December 10, 2014 – Agenda Item #7F

BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD POLICY COMMITTEE MEETING

December 5, 2014

Correspondence and media coverage of interest between November 24, 2014 and December 5, 2014

Correspondence

Date: December 3, 2014
From: Nicole Sandkulla, CEO/General Manager
Re: BAWSCA Comments on Mountain Tunnel Technical Advisory Panel Draft Report

Media Coverage

Conservation:

Date: December 3, 2014
Source: San Jose Mercury
Article: Despite drought, Californians failing to conserve enough water

Date: December 3, 2014
Source: SF Gate
Article: California Drought: Are water users slacking off conservation?

Date: December 3, 2014
Source: Peninsula Press
Article: Redwood City targeting biggest water users to reach 10 percent cut

Date: December 2, 2014
Source: Mountain View Voice
Article: Santa Clara Valley Water District extends call for conservation

Date: December 1, 2014
Source: San Gabriel Valley Tribune
Article: State needs a behavioral shift in water use

Date: November 29, 2014
Source: San Gabriel Valley Tribune
Article: Los Angeles leaders learn water-saving lessons from Australia

Date: November 24, 2014
Source: Press Telegram
Article: Water conservation must become norm, experts say at Long Beach gathering

Drought:

Date: December 5, 2014
Source: LA Times
Article: California needs more rain, any way you count it

Date: December 5, 2014
Source: San Jose Mercury News
Article: California drought the worst in 1,200 years, new study says

Date: December 4, 2014
Source: Turlock Journal
Article: Drought legislation introduced in Congress

Date: December 4, 2014
Sources: E&E Daily
Article: House ot vote on California drought relief bill next week

Date: December 4, 2014
Source: Daily Journal
Article: Experts say weather won't break drought, conservation still critical

Date: December 3, 2014
Source: Appeal Democrat
Article: Drought Watch: Yuba City likes state water allocation

Date: December 2, 2014
Source: Associated Press
Article: Storm: What will the rain mean for the drought?

Date: December 1, 2014
Source: KTVU News
Article: Water officials say recent storms won't deliver California from drought

Date: December 1, 2014
Source: KPIX 5
Article: EBMUD looks at buying water, customers could face 14 percent surcharge

Date: November 25, 2014
Source: San Diego Free Press
Article: Feinstein delays controversial drought legislation until next year

Date: November 24, 2014
Source: San Francisco Chronicle
Article: California drought: SF wants to add groundwater to tap

Water Supply:

Date: December 2, 2014
Source: LA Times
Article: Officials increase water allocations as rain hits, drought persists

Date: December 2, 2014
Source: The Record
Article: Soaker helped, but we're a year behind

Date: December 2, 2014
Source: Associated Press
Article: Report: California drought threatens groundwater

Date: December 1, 2014
Source: SF Gate
Article: State Water Project expects scant deliveries next year

Date: November 30, 2014
Source: Sierra Sun Times
Article: How much water do you use? The story of water by USGS

Date: November 27, 2014
Source: Recordnet.com
Article: Peace amid the water wars: SJ County, East Bay MUD reach deal

Date: November 26, 2014
Source: Daily Journal
Article: Aging pipes cause issues for water agencies: El Granada residents suffer from leaking pipe this week

Date: November 24, 2014
Source: SF Gate
Article: More Power! SF moves closer to expanding PUC's energy customer base

Miscellaneous

Date: December 1, 2014
Source: LA Daily News
Article: Tapped out – one woman's crusade to save the drinking fountain

(This page intentionally left blank.)

BAWSCA
Bay Area Water Supply & Conservation Agency

December 3, 2014

Mountain Tunnel Technical Advisory Panel:
Gary Brierley, Dr. Mole Incorporated
Russell G. Clough, Russell G. Clough Co.
Frank Rollo, Treadwell & Rollo

c/o Steve Ritchie, Assistant General Manager, Water Enterprise
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102

Subject: Comments on Mountain Tunnel Technical Advisory Panel Draft Report

Dear Mr. Ritchie and Mountain Tunnel Technical Advisory Panel,

Let me start by commending the SFPUC on the thoughtful process it has established for reviewing the options to remedy the conditions in the Mountain Tunnel. The efforts of the Mountain Tunnel Technical Advisory Panel (TAP) have certainly furthered this process.

As the SFPUC conducts additional analysis regarding the viability of repairing the Mountain Tunnel lining, BAWSCA has the following comments and questions, both for the SFPUC and the TAP, that we believe will provide additional insight as to the most appropriate solution to provide long-term reliability of this vital facility as necessary to protect the water users:

1. The TAP's assumption of a 56-day shutdown work schedule is fundamental to its recommendation. The practicality of this assumption must be thoroughly examined and confirmed by the SFPUC. It would also be good for the SFPUC to address the potential for extending the extent of the shutdown window.
2. The completion date of the new Calaveras Dam could have a significant impact as to the viability of the repair option. The SFPUC should examine the potential impacts of any delay in the completion of the Calaveras Dam might have on the repair alternative.
3. The TAP's cost assumptions need to be verified and fully loaded for stakeholders to understand the entire cost of repairs. Permitting, environmental, work scope and progress assumptions need to be verified to validate the schedule.
4. The TAP appears to say that while the concrete lining needs to be repaired for long-term serviceability, there is no imminent or urgent danger of the tunnel collapsing as a result of structural deficiencies. This notion is very different from the SFPUC's assessment of "moderate to high probability of local collapses" (from the 10-yr CIP data sheet on Mountain Tunnel) with the risk of catastrophic failure at some point in the future. These differing points of view must be clarified and reconciled as part of the decision making process for moving forward on this project.

5. The TAP's view on failure needs to be reconciled with the URS report that shows a growing possibility of failure in the next 25-30 years. (As a point of information, the 2008 Jacobs report does not identify any issues of possible structural collapse but recommends repairing the concrete lining immediately.) How would the TAP define and describe the probability of a major failure and the level of urgency of repair or replacement? What are the consequences of delay?
6. Even if the TAP's repair scenario is implemented, a question remains as to whether the tunnel will need such significant structural work or replacement that the bypass alternative becomes a more viable option. Can the TAP and the SFPUC provide its opinion on this potential risk?
7. More study of the TAP's proposed scope of work for the repair alternative needs to be done. The TAP only addressed the most critical areas of repair needed, which substantially reduced the area to be repaired from that noted in the URS report, from 57,500 linear feet to 32,000 linear feet. As a Phase 2 of the repair program, should more repair work be undertaken at a later date? How urgent is that work?
8. Could the TAP develop a set of of findings (e. g. lining conditions) and/or other conditions/limitations (e. g. outage limitations) that would lead the SFPUC to appropriately abandon the repair alternative?
9. Will the next step in this process elaborate further on the extent of the impacts from a catastrophic collapse of the tunnel and its impacts on water supply reliability.

Thank you for your consideration of the comments and questions. BAWSCA looks forward to working closely with the SFPUC as part of this process to determine the best solution for ensuring long-term reliability to the wholesale and retail customers of the Regional Water System.

Sincerely,

Nicole Sandkulla
CEO/General Manager

Despite drought, Californians failing to conserve enough water
San Jose Mercury News | December 3, 2014

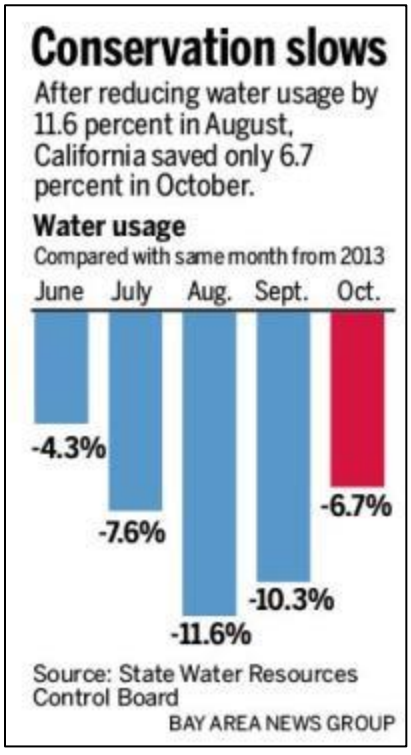
California is in one of the worst droughts in its history, yet the state's residents are going backward when it comes to water conservation.

Troubling new numbers out Tuesday show that in October the state reduced urban water use by just 6.7 percent compared with the same month the year before. That's down from a 10.3 percent reduction in September and an 11.6 percent cut in August.

The figures released by the state's water board and analyzed by this newspaper also showed a dramatic difference in conservation between the north and south.

While the Bay Area slashed its water use 15.5 percent in October compared with October 2013, Los Angeles basin residents cut their use by only 1.4 percent over the same period. And San Diego actually increased its use of water by 2.6 percent.

"Recent rains are no reason to let up on our conservation efforts," said Felicia Marcus, chairwoman of the State Water Resources Control Board, which released the survey of 400 cities and water districts. "It will take many sustained storms to get us out of this horrible drought."



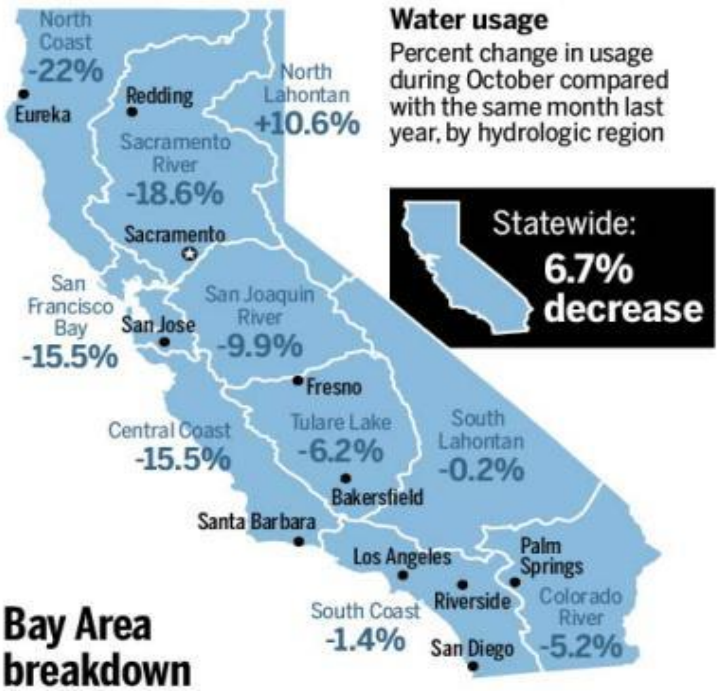
In January, Gov. Jerry Brown declared a drought emergency and asked the public to cut water use by 20 percent. But most cities and water districts have declined to issue fines for wasteful practices or charge residents higher rates if they use more than a set amount.

Not only do such measures often spark political controversy, they also cost cities and water districts millions of dollars in lost water sales.

Water efficiency experts said Tuesday that Californians -- and state politicians -- simply aren't doing enough and are risking severe water shortages in 2015 and 2016 if relentless storms don't end the drought this winter.

Who saved the most water

California cut water use by 6.7 percent in October compared with the previous October. Cities with tougher water rules and fines generally saved more, a new state report shows, and the north saved more than the south.



Bay Area breakdown

Percent change in usage during October, compared with the same month last year:

Alameda County Water District	-20.8%
American Canyon	-22.4%
Antioch	-11.0%
Benicia	-22.8%
Brentwood	-14.6%
Burlingame	-18.8%
California Water Service Co., Livermore	-30.7%
California Water Service Co., South San Francisco	-12.7%
Contra Costa Water District	-15.5%
Daly City	-14.4%
Dublin San Ramon Services District	-31.7%
East Bay Municipal Utility District	-14.9%
Gilroy	-12.8%
Great Oaks Water Co. (San Jose)	-16.7%
Hayward	-8.3%
Hollister	-17.6%
Livermore Division of Water Resources	-24.1%
Marin Municipal Water District	-18.5%
Martinez	-18.4%
Millbrae	-8.5%
Milpitas	-8.1%
Morgan Hill	-24.1%
Mountain View	-13.0%
Napa	-6.9%
North Marin Water District	-28.8%
Palo Alto	-9.2%
Petaluma	-21.4%
Pittsburg	-9.6%
Pleasanton	-29.5%
Redwood City	-38.1%
San Bruno	-11.5%
San Francisco PUC	-8.7%
San Jose	-11.9%
San Jose Water Co.	-16.5%
Santa Clara	-7.7%
Santa Cruz	-25.3%
Scotts Valley	-16.3%
Sonoma	-29.8%
Soquel Creek Water District	-21.7%
Suisun-Solano Water Authority	-19.6%
Sunnyvale	-8.1%

Other areas

Sacramento	-20.1%
Fresno	-8.4%
Los Angeles	-2.4%
San Diego	2.6%

Source: State Water Resources Control Board BAY AREA NEWS GROUP

"Frankly, the public has just never gotten the serious message that they should conserve, or adequate information on the many ways they can," said Peter Gleick, president of the Pacific Institute, an Oakland think tank that studies water efficiency.

"I'm afraid we're sliding back into hoping that nature will bail us out," he said.

Locally, the San Jose Water Co., which provides water to 1 million people, reduced use by 16.5 percent in October. San Francisco cut by 8.7 percent. And the East Bay Municipal Utility District, which serves 1.3 million people in Alameda and Contra Costa counties, cut use by 14.9 percent.

Asked why Southern California wasn't saving as much as Northern California, Marcus said: "I don't know. If the Bay Area cities can do it, then Southern California cities can do it. We should all be stepping up."

Southern California water officials said that a particularly hot October, with temperatures 6 degrees higher than the historic average, led too many people in the Southland to crank up their lawn sprinklers.

"We had off-the-charts, record temperatures in October," said Ken Weinberg, director of water resources for the San Diego County Water Authority. "It makes it very difficult to save."

State water board leaders said the reason for the lackluster results might be "drought fatigue." And they seemed reluctant to single out any agencies.

But Marcus noted that the state water board will hold a hearing Dec. 17 in Los Angeles to ask community leaders for ideas to save more water. The board has the authority to impose fines on communities that don't conserve enough. It can also impose statewide limits on lawn watering, such as allowing it only one day a week -- as some cities, such as Morgan Hill, have already done.

Despite the rain in recent days, most major cities in California are only just now reaching average rainfall totals for the July-December period. And many have rainfall "deficits" of 20 inches or more after the past three record dry years.

Major reservoirs in the state, including Shasta, Oroville and San Luis, are currently only about 25 percent full. Normally in December, they are about 40 percent full.

Bob Muir, a spokesman for the Metropolitan Water District of Southern California, which provides drinking water to 19 million people in and around Los Angeles, said the district had 2.7 million acre feet of water in its reservoirs at the start of 2013. It now has 1.2 million.

The agency's board will consider reducing supplies to Southern California cities in January or February if winter rains don't dent the drought, Muir said.

Meanwhile, Bay Area leaders say they hope this week's rains -- while healthy -- aren't used as an excuse for the public to cut back on conserving.

"Rain or shine, keep saving water," said Andrea Pook, a spokeswoman for the East Bay Municipal Utility District. "Regardless of what today's weather is, we need months of rain. We have a lot to make up."

# # #

(This page intentionally left blank.)

California drought: Are water users slacking off conservation?
SF Gate |December 3, 2014

Call it conservation fatigue.

Californians, particularly in the thirsty southern part of the state, are slipping and sliding in their attempts to save water, new data show, despite efforts to draw attention to the historic dry spell that has gripped the state and isn't about to go away with the current bout of heavy rain.

Figures released Tuesday by the State Water Resources Control Board indicate that residential customers used 6.7 percent less water in October than in the same month in 2013.

That's down from the 10.3 percent year-to-year savings achieved in September and the 11.6 percent mark in August — and far short of the 20 percent cut Gov. Jerry Brown requested earlier this year.

"We would have liked to have seen better," said Eric Oppenheimer, head of the Office of Research, Planning and Performance for the water board, which has pushed hard for cutbacks. But he referred to "this notion of conservation fatigue. Just over time, the message is getting blurred a little bit, and people are falling back to their old ways."

Three drier-than-average years have left drinking water supplies across California depleted, and in some cases critically low, while many farms are without sufficient water. State officials say even above-average rain this winter won't make up for the deficit, so conservation remains vital.

Efforts to conserve, though, have been particularly poor in in Southern California, the state data show. The Los Angeles and San Diego areas posted a paltry 1.4 percent year-over-year water savings in October, compared with 7.5 percent in September.

Officials speculate that unseasonably warm weather, combined with little rainfall, may have impeded efforts to save there.

The good news is that October's statewide water consumption — while it didn't lessen as much as desired — was cumulatively less than September's.

Parts of Northern California were more willing to make sacrifices. The Sacramento Valley reduced year-over-year water consumption by 18.6 percent in October, while the Bay Area cut back 15.5 percent, according to the data. Both reductions were slight improvements over September, but still fell short of the governor's request.

Daly City, San Francisco and South San Francisco were bright spots in the state report, posting the lowest per-capita water use in the state.

"When you put the call out, residents respond," said Patrick Sweetland, Daly City's director of water and wastewater resources. "The residents take their civic responsibility very seriously."

The San Francisco neighbor's moderate climate and small lot sizes helped it record California's lowest per-capita water use — just 43.5 gallons a day. The statewide average was 109 gallons a day.

While the water board has enacted restrictions on outdoor watering statewide, few communities have put firm caps on water use. Most conservation remains voluntary.

Gov. Brown in January declared a drought emergency and asked residents to pare back water use by 20 percent. That target has never been hit.

The state's major reservoirs, fed by mountain runoff, are much emptier than normal because of the drought. The largest, Lake Shasta, is at 23 percent capacity —39 percent of what it averages at this point in the season.

State and federal officials have consequently limited water deliveries to cities and farms this year. On Monday, regulators said they're likely to do it again next year, projecting just a 10 percent allocation for the 29 water departments and irrigation districts served by the State Water Project.

Many communities have turned to groundwater amid the declining surface supplies. A state report also released Tuesday, however, shows that underground reserves are dwindling in the rush to tap them.

Hundreds of new wells were dug this year, most in the agriculture-heavy San Joaquin Valley, according to the report. While state lawmakers recently signed off on new groundwater regulations, it could be years before they take hold.

In recent days, wet weather across much of the state has pushed rainfall totals to close to average since the rain year started in July.

However, in many places such as San Francisco, the winter would have to bring about double the average precipitation to make up for the hole created over the last three years, according to the National Weather Service.

"Our concern is that folks are going to see the rain and think the drought is over," said Felicia Marcus, who chairs of the water board. "But it's going to take a lot of these rains to get us out of the drought."

# # #

Redwood City targeting biggest water users to reach 10 percent cut
By Peninsula Press on December 3, 2014 12:38 PM

Redwood City is targeting the city's biggest outdoor water wasters as it strives to meet a regional goal to cut water usage by 10 percent by February.

As many California cities work to conserve water throughout the now three-year-long drought, Redwood City has been a water-saving leader in Silicon Valley. It cut back enough usage to meet its water-saving goals for 2020 nearly 10 years ahead of schedule.

But since the San Francisco Public Utilities Commission recommended an additional 10 percent cut in January, the city has strained to find even more places to reduce water use.

"All the 'low hanging fruit' has already been picked. We have achieved most of the savings that are easy to capture,'' Redwood City Public Works Superintendent Justin Chapel said.

Getting homeowners to voluntarily reduce water use has been the most challenging.

Redwood City has banned watering of home gardens more than two specified days per week and is exploring allowing homeowners to tap into recycled water as ways to get residents to cut back on water use. The city also bans using water to clean sidewalks and driveways, and it prohibits the use of non-recirculated or non-recycled water in ornamental fountains. As of Dec. 2, the city was closing in on its water-saving goal. A city official said they had reached a 9.1 percent water reduction.

But the city has been shy about advertising the new restrictions. Postcards were sent out over the summer with the new rules but at least some residents say they did not receive them.

"I didn't see it," said Redwood City resident Tracey Powers, who has called the city herself in the past to get more information on efforts to save water. "But that doesn't mean it didn't arrive, it just means I didn't see it."

Also from Peninsula Press: Water conservation could mean fewer redwood trees

Chapel said the city is battling "message fatigue'' after years of sounding the alarm about water shortages. "We're trying to find different ways to send the message," he said.

Currently, the city identifies overusing customers by comparing the amount of water they use against their allotment, which is determined by factors like the number of residents, the yard's square footage and the surface area of water features. It then offers them various incentives to cut back, including a free water audit and a "smart" water meter, which provides immediate data on a property's water usage to both the homeowner and the city.

It has also promoted the "Lawn Be Gone," program, which offers residents one dollar per square foot to replace their thirsty grass lawns with water-efficient plants.

Since it began in 2011, the Bay Area Water Supply & Conservation Agency that administers it has issued more than $47,000 in rebates to around 300 homeowners.

Officials said they could move to fines if such measures don't produce enough savings. But for now, Public Works is trying to find new ways to educate citizens, before they have to step in with punitive measures.

Redwood City's Public Works building displays an example of a drought resistant garden on its property as a way to promote the Lawn Be Gone program. (Allison McCartney/Peninsula Press)
Redwood City targeting biggest water users to reach 10 percent cut

Redwood City's Public Works building displays an example of a drought-resistant garden on its property as a way to promote the "Lawn Be Gone" program. (Allison McCartney/Peninsula Press)

Meanwhile, many citizens don't need convincing from the city to switch out their lawns.

Powers said that when she and her husband moved into their house in the Emerald Hills neighborhood seven years ago, non-native invasive species had taken over her yard. Since then, she has worked to restore the native plants along the hillside around the house, making her yard look more like California park land than the manicured grass lawns that dominate the flatlands below.

"The project will have a much bigger impact than merely saving water," she said. "My attempt is to create an environment that helps encourage the survival of some locally native plant and insect species that are currently threatened with extinction."

However, Powers says living in a fire hazard area make further cuts in water use difficult.

During her first year in the house, the yard was not irrigated and drought conditions made the plants very dry. A neighbor's kid flicked a cigarette into her yard, setting it on fire and sending flames within 20 feet of her door. After the incident, the fire department warned her that she needed to keep things irrigated and wet.

"We don't really have a choice," she said. "We can't just turn off the water up here in the summer."

The new policies are also affecting local businesses that specialize in creating drought-tolerant landscapes.

Landscape designer Julie Orr, who specializes in landscapes with native and Mediterranean plants, says the majority of the calls she receives now are from water-conscious homeowners looking to remove or reduce their lawns.

However, she cautions against the idea that planting native or drought-resistant plants would provide immediate benefit to parched water districts.

"You have to water any landscape, whether it's drought tolerant or not, until the landscape is established," she said. That could be up to a year. "After it's established, then you can cut back significantly, as much as 50 percent."

Then there's the price. Even with the rebate, yards like these can be out of reach for all but the wealthy. Some local landscaping companies list minimum fees as high as $30,000.

"Any landscaping project is expensive," Orr said. "I think it really needs to be looked at as an investment into the property."

This story originally appeared on Peninsula Press, a project of the Stanford Journalism Program. Allison McCartney covers Redwood City for Peninsula Press.

# # #

Santa Clara Valley Water District extends call for conservation

North county cities aren't meeting goal of 20 percent reduction in water use

Mountain View Voice | December 2, 2014

Rain has a welcome sight for the Bay Area this week, but the Santa Clara Valley Water District says more needs to be done to counteract the multi-year drought that has left California parched.

At a Nov. 25 board meeting, the water district board voted unanimously to spend millions of dollars more to extend its water conservation efforts and encourage residents in Santa Clara County to use 20 percent less water through June 30. Previous plans had the call for water reduction to end after January.

Santa Clara County is in a "severe" drought, based on projected levels of groundwater storage, and local supplies like the Steven's Creek Reservoir are at only 3 to 6 percent of their total capacity. Water levels in the Chesbro reservoir are so low they are below the district's measuring gauge, according to a water district report.

To combat the drought, the water district has implemented a 15-part strategy that includes, among other things, a campaign to get water use among county residents down by 20 percent for 2014 -- a plan that has since crept into mid-2015. The extending the campaign will cost a total of $3.8 million. The reduction, according to the report, can be made through voluntary "behavioral changes" to bring down residents' personal water consumption.

North county cities like Palo Alto and Mountain View are falling short of the water district's conservation goals, but there's a reason why, according to Elizabeth Flegel, Mountain View's water conservation coordinator. Flegal said the city receives 90 percent of its water from the San Francisco Public Utilities Commission, which is only calling for a 10 percent water reduction. Mountain View followed suit, and announced in February that city residents should cut down on water use by 10 percent.

But Flegel said the city is also honoring the Santa Clara Valley Water District's call for water reduction, and has reduced its water use specifically from sources of water within the water district by more than 20 percent.

Palo Alto had a 15 percent water use reduction for 2014, but dropped down to only 10 percent in October. Mountain View has reduced its water use overall by 14 percent this year, slipping down to 13 percent for the month of October. Morgan Hill was the only city in the county to break that 20 percent goal, reaching 24 percent overall water reduction for the month of October.

The reductions in Mountain View alone translate into 405 millions of gallons of water saved, according to the city website, with the biggest reductions in the early months of the year.

"We've been really impressed with our customers and all of their efforts they've put into dealing with the drought," Flegel said.

Conservation tips from the water district include fixing leaks, installing water-efficient toilets, washing machines and low-flow showerheads, and watering lawns less frequently during the fall and winter seasons. The water district website also recommends people aim sprinkler heads correctly, and reminds them that no matter how much they water it, concrete will not grow.

At the Nov. 25 meeting, Morgan Hill resident John Muirhead asked water district board members what they expect people to do to reduce water use by 20 percent when they are already going out of their way to conserve water. Board President Tony Estremera said people at a previous town hall meeting expressed the same concerns, and that the conservation campaign is really geared towards people who haven't "changed their minds yet."

"I'm still outside on the sidewalk telling my neighbors, 'Hey, what are you doing washing your car? Haven't you figured out what's going on out here?'" he said.

Most of the conservation campaign, according to Estremera, has been about telling people who have conserved water to keep up the good work, while also telling people who haven't adjusted their behaviors to 'step it up.'

"We're not trying to bother the people who have already helped us get to this point, we're trying to wake up the rest of us that haven't yet gotten there," Estremera said.

Board member Brian Schmidt, who represents the north county, questioned whether people should be watering outdoors at all during the wintertime, and suggested a possible ban of outdoor water use with very few exceptions.

"It doesn't make sense to water in the wintertime," Schmidt said.

If severe drought conditions continue, Schmidt said the water district could continue the ban into spring, and that it would be easier to keep the ban in place, rather than trying to introduce the ban in May when people have started to water their lawns again.

Staff member Garth Hall said the water district will work with cities and other water retailers to promote water conservation, and that it would be appropriate to ask them whether they could

support a ban on outdoor watering and whether they would need to fit the ban into an existing city ordinance or modify an ordinance to make it work.

Hall said the water district will also be in touch with water retailers to see how they will respond to the board's decision on the extended call for water reduction. A report by the district predicts that increased costs and lower water use are going to bring up the cost of water rates in the next fiscal year.

# # #

(This page intentionally left blank.)

State needs a behaviorial shift in water use
San Gabriel Valley Tribune | December 1, 2014

Not long after 9/11, going to the airport included taking off your shoes and getting body scanned.

With the advent of the smartphone, talking is giving way to texting.

As almost all of California slips into a fourth year of severe, extreme or exceptional drought, are there similar benchmark behavioral changes we can expect regarding water?

Most experts say no, not unless the 400 retail water agencies insert draconian penalties for water gluttons, or the state Legislature passes outright bans on "nonbeneficial" water uses such as lawns, fountains and swimming pools.

Without the stick, there will be no dramatic behavioral change. People obey TSA rules because it is the law.

"Are people going to become water saints, take 90-second showers and rip out their grass lawns? That's not going to happen overnight," said Jonathan Parfrey, executive director of Climate Resolve in Los Angeles and a commissioner at the Los Angeles Department of Water and Power from 2008-2013.

If there is one place where change is afoot, it is outdoors.

A quick perusal of State Water Resources Control Board rules regarding water conservation and those of most local cities and water agencies reveals the obvious: There's a bull's-eye on your lawn.

Of all water provided to cities, 70 percent to 80 percent goes to outdoor irrigation. Some experts say Southern Californians waste 1 million acre-feet of water through excessive watering of lawns each year — about half the amount of water imported into the Los Angeles region each year.

Voluntary water conservation measures in Los Angeles, for example, allow watering three days a week in summer. Some cities, such as Pasadena, have cut that to one day a week in fall and winter. The biggest target placed on green grass is from the Metropolitan Water District of Southern California, which is handing out $60 million in incentives in a two-year budget mostly for what is called turf removal. MWD has received turf removal requests worth $94 million — exceeding the budgeted amount, the agency reported last week.

The snowmelt in the Sierra was at zero percent this past summer. And reservoirs and groundwater basins — reserves for non-rainy years — are dropping rapidly, in some cases causing the ground around them to lower by dozens of feet.

In Los Angeles, a semi-arid region akin to cities along the Mediterranean Sea or in Australia, keeping a green lawn may no longer be practical.

Mitch Howard, a landscape designer with a degree from Cal Poly Pomona, says 90 percent of his business arises from homeowners who want to replace their lawns with plants native to Southern California or a Mediterranean climate because they require far less water than a carpet of Kentucky bluegrass.
"Close to 100 percent of my clients, the first question they ask is 'How can I save water,'" said Howard, who has a bumper sticker on his truck that reads: "I killed my lawn. Ask me how."

Penny Falcon, water conservation manager at Los Angeles Department of Water and Power, reported a tenfold increase in turf removal jobs from 2013 to 2014.

But parting with one's own lawn-scape unearths some deep psychological issues.

"The lawn in Southern California is a symbol of social status. That is ingrained in our public consciousness and is very difficult to undue," said Adan Ortega, a water consultant who develops conservation strategies for water districts in Southern California.

Keeping a grass lawn neat and trimmed says we are in control, Howard said. A native-plant garden is more wild, less orderly — something that can create anxiety in some suburbanites.

Watering a lawn can bring a homeowner a dose of security in a scary world, said Celeste Cantu, general manager of the Santa Ana Watershed Project Authority, a joint-powers agency working on water conservation and consisting of large water districts from Riverside, San Bernardino and Orange Counties.

The fact that surviving without water is impossible is hard-wired in our brains, she said. "Sometimes that hard wiring is expressed by wasting a lot of water," she said.

It's almost like the body gets sidetracked into bad habits over time.

To bring about a paradigm shift in water use, people need to get to know water better: where is comes from, where it goes, what it truly costs, Cantu said.

"We are in a dysfunctional relationship with water. We don't appreciate it. We take it for granted. We have to move from a dysfunctional relationship to a functional one."

To do that we must study history, she said.

The Santa Ana water authority — SAWPA — is embarking on a $22 million campaign to transform public lawns at warehouses, factories, schools and city halls into drought-tolerant landscapes. Sure it saves water but more importantly, they are living billboards for water conservation for anyone who drives by, she said.

Better still would be if Cantu could show everyone pictures of her great-grandparents who came from Mexico and Prussia and lived in the Inland Empire not with lawns but with flowering roses, bushes and trees.

"They didn't have a water budget for nonessential things like grass. They had a relationship with water. They had a water ethic," she said.

Historian Michele Zack, who wrote several books on the history of Southern California and produced a film "Eaton's Water" on pioneers and water development in Los Angeles County foothills, said settlers from the Midwest and East Coast brought with them the British version of a public-private lawn, aka the "idealized meadow."

This concept, made popular by American-born landscape architect Frederick Law Olmsted, replaced the zocalos or courtyards of plants, gardens, brick and tile — with manicured meadows called lawns.

"They were outnumbered by people moving here from the Midwest and East Coast trying to show they could be civilized here," Zack said.

The only problem is that conditions on the East Coast are different than in Southern California.

Zack and Cantu see a tide change in outdoor watering but stop short of calling it a paradigm shift — that is, a universal, societal swing.

Instead, Cantu compares the turf-removal movement to a style choice, like switching from wide to skinny neckties.

Nowadays, in more affluent communities, more people want to show off their ecological hubris by replacing their lawns, said Zack, a nod to individual empowerment. Howard, whose business, MLH Design Studio is based in Whittier, has clients in Spyglass, a well-off unincorporated hillside neighborhood overlooking southeast Los Angeles County.

Cantu wouldn't object to the state water board passing a rule that bans lawns without a benefit, adhering to the law in California that says all water must be put to beneficial use. "That would be a huge leap for the board. I don't think we will see that any time soon," she said.

But through combinations of technology, a reluctance to pay higher water bills, and a green version of "Keeping up with the Joneses," lawn removals will grow in Southern California, albeit slowly. And that kind of change is already happening.

"We need to adjust our idea of what beauty is. That doesn't happen overnight," Zack said.

# # #

(This page intentionally left blank.)

Los Angeles leaders learn water-saving lessons from Australia
San Gabriel Valley Tribune | November 29, 2014

When TreePeople's Andy Lipkis returned from Australia last week, he couldn't get out of his head the response people had when he told them most of the rain that falls in Los Angeles escapes to the sea.

"They say, 'Are you kidding?'" Lipkis said, adding: "Everyone sees water very different there."

Australia came out of a 12-year drought about two years ago with some important water lessons that Lipkis, Felicia Marcus, chair of the State Water Resources Control Board, and Los Angeles City Councilman Felipe Fuentes, among others on the trip, want to share with the city and anyone else who will listen.

When about 1 inch of rainfall hits Los Angeles, that produces about 7.6 billion gallons of runoff that bounces off the pavement, rooftops and concrete sidewalks and runs unabated down storm drains, the Los Angeles River and into the Pacific Ocean.

If only half of that could be captured, Los Angeles would not be looking for new sources of water, particularly during the current drought entering a fourth year, he said.

Australia invested heavily in capturing storm water runoff in part by giving each homeowner money for a rain tank capable of storing up to 10,000 gallons of runoff from home roofs and rain gutters, he said.

The system is an anomaly in L.A. TreePeople headquarters in Beverly Hills has an 18,000-gallon system, he said, but there's really nothing like the Australian rain tanks in America.

"They'd take this water and use it for landscaping, toilet-flushing and laundry. They've gotten better at this technology," Lipkis said.

To make sure everyone knows how to install large rain tanks and multiple water systems in their homes, cities in Australia and the federal government operate "plumbing academies" where professional plumbers learn the new water-capturing techniques.

"You heard Eskimos have 100 words for snow. Well, Australians have a bunch for water," Lipkis said.

To survive during the drought, homes were re-plumbed for potable water, gray water, tank water and well water. A resident can choose what water to use for different uses.

For example, Southern Californians flush their toilets with potable water, the same water they can drink. That is a waste of water and money, he said.

Each home has a television screen that monitors the water usage in real time, he said. Water bills are simple to read and compare water use to that of their neighbors.

"They've learned everyone is a manager of their water," he said. "This is stuff we can do. Some of it we have done, but we can go much further."

# # #

Water conservation must become norm, experts say at Long Beach gathering
Press Telegram | November 24, 2014

LONG BEACH >> With the state's reservoirs and groundwater supply hitting historic lows, Californians must adapt to a new culture of water conservation, according to experts from around the state who gathered at the Aquarium of the Pacific on Monday.

This means tighter water restrictions for residents across the Southland, especially in urban environments, where water use needs to be reduced by 15 to 20 percent — not just now, but forever.

"We need to sustain what we have as long as we possibly can ... or the consequences will be quite dire," said Jay Famiglietti, a hydrologist and groundwater expert at NASA Jet Propulsion Laboratory in Pasadena.

That was the overwhelming consensus among leading weather and water experts and city officials who convened to discuss short- and long-term plans for the worsening drought crisis.

During times of drought, the state relies more heavily on groundwater, which accounts for nearly 70 percent of the state's water supply, according to Famiglietti. Until recently, there has been no management of groundwater, which has led to a free-for-all for limited resources.

"It's like millions of people putting straws into the same glass and sucking out water from the glass at the same time … so the level of the water in the glass, or in the aquifer, drops very, very rapidly," he said.

Droughts are a cyclical weather phenomenon. They come and they go, but National Weather Service meteorologist Mark Jackson said people need to conserve not only during a shortage but in times of surplus.

"As it rains again, the sense of urgency weakens … and that's why we are back to the same thing when you get the drought," he said. "We are not changing our behaviors enough to adapt to these future droughts," Jackson said.

At the conference, Long Beach Mayor Robert Garcia announced a new social media campaign in hopes of changing the behavior of local residents, including a Twitter hashtag (#SaveWaterLB) where residents can post photos and information about water scarcity and conservation. The mayor also hopes residents will spread awareness and highlight efforts to conserve, including among city agencies.

Even though the mayor said Long Beach is leading the state when it comes to water conservation, the Long Beach Board of Water Commissioners declared a Stage 1 water supply shortage last week, reducing the number of days residents can water to two days a week.

Long Beach Water Department General Manager Kevin Wattier said that several factors contributed to the decision, including historically low precipitation levels and the water level in

Lake Oroville, one of the biggest reservoirs in the state and the Southland's main source of water.

In 2014 alone, Californians consumed half of its emergency water supply, and experts estimate there is only one year's supply left.

In attendance at the conference was U.S. Rep. Alan Lowenthal, D-Long Beach, who said Californians should look at this as a time of great opportunity.

"The future is not bleak … but it's going to be our responsibility to see how we become a part of the conservation movement," Lowenthal said.

# # #

California needs more rain, any way you count it
Measuring California's drought recovery is a tricky business. And two key agencies do it in different ways.
LA Times | December 5, 2014

So how many more storms like the ones California experienced this week would it take to end the drought?

The easy answer is: a lot. But the more complex answer involves looking at historic rain patterns and reservoir levels in different parts of the state, and making a series of calculations.

The National Oceanic and Atmospheric Administration says 18 to 21 more inches of rain over six months would do the trick for most of the state.

That's a tall order since the state's average rainfall for the year is about 23 inches. The latest storm dumped only about 1.5 inches in downtown L.A. but more than three inches in wetter parts of Northern California that feed the State Water Project.

Measuring drought recovery is a tricky business. And two key agencies — NOAA and the California Department of Water Resources — do it in significantly different ways.

Is it 21 inches or 75 inches?

State water resources officials said this week that it would take 150% of the average rainfall for California to recover from the current drought. The DWR measures rainfall at eight stations in the northern Sierra because water from those areas feeds the State Water Project. The water project, in turn, delivers water to farmland in the Central Valley and urban Southern California through a vast network of reservoirs and canals.

An average of 50 inches of rain fell at those stations annually between 1922 and 1998. Using that average, officials said 75 inches of rain would need to fall in those Northern California spots by the end of the year to end the drought.

Since Oct. 1, only about 11 inches of rain has fallen at those eight stations.

Counting the drops across California

NOAA does its measurements by calculating rainfall across the state — both in areas where it rains a lot and places where it rains relatively little. Federal scientists say 18 to 21 inches of rain is needed to end the drought for all of Northern California and coastal Southern California. It would take only 6 to 9 inches of rain to end the drought in inland and desert sections of Southern California, which typically get less rain.

To determine the level of the drought, NOAA uses models that rely mostly on the moisture levels of soil.

The state has a different — and more strenuous — approach to determining when the drought is over.

State climatologists take into account how much rain would be necessary to bring reservoir storage and runoff back to normal levels. That means the state's bar for declaring victory requires more rain.

Are we there yet?

No. If there's one thing state and federal experts agree on, it is that California will need several more significant storms to even approach ending the drought.

"It takes a long time to get in a drought this severe, and it takes a long time to get out of a drought this severe," said Deke Arndt, a climatologist with NOAA's National Climatic Data Center. "Any precipitation is welcome, but … it will take at least months of above-normal rain to reset things."

This article is related to: California Drought, National Oceanic and Atmospheric Administration, Weather, Weather Statistics

California drought the worst in 1,200 years, new study says
San Jose Mercury News | December 5, 2014

The last three years of drought were the most severe that California has experienced in at least 1,200 years, according to a new scientific study published Thursday.

The study provides the state with breathtaking new historical context for its low reservoirs and sinking water tables, even as California celebrated its first good soaking of the season.

Analyzing tree rings that date back to 800 A.D. -- a time when Vikings were marauding Europe and the Chinese were inventing gunpowder -- there is no three-year period when California's rainfall has been as low and its temperatures as hot as they have been from 2012 to 2014, the researchers found.

"We were really surprised. We didn't expect this," said one of the study's authors, Daniel Griffin, an assistant professor in the University of Minnesota's department of geography, environment and society.

The report, published in the journal of the American Geophysical Union, was written by researchers at Massachusetts' Woods Hole Oceanographic Institution and the University of Minnesota.

The scientists measured tree rings from 278 blue oaks in central and southern California. Tree rings show the age of trees, and their width shows how wet each year was because trees grow more during wet years.

The researchers compared the information to a database of other tree ring records from longer-living trees like giant sequoias and bristlecone pines, dating back 1,200 years.

Meanwhile, the rain that California received this week provided a promising start to a winter that water managers say needs to be relentless and drenching to break the drought cycle.

Good Beginning

"It's a good beginning," said Art Hinojosa, chief of hydrology at the state Department of Water Resources. "But we need storm after storm after storm if we have any hope of getting out of the drought this year."

By April, he said, California needs at least eight more major storm systems like the one this week -- as well as many smaller storms -- to fill its dangerously low reservoirs and break the drought. Rain and snow this winter needs to be at least 150 percent of average for the reservoirs to fill, Hinojosa said.

Above Normal

This week's storm was the biggest to hit California in roughly two years. Many parts of the state received between 2 and 4 inches of rain, doubling or tripling their totals since July. Through

Thursday night, San Jose received 3.79 inches, San Francisco 4.43 inches and Oakland 3.01 inches, bringing each city's rainfall to above-normal levels for the first time this year.

More important, several of the state's large reservoirs began to receive moderate amounts of runoff, as the parched ground became saturated. Lake Shasta gained about 6,000 acre-feet through midnight Wednesday, and Oroville Reservoir in Butte County added 17,000 acre-feet. But that new water boosted Shasta's storage by less than 1 percent, leaving it at only 23 percent full. It added 3 percent at Oroville, which is now 26 percent full, the lowest level in its history for this time of year.

The Sierra snowpack told a similar story. A week ago, it was at 24 percent of the average for this time of year. Thursday, after a week of snow, it was at 39 percent -- still far below normal.

Next Storm

But more rain and snow is on the way.

In the Bay Area, another cold front will be moving in on Friday and will hang around a couple of days, according to the National Weather Service.

"There will be rain Friday night and into Saturday and then partly clearing on Sunday," said forecaster Diana Henderson. "Then there will be a few more showers on Monday, and the next system on the horizon will come in at the end of next week."

The Weather Service issued a report late Thursday saying that because of storms brewing as far away as Hawaii, projections out to Dec. 18 show that "wetter than normal conditions are favored."

Experts emphasize that a three-year drought cannot be erased in a few days. Not only are reservoirs low, but there are huge "rainfall deficits" built up from the past three years.

San Jose normally receives 42.9 inches of rain in an average three-year period, for example. Between June 2011 and June 2014, it received just 22.8 inches, leaving the city 20 inches short. Similarly, San Francisco is 19 inches behind, Oakland 24 inches.

Overall, 94 percent of California remains in "severe drought," according to Thursday's edition of the Federal Drought Monitor, a weekly report from the U.S. Department of Agriculture and other agencies.

It was the tree-ring study showing California suffering its worst drought in 1,200 years, however, that received the most attention Thursday.

The researchers took core samples, which don't harm the living trees, of oaks as old as 500 years and oak logs dating back more than 700 years, the University of Minnesota's Griffin said. And they sanded down the wood with extremely fine-grain sandpaper, magnifying the rings 40 times under a microscope and measuring them to within one one-thousandth of a millimeter.

They then compared the findings to the North American Drought Atlas, a detailed collection of other tree-ring data that goes back 1,200 years and includes measurements from ancient trees such as giant sequoias and bristlecone pines. The atlas calculates temperature and rainfall for those years by comparing the ancient tree rings with tree rings from the past 100 years, when modern records were kept.

Although there are 37 times over the past 1,200 years when there were three-year dry periods in California, no period had as little rainfall and as hot of temperatures as 2012-14, the scientists concluded.

With climate change already warming the earth, the last three years in California could become a more recurring event, they said.

"This kind of drought is what we expect to see more of in the future," said Griffin. "Maybe the future is now."

# # #

(This page intentionally left blank.)

Drought legislation introduced in Congress
Turlock Journal | December 4, 2014

California drought has hit the Central Valley hard. Pictured here are dry fields and bare trees at Panoche Road on Feb. 5 near San Joaquin County.1 of 1 View Larger

While the recent rain across the state has somewhat eased local farmers' and citizens' minds, legislators are still fighting for more short term relief for Californians in the nation's capital. On Tuesday Central Valley Congressman David Valadao (CA-21) introduced legislation to enact temporary measures to maximize water resources during the ongoing drought plaguing California.

Hanford native Valadao introduced the California Emergency Drought Relief Act of 2014 with the aim of providing "short term water supplies to drought-stricken California" as well as protecting Northern California water rights and the State Water Project for the next two years, or until Governor Jerry Brown suspends his declaration of drought emergency. The President of the California Farm Bureau Federation Paul Wenger said that the new legislation keeps the drought "front and center" in Washington.

"We hope this legislation prompts continued discussions in Congress and elsewhere, about what the federal government can and should do to make our water system work more efficiently for the benefit of people, the environment and the economy," said Wenger.

The California Farm Bureau Federation is part of a nationwide network of more than 6.2 million members and works to protect family farms and ranches on behalf of more than 57,000 statewide members.

The runoff generated from rainfall during drought years is vital in terms of climbing out of the drought status. Noting that in past years a significant amount of water has flowed to the ocean that could have been utilized for "severe water shortages our farms and communities face," Wenger said that capturing runoff will significantly aid the environmental and agricultural needs of Californians.

"When we have storms such as those that have reached California this week, we simply must be able to capture as much of that runoff as possible," said Wenger. "California remains in desperate need of fixes to our water system, and this legislation would provide short-term relief while Congress continues work on long-term reform."

# # #

(This page intentionally left blank.)

House to vote on Calif. drought relief bill next week
E&E Daily |December 4, 2014

California Republicans are going to have the chance to show their constituents that sending more water to the state's parched farmers and residents remains a priority for them, even after bicameral negotiations fell through last month.

House Majority Leader Kevin McCarthy (R-Calif.) announced yesterday that H.R. 5781, introduced late Tuesday by Central Valley Republican David Valadao, has been scheduled for a floor vote next week (E&E Daily, Dec. 3).

"The first storms of the season are currently over California, with hopefully more to come in the subsequent months," McCarthy said in a statement yesterday announcing that floor time had been secured. "Absent action now, California will continue to lose water from storms in this water year and will face another year of devastating water-crisis."

Valadao pitched the measure as short-term relief for his hard-hit constituents during a House Rules Committee hearing yesterday.

"I literally have people in my district building shacks out of plastic and plywood and living on the streets because they're out of work," he said. "We're asking for just a little window to help these people get by so they can feed their families."

But the bill has drawn fierce opposition from Northern California Democrats and environmental groups, both for the negative impacts it would have on salmon and fishing jobs and for the secretive process by which it was developed.

"With just a few days left in the legislative session, the House plans to pass yet another divisive, dishonest, and potentially devastating California water bill without any public input or legislative oversight," Northern California's seven Democrats said in a statement. "This is unconscionable and just the latest chapter in their reckless approach to micromanaging the state's water during one of the worst droughts in our history."

Rep. Jared Huffman, a former Natural Resources Defense Council (NRDC) water attorney who represents a long swath of the Northern California coast, told the Rules Committee last night that even though the bill would sunset after 18 months, that would be enough time to bring serious consequences to species.

"There are salmon populations in California that are hanging by a vital thread, holding off against extinction, so it may seem like a window of that type prevents any major harm, but for the survival of those species and for the communities and jobs and industries that depend on them, that's a big deal," he said.

What are the odds?

Passage of the measure in the Republican-controlled House is all but assured. The lower chamber already approved a broader measure in February.

But whether the legislation has a shot at becoming more than simply a symbolic vote is an open question.

Sen. Dianne Feinstein (D-Calif.), who authored the emergency drought measure passed by the upper chamber in May and who had been leading negotiations with the House, has not yet commented on the new House measure.

But her colleague, California Democrat Barbara Boxer, came out in opposition to the bill yesterday. Without both of the Golden State's senators on board, the measure faces a very steep climb in the upper chamber.

"I have carefully studied the Republican water bill and I am dismayed that this measure could reignite the water wars by overriding critical state and federal protections for California," she said in a statement yesterday. "We have communities across the state that are hurting from this drought, so we need a balanced approach that doesn't pit one stakeholder against another, and meets the needs of all of California's water users."

House Republicans are also eyeing the omnibus spending package currently being negotiated by appropriators as a possible vehicle for their bill.

"We're looking at any vehicle we possibly can," said Rep. Devin Nunes (R-Calif.), a co-sponsor of the new measure who has been a lead negotiator for the House on drought issues.

Feinstein, who chairs the Senate Appropriations Energy and Water Development subpanel, included a boiled down version of her Senate-passed bill in her appropriations bill this summer. The section directed federal agencies to maximize water deliveries during the next fiscal year but contained none of the limitations that the drought bill did.

Feinstein's appropriations bill never saw committee consideration -- it was pulled at the last minute over fears about climate and water policy riders -- but the drought language is believed to be in play during omnibus negotiations. That could open the door to inclusion of the new House bill or similar legislation.

But in a brief interview yesterday, Boxer expressed concern at the idea of including the House measure in a must-pass appropriations package.

"I just think to attach a bill that waives protective laws for California -- that's a dangerous thing to do," she said. "It's such a big issue."

Doug Obegi, an attorney for NRDC's water program, said that if the House's aim with the new measure is to increase the pressure on the Senate, it could end up backfiring.

"I think there's a chance that Feinstein and Boxer take umbrage at the House releasing this bill and trying to pressure them and it could backfire for them -- the House majority -- and get them less in the omnibus," he said.

With the House measure offering only short-term changes, all sides are preparing to sit back down at the negotiating table again in January, regardless of whether this bill passes.

"If nothing else, this is a dry run for what we'll probably be doing for the next however many years," Obegi said.

# # #

(This page intentionally left blank.)

Experts say weather won't break drought, conservation still critical
Daily Journal | December 04, 2014

Despite mudslides, slower commutes, increased car accidents and even collapsing roads, the intense storms the parched state is experiencing will far from make a substantial dent in California's dry spell.

The skies have had little time to part the last three days with near constant downpour gracing San Mateo County and bringing rainfall to an average for this time of year; but water officials insist a few days of heavy storms don't mean its time to throw out conservation lessons.

"We never have enough water in California to waste, because even if we get normal precipitation this winter, the effects of the three-year drought will linger into 2015," said Nancy Vogel, spokeswoman for the California Department of Water Resources. "We've got depleted reservoirs and lower groundwater levels, both our aquifers and reservoirs need to be recharged. Our experts think we need about 150 percent of average participation to begin to recover from the three-year drought and conservation is critical."

While water officials are cautiously pleased by the season's first storm, its intensity has created hazardous driving and flying conditions and has taken a toll on numerous roads.

The California Highway Patrol's Golden Gate Division received nearly 400 calls regarding crashes between 2 a.m. Monday and 10 a.m. Tuesday, four times more than usual, said Sgt. Diana McDermott. Even when the rain breaks, McDermott said drivers must remain cautious of puddles, debris and landslides.

The intense rain overwhelmed a San Francisco storm drain leaving a massive 9-foot-deep sinkhole spanning nearly 20 feet by 20 feet on a Richmond District street Wednesday, said Tyrone Jue, spokesman for the San Francisco Public Utilities Commission.

Belmont had its share with a partial road collapse increasing traffic Wednesday afternoon near the intersection of El Camino Real and Middle Road, according to police.

The wind and rain caused more than 110 flight cancellations at San Francisco International Airport during Wednesday morning alone. Most of the 112 canceled flights were to and from airports on and around the West Coast including Los Angeles, Las Vegas and Monterey, according to Bay City News Service.

Where were inches gained?

Even though precipitation has picked up the last few days, the numbers can be misleading, said Felicia Marcus, chair of the California Water Resources Control Board.

Because the ground has been so dry, rainfall is more likely to be absorbed instead of filling reservoirs, Marcus said.

“You can’t look at a certain amount of precipitation and assume you’re going to get the same amount from runoff, at least for a while,” Marcus said.

The Bay Area is proving to be more fortunate than other parts of the state. Based on the water year, which runs from July 1 through June 30, San Mateo and San Francisco counties have received a more than average amount of rainfall compared to other years, said Diana Henderson, forecaster with the National Weather Service.

Over a 72-hour period, San Mateo County, which is most accurately measured at SFO, received 3.9 inches of rain between Sunday and Wednesday and is at 114 percent of normal, Henderson said. Downtown San Francisco is also slightly above its normal precipitation for this time of year, Henderson said.

But despite the intensity of the recent storm, Henderson said the stark contrast in 2013 shouldn’t be ignored.

At this time last year, SFO was at just 30 percent of normal and downtown San Francisco was at a low 35 percent, Henderson said.

The condition of California reservoirs serve as a reminder of the lackluster wet seasons the last three years provided.

Today, Shasta Lake, the state’s largest reservoir, stands at just 39 percent of normal while the second largest, Lake Oroville, stands at just 43 percent, according to Vogel.

On the other hand, the Hetch Hetchy Reservoir, San Mateo and San Francisco counties’ main contributor, is at 113 percent of average for this time of year or about 66 percent of its capacity, according to Vogel.

Conservation and where it counts

The state is diverse with communities having varying water storage systems and some already opting to implement desalinization or recycling programs, Marcus said. Therefore, the Water Resources Control Board felt it important to enact the nation’s first statewide mandatory rationing, Marcus said.

“Folks in large urban areas were hundreds of miles from their water source, so they weren’t seeing the [effects],” Marcus said. “So we had to ring a bell and say ‘hey, there’s a world of hurt out there.’”

Regardless of the Bay Area’s stormy skies, the real indicator of the region’s supply is how much rain and snow is being felt near the Hetch Hetchy Reservoir, Jue said.

“We’re more concerned with how much precipitation is there around our watershed and how much snowfall we are getting,” Jue said. “That’s why sustained snowfall and rainfall is so critical for all water systems in California.”

The SFPUC, which provides water to 2.6 million Bay Area customers, is continuing with its 10 percent voluntary conservation request, Jue said.

The Bay Area Water Conservation Agency represents the interests of 24 cities and water districts as well as two utility companies along the Peninsula. BAWSCA CEO Nicole Sandkulla said with the winter in swing, it's particularly important for people to remember to turn off their irrigation systems.

"Customers still need to be diligent about conserving, this is still early in the winter season. It's just really our first big storm so it remains to be seen how the water year turns out," Sandkulla said.

Marcus agreed and added experts anticipate needing more than a year and a half of normal rainfall before Gov. Jerry Brown is likely to consider declaring an end to the drought.

"Every drop you save today adds time in that race with the clock. And we just know we have no way of knowing whether it's going to be a wet year or not," Marcus said. "So even with the storms, while we welcome it and relish it and are thankful for it, we can't let our guard down."

# # #

(This page intentionally left blank.)

Drought Watch: Yuba City likes state water allocation
AppealDemocrat | December 3, 2014

California public agencies requested 4.1 million acre-feet of state water for 2015. For now, they'll get 90 percent less. And that's considered good news.

It speaks to the severity of the ongoing drought.

The announcement for initial allocations for the State Water Project could change as the winter continues and precipitation continues. But at 10 percent of requested supplies, it was double the initial 5 percent allocation of 2013.

Yuba City is the only local agency with a share of State Project Water. The city was pleased with the 10 percent allocation, having expected only 5 percent, said Public Works Director Diana Langley.

"It's not an end to the drought or water conservation, but at least it's more than we were expecting," Langley said. "It is anticipated that we will continue to be in water-conservation mode through next year, at a minimum."

The city's State Water Project contract is for 9,600 acre-feet. With the 10 percent allocation, the city will receive 960 acre-feet. An acre-foot is 326,000 gallons.

The city received another bit of good water news when the State Water Resources Control Board lifted curtailments on a water license and permit for December.

Together, the two water rights let the city pull up to 15,500 acre-feet from the Feather River, allowing it to conserve precious carryover water supplies that enabled the city to survive 2014 without mandatory water restrictions (this past year, there were water use restrictions but not mandatory cutbacks in actual volume).

The city used about 4,000 acre-feet of carryover storage, which is water the city banked during wet years and can only be used once, in 2014. It has about 2,700 acre-feet remaining for 2015.

Langley has warned the City Council in previous presentations that mandatory restrictions are a possibility in 2015. But the water fate of city residents, at the moment, is unknown and completely tied to winter precipitation totals.

The initial water allocation for the State Water Project routinely fluctuates throughout the year as wet or dry conditions persist or develop. Last year, the allocation dropped to 0 percent, before a string of spring storms increased it to a final 5 percent.

In 2011, the initial allocation was 25 percent, but a wet winter caused it to increase to 80 percent.

The State Water Project, which has Lake Oroville as its largest reservoir, provides water to 29 public agencies. Those agencies requested a total of about 4.1 million acre-feet for 2015.

Yuba River watershed remains critically dry

While Yuba City was seeing a slight increase in its water supply due to recent rains, those same storms did little to improve critically dry conditions in the Yuba River watershed.

Even with the storm to end the month, November and October were almost 4 inches below average rainfall totals and the runoff into New Bullards Bar Reservoir is also well below normal.

While rainfall totals for the two months were 66 percent of normal, runoff into the reservoir was only 32 percent of normal due to the dry watershed.

"We are seeing a double whammy of drought rainfall conditions being exacerbated by dry soil conditions, created by three years of drought, that produce more extreme drought conditions," said Curt Aikens, general manager of the Yuba County Water Agency, in an email. "It will take a well-above-average amount of rainfall to bring the watershed's soil moisture content back to average, perhaps 150 percent of average rainfall.

The recent storms pushed the months of October and November from the fourth-driest ever to the sixth-driest.

Inflow into the reservoir was 25,000 acre-feet, more than last year's 13,000 acre-feet over the same time period, but below the average runoff of 65,000 acre-feet.

To conserve water in New Bullards Bar, the agency has requested a flow deviation from the minimum Federal Energy Regulatory Commission requirements of outflow into the Yuba River.

The agency requested that flows from Jan. 1-Jan. 15 be reduced from 1,000 cubic feet per second to 550 cfs.

Flows of 550 cfs would conform to the Yuba Accord schedules, which were negotiated over two years with state and federal biologists, vetted through an environmental impact report and upheld in a 2008 hearing with the State Water Resources Control Board.

In early November, the agency requested a deviation request that would lower the minimum releases from 600 cubic feet per second to 550 cfs. from Dec. 1-Dec. 30 and Jan. 16-March 31.

FERC approved the request from Dec.1-Dec. 31.

# # #

STORM: What will the rain mean for the drought?

The rain will help, but the Northern California reservoirs and Sierra snowpack that provide much of the state's water remain far short of what they should be.

Associated Press | December 2, 2014

LOS ANGELES (AP) — A Pacific storm moved into drought-stricken California on Tuesday, bringing much-needed moisture along with fears of mudflows on wildfire-scarred hillsides.

Heavy rain began falling overnight in Northern California, while showers in the southern part of the state started after dawn. The strongest downpours were expected later in the day.

Storm watches were issued for a large swath of the Sierra Nevada, where a huge amount of the state's water supply is normally stored as snowpack. Significant accumulations were predicted but not enough to be a drought buster.

In some parts of the San Francisco Bay Area, more than an inch of rain fell between 1 a.m. and sunrise, the National Weather Service said. The weather caused flights arriving at San Francisco International Airport to be delayed nearly four hours, the Federal Aviation Administration website reported.

The rain comes on the heels of a weak storm Sunday. The back-to-back storms are helping some cities in northwest California reach normal rainfall amounts for the year, or even better, but the reservoirs and Sierra snowpack that provide much of the state's water remain far short of what they should be after three years of intense drought.

The state Department of Water Resources reported the Sierra snowpack, which counts most for the state's water supply, was at 24 percent of normal for this time of year.

Rain so far, at this early point in California's wet season, has yet to make much of an impact on the state's main reservoirs. Lake Shasta and Lake Oroville have less than 50 percent of their usual water levels for the start of December, while Folsom Lake stands at 59 percent, National Weather Service forecaster Eric Kurth said.

"The good news is there's more storms on the way," Kurth said.

# # #

(This page intentionally left blank.)

Water officials say recent storms won't deliver California from drought
KTVU News | December 1, 2014

ALAMEDA, Calif. (KTVU) --Despite weekend rain showers and a storm expected on Tuesday, the precipitation is still just a drop in the bucket amid the state's current drought conditions.

A continuing water shortage could prompt changes for some East Bay MUD customers.

Abby Figueroa with the East Bay Municipal Utility District said the rain the Bay Area saw over the four days of the Thanksgiving holiday equals the amount of water their customers use in one day.

“A normal year we get about 50 inches of rain,” Figueroa said. “Right now, we're just under about 7 inches of rain for this rain year. So there's a lot of room in those reservoirs that need to fill up.”

Because the Bay Area is receiving some rain, EBMUD customers are advised to turn off their irrigation systems and check for any leaks. Leaks are the most common way people waste water.

“We are getting ready for possibly another dry year and another dry summer where we will probably have to ask our customers to do a little bit more than they have this past year,” she said.

- **East Bay MUD provides update on drought response and water rates**

Although an official agenda has not been released, EBMUD Board of Directors are expected to discuss possible options in the event the drought gets worse.

Those include possibly declaring a stage 2 drought, increasing voluntary cutbacks from 10 percent to 15 percent, purchasing about 5 billion gallons of water from the Sacramento River and implementing a drought surcharge of 14 percent on customer's flow rates.

Figueroa said the changes, which must be approved through a board vote, are likely if there isn't enough rain or snow in December. It is why any rainfall the Bay Area receives is a relief during a dry spell.

“The rain has been very good for us,” she added. “We are very grateful for it, but we need a lot more.”

The board is expected to talk about the possible drought options next Tuesday.

# # #

(This page intentionally left blank.)

EBMUD Looks At Buying Water, Customers Could Face 14 Percent Surcharge
KPIX 5 | December 1, 2014

OAKLAND (KPIX 5) — Despite a wet weekend, the East Bay Municipal Utility District said they still need more water. The district is looking at buying billions of gallons from the government, but customers would pay a steep price.

The recent rain is a welcome sight that's helping Bay Area Reservoirs. The Lafayette Reservoir is one percent higher. But, every bit counts, every drop matters, especially during the holidays.

During the four-day Thanksgiving holiday weekend, EBMUD said they got an additional 200 million gallons of water, but customers consumed 500 million gallons.

Water use is actually down 10 percent. "Essentially we've gone from half empty to half full," Abby Figueroa of EBMUD said. "Well, not really we need a lot more rain this season."

They can buy the extra water they need from the federal government's Central Valley Project.

"Bring in about five billion gallons of water, that's a month's worth of water for us, from the Sacramento River through a federal contract we have," Figueroa said.

The district buys it, but customers pay for it, a 14 percent increase could be coming as early as next month.

The board will vote on the proposed hike next week.

# # #

(This page intentionally left blank.)

Feinstein Delays Controversial Drought Legislation Until Next Year
San Diego Free Press by At Large | November 25, 2014

Senator Dianne Feinstein (D-CA) announced on November 20 that she has abandoned the secret negotiations to craft a controversial drought relief bill this year, but said she will try to pass the legislation next year.

The delay is a victory by a coalition of fishing groups, environmentalists, Indian Tribes and family farmers who organized an action alert campaign over the past week to defeat the bill. They said the bill would amount to a water bailout for corporate agribusiness interests on the west side of the San Joaquin Valley that would devastate salmon and other fisheries and family farms.

"Over the past several weeks I have been working closely with members of the California delegation who expressed interest in reaching a bipartisan agreement on legislation to address California's drought crisis without violating the Endangered Species Act, the Clean Water Act or biological opinions," said Feinstein in a statement. "Although we have made progress, it has become clear that we will be unable to present an agreed-upon proposal before Congress adjourns this year."

Patricia Schifferle of Pacific Advocates responded, "She claims she worked with all Members – then why don't the northern California and Delta Members agree with that statement?"

Congresssman George Miller confirmed Schifferle's assessment. "She's doing the bidding of a very small group of people," Rep. George Miller, D-Richmond, told reporter Michael Doyle of McClatchy News Thursday, prior to Feinstein's decision becoming public. "This is just money and politics talking."

Feinstein also claimed that, in spite of much evidence otherwise provided by opponents of the legislation, that this wasn't "some kind of secret process."

"I deeply believe the people want both parties to work together, and that is the only way we will be able to enact water legislation," said Feinstein. "Claims that this has been some kind of secret process are false. In order to come up with a bill that is ready for public comment, back-and-forth negotiations and consultations are often necessary, including extensive technical assistance from federal and state agencies. That process is ongoing and we have no agreed-upon bill at this time."

If Feinstein asked for "technical analysis" then it would be great to share the agency's "technical analysis" with the public, Delta advocates noted.

The Senator also emphasized that there is a "real human face" to the current drought, although she failed to mention the people most impacted by the drought – recreational and commercial fishing families, family farmers, and Indian Tribes that depend on salmon and other fish as part of their religion, culture and existence.

“It is important to remember there is a real human face to this crisis,” Feinstein continued. “Some communities can no longer deliver water to homes. Thousands of residential wells have run dry. And many families lack very basic necessities like water for showers and cooking.”

Then Feinstein claimed that the bill wasn’t “about corporate agriculture,” failing to explain why heavy hitters from the water community, including Tom Birmingham of the Westlands Water District, Stewart Resnick of Paramount Farms, the Metropolitan Water District of Southern California and the Kern County Water Agency, were all at the table of the negotiations while fishermen, Tribes, family farmers, Northern California legislators and Northern California legislators were completely excluded.

“California is in a state of prolonged drought, and we must come together to find ways to provide the water necessary for life and well-being. This isn’t about corporate agriculture, this is about California,” she said.

Feinstein then took aim at drought bill opponents, concluding, “It’s my hope that groups critical of this effort will strive to be productive rather than destructive. It’s clear that we need to get more water to our cities, businesses, farmers, households, fish and the Delta. And it’s equally important that we continue to protect wildlife and the environment. Only together will we stand a chance of agreeing on a bill that can help accomplish all of these goals.”

Bill opponents greeted Feinstein’s announcement with relief – and vowed to stop similar legislation gutting fish protection and Delta water standards in the 2015 Congressional Session.

“We would like to thank the Senator for listening to our constituents and we hope that she and Senator Boxer will ensure that all Californians are taken into account during the formulation of legislation in the next Congress,” said Tom Stokely, water policy for the California Water Impact Network (C-WIN).

In a similar vein, Barbara Barrigan-Parrilla, Executive Director of Restore the Delta, said, “We are thankful that Senator Dianne Feinstein agreed to use regular bill procedures this time involving public hearings for next year. Thank you to everyone who took action and kept the pressure strong!”

“This bill has been delayed,” said Ronald Stork, Senior Policy Director of Friends of the River. “Feinstein said it will be reintroduced and go through the regular order in the new GOP led-Congress instead of being hatched in secret in the back rooms. That’s a good thing, but it doesn’t matter if California’s two Senators are unwilling to stand up to the San Joaquin Valley Congressmen. Somebody has to show some courage.”

“The dynamics haven’t changed. Feinstein is more than willing to accede to the demands of the Southern San Joaquin Valley Congressmen. Their demands are pretty simple: disrespect the Wild and Scenic Rivers Act, Endangered Species Act (ESA) and other peoples’ water,” concluded Stork.

On November 18, representatives of California's leading grassroots water conservation and environmental water organizations, fishing groups and the Winnemem Wintu and Karuk Tribes signed a letter strongly criticizing the legislation.

"We are disturbed by a resurgence of media reports and the potential movement of a purported 'drought bill' for California," the letter stated. "As we understand it, the draft legislation now being finalized attempts to reconcile provisions from S.2198 and HR.3964," two bills designed to benefit corporate agribusiness at the expense of other water users."

The groups and Tribes expressed concern that there would be "destructive elements" in the reconciled bill that were in past versions of either or both bills. These include the following:

- Water transfers from the Sacramento Valley are expedited circumventing public processes in federal environmental laws.
- Refuges are pushed to turn to groundwater instead of relying on what the Central Valley Improvement Act requires in the way of surface water deliveries.
- Most benefits are for desert agriculture in the southwestern San Joaquin Valley—not California as a whole—and especially not the area of origin where most of the water comes from: the Sacramento River Watershed.
- Permanent, devastating impacts on migratory bird and fish populations in California, Oregon, Washington State and Alaska.

Defenders of the public trust are gearing up for a big battle by Feinstein and the Republican-controlled Senate and House of Representative to pass "drought relief" legislation that serves corporate interests at the expense of fish, wildlife and the people of California during the next Congressional Session.

The complete letter is available on the Restore the Delta website: here (PDF).
http://restorethedelta.org/blog/wp-content/uploads/2014/11/EWC-Opposition-Letter-FINAL.pdf

# # #

(This page intentionally left blank.)

California drought: S.F. wants to add groundwater to tap
November 24, 2014

The recipe for San Francisco's famously delicious tap water is, gulp, about to change.

Most city spigots, which, since the 1930s, have gushed water from Yosemite's pristine Hetch Hetchy Reservoir, will start delivering the Sierra supply blended with a splash of local groundwater — by many measures, a far inferior source.

The San Francisco Public Utilities Commission recently began digging in and around Golden Gate Park in hopes of drawing underground flows into the mix within the next two years. The move is designed to increase and diversify the city's water reserves as California faces its worst drought in a generation.

The local groundwater isn't nearly as pure as the Sierra runoff, which is considered among the best water in the nation, and it sometimes contains unsavory, if not unhealthy, deposits.

But city officials say not to worry: The underground reserves are sufficiently clean and palatable, and will be blended with Hetch Hetchy water in small doses — between 10 and 15 percent — to assure a negligible change.

"We don't think people will notice a difference with what they're drinking," said Jeff Gilman, the water agency's groundwater project manager. "It tastes the same. Color is the same. Odor is the same."

Gilman's statements have largely held up to taste tests. In nine blind trials that the agency conducted with the public, people showed only a slight preference for Hetch Hetchy water over the new blend, while 20 percent expressed no preference at all.

A panel of food writers from The Chronicle found only subtle differences between the two supplies. Wine writer Jon Bonné noted a "mineral presence" in the blended water, which he said did not diminish the taste and was potentially a positive.

The real distinction lies in the chemistry. The groundwater, which will be drawn from a basin that extends beneath western San Francisco down the Peninsula, is rich in calcium, magnesium, sodium and other stuff that commonly spills into underground flows.

While many of the additives are benign or even beneficial, and can add to the flavor or effervescence of the water, some are not.

Tests of the basin last year found nitrates in the water at levels that exceeded state standards. The nitrates, a nitrogen-oxygen compound that can make people sick when consumed in high doses, come from fertilizers and leaky sewage pipes that infiltrate the soil.

Blending dirty water

City water officials say the nitrates will be diluted to safe levels as the groundwater is mixed with the Hetch Hetchy supply. Blending is a common way for water agencies to treat dirtier water.

“You might not be able to drink it straight, but blended we’re fine,” Gilman said.

The groundwater will also be treated with chlorine to kill off any pathogens, just as the Hetch Hetchy water is disinfected with chloramine, a chlorine-ammonia mix.

Sodium hydroxide will be added to the groundwater, to raise its PH and reduce its natural acidity. The same is done for the Hetchy Hetchy water. Fluoride is also added to the current supply as a public health measure.

The Hetch Hetchy supply, while vast, is limited. It’s also an impossible source to replicate as city officials look to boost their reserves. The water is so clean that, unlike most municipal stocks that originate with runoff, it doesn’t have to be filtered for sediment.

The water comes from melted snow atop the Sierra’s tall granite peaks. It’s caught at the O’Shaughnessy Dam in Yosemite National Park and piped 160 miles to the Bay Area.

The supply is enhanced by a small amount of runoff from hills in the East Bay and Peninsula — no more than 15 percent of the total.

Starting in late 2015 or 2016, the plan is for groundwater to be added to the supply as it arrives in the city. Six wells between Golden Gate Park and Lake Merced — four new ones and two that have long helped irrigate the park — will draw up the reserves.

Water officials expect to pump 4 million gallons of groundwater to the surface a day, the equivalent of about 5 percent of the city’s daily needs.

The blended water will be distributed to about 60 percent of the city, largely the west side. During particularly dry times, all of the city’s 837,000 residents will get it, water officials say.

Communities on the Peninsula and the East Bay that buy water from San Francisco will not receive the blended water.

Mixing it up

Already, many water agencies that receive Hetch Hetchy water add their own groundwater to it. Daly City, San Bruno and South San Francisco tap the same Westside Groundwater Basin that San Francisco plans to draw from.

“It tastes very good, but maybe I’m biased,” said Patrick Sweetland, director of Daly City’s water department.

San Francisco and its neighbors have drafted agreements to collectively make sure the basin is not overdrawn, and to keep seawater from rushing in and filling any void.

The roughly 45-square-mile basin was a primary water source for San Francisco before the pipeline to Yosemite was completed in 1934.

City water officials say reintroducing the groundwater — a project expected to cost $66 million — is one of the best ways to boost supplies during times of severe drought or crisis, such as an earthquake severing links to Hetch Hetchy.

David Sedlak, an environmental engineering professor at UC Berkeley and co-director of the Berkeley Water Center, said the city’s plan makes sense.

Already, many water agencies across California incorporate groundwater into their supplies, he noted, with about 80 percent of Californians relying on some amount of groundwater for their daily needs.

With snowmelt in the Sierra in decline as the drought lingers and the climate warms, the Hetch Hetchy supply is becoming less reliable.

Currently, San Francisco’s total water supplies are at 56 percent capacity, whereas they’re usually above 80 percent at this time of year, officials say. The water agency is asking residents to reduce their water use by 10 percent.

“The city is thinking ahead to when climate change starts to be an issue and about natural hazards like earthquakes,” Sedlak said. “Having this other local water supply is a really good thing.”

# # #

(This page intentionally left blank.)

Officials increase water allocations as rain hits, drought persists
LA Times | December 2, 2014

The biggest storm of the rain season is fostering optimism among state officials, who increased 2015 water allocations this week in response to improving precipitation forecasts..

On Monday, the Department of Water Resources announced that in 2015 water agencies will receive an initial allocation of 10% of the amount of water they requested from the State Water Project – double the 5% allocation customers received in 2014.

A translucent freshwater bryozoa is illuminated by the rising sun on the receding banks of Folsom Lake, which was 35% of capacity as of Sept. 30. One of the lake's five boat ramps remains in operation and boaters are restricted to 5 mph.

The effects of California's ongoing drought are evident at Diamond Valley Lake in Hemet as shells, once under water, lie in the soil of recently exposed banks.

Severe drought conditions reveal more than 600 empty docks sitting on dry, cracked dirt at Folsom Lake Marina, which is one of the largest inland marinas in California.

Patterns are created and reflected from water receding on the bed of Folsom Lake. As the state ends the fourth-driest water year on record with no guarantee of significant rain and snow this winter, Californians face the prospect of stricter rationing and meager irrigation deliveries.

Extremely low levels of water flowing through meandering streams of the east fork of the San Gabriel River in the Angeles National Forest show the effects of the prolonged drought. The water flows into the San Gabriel Dam and the Morris Dam, further downstream.

California's recent storms have increased the water level of Lake Oroville – the "keystone" reservoir of the State Water Project – officials said in a news release. The project is a series of reservoirs, canals and aqueducts that move water from Northern California to the south.

Still, state water experts said it would take about 1.5 times more rainfall than average for California to recover from the current drought. According to the water department, that would mean a total 75 inches of rain from Oct. 1, 2014 through Sept. 30, 2015 recorded at eight stations in the northern Sierras.

If dry conditions return, officials cautioned that they could "reallocate State Water Project supplies to meet critical human health and safety needs."

“Storms in the extended forecast give us hope that we will return this winter to normal or above-normal precipitation levels after three years of drought,” DWR Director Mark Cowin said. “But we must be cautious and preserve adequate storage in reservoirs should conditions turn dry again.”

Almost all areas served by the State Water Project also receive water from other sources, such as streams, groundwater and local reservoirs. But the 5% allocation in 2014 was the lowest amount at the end of a calendar year in the project's 52-year history, officials said. For comparison, the final allocation for the 2013 calendar year was 35%.

Other parts of the state’s water picture were less rosy. The DWP released an updated report on groundwater basins Tuesday, which showed that in most areas of the state the basins are at historically low levels.

Also Tuesday, officials at the State Water Resources Control Board issued a monthly report on water conservation, announcing that Californians reduced use by 6.7% in October compared to October 2013. Californians cut 11.6% in August and 10.3% in September.

Water board officials said that Southern California was a driver of state water use. While most of the state’s hydrologic regions continued to conserve at consistent rates, the South Coast Hydrologic Region, which includes Los Angeles, reduced its water use only 1.4% in October. During summer months, the region had cut use by as much as 7.8%, helping push statewide water conservation to its highest levels this year.

Despite the recent Southland storms, “it’s not time to relax,” said Eric Oppenheimer, director of the State Water Board's Office of Research. “We would have definitely liked to have seen better than the 6.7%.”

# # #

Soaker helped, but we're a year behind
The Record | December 2, 2014

In barely three hours Tuesday morning, Stockton swallowed up more rain than it received in all of December 2013.

By sunset, 1.10 inches had fallen, making it the wettest day since Feb. 28. Meanwhile, the city's seasonal rainfall total surged above normal, certainly an improvement from this time last year.

But a drought-buster? No.

San Francisco Bay Area meteorologist Jan Null this week calculated "rainfall deficits" for many California communities over the previous three years combined. Even taking into account Tuesday's soaker, Stockton still faces a three-year deficit of almost 16 inches of rain.

That deficit is greater than Stockton's annual average rainfall. In other words, the city has lost an entire year's worth of precipitation during this drought.

Tuesday's storm made up about 6 percent of that deficit. It would take roughly 15 more similarly wet storms to truly achieve "normal" here.

# # #

(This page intentionally left blank.)

Report: California drought threatens groundwater
The Associated Press | December 2, 2014

SACRAMENTO, Calif. — Three years of drought have taken a heavy toll on California groundwater supplies, with hundreds more wells being dug this year, one of the driest on record, a state report released Tuesday said.

Over 350 new wells were dug in both of the agriculturally rich Fresno and Tulare counties, more than any other part the state, the California Department of Water Resources reported. Hundreds more wells were drilled in Merced, Butte, Kern, Kings, Shasta and Stanislaus counties, the report says.

Gov. Jerry Brown this year initiated new laws to start managing underground water in California, the last Western state to take such steps. But the plans could take years to be developed, officials said.

"If we fail to manage our groundwater basins sustainably, we risk losing the water supply savings account that can help cities, farms and businesses surviving drought with minimal disruption," said Mark Cowin, director of the Water Resources department.

California risks overdraft, which Cowin said could permanently damage the naturally occurring underground water for future generations. In years of normal rain and snowfall, groundwater accounts for 40 percent of supplies for farmers and communities, and the report says that in times of drought that increases to 60 percent.

Yet the report says that about one-fourth of the state's 127 most heavily used underground water basins are not adequately monitored. Basins with notable decreases are in the Sacramento River, San Joaquin River, Tulare Lake, San Francisco Bay, Central and South Coast regions, the report says.

Excessive ground-water pumping, the report says, will continue to cause the ground levels to drop, a phenomenon called land subsidence.

# # #

(This page intentionally left blank.)

State Water Project expects scant deliveries next year
SF Gate | December 1, 2014

The State Water Project, which carries runoff from the mountains of Northern California to much of the state, expects to limit annual water deliveries to 10 percent of what is requested in the coming year due to the prolonged drought.

The cutback announced Monday, while not unexpected, is another reminder of California's precarious water situation and is a blow to both urban water departments and rural irrigation districts that received 5 percent of what they wanted last year — the lowest amount ever doled out by the state.

Though next year's projected allocation is slightly larger, it will force the 29 contracting agencies, serving nearly two-thirds of California residents and 750,000 acres of farmland, to look elsewhere for water and to push conservation.

The Zone 7 Water Agency in the Tri-Valley area of the East Bay, which gets 80 percent of its supply from the State Water Project, has recently pumped more groundwater while cutting deliveries to Livermore, Pleasanton, Dublin and San Ramon. Those communities have been forced into rationing water.

"Our customers are amazing. They've proven that they could reduce their water use by 25 percent," said Sue Stephenson, a spokeswoman for the Dublin San Ramon Services District.

However, another year of relying on groundwater, Stephenson said, may not be healthy for the area's aquifer — the equivalent of dipping deep into a savings account.

"It's not a good situation to be in," she said.

Next year will be the fourth straight in which water agencies see significantly less water than they contracted for with the state. Before this year's 5 percent allocation, agencies received 35 percent in 2013 and 65 percent in 2012. The allocation announced this week is preliminary, and state officials hope snow and rain this winter will allow them to bump up deliveries.

The state water comes from 34 lakes, reservoirs and storage facilities and is piped via aqueduct across the state, from the Bay Area to Southern California. About 70 percent goes to urban users and 30 percent to agriculture.

The project's largest water source is Lake Oroville, which is currently at 26 percent capacity — just 43 percent of average for this time of year.

California's other big water project, run by the federal government, has not yet projected how much water it will deliver next year. The Central Valley Project similarly slashed allocations this year, forcing customers to use alternative sources like groundwater.

# # #

(This page intentionally left blank.)

How Much Water Do You Use? The Story of Water by USGS
Sierra Sun Times | Sunday, 30 November 30 2014

November 25, 2014 - By Ethan Alpern and Jon Campbell - Across the nation, water is vital to every household and every community; to agriculture, energy production, and a productive economy; to wildlife, forests, and a healthy environment. America's water resources are generally abundant but they are not limitless. It is vital as well that we have a comprehensive understanding of how much water is being used across the country so we can make wise choices in managing our water resources.

Center pivot irrigation in Florida.

Tracking where water goes

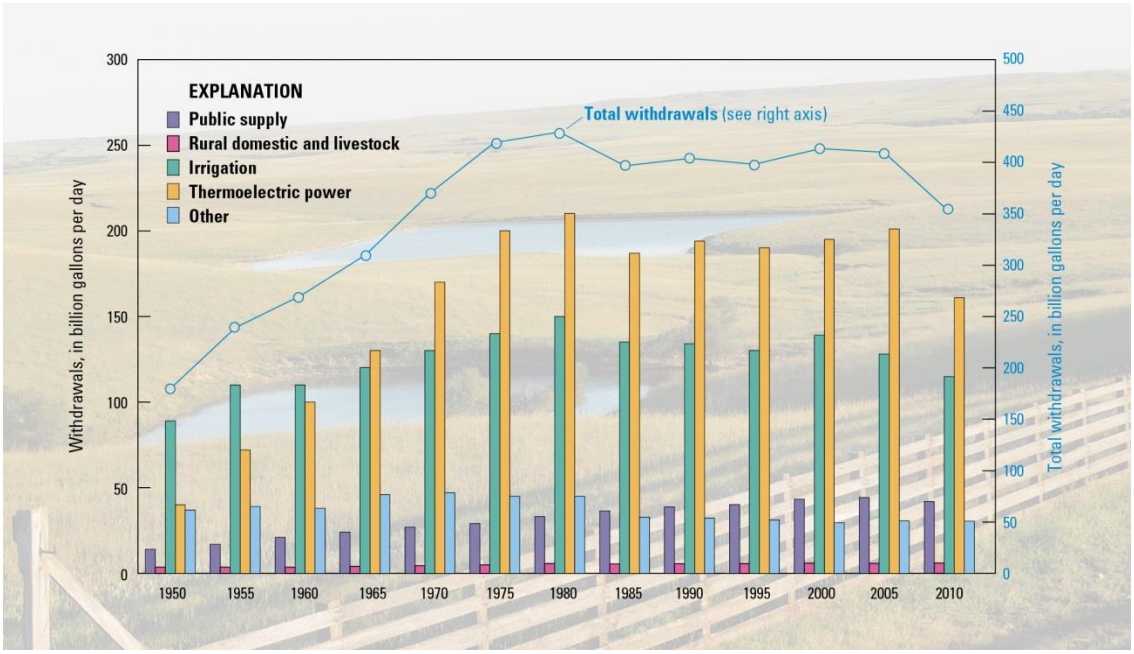
Every five years the U.S. Geological Survey collects data from counties all over the Nation for the national water use report, a thorough document that provides water resource managers and private citizens with accurate information on how much water is being used in specific places for a wide variety of purposes.

"Since 1950, the USGS has tracked the national water-use statistics," said Suzette Kimball, acting USGS director. "By providing data down to the county level, we are able to ensure that water resource managers across the nation have the information necessary to make strong water-use and conservation decisions."

A new low in water use

Water use across the country reached its lowest recorded level in nearly 45 years. According to a new USGS report, about 355 billion gallons of water per day (Bgal/d) were withdrawn for use in the entire United States during 2010, which represents a 13 percent reduction of water use from 2005 when about 410 Bgal/d were withdrawn and the lowest level since before 1970.

Reaching this 45-year low shows the positive trends in conservation that stem from improvements in water-use technologies and management. Even as the U.S. population continues to grow, people are learning to be more water conscious and do their part to help sustain the limited freshwater resources in the country.



Categories of water use

Water withdrawn for thermoelectric power was the largest type of water use nationally, with the other leading uses being irrigation, public supply and self-supplied industrial water, respectively. Withdrawals declined in each of these categories. Collectively, all of these uses represented 94 percent of total withdrawals from 2005-2010.

A number of factors can be attributed to the 20 percent decline in thermoelectric-power withdrawals, including an increase in the number of power plants built or converted since the 1970's that use more efficient cooling-system technologies, declines in withdrawals to protect aquatic habitat and environments, power plant closures and a decline in the use of coal to fuel power plants.

In a separate report, USGS estimated thermoelectric-power withdrawals and consumptive use for 2010, based on linked heat- and water-budget models that integrated power plant characteristics, cooling system types and data on heat flows into and out of 1,290 power plants in the United States. By incorporating data on the consumptive use for thermoelectric power since 1995, the models offer a new approach for nationally consistent estimates.

Irrigation withdrawals in the United States continued to decline since 2005, and more croplands were reported as using higher-efficiency irrigation systems in 2010. Shifts toward more sprinkler and micro-irrigation systems nationally and declining withdrawals in the West have contributed to a drop in the national average application rate from 2.32 acre-feet per acre in 2005 to 2.07 acre-feet per acre in 2010.

For the first time, withdrawals for public water supply declined between 2005 and 2010, despite a 4 percent increase in the nation's total population. The number of people served by public-supply systems continued to increase and the public-supply per capita use declined to 89 gallons per day in 2010 from 100 gallons per day in 2005.

Declines in industrial withdrawals can be attributed to factors such as greater efficiencies in industrial processes, more emphasis on water reuse and recycling, and the 2008 U.S. recession, resulting in lower industrial production in major water-using industries.

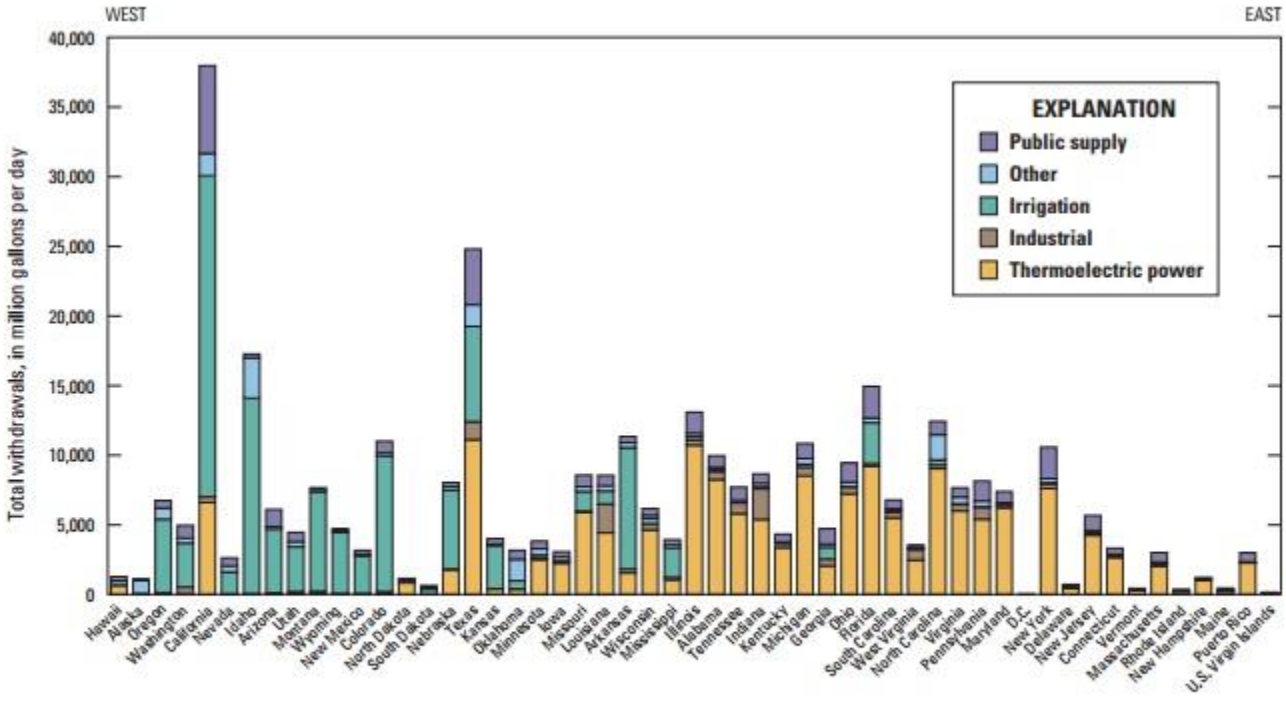


Figure 2. Total water withdrawals by State and barchart showing categories by State from west to east, 2010.

Regional water use

California accounted for 11 percent of the total withdrawals for all categories and 10 percent of total freshwater withdrawals for all categories nationwide. Texas accounted for about 7 percent of total withdrawals for all categories, predominantly for thermoelectric power, irrigation and public supply.In August, USGS released the 2010 water-use estimates for California in advance of the national report. The estimates showed that in 2010, Californians withdrew an estimated total of 38 Bgal/day, compared with 46 Bgal/day in 2005. Surface water withdrawals in the state were down whereas groundwater withdrawals and freshwater withdrawals were up. Most freshwater withdrawals in California are for irrigation.

Florida had the largest saline withdrawals, accounting for 18 percent of the total in the country, mostly saline surface-water withdrawals for thermoelectric power. Oklahoma and Texas accounted for about 70 percent of the total saline groundwater withdrawals in the United States, mostly for mining.

The USGS is the world's largest provider of water data and the premier water research agency in the federal government.

# # #

Peace amid the water wars: S.J. County, East Bay MUD reach deal
Recordnet.com | November 27, 2014

STOCKTON — Here's something to be thankful for today: A landmark peace treaty in one of this region's most enduring water wars.

San Joaquin County and the East Bay Municipal Utility District are the primary players behind a deal announced late Tuesday.

"This has been in the works for decades," county Supervisor Larry Ruhstaller said Wednesday.

In essence, East Bay MUD will provide water to the county during both dry and wet years and commits $4 million to an experimental groundwater banking project somewhere in the northeast county.

In exchange, during dry years, the utility will be able to export a portion of that groundwater to its 1.3 million customers in the East Bay.

All parties are dropping longstanding legal protests to various water-rights applications pending before the state.

It is one of those rare moments in California water where there is a marriage to celebrate instead of a divorce to litigate.

"We all have got to be working together and trying to find a solution rather than just pointing the finger at everyone," said Joe Valente, a farmer who sits on the board of the North San Joaquin Water District east of Lodi. "People's egos have got to go. Let's work together and get something done."

The animosity between local water interests and East Bay MUD dates back to 1956, when the utility received a water right on the Mokelumne River. Ever since, much of the river has been exported to the Bay Area.

San Joaquin County was left dry. State officials told the county to look elsewhere for water — namely, the American River. But the Auburn Dam was never built, and a canal to send river water south was never completed.

So it was in 2007 that San Joaquin County vehemently protested a request by East Bay MUD for more time to make full use of its Mokelumne River water right. The county went so far as to accuse East Bay MUD of attempting to "hoard" water, making it unavailable for others.

This week's agreement, privately negotiated for more than two years, is remarkable for its dramatically different tone.

“The fact that we’re all on the same page, I think everybody benefits,” said Fritz Buchman, deputy director of the county’s Public Works Department.

The nitty-gritty details:

• Starting next year, East Bay MUD will provide up to 6,000 acre-feet of water in dry years to the North San Joaquin district. Historically, that area has struggled to obtain river water and has leaned heavily on fragile groundwater.

Today, the district has a water right but only during wet years. Receiving a small amount of river water during dry years will help persuade farmers to use less groundwater, Valente said.

• East Bay MUD also will send North San Joaquin up to 8,000 acre-feet of water during wet years. If North San Joaquin can’t use it, then that water could be made available to the Stockton East Water District, which provides the city of Stockton with a portion of its water supply. Stockton East would have to build the infrastructure needed to divert that water, though.

• If San Joaquin County’s pending request to draw water from the Mokelumne River someday is honored by the state, East Bay MUD would allow some of that water to be stored in upstream Camanche Lake, for a fee.

• The county, the utility and four local water districts drop their protests on pending water right applications. This means the county no longer will be opposing East Bay MUD’s request to take more Mokelumne River water in the future, but with the state having given out more water rights on paper than water that actually exists, there is no guarantee the utility’s request will be granted, anyway.

• East Bay MUD will dedicate $4 million to a pilot groundwater banking project. Water will be stored underground during wet years; when it’s dry, up to half of that water would be extracted and sent to the Bay Area to avoid shortages.

Both parties win, the county says; East Bay MUD gains a more reliable water supply during droughts, while the county simultaneously squirrels away water below ground. The county also would own the facilities.

The agreement allows for East Bay MUD to deliver that groundwater to other parties, but the county would have a say in how that happens, Buchman said.

No site has been selected — officials say they want to be careful that the groundwater bank doesn’t harm nearby well owners.

And they’ll have to cut through some red tape to make it happen. San Joaquin County has an ordinance forbidding the export of groundwater without a permit, and no such permit has been issued. Local water leaders refused to grant a permit when a similar groundwater bank was proposed in the late 1990s.

Much has changed, said Brandon Nakagawa, the county's water resources coordinator.

The latest groundwater concept has been discussed publicly for two years and vetted with different interest groups. Last time, officials say, the process was not as sound.

Also, water leaders in the late 1990s were questioning why they should help their water rivals from the East Bay.

"A lot of their issues stemmed around, what was East Bay MUD's contribution to the health of our groundwater basin? The feeling was they were just using us," Nakagawa said.

And that's where the new deal comes in. Now the utility *is* contributing — both water and money. That sweetens the arrangement for San Joaquin County.

The San Joaquin Farm Bureau Federation, for example, opposed the proposal in the late 1990s.

But Bruce Blodgett, director of the farm bureau, said Wednesday that his group is "encouraged" by the new arrangement, though he added many details still have to be worked out.

"You think about all the fits and starts, all of the times where we seem to always run into a problems," Blodgett said. "But this time everyone sat there and negotiated in good faith and came up with a proposal. It's a great first step to finally get more water stored here."

# # #

(This page intentionally left blank.)

Aging pipes cause issues for water agencies: El Granada residents suffer from leaking pipe this week

Daily Journal |November 26, 2014, 05:00

Replacing aging infrastructure is a continuous challenge for many water providers and the combination of failing pipelines with statewide conditions, such as the drought and seismic activity, can lead to consequences.

The Coastside County Water District, the California Water Service Company and the San Francisco Public Utilities Commission have all experienced water main failures with varying consequences as the providers seek to balance financial and consumer restrictions.

Most recently, about 150 El Granada residents were advised to boil their drinking water for nearly two days after a more than 40-year-old Coastside County Water District pipe began leaking Sunday.

The 10-inch cast iron pipe broke Sunday and caused a decrease in pressure which prompted the State Water Resources Control Board to require the district to advise residents to boil water to eliminate potential bacteria.

"I think like every water utility, we have the challenge of replacing outdated infrastructure while keeping our rates reasonable," said district General Manager David Dickson.

Bacteriological samples to verify water safety came back negative, it appears no residents were affected and the district anticipates lifting the boil advisory Wednesday, Dickson said. The pipe, which ran east of Highway 1 near Magellan Avenue, was fixed within a few hours and is a small portion of the district's 100 miles of pipeline that will be maintained through a $33 million, 10-year capital improvement program, Dickson said. The soil surrounding the pipe dried up due to minimal rainfall, and seismic activity may more readily harm some of the older pipes, Dickson said.

Many water utilities repair or replace pipes piecemeal over time and often a provider will have mains that ranges from 80 years old to brand new.

San Mateo Creek leak

Last week, Cal Water faced the consequences of a failing nearly 60-year-old pipe when the water control board issued a $3 million complaint claiming the company leaked approximately 8 million gallons of water into the environmentally sensitive San Mateo Creek. The leak, which spanned about four days in 2013, ultimately killed 276 fish and caused erosion to the creek.

There were extenuating circumstances Cal Water plans on discussing with the water control board, such as the remote and underground location of the leak and how reports from monitoring systems were accidentally misinterpreted, according to Cal Water officials.

Replacing aging infrastructure, particularly in environmentally sensitive habitats, is a top priority and the company plans to work with the California Public Utilities Commission to address these issues, said Tim Treloar, vice president of Cal Water's operations and water quality.

“We are going to look more vigorously at a more robust replacement schedule,” Treloar said. “We’re not alone. We’ve got to be good stewards of the environment, we’ve got to serve our customers, we’ve got to keep the rates affordable and we’ve got to replace our infrastructure. I think we’re doing that, it’s a heck of a balancing act.”

The SFPUC, which sells water to a majority of San Mateo County distributors, is also no stranger to aging infrastructure. Prior to the recent completion of the Bay Tunnel, part of a multi-billion dollar capital improvement program, the SFPUC had two nearly 80-year-old pipes that leaked nearly 60 millions of gallons of fresh water into the Bay over several years.

“Aging infrastructure is a national problem, so when you talk about an agency that has failed to replace pipes … it’s not necessarily a violation, it’s just the fact that replacing pipe is very expensive and mainline breaks are just part of operating a water system,” said Bruce Burton, an assistant deputy director with State Water Resources Control Board’s division of drinking water.

High-cost upgrades

The U.S. Environmental Protection Agency estimates over the next 20 years the nation will need to invest $1 trillion into water and sewer systems and the SFPUC plans are undergoing a $4.8 billion system upgrade, said SFPUC spokesman Tyrone Jue.

Water delivery systems are primarily hidden and, although the resource is something on which we all depend, the expense involved in maintaining aging pipelines can be lost upon consumers, said Nicole Sandkulla, CEO of the Bay Area Water Supply and Conservation Agency. BAWSCA represents the interests of 24 cities and water districts, as well as two public utility companies along the Peninsula that purchase wholesale water from the SFPUC.

“Most of our agencies have an ongoing maintenance program to replace and repair [infrastructure,]” Sandkulla said. “It’s hard in a year for example like this year, where agencies are selling less water, so they have to dip into their reserves to cover their fixed costs, so they may have to go into their capital improvement program budget.”

As a state plagued by frequent seismic activity, many of the water mains that were built prior to modern standards may fail more readily than newer pipes, according to officials. With the looming drought and push for conservation, statewide water providers have myriad challenges to balance. But aging infrastructure must be a top priority to ensure quality service, Sandkulla said.

“There’s huge consequences. Water is something, just as a community, you don’t think about until it’s not there. It’s definitely one of the hidden infrastructures that we all rely upon. So to that extent, it’s also easy to forget about and sometimes it can be difficult for ratepayers who’s rates [are] raised to cover costs, it’s hard to see,” Sandkulla said. “It’s just like everything else, like your house, it needs maintenance, it needs continual investment.”

# # #

More power! SF moves closer to expanding PUC's energy customer base
SF Gate | November 24, 2014

San Francisco is on the cusp of getting even deeper into the energy business.

Legislation to give the city's Public Utilities Commission a right of first refusal on providing power to nearly all new developments in the city passed a major hurdle Monday and will got to the full Board of Supervisors on Tuesday.

The proposal, authored by Supervisors **Scott Wiener** and **London Breed**, picked up key support from Supervisor **Jane Kim** during Monday's hearing at the board's land use committee.

The legislation is designed to grow the PUC's retail customer base by giving it first crack at providing power to new developments while also helping San Francisco reach its ambitious goal of having all electricity in the city come from renewable sources by the end of 2020.

The public utility already provides greenhouse gas-free energy generated from solar panels or hydropower from Hetch Hetchy for city-owned sites like San Francisco International Airport, San Francisco General Hospital and City Hall.

"It's not enough to talk about clean energy," Wiener said. "We have to walk the walk, and this legislation will help us do that."

The San Francisco Public Utilities Commission, which sells most of its power at a heavily discounted rate for civic uses, also needs to bring in more revenue to keep up with aging infrastructure demands. Currently the city has to compete with Pacific Gas and Electric Co., which in some cases fights the city hard to provide power for new developments, like the under-construction Transbay Transit Center.

A PG&E representative did not address the committee Monday, but an official from the San Francisco Chamber of Commerce, which is heavily funded by PG&E, opposed the measure, as did the Building Owners and Managers Association, which works on issues for the commercial real estate industry.

"We have some serious problems with this legislation," said **Ken Cleaveland**, BOMA San Francisco's vice president of public affairs. "Why don't you allow the PUC and PG&E to bid to provide the contract?"

(This page intentionally left blank.)

Tapped out — one woman's crusade to save the drinking fountain
LA Daily News | November 28, 2014

When's the last time you bent to sip from the little arc of pipe-warm water produced by a public drinking fountain?

Long time, for many of us. As omnipresent cellulars have almost killed the phone booth, so omnipresent plastic bottles of store-bought water have almost killed the fountain.

That and the rather yucky disrepair many public fountains have fallen into. Who, no matter how parched, wants to place lips so close to a spigot that produces barely a trickle above its germy-looking outlet? While I have fond memories of those sparkling porcelain three-barreled models lining the outdoor walkways of my elementary school, keeping us hydrated all through recess and P.E. and after-school sports, most were built half a century ago and suffered generations of discarded chewing gum and poor water pressure. Not very appetizing.

That fear factor is compounded by those who are paranoid — sometimes with good reason, mostly not — about drinking tap water at all. Yes, some Southern California aquifers are poisoned Superfund sites. And as they age, the vast network of metal pipes that carries our potable water is certainly suffering. But what pours forth is still remarkably safe, clean, filtered and chlorinated against any contamination. Yet people have unaccountably switched almost entirely to expensive bottled water, especially while on the go. That makes it easier for those responsible for infrastructure to let it fall into disrepair. It's a problem.

Happily, Evelyn Wendel has an app for that. The Angelena mother of two and former movie producer is the founding director of the nonprofit We Tap, whose mission statement is to improve awareness, access and use of public drinking fountains, reducing dependence on single-use plastic.

And her cool phone app is in the process of building an interactive map of every drinking fountain in Southern California. Users can place their own favorite bubblers onto the map, grading them on water flow and whether or not there is a canine connection or a tap to easily fill reusable canteens.

It's impossible not to be engaged by Wendel's enthusiasm for this huge yet simple crusade. I met her at the Making LA green design conference and then talked with her on the phone.

"The goal," she says, "is to try to find a means for community members to engage with their city councils and Rec and Parks departments to get access to water. When we go out in nature, nature which here is obviously not the wilderness, providing water is not an added benefit — it's a necessity." Yet when her children were little and she took them to city parks, more often than not the water fountains didn't work.

“Then I saw how much waste there was in their public elementary school. We tried to educate the parents that tap water was available and they didn’t have to send their kids to school with bottled water every day. Then I talked to a scientist from Heal the Bay and found out about the gyre” — the huge accumulation of discarded plastic in the Pacific Ocean — “and saw that how much we accumulate in the ocean corresponds with how much we consume as a society.”

Wendel doesn’t dwell on the negative. She knows plastic bottles will still be used. She just wants to spread the word that tap water is safe and cheap, and ensure it’s available. She’s ticked about a local charter school that pays $10,000 a year for bottled water. And, as with the recently released app, she has her victories: At Palisades High, “we added a filling station next to the cafeteria and it’s brought like a joy for water to the kids. It didn’t happen overnight. But nothing happens overnight.”

# # #