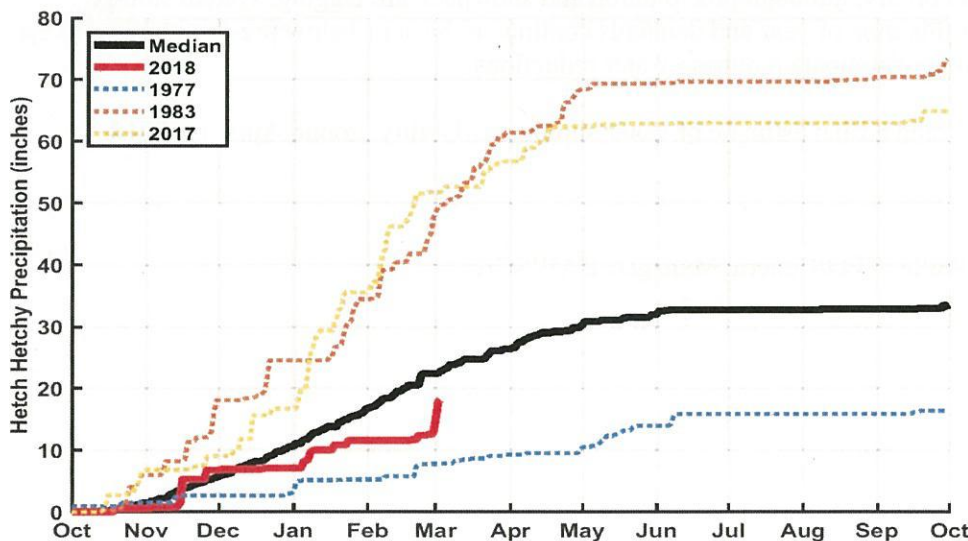
RE: Updated Water Supply Availability Estimate

This memo provides an updated estimate of water availability for Water Year 2018. Despite a very productive storm system to start the month of March, the water year's precipitation is still running below normal in the local and Hetch Hetchy watersheds. However, the SFPUC still does not anticipate needing to request demand reductions for the retail and wholesale service areas.

The February precipitation totals for Hetch Hetchy were 0.96 inches for a month that normally sees about 5 inches of precipitation. By contrast, the March 1st-3rd storm produced 5.43 inches of precipitation at Hetch Hetchy which is nearly the median total for the entire month of March. This storm also delivered a significant increase in the snowpack. It is estimated that this storm's snow accumulation in the Hetch Hetchy watershed provided the equivalent of 150,000 acre-feet of inflow to Hetch Hetchy reservoir. This storm system provides the confidence that Hetch Hetchy reservoir will fill this year. However, because February was such a dry month, the water supply forecast continues to indicate about a 25% chance that the entire water system will refill, including Water Bank, following spring runoff.

The plots below provide precipitation at Hetch Hetchy and snowpack in the watershed.

Hetch Hetchy Precipitation as of March 5, 2018



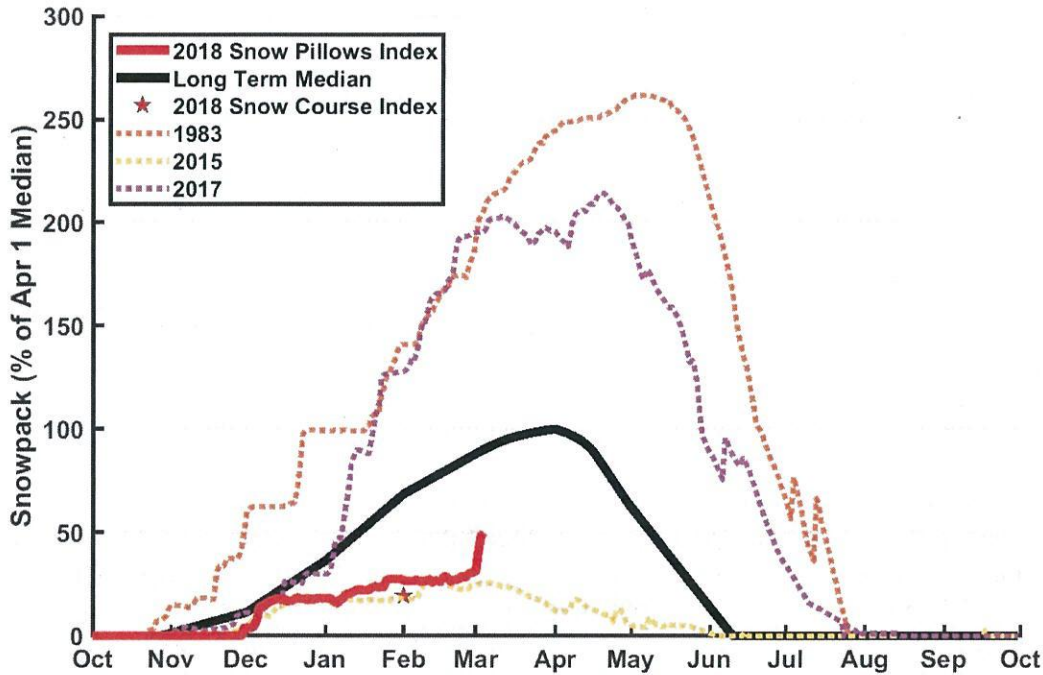
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% of Median April 1st Upcountry Snowpack as of March 5, 2018

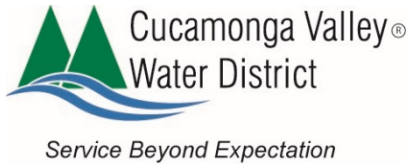


While the local precipitation totals remain below normal for this water year as well, the early March storm provided a boost for the local system but did not make up for the dry February. For the 7-station index, (based on precipitation gages at Calaveras Dam, Mt. Hamilton, San Antonio, Alameda East, Lower Crystal Springs, San Andreas, and Pilarcitos,) the precipitation total year-to-date is 13.21 inches, which is about 55% of the average year-to-date.

As we noted in February, although precipitation and snowpack are lagging, system storage remains high for this time of year and demands continue to be at or below pre-drought levels. At this point, we do not anticipate requiring water reductions.

The SFPUC will send a final estimate of water supply availability around April 15, 2018.

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



February 14, 2018

Via Email and U.S. Mail

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Re: Comment Letter – Changes to Proposed Regulation
Prohibiting Wasteful Water Use Practices

Dear Ms. Townsend:

The agencies denoted represent many of the State’s water suppliers and water right holders who stand to be impacted if the State Water Resources Control Board (“SWRCB”) adopts its proposed “Wasteful and Unreasonable Water Use Practices” regulation (“Regulation”) as currently drafted. Although we very much support the conservation objectives of the Regulation, we believe using waste and unreasonable use as the tool to reach these conservation objectives is problematic and inconsistent with the law. That said, we believe conservation is critical and, as such, have suggested many other ways the Regulation could be implemented.

As discussed in many of the comments previously submitted, the SWRCB’s authority to determine waste and unreasonable use of water is an adjudicative act that requires due process of law. The Regulation is defective because it has the effect – if not the purpose – of diminishing water rights by legislative means, without any process whatsoever. The Regulation therefore turns the water rights system on its head.

Several of the comment letters previously submitted to the SWRCB proposed minor and sensible modifications to the legal framework for Regulation that would have no effect on the substance or objectives of the conservation measures in the Regulation. These comments surgically addressed the serious water rights and due process concerns created by the proposed Regulation. Yet, those comments were ignored in the modified Regulation distributed by the SWRCB on January 31, 2018. The SWRCB should not ignore these significant legal issues, particularly when there are other lawful grounds supporting the proposed conservation measures.

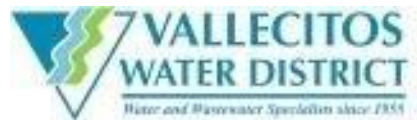
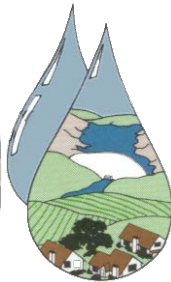
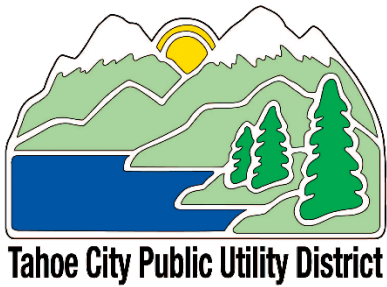
We respectfully ask the SWRCB to work with us, and with other water suppliers and interested parties, to make water conservation a way of life in California. To this end, we request that the SWRCB table any action to approve the Regulation at its February 20th meeting, and direct staff to work with us to develop a more defensible legal framework for its proposed conservation Regulation.

Thank you for your attention to this matter. We look forward to working with you.

cc: Felicia Marcus, Chair, State Water Resources Control Board
Steven Moore, Vice Chair, State Water Resources Control Board
Tam M. Doduc, Member, State Water Resources Control Board
Dorene D'Adamo, Member, State Water Resources Control Board
E. Joaquin Esquivel, Member, State Water Resources Control Board
Eileen Sobeck, Executive Director, State Water Resources Control Board
Michael Lauffer, Chief Counsel, State Water Resources Control Board
Eric Oppenheimer, Chief Deputy Director, State Water Resources Control Board
Max Gomberg, Climate & Conservation Program Mgr., State Water Resources Control Board
Charlotte Ely, Climate and Conservation Specialist, State Water Resources Control Board
Kathy Frevert, Climate and Conservation Specialist, State Water Resources Control Board



**SOUTH VALLEY
WATER ASSOCIATION**



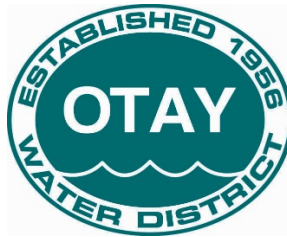


California
Water
Association



OLIVENHAIN
Municipal Water District

Carlsbad
Municipal Water District



Rincon Water del
Diablo



San Diego County
Water Authority



GCID
Glenn-Colusa Irrigation District

RAINBOW
MUNICIPAL WATER DISTRICT
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Helix
WATER DISTRICT



MID Modesto
Irrigation
District
Water and Power



Westlands Water District



Yorba Linda
Water District



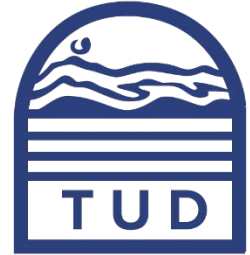
Mountain Counties

WATER RESOURCES ASSOCIATION



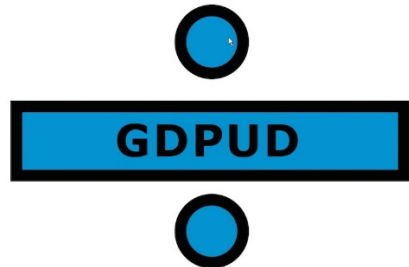
SOUTH SAN JOAQUIN
IRRIGATION DISTRICT





BAWNSCA

Bay Area Water Supply & Conservation Agency



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February 13, 2018

The Honorable Felicia Marcus, Chair
and Members of the State Water Resources Control Board
c/o Jeanine Townsend, Clerk of the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Subject: Comments on Prohibiting Wasteful Water Use Practices

Dear Chair Marcus and Members of the Board:

The Bay Area Water Supply and Conservation Agency (BAWSCA) appreciates the opportunity to provide comments on the proposed regulation to permanently prohibit certain wasteful water uses. BAWSCA provides regional water reliability planning and conservation programming for the benefit of its 26 member agencies that deliver water to over 1.7 million residents and 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara counties.

BAWSCA appreciates the changes that the State Water Resources Control Board has made to the proposed regulation to grandfather turf in median strips and parkways that are irrigated by a recycled water system installed prior to 2018. However, we still have concerns regarding the applicability of the proposed regulation to recycled water, and recommend the following changes:

- **Specify that the prohibition on irrigating turf on public medians and parkways is applicable to potable water only.** Many water suppliers have made significant investments in recycled water in order to reduce the impacts of drought on their communities. A key incentive for customers to convert to recycled water for landscape irrigation has been the ability to avoid cutbacks during droughts. While allowing irrigation of turf with recycled water systems installed prior to 2018 partially addresses this problem, the January 1, 2018 cutoff date would still result in stranded investment for local areas, including some within the BAWSCA service area, that have recycled water systems under construction. For these areas, the proposed restriction would result in stranded investments and provide no benefit for local areas that do not have a shortage of recycled water. In fact, the prohibition may result in more treated wastewater being discharged rather than put to beneficial use. Thus, the proposed regulation could disincentivize development of recycled water and result in the discharge of recycled water while public areas go unirrigated.
- **Specify that the prohibition on irrigating within 48 hours of rainfall is applicable to potable water only.** Recycled water salinity levels may require more frequent irrigation of landscapes, therefore the restriction on irrigating within 48 hours of rainfall may adversely impact landscape health.

In addition to the technical comments provided above, BAWSCA also intends to submit a second letter, jointly with the San Francisco Public Utilities Commission and others, regarding

The Hon. Felicia Marcus
February 13, 2018
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the application of the Reasonable Use Doctrine to declare certain water uses and practices per se “wasteful and unreasonable use” by means of a permanent statewide regulation.

Thank you for your consideration of these comments. If you have any questions, please contact me at NSandkulla@BAWSCA.org or (650) 349-3000.

Sincerely,



Nicole Sandkulla
CEO/General Manager

cc: BAWSCA Board Members
BAWSCA Water Management Representatives
Allison Schutte, Hanson Bridgett, LLP
Steve Ritchie, Assistant General Manager, Water

Despite Wet Weather, California Should Prepare for Drought Again

With about a month of California's wet season left, some areas will likely experience drought this year, but all water and wildlife managers should be preparing for it anyway, writes Jay Lund of University of California, Davis.

Water Deeply | March 8, 2018 | Jay Lund

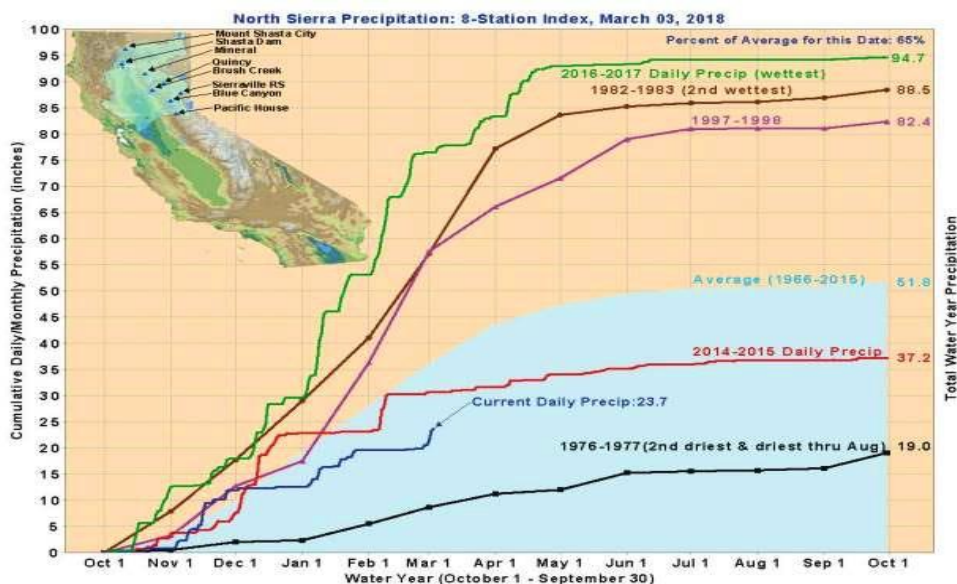
A team conducts the third snow survey of the 2018 snow season at Phillips Station in El Dorado County, California, on March 5, 2018. Kelly M. Grow/ California Department of Water Resources

Despite recent rain and snow, California is back to dry conditions again after a very wet 2017. With about four weeks left in the normal wet season, the Sacramento Valley is at about 65 percent of average precipitation (less than one-third of last year's precipitation). The southern Central Valley has less than 50 percent of average precipitation and Southern California is still drier. Snowpack is much less, at 37 percent statewide. Surface reservoirs, which almost all refilled and spilled in record-wet 2017, are now at 98 percent of average for this time of year, and will fall quickly as there is well-below-normal snowpack to melt.

The large water projects are expecting to make some water deliveries, but much less than last year. Groundwater, California's largest reservoir, is in mostly good shape in Northern California, but in the drier parts of California it has not nearly refilled the additional pumping from the last drought. Even if March is very wet, 2018 almost certainly will be dry.

Does this mean California is back to drought? Some, but mostly not yet. Drought comes on fast for some areas and more slowly for others. California's forests will likely experience drought this year. Soil moisture and snowpack are the forests' only reservoirs, and these deplete fast. Having lost over 100 million trees from the still-recent previous drought, there will be plenty of dead wood and dry conditions for wildfires this year. Aquatic ecosystems also can be expected to suffer in a dry year, especially as there has been little recovery of Delta smelt and salmon from the recent drought.

Most cities and agriculture should be able to weather this year's dryness with water stored in reservoirs and some additional groundwater use. Some areas will be worse affected, however. Southern Central Valley agriculture is slated to receive substantial surface water delivery cutbacks compared with last year.



Accumulated precipitation for northern California, 35 percent less than average and one-third of 2017. (CA DWR)

A series of dry years leads to more widespread and deeper effects of drought. Shallow rural wells are increasingly affected as dry conditions and the depletion of surface reservoirs lead to more groundwater pumping. More groundwater pumping will make it harder for some regions to comply with the state's new Sustainable Groundwater Management Act. The drawdown of reservoirs also leads to problems maintaining flows and cold temperatures for salmon and Delta outflows. Damages to ecosystems accumulate with additional dry years.

Areas prepared for drought suffer much less than areas with little or ineffective preparations. But all areas suffer some. Implementation of the Sustainable Groundwater Management Act is essential for rural areas to prepare for drought, as most agriculture and Central Valley water supplies will always depend on groundwater storage to get through long droughts. Preparation is hardest for areas that lack organization and regular funding, such as small rural water systems and ecosystem management. These are among the greatest challenges.

Now is the time for state and local agencies to prepare for drought, before a drought is declared. Most cities and irrigation districts are now well practiced for drought, and should now have better plans. Waterfowl managers were fairly well organized for the previous drought and introduced some useful innovations. However, fish and aquatic ecosystem management was largely unprepared for drought, and urgently needs plans and preparations for drought. Many water and environmental managers are likely to need drought plans this year. Even in the best cases, they will need drought plans and preparations all too soon.

Drought and dry years have always accelerated innovation in California's water management. Given our climate, California will always have water problems, and opportunities to improve. Now is a good time to prepare for drought, and to prepare to make other long-term improvements.

Jay Lund is the director of the University of California, Davis Center for Watershed Sciences.

This story first appeared on California Water Blog, published by the University of California, Davis Center for Watershed Sciences.

The views expressed in this article belong to the author and do not necessarily reflect the editorial policy of Water Deeply.

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Sierra snowpack up 80 percent from last week, but still below normal

Mercury News | March 6, 2018 | Paul Rogers

Last week's major snowstorms brought a welcome change to the Sierra Nevada Range — the source of nearly one-third of California's water — boosting the overall snowpack by nearly 80 percent.

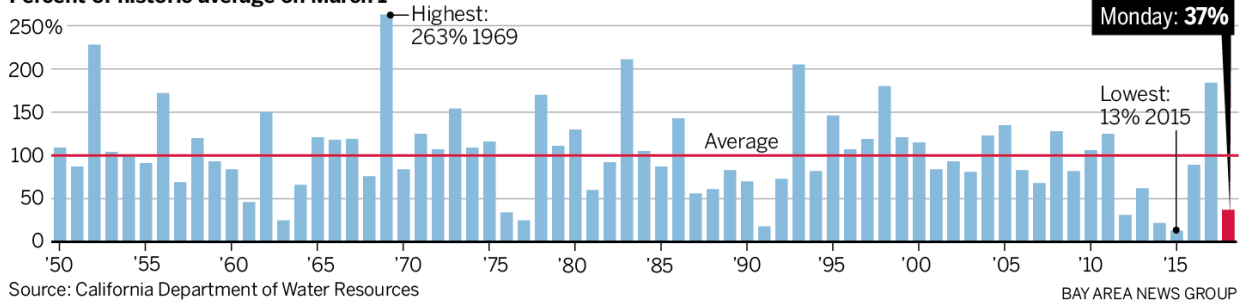
But despite the blizzards dumping 5 to 8 feet of fresh snow, the overall snowpack remains well below normal. Last Monday, the statewide snowpack was at 22 percent of the historic average. On Monday, it had increased to 37 percent.

"We're still far below normal," said Doug Carlson, a spokesman for the California Department of Water Resources. "Today is barely a third of what it should be on this date. Although the storms were notable compared with the extraordinarily dry month of February, they were not a game-changer. Californians are still encouraged to make water conservation a way of life."

SNOWPACK GETS A BOOST BUT STILL WELL BELOW AVERAGE

The recent storms raised the Sierra Nevada snowpack from 22 percent of the historical average a week ago to 37 percent today.

Percent of historic average on March 1



The snow water equivalent of the snowpack a week ago, meaning the amount of water in any given area if the snow was all melted, jumped from 5.3 inches last Monday to 9.5 inches on Monday, an increase of 79.2 percent.

But the historic average is 30 inches by April 1. To reach that level, the state would need another four or five storms like last week's to hit before the end of the month. The chances of that are about 1 in 50, according to the National Weather Service office in Reno.

Still, because of the very wet winter last year — the wettest in 20 years — reservoirs around California remain full or near full, giving the state a cushion this summer against major water shortages.

On Monday, 46 of the largest reservoirs in California were at 98.5 percent of their historic average capacity for this date. The largest, Shasta Lake, near Redding, was 76 percent full, with Pardee, the main reservoir for the East Bay Municipal Utility District, at 92 percent; Hetch Hetchy Reservoir in Yosemite National Park at 80 percent; Los Vaqueros Reservoir in Contra Costa County at 93 percent; and Diamond Valley Reservoir in Riverside County, a key source of water for Southern California, at 90 percent full.

“That’s the good news,” said Carlson. “You have to take everything together to come up with a composite picture. We’re not sounding an alarm bell now, but we’d certainly like to see more snow, not only for winter recreation but for all of California throughout the rest of the water year.”

The storms, which closed Interstate 80 on Thursday, also delayed the state’s March 1 manual snow survey, an event done every month in the winter at Phillips Station off Highway 50, not far from Lake Tahoe.

That event, largely a photo opportunity for TV crews and other media, found that the snow pack was 41 inches deep, or 39 percent of the historic average.

“It’s a very promising start for March,” said Frank Gehrke, chief of snow surveys for the Department of Water Resources.

Standing in snowshoes with blustery winds whipping around him, Gehrke called the situation “a much happier, rosier picture than a week ago.”

Last year at the beginning of March, Phillips Station was at 180 percent of normal snowpack. And this year, with a high-pressure ridge blocking many storms and bringing warm weather from December to February, the Sierra was facing one of its driest winters since modern records began in 1950, raising concerns that California might have been heading back into drought conditions this summer.

“It’s an encouraging start,” Gehrke told reporters. “But we have quite a way to go to get to average.”

The rest of this week looks mostly sunny across Northern California and the Sierra, although the following week has some potential for new storms in the picture.

The storm also brought much-needed rain across California. In the Bay Area, most cities received between 1 and 1.5 inches. San Jose’s total since Oct. 1 increased from 4.8 inches on Feb. 26 to 6.24 inches Monday, leaving the city at 53 percent of normal. Similarly, San Francisco increased from 8.17 inches to 10 inches, and is at 50 percent of normal, and Oakland went from 8.01 inches to 9.41, with a season total at 60 percent of normal.

The outlook remained much drier in Southern California. Last Monday, Los Angeles had only received one major storm in the past 12 months, and was at 18 percent of normal for the winter rainfall total. On Monday, after half an inch of new rain, it climbed slightly to 22 percent of normal.

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Soggy storm boosts Bay Area rainfall totals, but not enough

SF Gate | March 3, 2018 | Sophie Haigney

Recent storms have dropped more than an inch of rain on San Francisco and blanketed the Sierra with snow, but water levels and snowpack around the state are still lagging far below normal.

“It was a few drops in the bucket at least,” Scott Rowe, a meteorologist with the National Weather Service in Monterey, said Saturday.

In San Francisco, slightly more than 1.2 inches of rain have fallen since Wednesday, with almost 1.4 inches at San Francisco International Airport. Numbers were similar in the East Bay and South Bay: Oakland got 1.13 inches and San Jose Airport just over an inch. The North Bay fared better, with Santa Rosa recording a little more than 2 inches of rain and Napa getting almost 1.8 inches.

“This was the first significant system since early January,” Rowe said. “Nonetheless, if we talk about the strength of the storm, it wasn’t particularly strong because we didn’t get that much rain, but anything’s welcome.”

Water levels across the state are still facing a deficit, and nearly half of California is now facing moderate drought conditions. Since Oct. 1, downtown San Francisco has gotten 9.93 inches of rain, compared with an average of 18.08.

The storm hit harder in the Sierra, where the entire region was blanketed with between 3 feet and 8 feet of snow since Wednesday.

The Lake Tahoe area saw between 2 and 6 feet of snow, said Dawn Johnson of the National Weather Service in Reno. Near Mammoth to the south and on peaks more than 10,000 feet in elevation, those totals were even higher.

“Obviously it’s been helping the snowpack,” Johnson said. “Right now it’s hard to get an estimate exactly how much.”

Until the recent storms, the sparse snowpack was hovering between 20 and 30 percent of average, approaching record lows. Johnson estimated that the latest storm may have bumped it up to between 40 and 60 percent of average.

And the storm isn’t over for the Sierra.

“There’s a final piece coming through” Saturday night, Johnson said. “It’ll be significantly weaker than what we’ve seen so far, but will add a few inches up in the mountains.”

In the coming week, both the Bay Area and the mountains will again see a chance of rain and snow.

“We begin to reintroduce the chance of precipitation late Wednesday to Thursday, with a 20 to 30 percent chance of rain across the Bay Area,” Rowe said.

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State Water Board adopts regulations for augmenting reservoirs with treated recycled water

Maven's Notebook | March 7, 2018 | State Water Resources Control Board

Providing local water suppliers with a new tool to improve their drought resilience, the State Water Resources Control Board [yesterday] adopted water quality and other requirements to ensure the safe use of treated recycled water to augment surface water supplies.

“Cities and counties around the state are looking to stretch their local water supplies in the face of an increasingly uncertain water future,” said State Water Board Chair Felicia Marcus. “Water efficiency and reuse are the smartest ways to help our water resources go further. Today’s action is another important step in expanding the sensible use of recycled water in California.”

The new regulations set requirements for the quality of treated recycled water that can be added to a surface water reservoir that is used as source of drinking water. The regulations also specify the percentage of recycled water that can be added and how long it must reside there before being treated again at a surface water treatment facility and provided as drinking water.

Adoption of the regulation went through a public process of review and comment over two years, including an independent scientific review and guidance by an Expert Panel created in 2014 to assist the State Water Board in developing regulations for recycled water. The panel determined the surface water regulations adequately protect public health.

In addition to water quality requirements, the regulations also require local water systems to engage the public in developing “surface water augmentation” projects. The regulations recognize that public education and maintaining public confidence in their water supplies are essential parts of a project’s success.

Today’s action is the board’s latest effort to develop uniform statewide rules allowing for the expanded use of recycled water to indirectly supplement existing drinking water supplies. In 2014, the State Water Board set requirements for using treated recycled water to recharge groundwater. The same year the board adopted statewide rules for outdoor uses of recycled water and for irrigating crops.

The State Water Board is also working on regulations for “direct potable reuse,” in which treated recycled water is added directly into a drinking water system or into a raw water supply immediately upstream of a drinking water treatment plant. These rules are expected by 2023 after further research, expert consultation and public engagement to ensure the regulations protect public health while increasing drinking water supplies.

As California faces more severe and frequent droughts due to climate change, as well as the pressures of a growing population, water recycling is part of a portfolio of state strategies for building local self-reliance and providing more sustainable, reliable water supplies, as outlined in Governor Edmund G. Brown Jr.’s California Water Action Plan.

Today’s approval of regulations for surface water augmentation streamlines the process for drinking water providers to diversify their water sources, in order to provide a relatively reliable,

drought-resilient, and sustainable option for supplementing the water in a surface water reservoir that is used as a source of domestic drinking water supply.

Senate Bill 918 (Pavley, 2010) and SB 322 (Hueso, 2013) directed the State Water Board to investigate the feasibility of creating regulations for direct and indirect potable reuse. The State Water Board continues to support the wise utilization of all our water resources and recycled water is an important part of California's water portfolio.

Last year, the State Water Board funded more than \$748 million worth of water recycling projects using Proposition 1 grant and loan funds, and low-interest loans from the Clean Water State Revolving Fund. These projects are projected to add 44,980 acre-feet of recycled water per year to California's overall water supply portfolio.

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Hetch Hetchy water's long trip from Sierra to San Francisco

San Francisco Chronicle | March 6, 2018 | Bill Van Niekerken

Just to the east of Crystal Springs Reservoir sits the Pulgas Water Temple, a landmark commemorating completion in 1934 of the Hetch Hetchy aqueduct, which brought water from the lakes and valleys in the Sierra Nevada Mountains to kitchen taps in the Bay Area. An inscription above the temple's columns reads: "I give waters in the wilderness and rivers in the desert, to give drink to my people."

It took 22 years and \$100 million to complete the Hetch Hetchy system, and on Oct. 28, 1934, thousands of people celebrated as water flowed into Crystal Springs Reservoir in the Santa Cruz Mountains.

The Chronicle archives overflow with photos documenting the downstream journey of Hetch Hetchy's water — an engineering marvel that feeds power stations and fills reservoirs. So here's a follow-up to our previous column on O'Shaughnessy Dam and Hetch Hetchy Valley.

Pulitzer Prize-winning Chronicle writer Royce Brier was on hand in 1934 when the project was completed, writing: "In a pastoral meadow in San Mateo County yesterday afternoon culminated one of man's proudest engineering achievements when Hetch Hetchy water burst its bounds of time and distance and flowed into Crystal Springs Reservoir."

He continued: "It was the wine of a great dream fulfilled, of a great and often heartbreaking task accomplished, the wine of triumph in strife with Nature and one her most closely guarded treasures in the Western land." Eighty-nine workers lost their lives completing the 155-mile system.

Moccasin Powerhouse in Tuolumne County, near Sonora, is one of the stops on the water's journey west. Penstock pipes leading down to the powerhouse steer water at enormous pressure to turn turbines that generate electricity. Moccasin is what's known as a company town, where almost all of the homes are owned by the city and county of San Francisco, operated to supply housing for workers on the city's Hetch Hetchy Project.

According to Chronicle reporter Carl Nolte, who wrote in the 1990s about the town of Moccasin and the power station: "Moccasin is like a valve in the system's heart — 300 million gallons of water flow through the town every day in the summer. The powerhouse generates 305,000 megawatts of electricity. The power that runs the Municipal Railway's electric buses and subway trains and turns on the lights at SFO comes from Moccasin."

Through a series of pipelines, tunnels and treatment plants, the water makes its way to San Francisco, providing water to 2.7 million people.

At the end of the Sierra water's journey is the Crystal Springs Reservoir, visible from Interstate 280. The lakes, Crystal Springs, San Andreas and Pilarcitos, are surrounded by 23,000 acres of woodlands and chaparral. Many plans from golf courses to parks have been considered, but unsupervised access to the area is still limited, with San Francisco Water Department employees among the lucky few.

Bill Van Niekerken is the library director of The San Francisco Chronicle, where he has worked since 1985. In his weekly column, From the Archive, he explores the depths of The Chronicle's vast photography archive in search of interesting historical tales related to the city by the bay.

#

Alternative Water Projects Feasible, but Cost Is Barrier

The Independent | March 8, 2018 | Ron McNicoll

The Tri-Valley Water Liaison Committee heard an update on the feasibility of spreading out the Valley's potable water source portfolio. The report points the way to create new technical tools to lessen dependency on the State Water Project.

However, the group of four Valley water retailers and Zone 7 Water Agency who met at the Livermore Library March 1 also heard a report on public sentiment about acceptance of various forms of recycled water for the potable supply, and attitudes about paying for it. Those two factors still appear to be the challenge for the water officials.

The staff and elected representatives of Livermore, Pleasanton and Dublin San Ramon Services District (DSRSD) will be reporting back to their councils and board for discussion of what they heard at the meeting.

On the technical side, consultant Andrew Salveson, a vice-president at Carollo Engineers talked about the options for local water suppliers to gain more control over the future water supply.

Recycled wastewater using high filtration and reverse osmosis filters, and linkage to a salt-water conversion plant on the Bay could supply enough water for the Valley's needs. It could be done in combination with the existing sources of the State Water Project and Valley run-off water. With those two new tools in place, the Valley would not need the Cal Water Fix, said Salveson.

The regulatory framework is in place now to enable recycled potable reuse and also desalination, said Salveson. All alternatives improve water quality. Good options are available in the Valley for a facility to produce the potable reuse water, he said. No "fatal flaws," have been identified, said Salveson.

There could be from 5500 to 10,000 acre feet (AF) annually from adding such projects, depending on how much the agencies want.

The study notes that between the capital expense and operations and maintenance, it could cost about \$2200 to \$2500 per AF. One AF supports two households for one year.

A separate report showing a public survey indicates how difficult it could be for the water agencies to convince customers that adding the local technical measures is worthwhile.

The survey found that majorities would support \$5 per month or a 5% rate increase, but above that dollar level, most people are opposed.

The \$5 level received 55% support compared to 42% opposition. At \$10, the figures were 36% in favor, and 61% opposed. The \$15 level changed the statistic to 24% yes, and 73% no. At \$20, the figures became 17% yes, and 80% no.

During the committee's discussion, DSRSD director Georgean Vonheeder-Leopold said that one problem people have in gauging costs of water improvements is that only recently the

public has learned about costs in day-to-day terms, such as what a big project will add to their monthly water bills.

Livermore Mayor John Marchand commented that cost comparisons show people are willing to pay \$140 per month for cable TV, but when he was on the Zone 7 board, people would be upset if their water bill rose from \$35 to \$37.

The survey also found that voters have become more concerned about water rates and water quality.

In general, people are comfortable with groundwater and reservoir recharge using recycled water. They are divided about its direct integration into the water supply. Education can elevate comfort levels, according to the survey, which was done by FM3 Research.

One question asked people about their impressions of their local water suppliers. Many had no opinion. However, among those who did, 45% in Pleasanton favored it, and 33% were negative.

In Livermore, the city's water department was favorably rated 45% to 25%. The private California Water Service received a 44% favorable rating to 20% unfavorable. DSRSD was rated at 44% favorable to 20% unfavorable.

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Pressure mounts on WaterFix agencies

The Press | March 7, 2018 | Tony Kukulich

As the clock winds down on Gov. Jerry Brown's time in office, pressure appears to be mounting on state agencies to move the California WaterFix project forward.

The Metropolitan Water District of Southern California (MWD) surprised many during a Bay-Delta Special Committee meeting on Feb. 27 when it was disclosed that the agency was examining the opportunity to finance the \$11 billion cost of building the first of two tunnels in accordance with the Department of Water Resources's (DWR) revised construction plan. The plan would require increased financial commitment from the agency but would also cede greater control of water resources to the agency. That has critics concerned.

"There is so much to unpack for the public from what was revealed today at MWD's Bay-Delta Committee meeting," Barbara Barrigan-Parrilla, executive director of Restore the Delta, wrote in a press release. "On the surface, it is clear that the California Department of Water Resources is moving forward with a two-tunnels application for the change in the point of diversion to secure a State Water Project right for MWD, who will become the financier and operator of the project. California's water management is being gamed to give the majority of power over watershed management throughout the state to Metropolitan Water District. The state is abdicating its responsibility to manage water for all people in California as a public trust resource."

WaterFix has bogged down in recent months, as the reality of the project's nearly \$17 billion price tag rattled the agencies expected to bear the burden of that cost. The financial commitments necessary for the project to advance failed to materialize, and DWR revised WaterFix in early February by adopting a staged approach to the tunnel construction. Within days of that announcement, MWD, believing the twin-tunnel approach provided greater benefits, announced it was looking at the feasibility of increasing its financial commitment to the project to ensure that both tunnels were built simultaneously. MWD's analysis was expected to take four to six weeks to complete.

MWD has undertaken the analysis of two approaches to WaterFix involving a potential commitment of billions of dollars and given itself only a matter of weeks to complete both initiatives. Comments made by Jeffrey Kightlinger, MWD general manager, during the Feb. 27 committee meeting provide some insight into the reason for urgency.

"The governor came and joined this meeting with the (water) contractors, briefly," said Kightlinger. "The chairman was there. The governor did say we need to get moving, whether it's one project or the full project – whether it's the state's approach to the full project. (He) gave direction to everybody, really encouraged everyone to explore both on the same track simultaneously and to make a decision in weeks to come."

Throughout the Bay-Delta Committee meeting, MWD staff was clear that any incremental financial commitment by MWD would require a new contract with the state protecting its right to set the terms of use of water flowing through the tunnel.

"We would have to have a new arrangement with the state that clearly protected our financing interests in that, and that the state would respect that," Roger Patterson, MWD assistant general

manager, said during the meeting. “That would require a separate agreement, we believe, with the state that lays out: here’s Metropolitan’s rights and what they financed, here’s how they get reimbursed, that the state doesn’t have the ability to appropriate that and provide water to other agricultural districts through our capacity without working through us. And that would have to be protected, we believe, through some binding document.”

Patterson reiterated the point when a director asked what safeguards MWD would require before it could consider financing a greater portion of the tunnel’s construction cost.

“... We get to set the terms and conditions,” said Patterson. “The state doesn’t get to come in and say, ‘We decided this is a fairer price, Metropolitan.’ No, it would be our choice – what we would do and when we would do it ... If we were allowing parties to wheel water through our capacity, that we would set the terms and conditions. DWR wouldn’t say, ‘This is what we deem is the appropriate price.’ Obviously, we’d have to make it legally defensible, but it would be our calculation, our decision on when, where and how we would do that. And if the state said, ‘We want to really control that,’ I would come back and say, ‘I don’t think this makes any sense for us at all.’ We would have to, in my mind, at a minimum, have that protection for this to make sense for us to do this.”

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Jerry Brown's grand California water solution remains in jeopardy as he prepares to exit
Los Angeles Times | March 5, 2018 | Bettina Boxall

Two tunnels, one or none? The question continues to swirl around plans to perform major surgery on the sickly heart of California's water system.

Confronted with a shortage of funding, state officials announced last month that they would move ahead with the construction of one giant water tunnel under the Sacramento-San Joaquin Delta rather than two.

But the announcement did little to settle the fate of the project, which Gov. Jerry Brown's administration considers vital to sustaining water deliveries to one of the country's richest agricultural regions and the urban sprawl of Southern California.

Opponents still don't like the so-called WaterFix plan, which despite downsizing is massive. Financing remains an open question. And backers haven't given up their dream of two 35-mile tunnels carrying high-quality Sacramento River water under the delta's levee-ringed farm islands to government pumping plants that fill southbound aqueducts.

"We're being sent down a lot of rabbit holes, and we don't know which one's got the rabbit," said Jonas Minton, a former state water official who is on the staff of an environmental group.

Money is the key to WaterFix, a priority of Brown's administration that has been in the planning stages for more than a decade. Underlying that is the fundamental question of the tunnels' value to California's water supply.

The \$17-billion bill for the twin-tunnel version was supposed to be paid by the San Joaquin Valley agricultural districts and Southland urban agencies that rely on water deliveries from the southern part of the delta. But the farm districts have for the most part declined to open their wallets, saying the tunnel water is too expensive for them.

That prompted the Brown administration's decision to press ahead with a less-expensive, one-tunnel project. But as the state continues to try and round up enough financing for the scaled-down proposal, the Metropolitan Water District of Southern California is pondering whether to ride to the rescue of the full project.

There is no formal proposal on the table, but the MWD staff is exploring the possibility of the district picking up WaterFix's unfunded portion and building both tunnels.

If that happened, the water wholesaler's tunnels tab would soar to roughly \$11 billion, more than double the \$4.3 billion the district board approved last fall.

The ever-shifting plans have intensified debate over the size and need for WaterFix.

Environmental groups argue the billions of dollars that will eventually come out of ratepayers' pockets would be better spent expanding regional supplies such as recycled water and stormwater capture.

"Those projects would actually produce new sources of water," said Brenna Norton, the Southern California organizer for Food and Water Watch.

One tunnel with two river intakes would accomplish much of what water agencies hope to gain with a bigger project, according to Jeffrey Mount, a water policy expert at the Public Policy Institute of California.

"We've said this repeatedly: One tunnel performs almost as well as two tunnels," Mount said. "There is a substantial amount of cost associated with the second tunnel, and it is unclear to me that that creates sufficient benefit to warrant it."

State officials say WaterFix is necessary to sustain delta deliveries in the face of tightening environmental restrictions, rising sea level and the potential for a large earthquake that could topple delta levees that keep seawater from contaminating water exports.

Without the project, the state Department of Water Resources predicts delta exports over time will decline by about a fifth, to roughly 1970s levels.

The tunnel project is intended to lessen the ecological impacts of the state and federal pumping operations that draw directly from the delta's southern portion.

The monster pumps are so powerful that they force water channels to run backward, draw the native delta smelt into bad habitat, confuse migrating salmon and upend the natural flow patterns of the estuary system.

Regulators have responded by clamping down on pumping to cap the reverse flows.

By partially supplying the pumps with tunnel water diverted from the Sacramento River in the delta's northern reach, WaterFix is designed to reduce direct withdrawals from the southern delta — and thus head off more pumping restrictions.

But the tunnels won't give the ailing delta and its vanishing native fish what biologists say the estuary system most needs: a lot more fresh water flowing into the delta and out to sea.

"I basically accept the fact that the water is going to go south and to the Bay Area no matter what ... that's the political reality," said Peter Moyle, a UC Davis fisheries professor emeritus whose research helped put the once-abundant delta smelt on the federal endangered species list more than two decades ago.

Given that Moyle doesn't expect the delta to get the flows it needs, he says WaterFix could alleviate some of the negative pumping effects. "When you look at all the alternatives, it's the main one that's out there that is a real alternative for management of the system in a way that can benefit fish."

Environmental groups have consistently argued that constructing two tunnels — each taller than a three-story building — would inevitably invite exporters to pull ever more water out of the delta, despite their assurances to the contrary.

"Once these are constructed, the operations will be subject to whatever the politics of the day are," said Minton, senior water policy advisor at the Planning and Conservation League. "It's like giving a teenager the keys to a 400-horsepower Mustang car and telling them only to drive at 60 miles an hour."

Minton's organization and several other groups previously asked the state to consider paring the project to one river intake and one small tunnel, coupled with substantial investments in developing regional water supplies.

That didn't happen. The two-intake, one-tunnel version the state is now proposing would cost \$11 billion, a third less than the twin tunnels, and have a capacity of 6,000 cubic feet per second, also a third less than the two-tunnel proposal.

Because more diversions would have to come directly from the south delta if only one tunnel is constructed, "the benefits of the project drop" as well, said MWD assistant general manager Roger Patterson.

According to an MWD analysis, overall tunnel supplies would decline by a third; there would be some reduction in water quality improvements; and some increase in harmful reverse flows compared to two tunnels.

Still, one key number would not change. Overall State Water Project deliveries to MWD and other state contractors that invested in WaterFix would be roughly the same whether one or two tunnels are built.

So why would MWD take on billions more in debt to build a bigger project that wouldn't increase deliveries to its urban customers?

MWD officials say the extra capacity could be used to convey water that the agency sometimes purchases in addition to its State Water Project allocation. And it would give water managers more flexibility in how they run the pumping operations.

The agency also assumes that San Joaquin agricultural districts that don't want to invest in upfront tunnel costs would be interested in buying tunnel capacity once the project is up and running.

"Will there be buyers in the future that would be willing to pay for that?" Patterson asked.

"There's a good chance there will be."

If the tunnels aren't built and delta exports drop as the state predicts, the San Joaquin Valley growers who are holding out on paying for WaterFix will suffer the most.

That's because California's new groundwater law will in coming years force farmers to stop overpumping the valley aquifer — their fallback in times of drought and low allocations from the federal Central Valley Project.

"These are very shrewd businessmen and women," Mount said. "They also know full well that this is a negotiation that's going on. If you don't have enough money to build the whole project, we're going to hold out and see if we can get someone else to pay for it."

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California WaterFix project picking up speed

The Press | March 1, 2018 | Tony Kukulich

The pace of activity related to the California WaterFix project has stepped up considerably in the last few weeks, and several major developments have arisen.

Those developments included the resumption of the Part 2 hearings, the issuance of a major ruling by the State Water Resources Control Board, the revelation that the Metropolitan Water District is examining the option of funding a majority of the cost of a two-tunnel solution and the release of an long-awaited economic analysis of the project.

The original WaterFix plan was based on the construction of two tunnels, each with a 4,500 cubic feet per second (cfs) capacity. On Feb. 7, Karla Nemeth, Department of Water Resources (DWR) director, issued a statement that called for the construction of a single tunnel with a 6,000 cfs capacity. This has been referred to as a single-tunnel plan, but that designation is a misnomer as the plan allows for the construction of a second tunnel at some undetermined point in the future when sufficient funding is available. The adoption of a staged construction approach came after Central Valley and Southern California water agencies expected to pay for the construction failed to commit to the cost.

The change to WaterFix proposed by DWR prompted a number of groups opposing the project to file motions with the State Water Board seeking to have the tunnel construction permit approval hearings stopped. The motions argued that the hearings were based on a two-tunnel plan and the adoption of a staged approach to the construction was significant enough to necessitate restarting the hearings based on the new plan specifications.

The Part 2 hearings got underway on Feb. 8 but lasted only a short while. The Water Board opted to cancel two weeks of hearings during which time it considered the impact of DWR's change on the hearing process. The State Water Resources Control Board ruled on Feb. 21 that the Part 2 hearings should continue. It was argued that, despite the Feb. 7 announcement, DWR had not yet committed to the phased approach, so there was no need to stop the hearings.

The ruling read, "Because Petitioners (DWR and the U.S. Bureau of Reclamation) have not yet communicated a decision to proceed with the WaterFix project in stages, we find no reason at this point in time to grant a stay and modify the procedures for this hearing to accommodate that possibility."

The ruling drew immediate criticism from a wide range of project opponents as the hearings resumed on Feb. 23.

"This ruling is absurd given the facts," said California State Assemblymember Jim Frazier (D - Discovery Bay). "The State Water Resources Control Board is continuing with the hearings as if the original twin-tunnels plan has undergone no alterations, when in fact significant alterations have been made. It is disappointing the board is failing its responsibility to represent all of California. The board should stay the hearings and require the Department of Water Resources and the Bureau of Reclamation to submit a change petition that properly addresses the dramatic deviations from the previous WaterFix plan. The phased-in two-tunnel design DWR is now proposing will have a dual impact. It is now two construction projects, not just one. It doubles the devastating impact constructing the tunnels will have on the Delta region."

As the Water Board was attempting to determine whether or not WaterFix was going to be built in stages, the Metropolitan Water District of Southern California (MWD) board further complicated the issue.

MWD is a regional wholesaler of water to member agencies, which in turn deliver water to more than 19 million people in Southern California and a key player in WaterFix. While water agencies in the agricultural Central Valley have failed to pledge financial resources for the project, MWD has taken the lead in that regard. During a MWD board meeting on Feb. 12, a director urged the district to determine if it could provide the financing necessary to ensure that

Jeffrey Kightlinger, MWD general manager, said in a phone call to The Press that he was directed by the MWD board to investigate the option of funding 70 percent of the project's estimated \$16.2 billion cost. Doing so would mean the MWD would increase its financial commitment to the project by more than \$6 billion. Kightlinger said that the viability of this approach would depend on the MWD's ability to determine the price at which it would sell water to the Central Valley agencies and its ability to manage the volume of water that would flow from north to south. He said the analysis is expected to take four to six weeks to complete.

DWR released a Cost-Benefit Analysis for California WaterFix on Feb. 13 touting the economic benefits of the project. The report examined the economic impact of Stage 1 of WaterFix, though the release of the report was not enough to convince the State Water Resources Control Board of DWR's intent to move forward with the staged approach.

"Without WaterFix, State Water Project contractors will see the continued deterioration of their water supply reliability," said report author David Sunding, a professor of natural resource economics at UC Berkeley. "This analysis shows there is substantial benefit for both urban and agricultural water users throughout the state and that the project will be more affordable for consumers than local alternatives such as desalination and recycling.

The report concluded the project would generate \$1.82 of benefit for every \$1 spent. This number contrasts sharply with analysis completed in 2012 by Dr. Jeffrey Michael, executive director of the Center for Business & Policy Research at the University of the Pacific, in which he found that the return would be \$0.40 per dollar spent and concluded that the cost of the solution was greater than the cost of the problem.

"This is just another chapter of the California Natural Resources Agency and the California Department of Water Resources presenting incomplete facts to push this ill-conceived project onto Californians," said Barbara Barrigan-Parrilla, executive director for Restore the Delta. "We have known for some time that deep problems exist within the modeling which create a fictional scenario of how much water is available for the Delta tunnels. Moreover, DWR wants it both ways. They want a water right to build two tunnels, but they don't want to tell the public how much that will cost or what the real water quality impacts will be for the San Francisco Bay-Delta Estuary. If Secretary Laird, the Department of Water Resources and the Metropolitan Water District continue touting Delta tunnels fiction as fact, California water management, and consequently California water quality and supply is headed toward a bad end."

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