

CALIFORNIA WATER

2016

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Saving Every Drop

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The Drought is Not Over



Cover photo: Aerial view showing The Enterprise Bridge crossing the South Fork at Lake Oroville in May 2016. Inset: The same view during drought conditions on March 2, 2015.

Photo courtesy of California Department of Water Resources

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Is California's Drought Over?

By Chris Lancaster
Publisher, Civic Publications

The answer is a two-letter word: No. Wait, what? How about all that rain? Didn't that help our state's withering 10-year drought?

We all rejoiced when El Niño brought a string of storms and rain to central and Northern California this winter and early spring, filling depleted reservoirs and adding crucial feet to the anemic snowpack. Did you know that our mountain snowpack is our state's main water reservoir because it melts gradually and drains into the above-ground reservoirs during the warmer summer months, exactly when we need it most? Yep, that plethora of snow we hope for every year in the Sierra Nevadas is not just useful for skiing.

However, our long-awaited mountain snowpack has almost disappeared during our sunny and warm spring. As summer begins, California's snowpack is "pretty much getting close to bare," said Frank Gehrke, California's chief snow surveyor. That's on top of last year being the worst year on record in terms of snowpack.

So our immediate drought "emergency" – a decade in the making – may have lessened just a tiny bit because of this year's snowpack, but overall the drought is very far from over, friends. Let's be clear about that.

For its part, Southern California had very little rain during the winter. Our local reservoirs and groundwater basins were NOT recharged.

So is the drought over? Not for Southern California, and not for the state as a whole. Much of central and Southern California remain in severe or exceptional drought.

The coming decade still looks grim for water. "Looking to the future, we expect long-term declines compared to this year," said Michael Dettinger, a U.S. Geological Survey hydrologist.

At fault is global warming, which is projected to reduce our state's snowpack by causing it to melt earlier in the year resulting in runoff that can't effectively be captured, and by causing more rain to fall instead of snow.

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Sierra Nevada Mountains
The snowpack on the Sierra Nevada mountains is our state's main water reservoir because it melts gradually and drains into the above-ground reservoirs during the warmer summer months. 123 RF Stock Photo

Felicia Marcus Looks to the Future with Optimism and Caution

State Water Resources Control Board Chair Says Water Conservation Must Continue

By Elizabeth Smilor
Special Sections Writer

Felicia Marcus is an optimist. As chair of the California State Water Resources Control Board, she has witnessed a shift in attitude that resulted in a statewide 24 percent reduction in urban potable water use during a nine-month period.

"I am optimistic about the ability of urban areas to adapt and be more efficient in how they use water," she said in a recent interview.

She is also a realist. Though Gov. Jerry Brown eased statewide water restrictions, effective June 1, Marcus and her fellow board members know they have to keep a close eye on water use.

"I don't think people will go back to watering with wild abandon, some will, but we'll see," she said. "We will be watching very carefully. We are going to hope that folks will keep it up."

In reality, El Niño only hit the northern half of the state with snow and rain. It was still a very dry winter in Southern California.

"I'm a little worried that (the eased restrictions) might send the wrong signal to a lot of people that we're in better shape than we are, especially in Southern California where the rain didn't really

materialize," said Thomas Wong, president of the San Gabriel Valley Municipal Water District Board of Directors. "It's a little worrisome for us to put on the brakes when we're not out of trouble."

He and other local and regional water agency officials said their message of conservation will not change.

"We need to caution our constituency that the drought is not over and we must continue our yeoman efforts

and continue to save and conserve as much water as we possibly can," said David De Jesus, a member of the Three Valleys Municipal Water Board and chair of the Metropolitan Water District's Water Planning and Stewardship Council. "One good year does not eliminate the need to conserve when you've been in drought as long as we have."

The state did not lift all regulations. Under the new rules, water agencies and communities have been asked to set reduction guidelines, assuming the next three years are as dry as the previous three years.

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Felicia Marcus

"I don't think people will go back to watering with wild abandon, some will, but we'll see."

– Felicia Marcus
Chair, California State Water Resources Control Board



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Sen. Hertzberg's Legislation Considers Every Last Drop

Multiple Bills Aim to Save Water and Money

Control Board to consider convening an advisory group to develop recommendations and regulations to achieve the goal.

"California's drought has forced us to rethink everything we do with water and consider how to be more intelligent in how we manage it," Hertzberg said. "This legislation is a no-brainer. Let's find a way to reuse treated water instead of dumping it into the ocean. We have to stop thinking of treated water as a waste product – it's a valuable resource to be utilized."

California discharges an estimated 1.5 billion gallons of treated water – the equivalent of 18 Rose Bowls filled with water – into the ocean every day. In Los Angeles County alone, 650 million gallons of treated water goes into the Pacific daily. Hertzberg suggests that more water treatment facilities transfer this water to spreading fields where the water percolates into groundwater basins that we can tap into as needed.

Hertzberg's most recently introduced legislation is SB 1298, which makes changes in state law to help local governments finance stormwater projects and provides options for water agencies to develop different rates – lower ones for low-income households and higher ones for extravagant water users.

"L.A. County and the San Gabriel Valley do a brilliant job of capturing stormwater from mountains," he said, adding that his hope is this legislation will help more agencies complete stormwater reuse projects.

In May, SB 919 passed the Senate and is headed to the Assembly. This legislation requires the state to better coordinate its power by directing excess

renewable energy that can occur during the middle of the day toward water agencies that recycle or purify water.

"Confronted with drought and climate change, California must manage its water

and energy as intelligently as possible," Hertzberg said. "SB 919 takes advantage of excess energy by directing it toward those who are recycling water or making it drinkable and helping to lower their costs."

In the future, Hertzberg plans to introduce legislation addressing water rights and the water market, especially as it pertains to agriculture.

"Rising cost, the drought, tensions with farmers, issues with environmentalists and climate change, all of those have converged to be the moment in history where we need to really elevate our discussion on water resources," Hertzberg said. "New day, new rules." ○



California wastewater treatment facilities discharge an estimated 1.5 billion gallons of treated water via rivers into the ocean every day. In Los Angeles County alone, 650 million gallons of treated wastewater dumps into the Pacific Ocean daily. Sen. Hertzberg's legislation would require wastewater treatment facilities to capture and reuse at least 50 percent of that now wasted water.

By Elizabeth Smilor
Special Sections Writer

State Sen. Bob Hertzberg, D-Van Nuys, has studied the intricacies of water issues and policy since he wrote his college thesis on the topic 40 years ago. Throughout the ebb and flow of his career in and out of government, water has been a constant.

"You'll see me introduce water bills every year that I'm in the Senate," Hertzberg said as he discussed some of his recent legislation. "These (bills) are just one small step for water policy toward one large deliverable of how we do water policy in California."

Hertzberg, who was elected to the Senate in 2014, previously served in the State Assembly from 1996-2002. During his time in the Assembly, including two years as Speaker, Hertzberg helped shape and pass legislation regarding agriculture-to-urban water transfers that provided a framework to end nearly seven decades of California/Colorado River water disputes.

"I left politics for 12 years and I came back wanting to fix things for the next generation," Hertzberg said. Water is one issue he knew he would address and he just served on a commission for the Metropolitan Water District to look ahead 50 years in water management.

Two bills Hertzberg has introduced this year, SB 163 and SB 1298, address recycled water and stormwater, respectively. "Both were treated as waste products historically. We just simply cleaned them up and threw them in the ocean."

Senate Bill 163 requires agencies that dump treated water to come up with plans to beneficially reuse the water and sets a goal of reusing half of the discharged water within a decade of the agencies submitting their plans. The bill also directs the State Water Resources



Diamond Valley Lake located in Riverside County near Hemet reached its lowest water level in history. Red bouys are usually under water when lake is full.

Water conservation is a way of life, not just an emergency response

By Randy Record
Chairman, Metropolitan Water District of Southern California

When California regulators in May relaxed the statewide water conservation mandates they implemented in 2015, some residents may have wondered if the drought was over. Unfortunately, that is far from the case, particularly in Southern California.



Randy Record

While winter rain and snow brought some welcome relief to the Northern Sierra, much of the Southland remains in extreme drought. Less than 9 inches of rain fell in the region this winter--about half of what we'd expect in a normal year. And, after years of drought, our local reservoirs and groundwater basins hit record low levels. Water imported from Northern California and the Colorado River is helping us partially rebuild our local reserves, and those supplies could be crucial given what lies ahead. Scientists believe El Niño's dry alter ego, La Niña, is on the horizon, a sign the drought isn't going anywhere soon.

So while the State Water Resources Control Board's decision to end mandatory conservation statewide was an important recognition that absent a true emergency condition water supplies are best managed locally, it was not a statement that Southern Californians can or should stop conserving.

The truth is we must reduce our water use long-term and make conservation a way of life.

The Metropolitan Water District of Southern California encourages people to make permanent changes in how they use water, like replacing lawns with California Friendly™ landscaping or installing high efficiency sprinklers. Building on the momentum of a \$450 million conservation program – the largest of its kind in the nation – Metropolitan's board earlier this year allocated \$100 million toward rebates for other water-efficient devices and conservation programs over the next two fiscal years.

“The truth is we must reduce our water use long-term and make conservation a way of life.”

Along with managing demands, local water supply development also will play a critical role in the region's long-term water reliability. For example, Metropolitan is partnering with the Sanitation Districts of Los Angeles County to explore the development of a large-scale project to purify wastewater currently discharged into the Pacific Ocean and instead use it to recharge local groundwater basins. The first step



People are encourage to make permanent changes in how they use water, like replacing lawns with California Friendly™ landscaping or installing high efficiency sprinklers.

will be development of a 1 million-gallon-per-day demonstration plant.

In fact, Metropolitan's long-range water supply plan – the Integrated Water Resources Plan – outlines how by 2040, conservation, recycling and local supplies will account for two-thirds of Metropolitan's water. Water savings must continue, long into the future. ○

Visit bewaterwise.com for more conservation information.



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A reservoir owned and operated by Three Valleys Municipal Water District holds up to eight (8) million gallons of drinking water.

Water Supply Reliability for Southern California

By Richard W. Hansen
General Manager
Three Valleys Municipal Water District



Just seven counties in Southern California, make up more than 54% of the state’s overall population, while only covering 26% of the state’s geography. California’s unbalanced population has led to water supply issues that require importing water over long distances.

To help stretch Southern California’s local water supplies, Three Valleys Municipal Water District is encouraging research and development of a diverse local resource portfolio.

Putting water into the local groundwater basins maximizes the use of local storage and takes advantage of rainfall and snowmelt. Southern California’s biggest “storage areas” are underground aquifers.

More effective stormwater capture has been planned for many years. Local agencies are

beginning to put this tool to use throughout the region. Capturing stormwater and allowing it to percolate in to the local aquifers provides many benefits, but primarily, it helps bank water for use when it’s most needed.

We could also maximize our use of reclaimed water. Much of the water leaving a wastewater treatment facility is treated to Department of Health approved tertiary levels. At that treatment level, the water can be used to recharge groundwater aquifers, resulting in a best use scenario. This highly treated wastewater used for groundwater recharge gives us a more dependable water supply. Wastewater is always available, even during droughts.

Another part of the overall water supply balance is conservation – still one of the least expensive means of extending our water supplies. We’re doing a good job there too, but we have to be diligent. Southern California’s overall water use is nearly the same as it was in the 1970s despite vast population growth. Water usage has held steady because of new technology, legislation, and increased education and awareness among residents.

Local water supplies are a very important piece of the water supply puzzle. Population in Southern



Above: In northern Claremont, a well is drilled to gain access to groundwater to supplement imported water supplies from northern California. Below: Water that is imported from northern California is distributed into spreading fields to percolate into groundwater basins for future use.



California will continue to grow. Meeting the needs of all the people will continue to be a challenge, but creating a diverse supply will help strengthen reliability now and in the future regardless of population size, environmental challenges, climatic changes, or natural disasters. ○

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Progress seen in San Gabriel Valley groundwater cleanup

By Elaine Regus
Special Sections Writer

The San Gabriel Valley Legislative Caucus, led by State Senator's Ed Hernandez and Bob Huff, met May 20 to hear a first-hand progress report from regulators and responsible parties relative to the ongoing cleanup of contaminants in the San Gabriel Valley's groundwater supply.

In light of California's on-going drought and serious water contamination issues in Flint, Mich., and elsewhere in the nation, the state legislators joined by Congresswomen Grace Napolitano and Judy Chu, whose districts include the San Gabriel Valley, were anxious to hear the update.

What they heard was that tremendous progress has been made over the past 23 years thanks to extraordinary efforts by



Richard Hiatt, U.S. Environmental Protection Agency (EPA) Region 9 Chief, discusses the progress of groundwater cleanup in the San Gabriel Basin.

multiple public and private parties but they still had a long way to go to rid the basin of massive chemical pollution.

"We have a good plan in place and it's just a matter of pushing to get it done as quickly as possible," said Ken Manning, executive director of the San Gabriel Basin Water Quality Authority, which was created in 1993 to manage the effort. "It's not done until the Basin is clean."

The San Gabriel Basin, the main source of drinking water



State Senators Bob Huff, Vice Chair, and Dr. Ed Hernandez, Chair, of the San Gabriel Valley Legislative Caucus.

for 1.4 million people, was declared a Superfund site by the EPA in 1984 and since then efforts to clean up contaminants and make the water safe to drink have been under way.



Judy Chu Congresswoman

As a result of the state's historic four-year drought, the Basin is at its lowest level in history, said Tony Zampello, Executive Officer of the Main San Gabriel Basin Watermaster.

"Because of the drought, the more self-sufficient we are in the San Gabriel Basin the less water we have to import from the Sacramento River Delta or Colorado River, which are

more expensive and less reliable sources of water," Manning said.

Legislators heard from the EPA, members of the water community and several responsible parties such as Northrop Grumman and Aerojet Rocketdyne, who are paying a majority of the cleanup costs, which are expected to reach more than \$1.3 billion by 2036.

The presentations focused on three of the six sites or Operable Units (OUs) within the San Gabriel Basin Superfund Site that are currently at important stages of design, construction and ongoing operations: Baldwin Park OU, Puente Valley OU and El Monte OU.

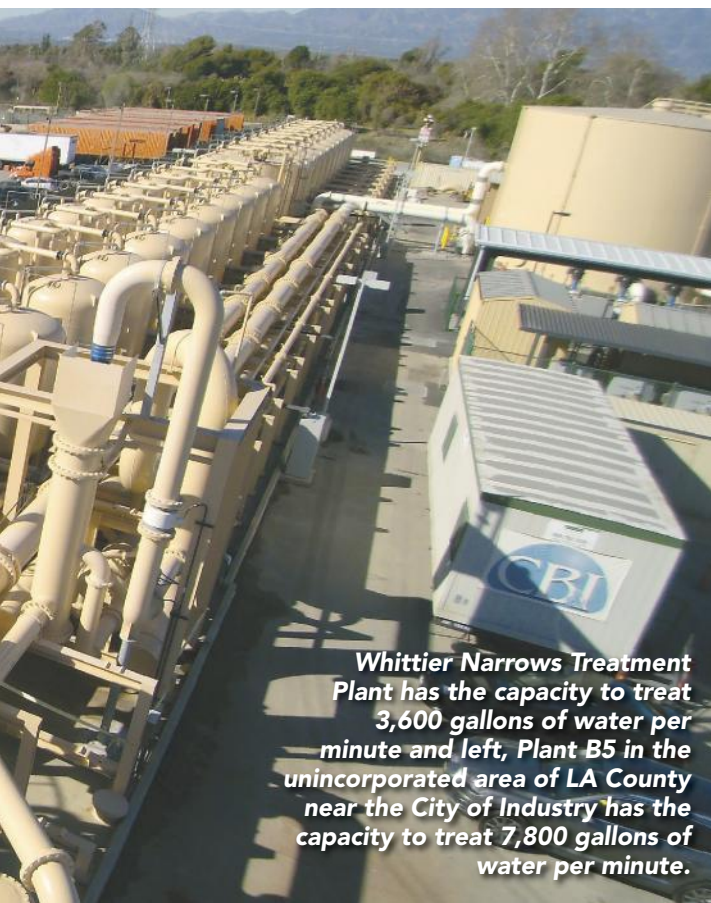
The Baldwin Park OU is the "gold

standard" of groundwater cleanup operations, said Robert DiPrimio, Senior Vice President at San Gabriel Valley Water Company. To date, five treatment plants have been built, \$46 million in public funds expended and 87,000 pounds of contaminants removed from the underground plume that measures eight miles long, one mile wide and several hundreds of feet deep.

The 15-year agreement among Baldwin Park OU's Responsible Parties for sharing the clean-up costs is set to expire next year but they assured lawmakers that they are working with the Water Agencies and EPA to extend the agreement.



Grace Napolitano Congresswoman



Whittier Narrows Treatment Plant has the capacity to treat 3,600 gallons of water per minute and left, Plant B5 in the unincorporated area of LA County near the City of Industry has the capacity to treat 7,800 gallons of water per minute.



Above: More than 80 members of the public, city officials and water agency representatives attended a hearing hosted by the San Gabriel Valley Legislative Caucus regarding groundwater cleanup. Right: Ken Manning, Executive Director of the San Gabriel Basin Water Quality Authority testifies before the legislative caucus regarding the need to continue cleanup of the San Gabriel Valley's groundwater basin.



"There are some critical issues that need to be resolved but we feel confident in the next few months that the Responsible Parties and the Water Agencies will work out an agreement that will take us through the next decade," Manning said.

"... the public doesn't care about who is responsible for the contamination....They just want it cleaned up."

– **Ken Manning**
WQA Executive Director

The Puente Valley OU has been beset by a series of delays prompted by the discovery of additional contaminants, which has triggered several redesigns to ensure the proper cleaning systems are installed.

Matthew Williams, corporate director of real estate, facilities and environmental remediation for Northrop

Grumman, said his company is working aggressively to pursue completion of the treatment program, which began in the 1980s. He estimated construction to be complete and the systems operational by early 2020.

Manning said the Puente Valley OU was probably the most frustrating of the six sites but that since Williams got involved in the project, the parties have been working diligently on a very robust program to treat the water in the Puente Valley.

The cleanup process at the El Monte OU has been hampered by low water levels and regional groundwater pumping. A bigger issue is the discovery of hexavalent chromium right in the middle of the project site. The cleanup system has been built



Ed Chau
Assemblymember

and the Responsible Parties are waiting for permits to be issued before turning on the pumps. "Hopefully that will happen by the end of the year", said Manning.

"The delays have been frustrating but the public doesn't care about who is responsible for the contamination," Manning said. "They just want it cleaned up." ○

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Frank Gehrke (Chief of the California Cooperative Snow Surveys Program) answers questions from the media after conducting a snow survey at Phillips Station off Hwy. 50, approximately 90 miles east of Sacramento, on March 1, 2016.

Drought

FROM PAGE 2

There are other problems, as well. This year's snowpack's water content is below average – some 87% of the historical average. And our largest reservoir, Lake Shasta, stands at only 87% of its capacity.

The problem is that we have lost so much water over the past several years that it will take more than this season to refill aquifers and reservoirs, which may prompt additional conservation measures. And we're likely to see a rising population – and therefore more water demand – as well as increased climate uncertainty in the future.

We are not out of the woods; we have to learn to do more with less water.

A little over a year ago our Governor Jerry Brown, stood in the Sierra Nevada mountains, where the snowpack was just 5% of average (the lowest ever recorded), and declared a statewide emergency. That lead to orders for urban areas to slash water use by 25%-35%.

By and large, we rose to that challenge, cutting our usage some 25%. We take shorter showers, we water our home landscaping far less or never, and our farmers are experts at getting the most out of their water allotment.

We can do more, to invest in more water-efficient infrastructure and technology, reclaim more waste and storm water, and reduce water used for landscaping and irrigation.

Water experts agree that conservation should be a way of life for California. We can take a page from Australia's playbook. After a 10-year drought devastated parts of Australia, government, farmers, businesses, and citizens stepped up their efforts to save water. Now, South Australians use four to five times less water per capita than Californians.

We need to face the fact that we will have less water for farms, homes and factories. This is our new way of life; we need to embrace it and rise to the challenge. ○



Marcus

FROM PAGE 2

The state made permanent prohibitions against washing down sidewalks and driveways, using a hose without a shut-off valve to wash cars and using water on road medians.

"Where the benefit is with eased regulations is that we are no longer pressured by penalty. We are back to a voluntary approach," said De Jesus. "We've been educated and we know what to do. We must show Sacramento that we can take care of ourselves and police ourselves in a way that will continue to conserve water."

That's exactly what Marcus hopes the more than 400 water agencies throughout the state will take to heart.

"Prove to us that you're ready for three more horrendous years and we'll back off. The way you prove it is show what water you're going to rely on and set your own conservation target," she said, adding that such a system will allow the state agency to focus more on long-term efficiency standards.

Traditionally, local control has been the norm. The duties of the State Water Resources five-member board are to implement the state water rights program, run the water quality regulatory program, give financial assistance for water-related projects, monitor the state drinking water quality and exercise emergency authority for conservation.

Marcus, who was designated by the governor as board chair in 2013, said the state agency was reluctant to issue conservation mandates. However, when voluntary restrictions did not produce adequate results and the drought entered its fourth year, they knew they had to act.

"We were past the usual three-year drought cycle and we knew from geophysical evidence that the 100-year drought cycle was not the usual," she explained. "That's when we set mandatory targets. Better to be safe than sorry. We now know we had worst snowpack in 500 years."

Always looking on the bright side, Marcus said the drought has given water issues a new sense of urgency.

"In the drought we were actually able to accelerate a lot of the sensible things we need to do for the future in the face of climate change," Marcus said. "We came up with the California Water Action Plan, which is an all-of-the-above approach to dealing with the future."

This approach will be an integrated water management system that includes everything from recycling and reuse to stormwater capture and groundwater storage.



State Water Resources Control Board Chairwoman Felicia Marcus has had to answer many questions during California's ongoing drought. She will continue to lead the state's conservation push.

"The incredible advances in recycled water, particularly in Southern California in San Gabriel Valley have really been signal accomplishments we're hoping to replicate," Marcus said. "The San Gabriel Valley, from my understanding, captures 90 percent of what runs off the mountain and gets it into the ground. I point people to the San Gabriel Valley to learn from them."

Michael Touhey, board member for the Upper San Gabriel Valley Municipal Water District and ACWA Region 8, Chair, said the San Gabriel Valley water basin is crucial to the region's water supply.

"We are going to be in conservation mode for the rest of our lives. Our basin is still close to our all-time historic low that was reached in November 2015," he said. "We need years of rain to replenish the basin back to normal levels. Without rain, it is not sustainable, and the imported water system is unreliable."

Unfortunately, as we conserve and upgrade technologies, costs are likely to rise, the officials agree.

"It's sort of a double-edged sword," said De Jesus. "Just because I turned down the spigot a little, reduced the amount of water, doesn't mean it's going to be any less expensive to deliver that water."

Even Marcus knows her optimistic outlook for the future will, in reality, "cost a lot." ○



Thomas Wong
Board President
SGVMWD



David De Jesus, Chair
MWD Water Planning
& Stewardship Council



Michael Touhey, Chair
ACWA Region 8
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No Drugs Down the Drain!

Pharmaceuticals harmful to wildlife and environment

By Michele Nava
Special Sections Writer

Doctors advised their patients to do it. Criminals running from police did it to hide the evidence of their drug use. And many a parent has done this to a gold fish that has passed away.

Flushing unwanted items, including medicine, down the toilet is an act most people in America have done, or at least watched on television.

But now that we know better, we must do better. Scientists have reported that the increasing amount of pharmaceuticals being poured down drains and flushed in toilets is getting into the water system – endangering people and the environment.

It is for this reason that water districts and Sanitation Districts of Los Angeles County are asking their customers not to put drugs down the drain.

The danger

Traces of potentially harmful toxins and pharmaceuticals were found in 96 percent of the public drinking water samples taken from more than two dozen states in a sweeping study conducted by the U.S. Geological Survey. The most prevalent drugs found included an array of addictive pain killers, hormones, steroids and antibiotics.

Health experts warn that exposure to some of these chemicals can cause a bacterial resistance to antibiotics in water animals such as frogs and fish that live in shallow waters where these toxins have been found. Other side effects could include reproductive, fertility and behavioral problems, according to the Sanitation Districts of Los Angeles County.

In addition, sewage and wastewater treatment facilities can filter out most solids and contaminants but not all pharmaceutical chemicals.

While it may be impossible to prevent all medications from winding up in the sewage system, as the human body excretes what it doesn't need in the form of urine and feces, there is a way to prevent unused drugs from further contaminating public drinking sources.

Disposal

Most medications that are no longer needed should be taken to a household hazardous waste collection center or event. Many government agencies hold these events several times a year.

Certain drugs, referred to as controlled substances, will need to be placed in trash bins. However, they first need to be placed in containers, treated with water, salt, ashes and/or dirt, then sealed and wrapped in duct tape to prevent leaking.

For more information about scheduled household hazard waste collection events, visit the Los Angeles County Department of Public Works website at ladpw.org/epd/hhw. For more information about keeping drugs from being flushed down drains, visit the Sanitation Districts of Los Angeles County's website at lacsdc.org. ○



Sewage and wastewater treatment facility (pictured above) can filter out most solids and contaminants but not all pharmaceutical chemicals.

The most prevalent drugs found included an array of addictive pain killers, hormones, steroids and antibiotics.



15 Years into Drought

So Cal Becoming Warmer and Drier

Upper San Gabriel Valley Municipal Water District hosts town hall meetings to discuss the situation

By Michele Nava
Special Sections Writer

The Upper San Gabriel Valley Municipal Water District is bringing a variety of experts together with residents this year to talk about the record-breaking drought, the El Niño that never quite hit Southern California, and the urgency in which water conservation measures need to be upgraded and maintained on the subject in the future.

Board Vice President Anthony Fellow hosted one of the town hall meetings in May at the Arcadia Public Library. He explained that many had hoped the Godzilla El Niño that was expected at the beginning of the year would help California get out of the drought.

"However, this Godzilla didn't make it to Southern California," said Fellow, adding that we now "need to adapt to a new way of life. We must diversify our water portfolio and continue to conserve water."

The town hall meeting included a half-hour preview of an upcoming documentary by film-maker Jim Thebaut, titled *Running Dry: Beyond the Brink*.

Thebaut's preview included footage from the Dust Bowl-era that devastated the Great Plains in the 1930s, as well as predictions that California could suffer the same fate at some point if the drought and rising climate temperatures continue. It's also possible that the Hoover Dam could eventually stop producing electricity.

"We must diversify our water portfolio and continue to conserve water."

— Dr. Anthony Fellow
*Board Vice President,
Upper San Gabriel Valley Municipal Water District*



Residents attend a water forum sponsored by the Upper San Gabriel Valley Municipal Water District to get an update regarding the current drought (above). Guest speaker and documentary filmmaker Jim Thebaut (right), discusses the similarities of the Dust Bowl-era that devastated the Great Plains of the 1930s, and how southern California could suffer the same fate. Attendees (below) listen intently to speakers as to why El Niño weather patterns bypassed Southern California.

The film's preview also examined the problems facing Australia, which has been in a severe drought since 2000. Lack of water and rising temperatures

have led to myriad issues, including social and economic losses to farming families and communities, lack of cooling water for power plants, dried up rivers and creeks, jumps in suicide and depression rates, and a decrease in crop production and food supplies.

Australian leaders sent a warning and call to action to the United States and the rest of the world to





Dr. Anthony Fellow, Director and Vice President of the Upper San Gabriel Valley Municipal Water District, addresses water forum attendees regarding the drought and what residents can do to be more efficient in their water use (above). William Patzert, an oceanographer from Jet Propulsion Laboratory, gives an update regarding El Niño by explaining that southern California is in the 15th year of the drought.

do something now about water conservation and prepare for a worsening drought.

William Patzert, an oceanographer from Jet Propulsion Laboratory, began his update about the drought and El Niño by explaining that this is actually the 15th year of the drought.

And Southern California has set several related records since. For example: 2011 to 2015 set a record for the driest, consecutive four years in downtown Los Angeles, with just 29 inches of rain for that period.

Lake Mead has also hit its lowest level in recorded history. In May, the lake was at 1,074 feet, and just 37 percent full.

And over the last 12 months, Patzert said, the global temperature record was broken – something that hasn’t happened in more than 190 years.

“It’s getting warmer faster,” Patzert explained. “We’re nowhere near getting out of a drought in the foreseeable future. It’s going to get warmer.”



Patzert and others called for political consensus in dealing with the issue. Water conservation efforts must continue, and, some suggested, the U.S. could do well by using its great thinkers and innovators to become a world leader in water efficiency.

Fellow said the Upper San Gabriel Valley Municipal Water District plans to host more town hall meetings on the subject in the future. ○



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- Drought Tolerant Plants



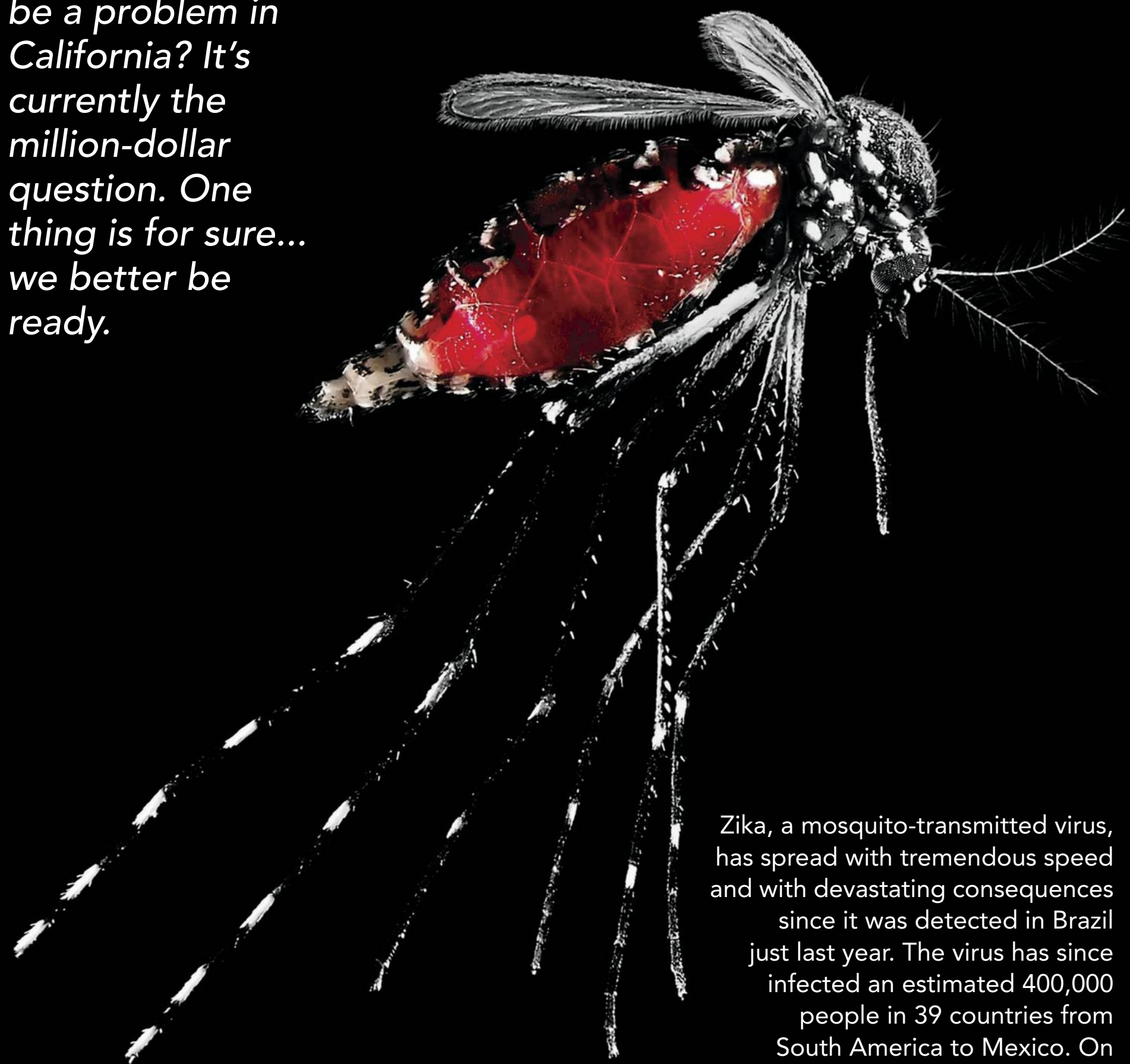
Wednesday
June 29, 2016 • 6-8 pm
Covina City Council Chambers
125 E. College Street
Covina, CA 91723



www.upperdistrict.org

To RSVP, please contact
Alice Wong at (626) 443-2997
or alice@usgvmwd.org

Will Zika virus be a problem in California? It's currently the million-dollar question. One thing is for sure... we better be ready.



Aedes mosquito with a visible fiery red blood meal.

Zika, a mosquito-transmitted virus, has spread with tremendous speed and with devastating consequences since it was detected in Brazil just last year. The virus has since infected an estimated 400,000 people in 39 countries from South America to Mexico. On February 1, 2016, the World Health Organization declared Zika virus a Public Health Emergency of International Concern.

WATER MANAGEMENT IN THE AGE OF ZIKA

Public health agencies across the country have been working together to prepare for localized Zika transmission. Vector control districts along with the Centers for Disease Control and Prevention (CDC), and local and state health departments are all seeking to identify actions that must be taken to reduce the risk of a local epidemic, and protect the most vulnerable – our unborn children – from this very real, and significant issue.

Zika virus is primarily transmitted by *Aedes* mosquitoes when they bite. These highly invasive mosquitoes are common in many parts of the world, and in the southeastern parts of the United States. Most concerning for Californians is that the two primary vectors (transmitters) of Zika virus are now well-established and rapidly-spreading in at least twelve California counties from Alameda to San Diego... including Los Angeles County.

ZIKA – THE URBAN REALITY

Aedes mosquitoes thrive in urban habitats. They are supremely adapted to utilize small sources of standing water that we provide. From plant saucers, to hidden trash and rain barrels, these mosquitoes can find a home in nearly every yard. Susanne Kluh, the director of scientific technical services for the Greater Los Angeles County Vector Control District calls them ‘microhabitat specialists’ for their ability to infest yards that provide water sources and higher humidity levels – a result of regular watering and dense vegetation. “They prefer the same lush, cool conditions we do” Kluh says.

Once established in a yard or neighborhood, managing an *Aedes* infestation is extremely difficult. Unlike our common *Culex* mosquitoes (primary vectors of West Nile virus), whose eggs are laid on the surface of water and easily dumped out, the eggs of *Aedes* mosquitoes are laid and attached to the sides of containers with water or on plant stems or leaves sitting in water. These eggs can dry out, and remain alive in a yard for years – just waiting for that next rainfall, sprinkler, or hose to refill that container so they can hatch.

If this weren’t enough, invasive *Aedes* mosquitoes are tiny and aggressive day-time biters which will

make spending time outdoors nearly impossible if their numbers are high. “We’ve already seen this level of activity in many of our communities this year” says Kluh, “Aside from the significant nuisance, we are now at risk for new diseases in Los Angeles County like Zika virus, dengue, and chikungunya, because of these infestations.”

Vector control districts closely monitor mosquito populations for the presence of disease-causing agents. So far, there is no indication that mosquitoes in Los Angeles County are currently infected with Zika virus, but it is likely only a matter of time. Los Angeles is a top tourist hub, and many of our residents vacation or visit family in areas where Zika virus is currently circulating. Most people (~80%) infected with Zika virus while traveling will have no symptoms, but if they are bitten by an *Aedes* mosquito once they return home, they can infect that mosquito and lead to local transmission here in California.

ISN'T THE DROUGHT BAD FOR MOSQUITOES?

One would expect that mosquitoes would have a tough time surviving in a hot climate, especially in a drought. Unfortunately, in an urban setting, that’s just not the case. Even in an era of watering restrictions, and decreased availability, there is plenty of standing water in every neighborhood. Urban areas are paved with concrete; runoff travels down concrete gutters into concrete or steel pipes that prohibit water infiltration; and it only takes a bit of trash or debris to prevent flow and create mosquito habitat.

“The mosquito breeds in artificial water containers, such as discarded tires, cans, [rain] barrels, buckets, flower vases, [birdbaths] and cisterns.”

– Dr. Frank Hadley Collins

*Center for Global Health and Infectious Diseases
University of Notre Dame*

New stormwater capture initiatives and residential good intentions increase these risks as well. Mosquitoes can easily enter gaps as small as ¼ inch and travel the length of downspouts and pipes to find that last inch of water in rain barrels in which to lay their eggs. Buckets that are used to store water will breed mosquitoes prolifically unless they are tightly sealed. Low impact design elements (LIDs) like bioswales, dry-streams, etc. must be carefully maintained to ensure they do not become overgrown with vegetation or filled with silt, which would impede infiltration.

During hot spells, people tend to water their potted plants more frequently... and *Aedes* mosquitoes LOVE plant saucers and decorative pots. Water should no longer be allowed to collect in any container anywhere around the home... indoors or out. If you really want to keep your yard mosquito-free... embrace drought-tolerant landscaping and move to drip irrigation.



Birdbath

ADVICE FOR TRAVELERS

If your summer plans include a trip south of the border or to the Caribbean, plan ahead and keep yourself and your family safe. Pack your mosquito repellents and take them with you – they may be hard to find once you arrive. Look for products containing EPA-registered ingredients such as DEET, Picaridin, oil of lemon eucalyptus, or IR-3535 as these have been tested to be both safe and effective. Don’t rely on ‘old wives tales’ or unproven natural remedies to prevent bites – they rarely work for long, or at all.

Keep *Aedes* out of your hotel room, and avoid bites while there. Once you return home, continue using repellents for 3 weeks if mosquitoes are present to avoid spreading disease. Pregnant women, or couples considering starting a family are strongly urged to discuss travel to these areas with your physician before you go. Review CDC’s Zika Travel Advisory for more information at www.cdc.gov/zika.

DO IT FOR THEM

We have reached a point where communities must come together and help reduce the risk of *Aedes* infestations, and keep mosquito numbers as low as possible. This will directly reduce the risk that Zika or other viruses will circulate here in southern California, and it is our only hope.

Jason Farned, public information officer for the San Gabriel Valley Mosquito & Vector Control District says it’s time. “It’s time we all work together on this one. Moms, do it for your children. Dads, take care of your parents, and kids ... the future is in your hands. Let’s go outside this weekend and fight these mosquitoes together.” ○

Greater Los Angeles County
Vector Control District
(562) 944-9656
www.glacvcd.org

San Gabriel Valley Mosquito
& Vector Control District
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The 2016 San Gabriel Valley Water Forum is a partnership between the San Gabriel Valley Municipal Water District, the San Gabriel Basin Water Quality Authority, Main San Gabriel Basin Watermaster, Three Valleys Municipal Water District and Upper San Gabriel Valley Municipal Water District

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