BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD OF DIRECTORS MEETING

January 21, 2016

Correspondence and media coverage of interest between December 15, 2015 and January 11, 2016

Correspondence

Date: January 11, 2016
From: Bay Area Regional Reliability (BARR)
To: BAWSCA Board of Directors and CEO/General Manager
Subject: BARR Participation

Date: January 6, 2016
From: Nicole Sandkulla, CEO/General Manager
To: The Hon. Felicia Marcus, Chair, and Members of the State Water Resources Control Board
Subject: Comments on the Proposed Regulatory Framework for Extended Emergency Regulation for Urban Water Conservation

Media Coverage

Drought:

Date: January 11, 2016
Source: Sacramento Bee
Article: Agencies deserve credit for water supply investments

Date: January 11, 2016
Source: Washington Post
Article: As rain pummels California, some see a way to fight drought

Date: January 9, 2016
Source: San Jose Mercury News
Article: California Drought: How will we know when it's over?

Date: January 7, 2016
Source: Maven's Notebook
Article: What's in the Governor's proposed budget for emergency drought response and implementation of the California Water Action Plan

Date: December 16, 2015
Source: Ag Professional
Article: USDA: Not all California's crops have seen acreage declines during drought

Conservation:

Date: January 10, 2016
Source: Examiner.com
Article: California falls short on water conservation ahead of El Nino

Date: January 8, 2016
Source: Contra Costa Times
Article: Bay Area lawmaker wants to throw the checkbook at water hogs

Date: January 5, 2016
Source: SF Gate
Article: Southern California lags as state misses water conservation goal

Date: December 15, 2015
Source: SF Chronicle
Article: White House pushes water conservation in wake of climate pact

Date: December 15, 2015
Source: LA Weekly
Article: California Ballot Measure Would Let Water Agencies Soak the Rich

Water Supply:

Date: January 11, 2016
Source: Water Technology
Article: California looks to make the most of stormwater

Date: January 11, 2106
Source: The California Aggie
Article: UC researchers launch UC Water Security and Sustainability Research Initiative

Date: January 10, 2016
Source: Sacramento Bee
Article: We need more urgency on sinking Valley

Date: January 10, 2016
Source: Inland News Today
Article: California struggles over water storage for farmers

Date: January 7, 2016
Source: ACWA
Article: Desalinated Water From Carlsbad Plant Delivered to Vallecitos Water District

Date: January 2, 2016
Source: Contra Costa Times
Article: Recycled water in demand, and not just for parks, golf courses

Date: January 2, 2016
Source: Sacramento Bee
Article: Building Sites Reservoir will never pencil out or produce much water

Date: December 28, 2015
Source: Modesto Bee
Article: Our View: It's time state invested in Sites Reservoir

Sierra Club SF Bay Chapter ◊ Sierra Club Loma Prieta Chapter ◊ California Sportfishing Protection Alliance ◊ Tuolumne River Trust ◊ Restore Hetch Hetchy ◊ Wholly H2O ◊ Foothill Conservancy ◊ Environmental Water Caucus ◊ Clean Water Action

Via email to:
Board members, Commissioners c/o Board Clerks/Secretaries:
ACFCWCD, Zone 7 - Ms. Linda Van Buskirk, lvanbuskirk@zone7water.com
ACWD – Ms. Gina Markou, gina.markou@acwd.com
BAWSCA – Ms. Nicole Sandkulla, nsandkulla@bawsca.org
CCWD – Ms. Mary A. Neher, mneher@ccwater.com
EBMUD – Ms. Lynelle M. Lewis, llewis@ebmud.com
MMWD – Ms. Stephanie Eichner-Gross, seichner@marinwater.org
SCVWD – Ms. Michele King, clerkoftheboard@valleywater.org
SFPUC – Ms. Donna Hood, dhood@sfwater.org

Mr. Jerry Brown, General Manager, Contra Costa Water District, jbrown@ccwater.com ;
Mr. Alexander R. Coate, General Manager, East Bay Municipal Utility District, acoate@ebmud.com ;
Ms. Jill Duerig, General Manager, Alameda County Flood Control and Water Conservation District, Zone 7, jduerig@zone7water.com ;
Mr. Beau Goldie, Chief Executive Officer, Santa Clara Valley Water District, bgoldie@valleywater.org ;
Mr. Harlan Kelly, General Manager, San Francisco Public Utilities Commission, hkelly@sfwater.org ;
Mr. Krishna Kumar, General Manager, Marin Municipal Water District, kkumar@marinwater.org ;
Ms. Nicole Sandkulla, Chief Executive Officer and General Manager, Bay Area Water Supply and Conservation Agency, nsandkulla@bawsca.org ;
Mr. Robert Shaver, General Manager, Alameda County Water District, robert.shaver@acwd.com

January 11, 2016

Re: Bay Area Regional Reliability (BARR) participation

Dear Board Members, Commissioners, Chief Executive Officers, General Managers:

As your agencies engage in the cooperative Bay Area Regional Reliability (BARR) effort, the undersigned organizations request that you include a unified outreach element as part of all BARR activities. Such public outreach should be regular, provide for input and participation, and be initiated starting immediately as part of the Drought Contingency Plan process.

The BARR initiative may allow your agencies to develop cooperative projects and programs that can provide better reliability at lower cost to your customers and with less damage to the natural environment. We applaud your intention to pursue such outcomes with a new level of cooperation.

Initiatives and projects springing from this effort could also produce less desirable outcomes for the environment and/or the public interest.

We hope to support the work of the BARR program and will be in a better position to do so if we are informed. Your agencies and the BARR effort as a whole will benefit if programs and projects receive public input as they are developed.

The Sierra Club SF Bay Chapter Water Committee is willing to serve as an initial contact until a regular communications link is established. Please let us know if this will be acceptable.

We understand, of course, that we only represent certain elements of the public interest and recommend that the BARR agencies reach out broadly to other individuals and organizations that may also want to have input.

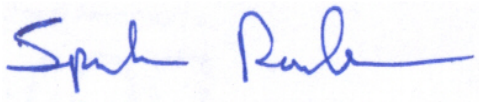
Thank you for your consideration. We look forward to hearing from you.

Sincerely,

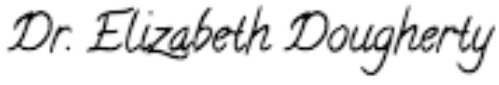
Sonia Diermayer
Co-chair, Water Committee
Sierra Club SF Bay Chapter
sodier@mindspring.com
510-336-1102

Peter Drekmeier
Policy Director
Tuolumne River Trust

Katja Irvin, AICP
Water Committee Chair
Sierra Club Loma Prieta Chapter



Spreck Rosekrans
Executive Director
Restore Hetch Hetchy

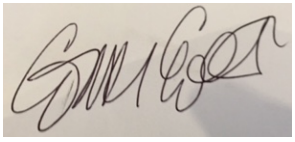


Dr. Elizabeth Dougherty
Director
Wholly H2O

Chris Shutes
Water Rights Advocate
California Sportfishing Protection Alliance

Cecily Smith
Executive Director
Foothill Conservancy

Jennifer Clary
Water Program Manager
Clean Water Action



Conner Everts
Facilitator
Environmental Water Caucus

Cc's via email to:
Project Contacts:
ACFCWCD, Zone 7 - Ms. Amparo Flores, aflores@zone7water.com
ACWD - Mr. Thomas Niesar, thomas.niesar@acwd.com
BAWSCA - Mr. Michael Hurley, mhurley@bawsca.org
CCWD - Ms. Maureen Martin, mmartin@ccwater.com
EBMUD - Mr. Thomas Francis, tfrancis@ebmud.com;
Mr. Hassan Abdullah, habdulla@ebmud.com
MMWD - Ms. Thomasin Grim, tgrim@marinwater.org
SCVWD - Ms. Tracy Hemmeter, themmeter@valleywater.org
SFPUC - Ms. Manisha Kothari, mkothari@sfwater.org

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BAWSCA
Bay Area Water Supply & Conservation Agency

January 6, 2016

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: Proposed Regulatory Framework for Extended Emergency Regulation for Urban Water Conservation

Dear Chair Marcus and Members of the Board:

The Bay Area Water Supply and Conservation Agency (BAWSCA) appreciates the opportunity to provide input as the State Water Resources Control Board (Board) considers potential modifications to the Emergency Regulation for Urban Water Conservation. 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 nearly 33,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties.

BAWSCA has the following comments and recommendations on the proposed regulatory framework:

No Redirected Impacts – The proposed regulatory framework includes new credits for climate and growth impacts, but is silent as to whether such modifications will result in the raising of Conservation Standards for other water agencies. BAWSCA respectfully requests that the State Board clarify its intention to avoid redistributing impacts onto other water suppliers through implementation of the revised regulations.

Growth Credit for Infill Development – The State of California encourages infill development as a means of supporting sustainable development that results in reduced greenhouse gas emissions and energy use, as well as improved regional air quality. The current "Growth Credit" proposal relies on additional water service connections as the metric for determining a city's and/or agency's population growth. This method may not work adequately for many dense urban environments where new infill developments do not generate additional water service connections. BAWSCA suggests that the State Board include an additional metric for recognizing growth that is more appropriate for infill development (e.g., population growth data from a respected third party, such as the California Department of Finance).

Cumulative Timeperiod for Monitoring Compliance with Mandated Reductions – The proposed changes in the regulatory framework do not address the period over which the monitoring of an individual agency‘s performance will occur (e.g., June 2015 and February 2016) and particularly, when or if the cumulative accounting of savings would “reset“ under the revised framework. BAWSCA suggests that the State Board clarify that the compliance of individual agencies will continue to be monitored on a cumulative basis through the revised termination date of October 2016.

Process for Ending Mandatory Reductions – BAWSCA suggest that the State Board develop a process with specific triggers for ending the mandatory reductions should water supply conditions warrant.

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
A. Schutte, Hanson Bridgett, LLP

Agencies deserve credit for water supply investments
Sacramento Bee | January 11, 2016 | Timothy Quinn

El Niño is finally making its presence felt with a series of welcome storms. Since we don't yet know if it will put a significant dent in California's epic drought, state regulators are preparing the next version of an emergency regulation that has required statewide mandatory conservation in urban areas since last June.

An initial framework released last month by the State Water Resources Control Board staff, however, is raising deep concerns that the regulation could take a critical tool off the table – local water projects developed to buffer the effects of drought.

Focusing almost exclusively on mandatory conservation could deny communities the benefit of billions of dollars invested in projects such as water recycling, water storage and desalination designed to make them less vulnerable to multiyear droughts.

Not only does this undermine the value of these public investments, but it also runs counter to Gov. Jerry Brown's California Water Action Plan and its call for more such investments in the future.

Under the current regulation set to expire in February, urban water suppliers are required to meet conservation targets ranging from 4 percent to 36 percent, compared to 2013 levels. Californians have responded heroically to the conservation mandate, exceeding Brown's goal of reducing water use by 25 percent statewide.

Conservation remains important, but ratepayers have supported and financed water supply projects no less heroically. They expect to see their benefits in times of drought.

Since the last major drought in the early 1990s, local water agencies have invested about $20 billion to augment and diversify their water supplies through recycling and conservation, water storage projects, groundwater cleanup and brackish water and ocean desalination. These investments are widely credited by the Public Policy Institute of California and others with keeping the state's economy largely unscathed through four years of severe drought.

If the State Water Board's current approach continues in 2016, there could be little incentive for public water agencies and their ratepayers to invest in additional drought-proof supplies. Water agencies also could see damage to their credibility with customers if they cannot use the very tools paid for with ratepayer dollars.

The State Water Board must rethink its approach. Water supply tools are just as valuable – if not more so – than demand management tools such as conservation. State regulations for 2016 should recognize both types of tools as equally important and fully credit local agencies for their investments.

The board also should provide a clear end to the regulation should El Niño end the drought emergency. We owe it to Californians who've entrusted us to invest wisely in our local water resources.

Timothy Quinn is executive director of the Association of California Water Agencies, which represents 430 public water agencies. He can be contacted at timq@acwa.com.

# # #

As rain pummels California, some see a way to fight drought
Washington Post | January 11, 2016 | Associated Press and Elliot Spagat

Much of California's rain washed away

Much of the torrential rain that fell on Southern California last week flowed right into the ocean, just as downpours did before the state's epic drought.

That approach once seemed like a good idea, as storm drains provided a defense against flooding. But with California entering what may be a fifth year of drought, agencies are slowly moving to capture and store more of this precious resource.

"That was the 19th-, 20th-century thinking: 'Let's get that water out of here as fast as possible,' " said Deborah Bloome, senior director of policy at TreePeople, a nonprofit that is working to increase rain capture in the Los Angeles area.

Now people are more likely to see a rapidly disappearing flood — nearly three inches fell on much of Southern California last week — as a wasted opportunity.

The State Water Resources Control Board plans to allocate $200 million for such projects. And Los Angeles plans to capture 20 billion more gallons than the 10 billion it collects during normal years.

"This is a source of water that has been neglected for far too long," said Peter Gleick, president of the Pacific Institute. The institute authored a 2014 report with the Natural Resources Defense Council that estimated that urban California could capture an additional 630,000 acre-feet of rain a year, roughly enough for 1.2 million households. "It is untapped, and it has enormous potential."

Southern California imports a lion's share of its water from Northern California and the Colorado River, on aqueducts that stretch hundreds of miles. The drought has slashed water consumption across the state and renewed interest in developing new water sources such as recycling and seawater desalination.

In Los Angeles, the city gutted a 16-foot-wide concrete street median and replaced it with vegetation that captures rain over 111 acres. The $3.4 million project is designed to collect enough water to fill more than 27 Olympic-size swimming pools a year.

Even smaller projects are being eyed. In November TreePeople unveiled a 1,320-gallon home tank that can be programmed to drain before a storm, making room to capture fresh water. The group plans to equip several more houses by next month.

"We want to show folks this works for El Niño," Bloome said.

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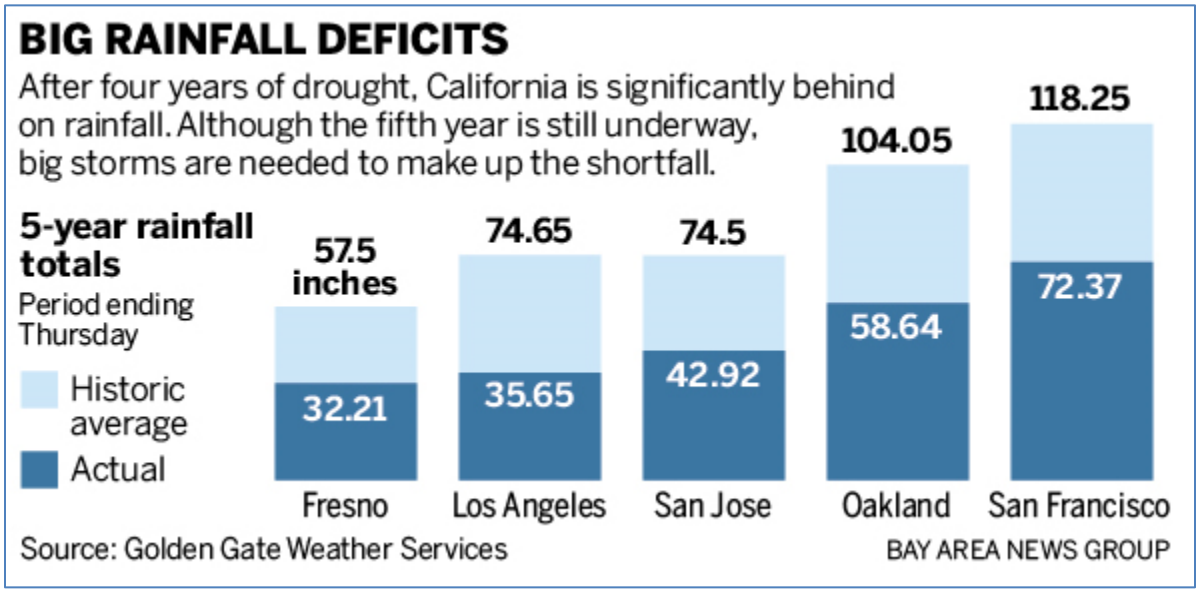
California drought: How will we know when it's over?
SJ Mercury News | January 9, 2016 | Paul Rogers



Now that 2016 has gotten off to a wet start, with a series of El Niño storms drenching California in recent days, the question is turning up with increasing frequency at dinner parties and coffee shops:

"How will we know when the drought is over?"

The answer, water experts say, is more complicated than you'd think.

Simply put: The drought could end this year, according to state water officials. But for that to happen, as California enters the fifth year of the worst drought in the state's history, rains will have to continue arriving in pounding, relentless waves through April to fill depleted reservoirs and dry rivers and push the Sierra snowpack to at least 150 percent of normal

"One week of rain doesn't make up for four years of historic drought. We are in a very deep hole," said Mike Anderson, California's state climatologist.

Other disasters are easier to understand. Everyone knows when a forest fire is contained, an earthquake stops shaking or a tornado has passed.

But with California droughts, there isn't widespread agreement among scientists and water managers about what signifies the finish line. California is a huge state, with many different climates, water sources and water users. Decent rain over a few months may be enough to grow green grass so that a Sacramento Valley cattle rancher's business returns to normal in one season. But it might not fill reservoirs enough so a Bay Area city can lift water conservation rules.

"As they say, all politics is local. And all droughts are local," said Jeanine Jones, a top drought manager at the state Department of Water Resources. "The impacts are in the eye of the beholder."

Many experts say that if the state's big reservoirs fill, the drought will be over because it will be nearly impossible to convince Californians there is a drought emergency when they see water rushing over spillways and headed out to sea.

Others say California needs to make up the sizable rainfall deficit over the past four years, which almost certainly won't happen this winter. Other experts say that California has to replace billions of gallons of overpumped groundwater to have a true recovery -- which will take decades.

"How will we know when the drought is over?" said Leon Szeptycki, a water use attorney and executive director of Stanford's Water in the West program. "That's a really good question. There are lots of different answers."

The final decision will rest with Gov. Jerry Brown.

He declared a statewide drought emergency Jan. 17, 2014, and he is the one who eventually will rescind it.

Jones said various state agencies have been meeting nearly every week as part of a drought task force. They will make a recommendation to the governor about whether to lift the drought declaration at the end of the winter rainy season -- probably not before April -- after it's clear how much rain and snow fell, she said.

How far do we still have to go?

Anderson researched years when other major droughts were widely considered to have ended: 1938, 1978 and 1993. In each case, the Sierra snowpack -- the source of one-third of California's water supply -- was roughly 150 percent of the historic average. And precipitation levels at eight key weather stations in Northern California, located in watersheds that feed Shasta, Oroville, Folsom and other massive reservoirs, also was between 130 percent and 150 percent of normal.

His conclusion: If California receives 150 percent snowpack by this April and 150 percent of normal precipitation in the north, that should be enough to fill the biggest reservoirs and probably end the drought.

On Friday, the Sierra Nevada snowpack was at 107 percent of the historic average, and the eight-station index was at 94 percent.

"I'm encouraged. It's glorious. I went up to the Sierra last week, and I wanted to kiss each snowflake," said Felicia Marcus, director of the State Water Resources Control Board. "It was spectacular. It was tinged with the fact that I know it could still get warmer and melt, but I'm trying to look at it as a glass half full."

On Feb. 2, the board will vote on whether to relax the mandatory water conservation rules that have been in place since last June. Those require a statewide reduction of 25 percent in urban water use, and cities and water companies that violate the rules face fines. They have forced hundreds of water agencies to impose water restrictions.

The board is expected to ease the rules somewhat in areas with hotter climates or fast population growth, while keeping most of them in place. However, it will come back in April for another look, Marcus said.

"If we are flush, then we'll drop them then," she said. "If we are in some middle ground, we might adjust them and ease up a bit."

One of the biggest problems statewide is that nearly every major reservoir is at dangerously low levels. Since Dec. 8, rain has boosted the level of Shasta Lake, the state's largest reservoir, by 12 feet, adding 168,000 acre feet of water -- enough for 840,000 people's needs for a year.

That's impressive, until you realize that all that water only increased Shasta's storage by 4 percentage points, to 33 percent full.

Similarly, all the recent rain raised the 10 reservoirs in Santa Clara County to 31 percent full, up from 29 percent on New Year's Day.

"There's still an awful lot of room in those reservoirs," Anderson said.

And then there is the rainfall deficit.

Since the drought began in 2011, most major cities in California are missing at least a year of supply.

San Francisco, for example, receives 23.65 inches of rain in an average year. So over five years, it should have received 118.25 inches. But so far, since the drought began, it has received just 72.37 inches. That means that to get "back to normal," the city would need 45.88 inches this rainy season.

The record wettest year in San Francisco was 49.27 inches, during the winter of 1861-62.

Similar shortfalls of 25 to nearly 40 inches exist in San Jose, Oakland, Fresno and Los Angeles.

In strong El Niño years like this one, history shows, the chance of a wet winter in California is greater. But it's not guaranteed.

"The big question is: Are we going to stay in a wet pattern?" said Jan Null, a meteorologist with Golden Gate Weather Services in Saratoga. "We don't have much skill after a week or two to know for sure.

"The fact that we have a very strong El Niño in place loads up the dice a little bit in favor of it being wetter," he said. "But even loaded dice don't always come up the way you want."

NASA scientists using satellite data estimate that California is 12 trillion gallons of water short because of the drought -- in rivers, creeks, snowpack and, most importantly, in underground aquifers that have been pumped at record levels by Central Valley farmers. Groundwater experts say that will take decades to recover. And it might not ever happen.

"California suffers from what I call 'chronic water scarcity.' We simply don't have enough water to do all the things that we want to do," said Jay Famiglietti, a senior water scientist with NASA's Jet Propulsion Lab and a UC Irvine professor of Earth systems science.

Famiglietti said farms need more drip irrigation, changes in water pricing and perhaps importing more water from out of state to stay sustainable in the future. Making up the lost 12 trillion gallons of water could take four years of normal or above-normal rainfall, he added.

When the drought does finally end, some leaders will push to make certain rules permanent, such as not allowing anyone to water grass within 48 hours of rainfall or requiring hotels to ask customers if they want to waive washing sheets and towels.

"It's rained a little, so we're all celebrating right now," said Dick Santos, a director with the Santa Clara Valley Water District. "It's like the economy. Things are going good right now, but they won't always be. Rainy days are going to come, but don't be fooled. Our population is growing, and California is a dry state. Droughts will come back. We should be better prepared next time than we were this time."

# # #

What's in the Governor's proposed budget for emergency drought response and implementation of the California Water Action Plan
Maven's Notebook | January 7, 2016

The Governor released his proposed budget this morning. Here's what's in the budget for emergency drought response and the California Water Action Plan:

What's in the Governor's proposed budget for Emergency Drought Response …
From the Natural Resources Chapter pages 109-114

The State of California has entered into what may prove to be a fifth consecutive year of drought. Major reservoirs are extraordinarily low and many groundwater aquifers are significantly depleted. Drinking water supplies continue to be at risk in some communities, agricultural areas face fallowing of farmland and increased unemployment, and drier conditions have increased the risk of wildfire. The drought has also degraded important wildlife habitats and pushed some of the rarest fish and terrestrial species closer toward extinction.

Since the Governor first declared a state of drought emergency in January 2014, the Administration has worked with the Legislature to appropriate $3.7 billion to assist drought-impacted communities, provide additional resources for critical water infrastructure projects and respond to drought-related wildlife emergencies. The state has also committed an additional $292 million General Fund in the current year for emergency response activities associated with catastrophic wildfires, such as higher wildfire suppression costs and debris removal in impacted communities in Lake and Calaveras counties to enable community rebuilding and economic recovery.

The Budget provides an additional $323.1 million ($212.1 million General Fund) on a one-time basis to continue immediate response to the drought (see Figure RES-01). The Budget also reflects an additional $215 million General Fund for higher anticipated emergency wildfire suppression costs as a result of the drought, including significant tree mortality throughout the state. The Administration will continue to monitor and evaluate statewide drought conditions through the winter months, and will reevaluate these budget year needs in the May Revision.

Significant Adjustments:

• Department of Forestry and Fire Protection (CAL FIRE) — An increase of $74.5 million General Fund and $2.9 million State Responsibility Area Fire Prevention Fund to continue firefighter surge capacity, retain seasonal firefighters beyond the normal budgeted fire season, provide additional defensible space inspectors, and enhance air attack capabilities to suppress wildfires during the 2016 fire season.

• Department of Water Resources — An increase of $64 million General Fund for multiple statewide drought response efforts including:

•• $42 million for installation and removal of a temporary rock barrier in the Sacramento-San Joaquin Delta to deter salinity encroachment.
•• $12 million to implement statewide actions, including operation of the drought management operations center, water transfer support and water supply modeling.
•• $5 million to provide emergency drinking water support for small communities, including addressing private wells.
•• $5 million to continue Save Our Water, the state's public education campaign aimed at helping all Californians reduce water use.

• State Water Resources Control Board — An increase of $5.4 million General Fund and $16 million Cleanup and Abatement Account to continue enforcement of drought-related water rights and water curtailment actions and provide grants for emergency drinking water projects.

• Department of Fish and Wildlife — An increase of $15.7 million General Fund and $2 million Hatchery and Inland Fisheries Fund to continue fish rescue and stressor monitoring, water efficiency projects on department lands, law enforcement activities, and to provide infrastructure to protect salmon. Drought response efforts will include the voluntary drought initiative, which encourages landowners to keep as much water as possible in high-priority spawning streams. The Department also has expedited installation of storage tanks for landowners who would otherwise divert from streams.

• Department of Social Services — An increase of $18.4 million General Fund to continue the Drought Food Assistance Program, which since 2014 has delivered more than a million boxes of food to communities most impacted by the drought.

• Department of Community Services and Development — An increase of $7.5 million General Fund to provide emergency assistance to unemployed farmworkers, including housing, utility and job training assistance.

• Office of Emergency Services — An increase of $26.7 million General Fund to continue to provide local communities with technical guidance and disaster recovery support related to the drought, distribution of bottled water, and response and recovery training and credentialing program for local agencies.

The Budget also includes $90 million of Cap and Trade funding for the Department of Food and Agriculture, the Department of Water Resources, and the Energy Commission for multiple water conservation projects that save energy and reduce GHG emissions.

Figure RES-01
Emergency Drought Response
(Dollars in Millions)

Investment Category	*Department*	*Program*	*Amount*
Protecting Water Supplies	Department of Water Resources	Emergency Salinity Barriers in the Delta	$42.0
	Department of Water Resources	Local Assistance for Small Communities	$5.0
	Water Board	Water Curtailment	$5.4
	Water Board	Emergency Drinking Water Projects	$16.0
Water Conservation	Department of Water Resources	Urban Water Conservation & Save Our Water Campaign	$15.0
	Energy Commission	Rebates for Appliances	$30.0
	Energy Commission	Water and Energy Technology Program	$30.0
	Department of Food and Agriculture	Agricultural Water Conservation	$20.0
Emergency Response	Department of Forestry and Fire Protection	Enhanced Fire Protection	$77.4
	Department of Water Resources	Drought Management and Response	$12.0
	Department of Fish and Wildlife	Protection of Fish and Wildlife	$17.7
	Department of Social Services	Drought Food Assistance	$18.4
	Office of Emergency Services	California Disaster Assistance Act	$22.7
	Office of Emergency Services	State Operations Center	$4.0
	Department of Community Services and Development	Farmworker Assistance	$7.5
Total			**$323.1**

What's in the Governor's proposed budget for implementing the California Water Action Plan …
From the Natural Resources chapter, pages 109-114

Released in January 2014, the California Water Action Plan provides a blueprint for California to build more reliable and resilient water systems and restore important ecosystems. Many of the emergency drought response actions executed during the previous four years further the 10 actions of the California Water Action Plan (see Figure RES-02), including making conservation a way of life, increasing regional self-reliance in water supplies, and improving flood protection. The state's emergency drought response is strategically guided by accelerating several of the key actions in the California Water Action Plan that will provide long-term benefits for the state.

In November 2014, the voters approved the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1), which provides $7.5 billion in general obligation bonds for water storage, water quality, flood protection, and watershed protection and restoration projects. Proposition 1 includes funding specifically intended to achieve the three overarching goals described in the Plan: restoration, resilience, and reliability.

Significant Adjustments:

• State Obligations — An increase of $385 million Proposition 1 funds for multiple agencies to support projects that meet the state's commitments under the Klamath Agreements ($250 million), the Central Valley Project Improvement Act ($90 million), and the San Joaquin River Settlements ($45 million).

• Flood Protection — An increase of $100 million General Fund for the Department of Water Resources to enhance flood protection in the Central Valley by repairing levees. This is part of the deferred maintenance proposal in the Statewide Issues Chapter.

• Salton Sea Restoration — An increase of $80 million Proposition 1 for the Department of Water Resources to design and implement projects that expand habitat and suppress dust at the Salton Sea, a critical resting stop for migratory birds.

• Wetlands Restoration — An increase of $60 million Greenhouse Gas Reduction Fund for the Department of Fish and Wildlife to implement wetland restoration projects that provide carbon sequestration benefits, including habitat restoration projects within the California EcoRestore program to support the long-term health of the Delta's native fish and wildlife species.

• Update of the Delta Plan — An increase of $3.6 million General Fund for the Delta Stewardship Council to implement the Delta Science Plan and incorporate the WaterFix Delta conveyance project into the Delta Plan.

• Manage and Prepare for Dry Periods — An increase of $3 million General Fund for the Department of Water Resources to identify water delivery operational improvements in extreme conditions and evaluate long-term climate change impacts on statewide water supplies.

• Groundwater Management — An increase of $2.5 million General Fund for the Department of Water Resources to update data and fix safety hazards at 15 monitoring sites that are part of the National Hydrography Dataset, an important federal surface water mapping system.

• Investment Strategy — An increase of $1.2 million General Fund for the Department of Water Resources to strengthen coordination and performance evaluation across state and regional agencies and develop a long-term investment and financing strategy for the Water Action Plan.

Since the establishment of the Governor's drought task force in December of 2013, the state has made significant progress in a number of key water policy areas. California has adopted historic groundwater legislation, improved the groundwater adjudication process, enacted legislation that authorizes the consolidation of drinking water systems, and, with the help of the voters, enacted a $7.5 billion water bond.

Even with these achievements, the last four years of drought conditions have exposed the weaknesses of the state's water system and the laws that govern it. As the state adapts to the future challenges of reduced Sierra snowpack and other changes to California's hydrology associated with climate change, it will be necessary to gain more flexibility in a water system that is increasingly constrained, both physically and legally.

The state must focus limited resources on projects that leverage and maximize multiple benefits, and integrate the state's water systems with regional and local supplies. New water storage and conveyance systems must work together with water recycling and conservation to support economic growth in an environmentally sustainable way.

Furthermore, the state must create more flexibility to get water where it is needed — on farms, in communities, and in streams to support people and the biodiversity on which they depend. The state must also improve the ability to transfer water and help support the integration of surface water and groundwater use to lessen conflicts between human, economic and environmental demands for water.

What the Governor's budget says about Water Action Plan and Safeguarding California …
From the Environmental Protection Chapter, pages 104-105

While California continues to reduce GHG emissions, the state is already confronting the impacts of climate change. Many impacts, such as increased fires, floods, severe storms and heat waves, will only become more frequent and more dramatic. California has experienced four consecutive years of below-average rain and snow, and is currently facing severe drought conditions statewide. Water levels in the state's reservoirs are depleted, the state's snowpack has been at historically low levels, and the state's rivers have been experiencing reduced flows.

In July 2014, the Natural Resources Agency released the Safeguarding California Plan, which identified risk reduction strategies to prepare for, and adapt to, climate change, including the management of the state's water supplies. In recognition of the current and future challenges of climate change, the Water Action Plan provides a blueprint to improve water supply reliability, restoration, and resilience (See the Natural Resources Chapter). The Cap and Trade Expenditure Plan includes an additional $150 million for the following programs that reduce GHG emissions by saving energy through water conservation, and restore ecosystems to improve carbon sequestration:

• $60 million for the Department of Fish and Wildlife to implement wetland restoration projects that provide carbon sequestration benefits, including habitat restoration projects within the California EcoRestore program to support the long-term health of the Delta's native fish and wildlife species.

• $30 million for the Energy Commission to begin implementation of the Water Energy Technology Program to provide funding for innovative technologies that reduce GHG emissions by (1) achieving significant energy and water savings, (2) demonstrating actual operation

beyond the research and development stage, and (3) documenting readiness for rapid, large-scale deployment in California.

• $30 million for the Energy Commission to implement a consumer rebate program for the replacement of energy-inefficient water-consuming appliances, such as dishwashers and washing machines.

• $20 million for the California Department of Food and Agriculture's existing State Water Efficiency and Enhancement Program, which provides incentives to agricultural operations to invest in energy-efficient irrigation technologies that reduce GHG emissions and water use.

• $10 million for the Department of Water Resources' existing Water Energy Grant Program which reduces energy demand and GHG emissions through local projects that also support water use efficiency and conservation.

# # #

USDA: Not all California's crops have seen acreage declines during drought
Ag Professional | December 16, 2015 | USDA

Long-term trends in California agriculture reflect shifting production, which may have implications for water use during droughts.

Annually harvested crops such as cotton, corn, and wheat are on a downward trend and have seen a 31-percent reduction in planted acreage in California since 2012.

Similarly, rice acreage has dropped 27 percent during the past 2 years (2013-15) of the drought.

California's hay and vegetable acreage has been more stable.

In contrast, almonds, grapes, and walnuts acreage is on a strong upward trend that does not appear to have slowed during the drought.

Orchards and vineyards require larger capital investments than annual crops, and because of the potential loss of that investment, orchard/vineyard owners are generally less willing to reduce water usage during droughts.

However, orchards and vineyards are also more dependent upon ground-water than volatile surface-water supplies.

California orchard/vineyard farmers are also more likely to have invested in more-efficient irrigation systems, such as low-pressure sprinkler and micro-irrigation systems that reduce water lost to evaporation, runoff, and deep percolation, thereby increasing the share of applied water that is beneficially used by the crop.

This chart is found in the November 2015 Amber Waves statistic, "Long-Term Response to Water Scarcity in California."

# # #

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California falls short on water conservation ahead of El Niño
Examiner.com | January 10, 2016

As one of the worst droughts that California has seen continues to loom, the state works towards water use reduction which is monitored on a monthly basis. The months of October and November have fallen short of the monthly projections. Although the projections are on track to meet the 25% savings over 2013, the state has a long way to go to see significant change.

Unfortunately, the winter months that bring in the cold and wet weather tends to see less reductions. According to Felicia Marcus of the State Water Resources Control Board, "I want to be clear that the goal post is still the cumulative 25%." Marcus encourages state officials and residents that "we're still winning the race."

In an effort to meet the state's goals, the board sets the standards with the 411 urban suppliers. Depending on the per-capita water use of the past, the water board sets the percentage for each supplier to meet. Suppliers that fall short of the goals are penalized or issued warning notices.

Due to the large number of regional concerns, issues and crop needs, the board has decided to adjust the suppliers requirements to assist in meeting the projections and avoid penalty. The water board plans to look at the rainfall totals from the El Niño storms to determine ongoing requirements or the elimination of them altogether.

As part of overall initiatives, some local municipalities have taken such measures as not watering public vegetation and offering households alternatives for their homes and lawns. Residents of the state can do their part by reducing household consumption voluntarily. Ways to do this include:

• Taking shorter showers.
• Turning off the water when brushing your teeth.
• Complying with alternate yard watering days.
• Changing your yards to drought resistant plants and landscaping.
• Installing low flow faucets, shower heads and toilets. Some low flow shower heads can be obtained for free by contacting your water company.

As you look to replace old appliances, look into water and energy saving dishwashers, tankless water heaters, and washing machines. These purchases may have a rebate offered by your local water department that can be as high as $300, a significant cost reduction on your purchase.

Education is key for households, including rentals, to decide what the best plan of action is to make a difference. It is important to understand that even with the projected rains from the impending storms, far more will be needed before any real difference can be made towards getting back to the water levels of six years ago.

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Bay Area lawmaker wants to throw the checkbook at water hogs
Contra Costa Times | January 8, 2016 | Denis Cuff

A California lawmaker is dramatically raising the stakes in water management, proposing fines that could reach thousands of dollars a day and public shaming of people who use too much.

Legislation introduced this week would require the state's 411 urban water districts to set local limits on household water consumption during drought emergencies.

Violators would be fined at least $500 for every 748 gallons of excess use.

An Alamo house identified last month as using more than 11,200 gallons per day would be assessed $6,800 a day in fines, or more than $200,000 a month, under the penalties called for in the bill.

State Sen. Jerry Hill, D-San Mateo, said his bill is needed to assure Californians share the burden of cutting back water use without letting some people with big incomes use as much as they want.

"We should all be treated equally," Hill said Thursday. "If you're not willing to save, you should pay a price."

Hill said he was troubled by media reports of some households using thousands of gallons per day in affluent communities such Alamo, Danville, Beverly Hills and La Jolla.

The vast majority of California's urban districts have resisted setting hard limits on household use because they don't want to be seen as water cops.

Instead, most districts have met the state's demand for 25 percent savings on average by raising rates to encourage cutbacks. Many districts use tiered rates that charge more for those who use more, but most have not adopted rules that impose penalties.

Hill said his bill would require each urban district to decide what is reasonable and excessive after considering the local climate, average lot size and average family size.

"I don't believe in a one-size-fits-all approach," he said

The household limit is defined as 1,000 gallons per day in the East Bay Municipal Utility District, California's only major urban water district that has penalties for excess use.

EBMUD's fine, however, is $2 for every 748-gallon units of excess use, less than 1 percent of the $500 fine called for in Hill's bill.

"I think $500 is an outrageous amount," said John Coleman, who serves on the EBMUD board.

Coleman asserted that Hill's bill would undermine water districts' incentives to bolster their defense against drought through actions such as buying extra irrigation water, storing water underground or building desalination plants. Why invest in drought protections if customers are going to be penalized anyway, he asked.

One San Ramon resident said the bill goes too far in empowering government to dictate behavior.

"This is Draconian," said Rich Nidever, a homeowner who stays below EBMUD's 1,000 gallon limit. "What's the next? A list that tells you how much gasoline you can use or how much food you can eat?"

Nidever said he also worries that the bill would invade the privacy of homeowners who exceed use and then are exposed to the media as water hogs.

Environmentalists, however, say the public shaming works. Many homeowners who exceeded limits and were identified by EBMUD last year have cut their water use dramatically.

The district released the names of more than 4,200 customers fined for exceeding the 1,000-gallon limit -- including Oakland A's executive Billy Beane and San Francisco Giants' star catcher Buster Posey.

"East Bay MUD was very successful in shaming its water wasters, while water districts in Southern California have not made shaming one of their tools to reduce use," said Sejal Choksi-Chugh, executive director of San Francisco Baykeeper

She predicted Hill's bill will open the door wider for more actions to reduce water waste, furthering California's stronger conservation ethic developed from the state ordering water districts last year to reduce use from 4 to 36 percent.

The penalties in Hill's bill would be in effect only during declared drought emergencies. Hill said there would be an appeal process for people if their excess use was triggered for reasons such as a pipe break.

# # #

Southern California lags as state misses water conservation goal
SF Gate | January 5, 2016 | Kurtis Alexander

California residents continue to ease back on the taps, but their efforts are slipping a bit, according to data released Tuesday that show cities and towns missed the state's 25 percent water savings mandate for the second straight month.

The savings in November — a 20 percent statewide cut over the same month in 2013 — come as California is hit with a series of storms fueled by El Niño, the weather pattern that forecasters expect to provide at least some relief after four dry years.

State water officials cautioned Californians against letting up on conservation even with a wet winter projected. The deficit created by the drought, they say, is unlikely to be repaired by a single wet year.

The greatest lapse in savings in November was in warm, dry Southern California, where residents cut back 14 percent compared with the baseline year of 2013 — before Gov. Jerry Brown declared a drought emergency. Water savings in the Bay Area actually improved in November to 27 percent.

Felicia Marcus, chair of the State Water Resources Control Board, downplayed the slip, noting that cutbacks over past years are much harder to achieve in the fall and winter, when less overall water is used because of the lower demand for outdoor irrigation.

Marcus praised November's 20 percent reduction as enough to keep cumulative savings since June — when the mandatory restrictions took effect — above the target at 26.3 percent.

"The goalpost is the 25 percent through February, so we're still winning the race," she said.

Under the water board's unprecedented conservation rules, California's roughly 410 biggest urban water suppliers are assigned a mandatory reduction between 4 and 36 percent, depending on how much they've saved in the past — with the goal being a 25 percent statewide cut. Agencies that don't make their mark face potential fines.

The East Bay Municipal Utility District saved 25 percent in November, according to the new data, surpassing its 16 percent benchmark. The San Jose Water Co. cut back 33 percent, besting its 20 percent goal. San Francisco residents saved 13 percent, exceeding their 8 percent mandate.

Out of about four dozen water suppliers in the Bay Area, four didn't hit their targets in November: Daly City, Pittsburg, the city of Sonoma and the Contra Costa Water District. All four, however, remain on track cumulatively.

In October, California saved a total 22 percent over 2013. In previous months, the state hit its goal, reducing water use by 26 percent in September, 27 percent in August, 31 percent in July and 27 percent in June.

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White House pushes water conservation in wake of climate pact

SF Chronicle | December 15, 2015 | Carolyn Lochhead

WASHINGTON — The White House followed Sunday's landmark climate pact in Paris with a push Tuesday on water conservation and efficiency, as top administration officials warned that water shortages are among the biggest consequences of rising global temperatures.

Following the same model it used to push solar power, the Obama administration seeks to use federal research, better data collection and private-sector incentives to boost water-saving technologies, Ali Zaidi, associate director of natural resources, energy and science at the Office of Management and Budget, said at a White House round table on water innovation.

"This is a proven playbook," Zaidi said.

Competition for water

White House science adviser John Holdren and Interior Secretary Sally Jewell said the plan is to find ways to squeeze more water from existing systems through new technologies.

Congress is no longer funding the giant dams like those built in the last century that led to the development of the West, Jewell said, while Holdren warned that climate change is reducing the available freshwater supply even as higher temperatures increase demand.

Population and development pressures "are catching up to us," Jewell said, pointing to California as an example of how shrinking supplies lead to clashes among human users and put enormous stress on the "natural landscapes and habitats that vie for the same water everybody else wants."

Jewell called for more water storage but made no mention of five huge dam projects under consideration in California. Instead, she pointed to a little-known reservoir completed five years ago in California just north of the Mexican border. The Warren Brock Reservoir was built in two years, she said, and can capture runoff from extreme rain on the Colorado River. The reservoir prevents such floodwaters from "escaping" to Mexico.

Holdren said humans already take 42 percent of the planet's total freshwater runoff, with more than 70 percent of that going to farms. Counting the water used to grow food and make consumer goods, the average American uses 528,000 gallons a year, he said, about twice what the average Italian uses.

Higher temperatures increase evaporation from the soil, reservoirs and rivers, he said, even as plants and people demand more water.

Holdren said the U.S. loses 16 percent of its freshwater to leaks, which could be prevented by better sensors and new pipe materials. Existing water recycling technologies need to be deployed more widely, he said.

But "no one technological bullet" can solve water shortages, he said. Desalination remains four times more expensive than traditional water sources, he said. It uses three times more electricity and contributes twice the greenhouse gas emissions, he said. Ocean intake valves disturb marine life, and disposal of the concentrated waste brine remains a problem, he added.

Desalination "has to sync with our climate change objectives," Jewell said.

Summit set for March

The White House has scheduled a water summit for March 22. Jewell announced a new Natural Resource Investment Center to coordinate water research and private investment in water conservation and habitat protection. The center will attempt to expand water markets using as a model California's Central Valley Project, in which cities and farms buy water during droughts from farmers who grow lower-value crops.

To relieve drought stresses on ecosystems, she called for "mitigation banking" as a way to protect larger landscapes. Such a concept would allow a developer, for example, to improve habitat in one place to offset the damage done by construction in another place.

# # #

California Ballot Measure Would Let Water Agencies Soak the Rich
LA Weekly | December 15, 2015 | Gene Maddaus

As the state enters its fifth year of drought, Californians have finally identified the true water-hogging culprits: rich people.

Water use is directly related to income, with big lawns equating to big water bills. Under a statewide mandate to conserve, California is upping its drought-shaming game, singling out celebrities and golf courses, and even going after non-famous people who just want to grow orchards in their backyards.

Well, now the League of California Cities is offering a ballot measure that could channel some of that populist anger. The initiative would allow water agencies to impose tiered rate structures, which force power-guzzling one-percenters to pay substantially higher water rates than everybody else.

Water agencies already do this, though the rates are not as aggressive as they could be. But the legality of tiered pricing was thrown into doubt earlier this year, when a judge invalidated the rate structure in San Juan Capistrano. The issue is Proposition 218, which requires that government fees be directly connected to the cost to provide a particular service.

This ruling did not immediately invalidate all the other tiered rate structures around the state. And in fact, on Monday L.A. Mayor Eric Garcetti announced his support for expanding L.A.'s rate structure from two tiers to four. But the San Juan Capistrano ruling has clearly made some agencies wary of increasing rates at the upper usage tiers. If they do it, they will have to show some math.

The ballot initiative, filed on Monday, would make it clear that tiered-rate systems are legal. The measure allows agencies to set rates that "encourage water conservation, prevent waste, and discourage excessive use of water." It also includes language tying rates to the cost of service, which echoes current law under Proposition 218.

The measure would also make it easier for local agencies to fund projects for stormwater capture and decontamination.

The League of California Cities is sponsoring the initiative, along with the California Association of Counties and the Association of California Water Agencies. To get it on the ballot, they would have to launch an expensive signature-gathering effort. And it could also face concerns that the measure would undermine the taxpayer protections in Proposition 218.

So it's possible this is just a backup plan as the local-government groups seek to get a similar measure through the Legislature.

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California looks to make the most of stormwater

Taking a new approach, the statewide Storm Water Strategy aims to use stormwater to improve water quality and supply for local communities and long-term state water supply needs.

Water Technology | January 11, 2016 | Staff

SACRAMENTO, Calif. — Jan. 6, 2016 — As California prepares for a fifth year of drought, the State Water Resources Control Board adopted a new strategy that promotes the value of stormwater for multiple benefits, including groundwater replenishment and habitat improvement, according to a press release.

In the past, unmanaged stormwater runoff has been viewed as water pollution and a threat to human life and property, the State Water Board said in the release.

Taking a new approach, the statewide Storm Water Strategy aims to use stormwater to improve water quality and supply for local communities and long-term state water supply needs, stated the release.

“The drought, and the specter of more frequent droughts due to climate change, requires us to dramatically rethink how we manage storm water in California,” explained State Water Board Chair Felicia Marcus in the release. “Stormwater should no longer be viewed as a nuisance, but instead embraced as an immediate and future water resource. With the right planning to capture it rather than shunting it away, local communities can improve local flood control, water quality, and water supply, including groundwater recharge, while contributing to urban greening — all of which will benefit current and future generations of Californians.”

According to the strategy document, the Storm Water Strategy envisions “a future where watershed processes critical to watershed health, such as overland flow, infiltration and groundwater recharge, interflow, and evapotranspiration, are improved and protected; where urbanized areas of California retain, infiltrate, and use rain falling within their jurisdictions; and municipalities regularly build and maintain multi-benefit storm water projects to achieve positive community, watershed and water resource management outcomes.”

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UC researchers launch UC Water Security and Sustainability Research Initiative
The California Aggie | January 11, 2016 | Alyssa Vandenberg

UC schools collaborate in improving statewide water management, security

In December 2015, several researchers from the University of California (UC) gathered to create the UC Water Security and Sustainability Research Initiative, an initiative which focuses on improving water management and sustainability in California.

According to Graham Fogg, a UC Davis professor of hydrogeology and one of the initiative's six directors, the idea for this initiative began when the UC Office of the President put out a request for proposals for multi-campus collaborative research projects.

"My colleagues and I from the campuses got together and came up with an idea for a water security and sustainability center that we thought would harness all of our strengths and have an immediate impact on California's water management and sustainability," Fogg said.

Both Fogg and Joshua Viers, a director for the initiative at UC Merced, emphasize that this initiative focuses on researching the most efficient ways of storing and managing water, such as reservoir management, floodplains management, ground water recharge, ground water management and runoff.

"[This initiative is] important because it's hard to manage what you don't measure," Fogg said. "One of our key goals is to make the water resources conditions or the store of the water more transparent — how much water is there in these various stores […] and how much is going to be there in the future and what can we do differently in the short term and the long term to make our water resources more secure?"

Viers adds that this initiative is especially crucial because California is dealing with El Niño and the impacts of the drought.

Robert Gailey, a Ph.D student at UC Davis working on groundwater management research under the initiative, believes that this project is important because water plays a key role in everyday life.

"Water is really important to California, not only for agriculture […] but [also because] it's important to our economy for agriculture and it's important to our sustainable food sources," Gailey said.

Viers said that the UC campuses need this initiative in order to make a greater impact on water management and research.

“What makes the University of California really unique is that each one of the campuses is fantastic, [and] while a lot can be done individually […] there were opportunities that were being missed because we weren’t coordinating our activities,” Viers said. “It was clear that water resources research was not well-coordinated across the campuses.”

Viers believes that this initiative will make the UC a leader in preserving water in California.

“The long term goal, of course, is to show that the University of California not only brings vital scientific information […] but that we’re [also] leaders in technology information and novel ways of conducting science that can improve not just the infrastructure surrounding water, but the institution itself,” Viers said.

# # #

We need more urgency on sinking Valley
Sacramento Bee | January 10, 2016 | Editorial

Some parts of the Central Valley are sinking, and time is running out to make the hard choices to slow the overpumping of groundwater causing it.

During the 1920s, ’30s and ’40s, subsidence, which occurs when underground aquifers are emptied, was a huge problem. Farmers pumped with abandon, and parts of the San Joaquin Valley sank 30 feet. When the federal Central Valley Project started delivering water from the Sierra, subsidence ended.

The epic drought has brought it back, with a vengeance. Farmers have fired up their pumps, including those who have planted almonds and other thirsty tree crops.

Now, some areas in the southern part of the San Joaquin Valley are sinking an inch a month, says the U.S. Geological Survey. A NASA study, based on satellite photos, also found significant subsidence.

Roads can crack and become uneven. Bridges, anchored to either side, can twist. Cement canals can leak. Damage could reach hundreds of millions of dollars, even billions.

In the Central California Irrigation District, which serves customers in the western sides of Fresno, Merced and Stanislaus counties, one canal has suffered a significant crack and a bridge will have to be raised. The district has spent $4.5 million so far on fixes.

There are ways to stop subsidence, but none will appeal to everyone.

And they will be politically difficult, especially if fears of drought subside in El Niño’s rains, though the recent storms have had little impact.

First, the state knows the aquifers most at risk and the location of wells drawing from them. It could impose per-acre fees to pay for infrastructure repairs where the dangers are greatest, such as the Tulare Basin. Some have suggested that counties and water districts ban new wells, or at least require permits to pump in areas most prone to subsidence – an idea well worth considering.

Second, farmers could pump only from aquifers above the clay, which would not compact the soil as water is pulled out. But those aquifers have already been exhausted and refilling them would require injection wells and capture basins. While those projects could be financed through the $7.5 billion water bond passed in 2014, the California Water Commission says it won’t make any allocations until 2017 at the earliest. That should be expedited.

Third, the state could beef up its monitoring. In the 1940s, at the height of the previous subsidence crisis, well-like structures measured sinking. The state could require real-time

monitoring for pumps drawing from aquifers below important infrastructure and could limit pumping if subsidence is detected. Starting early could save hundreds of millions in repairs.

Another, perhaps more effective, solution might be the most difficult to achieve – more logical water delivery.

Consider last year's fiasco. In late spring, San Joaquin Valley farmers were told to expect a certain amount from Lake Shasta and planted accordingly.

Two months later, officials became convinced there wouldn't be enough cold water to allow salmon to migrate in the winter. So they slashed deliveries, leaving farmers with a choice – pump groundwater or lose an entire season's investment.

As more demands are made on water supplies and if the drought persists, farmers will again be faced with hard choices.

If they pump, the ground will subside. If they don't, an entire region's agriculture-based economy could sink.

# # #

California struggles over water storage for farmers
Inland News Today | January 10, 2016 |

FRESNO - Keeping California's agricultural land in production depends on fixing its growing water problems.

As the state considers its options, many farmers want to revive the approach that worked for them in the last century: building dams. Not far from this tiny hamlet northeast of Fresno, for instance, the government is thinking of building a new artificial lake just above an existing one.

Doubts are growing about whether spending huge sums to pour high walls of concrete are the best way to solve California's water problems.

Many independent experts, and almost all environmental groups, argue that dams would supply relatively little water for the money. They contend that Californians need to move aggressively to more modern methods of water management, reducing waste to a minimum and learning to live within the limits imposed by an arid environment.

California is able to supply a third of America's vegetables and two-thirds of its fruits and nuts because it is one of only five major growing regions of the world with what is known as a Mediterranean climate. That means it is cold and wet in the winter, then dry and sunny in the summer. The bright, clear days create ideal growing conditions.

The hitch is water. Precipitation is erratic, and when it comes, it tends to fall in the mountainous northern and eastern parts of the state, while much of the population and farming are in the south and west. Winter snows in the Sierra Nevada are crucial, sending billions of gallons of water racing down the state's rivers with the spring snowmelt.

As water problems have worsened in the Central Valley, many farmers have blamed the environmentalists who, the farmers argue, are choosing to waste water on fish at the expense of people.

Many proposals for new storage are on the table. Two that have drawn considerable interest are damming the San Joaquin River again at Temperance Flat, costing more than $2 billion, and a project north of the delta called Sites Reservoir that would store water pumped from the Sacramento River, at a cost nearing $4 billion.

As climate change forces farmers to grow crops in hotter conditions, water demand is only going to rise.

"These aquifers need to be seen as strategic national reserves that can help us weather more climate variability in the future," Dr. Konar said. "Right now, we have pretty much the opposite situation — we're just seeing rapid overexploitation." (Source: New York Times)

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Desalinated Water From Carlsbad Plant Delivered to Vallecitos Water District

ACWA | January 7, 2016 | Emily Allshouse

Desalinated water from the recently completed Claude "Bud" Lewis Desalination Plant in Carlsbad is now being delivered to Vallecitos Water District thanks to the district's direct connection pipe in San Marcos.

VWD is one of two water providers with a direct connection to the desalination plant. According to the district, the pipe will deliver as much as 4,083 acre feet of desalinated water annually – about 27% of its annual supply needs – or enough to supply 8,100 families for one year.

"It's exciting to be a major participant in this effort," said VWD Board Vice President Craig Elitharp. "The Carlsbad Desalination Plant is the largest, most technologically advanced and energy-efficient seawater desalination plant in the nation."

To learn more about the Claude "Bud" Lewis Desalination Plant operations, please visit www.carlsbaddesal.com.

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Recycled water in demand, and not just for parks, golf courses
Contra Costa Times | January 2, 2016 | Sam Richards

ANTIOCH -- The ongoing drought has driven interest in using recycled water instead of drinking-quality water wherever possible, but making that happen depends largely on where the "purple pipes" run.

Wastewater treatment agencies in the East Bay have been selling (or giving away) the water that runs through those purple pipes -- essentially wastewater that has been treated to a lesser degree than water purified for drinking and other domestic purposes -- for uses ranging from watering home gardens to helping cool down a power plant.

Even if the drought comes to a wet, El Niño-fueled end, cities, industries, and school and park districts will increasingly rely on recycled water. And that will require spending to expand the network of all-important purple pipes that, by state law, carry only "disinfected tertiary" water. Although it isn't safe for humans and animals to drink, it can be used on virtually any food crop and for irrigation of parks and playgrounds, school fields and golf courses.

"Moving recycled water requires separate infrastructure running to the various facilities, and that is very expensive," said Jennifer Allen, director of public affairs for the Contra Costa Water District. Bringing that water to more Contra Costa County industries, she said, will require wastewater agencies and the industries to pay for those purple pipelines and associated equipment.

Antioch-based Delta Diablo recently started supplying recycled water to Contra Costa Waste Services' Loveridge Road transfer station in Pittsburg for ongoing dust control needs, related mainly to recycling construction waste.

"Instead of the (transfer) station using drinking water for dust control, they're using recycled water," said Angela Lowrey, Delta Diablo's public information manager. "It's a matter of addressing the drought and preserving drinking water."

The cost of a gallon of recycled water is approximately one-quarter that of a gallon of drinking water, which is good news for the transfer station, operated by Concord-based Garaventa Enterprises. Sal Evola, a Pittsburg city councilman and a Garaventa governmental affairs officer, said it also plays into the transfer station's main mission.

"Our philosophy is to not waste things; for us, it's all about recovery," he said.

It also helps that the Loveridge Road facility is near an existing Delta Diablo "purple pipe," one the agency hopes will soon serve more industries, Lowrey said.

Even pre-drought, wastewater agencies supplied cities, school districts, park districts and other entities with recycled water. Delta Diablo, which has sold recycled water since 2000, can also serve industrial customers, thanks largely to its location on the East Contra Costa waterfront. Its first industrial client was the Calpine power plant a stone's throw away.

The Central Contra Costa Sanitary District, based near Concord, has had preliminary talks with CCWD and others about making more recycled water available for the area's industrial businesses and refineries.

"Are we looking at doing this? Definitely," said Emily Barnett, the sanitary district's intergovernmental affairs manager. "But other entities have to be involved for there to be a solution."

Part of that solution, she said, is creating projects large enough to be financially practical for both the wastewater agencies and the industries.

Many newer neighborhoods in San Ramon and Brentwood, among other places, have purple pipes as part of the original infrastructure. Concord's remade former Naval Weapons Station land will be built with such pipes, too.

Whether the expense of retrofit work in older, established neighborhoods is justified is a case-by-case matter, said Paul Eldredge, general manager of the Union Sanitary District, which serves Fremont, Union City and Newark.

"We'd have to determine whether the expense, and subsequent ratepayer hikes, would be worth it," he said. A partnership between his agency and the Alameda County Water District to pursue expanding recycled-water service has been discussed but would be at least two to three years away, he said.

The Tri-Valley has little industry, but the Dublin San Ramon Services District provides recycled water to construction companies for dust control. Far more of the district's recycled water goes to the cities of San Ramon and Dublin, the latter of which uses recycled water for 82 percent of its needs, said spokeswoman Sue Stephenson.

"Dublin has been a poster child for recycled water use," said Stephenson, noting that her agency is on the lookout for other bulk users.

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Building Sites reservoir will never pencil out or produce much water
Sacramento Bee | January 2, 2016 | Stephen Green

The Sacramento Bee editorial promoting construction of Sites reservoir noted that it would cost $3 billion to $4 billion ("State needs to invest in Sites reservoir"; Editorials, Dec. 27).

Proposals to build Sites have been put forth since the 1940s, and none have gotten past a drawing board. No study has ever shown that the project makes economic sense. Even Don Hodel, President Ronald Reagan's interior secretary, said the Sites project would never pencil out.

Sites reservoir would add a little more than 1 percent to the state's storage capacity. And since it would be a pump-storage reservoir, with water diverted from the Sacramento River, there would be no water to pump during periods of extended drought such as the one we are in now.

There are better alternatives for increasing California's water supply. An economic analysis by EcoNorthwest concluded that retiring and curbing water rights for 300,000 acres of contaminated land farmed in the San Joaquin Valley would cost approximately $1 billion.

That is a reasonable price to pay to stop the poisoning of California's environment. In addition, retiring the land would free up to 455,000 acre-feet of water annually. That is a vast amount of water. The city of Los Angeles, in comparison, uses an average of 587,000 acre-feet per year.

Farmers whose lands are retired deserve compensation. And while $1 billion is a substantial sum, it compares favorably when the cost of other projects for managing California's water supply are considered.

Many growers are producing unsustainable crops on those contaminated lands. Their fields and orchards release drainage contaminated with selenium, salts and other wastes that impact wetlands, poison fish and wildlife and their habitats. Drainage also has caused salinization of bottom-land soils and aquifers.

The disastrous consequences of industrial-scale cultivation of contaminated lands became obvious in 1983, when thousands of migratory waterfowl, including ducks and geese, were deformed or killed outright at Kesterson National Wildlife Refuge due to deliveries of toxic drain water from corporate farms.

That huge environmental scandal was exposed by Felix Smith, a U.S. Fish and Wildlife Service biologist at the time, who now serves on the Board of the Save the American River Association.

Federal and state officials have been aware of the drainage problems for decades and have done little to prevent the continuing harm to the public-trust resources.

Stephen Green is president of Save the *American River Association.*

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Our View: It's time state invested in Sites Reservoir
Modesto Bee | December 28, 2015 | Editorial

It's frustrating that the California Water Commission will need such a long time to consider how to spend the money from last year's Proposition 1 – the water bond. There are so many projects, the commission says any approval is unlikely before 2017 or even 2018.

That's frustrating because one project in particular is so clearly in the state's best interest, that commissioners should find a way to commit to it more quickly – building Sites Reservoir on the west side of the Sacramento Valley. As we first said in 2008, the proposed reservoir will be an integral component in improving California's environment and water reliability.

Yes, we also need to consider wastewater recycling, stormwater capture, desalination and conservation. But such projects could take years to work through the approval process; we shouldn't delay Sites while all that unfolds.

The Water Commission must divvy up $2.7 billion for projects that increase storage capacity, improve operation of the statewide water system and provide benefits to the Delta ecosystem in a "cost-effective" manner. Sites does all of the above, but it does even more. Through an "environmental water account," Sites could contribute to wildlife refuges along the Pacific flyway while creating flexibility so that cold water pools behind dams in Shasta, Oroville and Folsom lakes could be used for salmon migrations.

And when salt water intrudes into the Delta, water from Sites could be released to flush it back toward San Francisco Bay.

During summer months, about 500,000 acre-feet from Sites would be available for Northern California farmers, mostly south of the Delta.

One of the things we like best about Sites is that it creates a bloc of water for the environment, specifically to help make flows through the Delta more consistent. That could, in theory at least, relieve some of the pressure on the Tuolumne, Stanislaus and Merced rivers to provide water for the same purposes.

Created by two primary dams and nine saddle dams, Sites would store 1.8 million acre-feet in an "off-stream" reservoir. Operators would fill the reservoir by diverting high winter flows on the Sacramento River through two existing canals and a pipeline. By being "off-stream" it won't imperil any species on the Sacramento.

West of the town of Maxwell, the reservoir would inundate Antelope Valley, home to about 15 family farms and cattle ranches in Colusa and Glenn counties.

Building Sites will cost $3 billion to $4 billion, only a portion of which would be covered by the water bond. Other financing would come from those who benefit – including farmers in the Sacramento Valley and those south of the Sacramento-San Joaquin Delta. But Congress should contribute, too, and so should environmental organizations. For decades they have been

willing to tell those who created the dams and our state's water system exactly how they should be run, but they've brought nothing else to the table.

The environmental positives of this project are clear and would likely take precedence over all other objectives. For that reason alone, the environmental groups should take some of the money they spend on courtroom challenges, San Francisco fund-raising parties and public relations and put it toward this project.

California's water system is broken. Sites will provide the flexibility needed as we face the challenges of climate change and the necessity to provide food and water for 40 million people.

The longer we wait to commit to this project, the longer the delay in receiving its benefits.

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