January 15, 2015 – Agenda Item #12B

BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD POLICY COMMITTEE MEETING

January 8, 2015

Correspondence and media coverage of interest between December 16, 2014 and January 8, 2015

Correspondence

Date: December 29, 2014
From: Steven Ritchie, Assistant General Manager, Water
Re: Continuing Request for 10 percent Water Use Reduction

Media Coverage

Conservation:

Date: January 6, 2015
Source: Daily Journal
Article: City wants landscape to be drought tolerant: San Mateo Planning, Sustainability commissions to discuss conservation, greenhouse gasses

Date: December 17, 2014
Source: KQED Science
Article: Storms a Boon for Rainwater Harvesters

Water Supply:

Date: January 6, 2015
Source: San Jose Mercury News
Article: EBMUD puts rate hike on hold

Date: January 4, 2015
Source: Associated Press
Article: Citing drought, California town rushes water plant

Date: December 16, 2014
Source: Boing Boing.net
Article: California needs 11 trillion gallon of water to recover from ongoing drought

Date: December 16, 2014
Source: San Jose Mercury News
Article: Catching rainwater from the sky eases drought's grip for Bay Area innovators

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San Francisco
Water Power Sewer
Operator of the Hetch Hetchy Regional Water System

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TO: SFPUC Wholesale Customers

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

DATE: December 29, 2014

RE: Continuing Request for 10 Percent Water Use Reduction

Dear Wholesale Customers,

We would like to thank you all for your successful efforts to reduce water consumption in 2014. To date, we have saved over 9 billion gallons this calendar year, surpassing our goal of 8 billion gallons saved. We commend all of you for your hard work to achieve this accomplishment.

Though the recent rains have been welcome, we still need snow and rain in January and February to secure our water supply. Therefore, we are maintaining our request for a voluntary 10 percent reduction system-wide. The drought is not over, and we need to preserve water supplies in storage in the event that subsequent years of drought conditions persist.

We continue to encourage our customers to implement the measures recommended by Governor Brown in April 2014, which include:

- Limiting lawn and outdoor plant watering to two days a week
- Not washing sidewalks and driveways with water
- Turning off fountains
- Washing cars at car washes that use recycled water
- Prohibiting Home Owner Associations from fining residents who conserve water by reducing lawn watering and pursuing other water conservation
- Implementing water use reduction plans at schools, parks and golf courses
- Asking restaurants, hotels and other businesses to build awareness of the drought and reduce water usage by measures such as only serving water upon request

Per the Water Supply Agreement, we will provide monthly water supply updates beginning in February. We will revisit our water use reduction request in the late spring to determine if the 10% voluntary reduction is sufficient, and whether it will continue. Again, thank you for your efforts to conserve water in this exceptionally dry year.

cc: Harlan L. Kelly, Jr., General Manager, SFPUC
Nicole Sandkulla, CEO/General Manager, BAWSCA

Edwin M. Lee
Mayor

Ann Moller Caen
President

Francesca Vietor
Vice President

Vince Courtney
Commissioner

Anson Moran
Commissioner

Harlan L. Kelly, Jr.
General Manager

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City wants landscapes to be drought tolerant: San Mateo Planning, Sustainability commissions to discuss conservation, greenhouse gasses

Daily Journal | January 06, 2015

To promote water conservation in new landscaping, San Mateo Sustainability Commission will be taking one of its first formal actions since it was formed in February in recommending the City Council implement new mandates to counter the drought and establish long-term water savings.

Despite the city adhering to the California Water Conservation Landscaping Act since 2010, the Sustainability and the Planning commissions will meet Tuesday to discuss imposing more restrictive rules for new developments or rehabilitated landscapes of 1,000 square feet or larger, according to a city staff report.

The joint-study session will also include a review of the city's draft Climate Action Plan, which identifies measures and strategies for reducing greenhouse gas emissions.

Developers have been abiding by the state's mandate for several years and the newly created Sustainability Commission is working to ensure the city's code is up to date, said Kathy Kleinbaum, senior management analyst with the City Manager's Office.

"It's to really encourage people to put in more drought-tolerant landscape to conserve water, because the drought is an ongoing issue," Kleinbaum said.

"Even as far back as 2006 [when the state passed the act,] water has been an ongoing issue all this time; so it's important, especially for new developments and new landscapes, that we do them wisely."

The updated landscape code would include requiring new technologies be used such as automatic irrigation systems with moisture sensors and separate meters for new landscapes over 1,000 square feet that require a building permit or design review.

San Mateo will mirror its code after the Bay Area Water Supply and Conservation Agency's model, which provides a more streamlined process and is stricter than the state's suggestion, Kleinbaum said.

The new code outlines a preference of native and drought-tolerant species, encourages mulch be used over exposed spoil and discourages more than 25 percent of a landscape to be turf.

Residences are primarily excluded from the restrictions and those who are redoing their landscapes wouldn't be affected. However, those completely redeveloping their properties and landscapes or building on a new lot that requires a permit would have to comply, Kleinbaum said.

While the City Council and Planning Commission previously discussed updates to the code, neither took formal action. Having the Sustainability Commission dedicated to issues such as water conservation will assist in the city keeping up to date, Kleinbaum said.

The landscape ordinance will be one of the first items the Sustainability Commission will take a formal action on since its creation in February. Updating the Climate Action Plan is one of the Sustainability Commission's main charges and Tuesday's meeting will provide an opportunity for sustainability and planning commissioners to jointly discuss the important project, Kleinbaum said.

The recommendations include requiring new residential developments of more than 20 units to obtain half of their energy from on-site renewable systems, increasing the number of publicly accessible electric vehicle charging stations, requiring large multi-family and commercial properties to compost and more.

The Climate Action Plan seeks to meet the state's recommendation that cities reduce their emissions by 15 percent between 2005 and 2020. A recently completed study showed San Mateo's greenhouse gas emissions were reduced by 9 percent and Kleinbaum said the Sustainability Commission will focus on meeting the state's goals.

"Really having a Sustainability Commission that can take ownership of things in this realm and say 'this is what we think makes sense,' is really helping things that have been on the back burner move forward," Kleinbaum said. "So they'll be doing a lot, especially with the Climate Action Plan that's in progress."

The Sustainability and Planning commissions' joint study session is 7 p.m. Tuesday at City Hall, 330 W. 20th Ave. The City Council will also review and provide comment on the Climate Action Plan Jan. 20. For more information about the city's adoption and amendments of the California Water Conservation in Landscaping Act and the draft Climate Action Plan visit www.cityofsanmateo.org.

# # #

Storms a Boon for Rainwater Harvesters
KQED Science | December 17, 2014

Water didn't just pour into city streets during last week's storm, it was also stashed away by rain harvesting enthusiasts.

"It's crazy we have all this wasted water that is flooding our cities and we could be capturing and using it," says Claire Elliot, a home owner in Palo Alto. Elliot has six barrels in her back yard that she uses to water her plants.

Though they hold a total of 300 gallons of water, she says all six filled up within a couple of hours.

"I was excited to see them fill up but the question is whether I can use all the water before the next storm event."

The water is not potable but can be used as "graywater," for outdoor irrigation, laundry and dish washing.

It hasn't been universally embraced. In parts of the West, rainwater harvesting has been outlawed, seen as an infringement on those who have downstream water rights on rivers where that rain might end up.

But Californians have legally been able to collect household runoff without a permit since 2012. In fact, several counties and the Bay Area Water Supply & Conservation Agency provide up to $100 in rebates for barrels or cisterns purchased for rainwater harvesting.

BAWSCA has issued 75 rebates since launching its program in October. "We were getting calls the first day after the program was announced," says Water Resources Manager Michael Hurley.

San Francisco will start a similar program by spring of next year.

Most systems for corralling rainwater use a barrel, a mesh screen and a diverter. As rainfall collects in rooftop gutters, instead of gushing out of downspouts it takes a detour through the diverter and into storage.

Since the first rush of water often contains contaminants like leaves, insects and animal waste, many diverters will capture this debris and prevent it from flowing into the barrel, and the mesh discourages mosquitoes from using the collected water as a nursery.

In Australia, rainwater collection systems became standard accessories during the recent nine-year drought known as the Big Dry, but have been slower to catch on in California. During a previous four-year program, San Francisco issued fewer than 1,000 rebates for rain catchments within the city.

“This is a tangible activity that people can do on their own to try and help address drought conditions,” said Hurley. “It won’t be the entire solution but it provides some benefit to home owners and the region.”

Rain barrels are available at most large hardware supply stores and hold between 50 and 200 gallons of water. A 100-gallon barrel costs about $200.

# # #

EBMUD puts rate hike on hold
San Jose Mercury News | January 6, 2015

OAKLAND -- Thanks to December's downpour, 1.3 million East Bay residents expecting to see a 14 percent hike in their water bill this month are getting a break -- for now.

The East Bay Municipal Utility District has postponed its emergency plan to pump Sacramento River water to local reservoirs as insurance against a prolonged drought. The pumps were scheduled to start up Friday, along with a simultaneous 14 percent surcharge on water bills to cover the pumping costs.

Both the pumping and the surcharge are on hold at least until Jan. 19. December rains provided more time for the district to consider if it really wants the emergency source to supplement regular supplies from the Mokelumne River.

"It is still on the table. The drought is not over," said district spokeswoman Abby Figueroa. "We have more time to decide and see what water Mother Nature is going to give us."

The district asks customers to voluntarily reduce water by 15 percent, but more severe cutbacks and higher rates could be ordered if it's too dry this year.

EBMUD is trying to balance the risk of two undesirable results -- water shortages in summer or expensive water it ends up not needing.

"We don't want to bring in the Sacramento River water and then later have to spill it out of our reservoirs if we have big storms," Figueroa said.

Most Northern California water suppliers are waiting to make major decisions until after April and May when they find out their state and federal water allocations.

EBMUD, however, has federal rights to take 16,000 acre feet of Sacramento River it didn't use last year. There's a hitch, though. The district must take the water by Feb. 28 or lose it, under its contract.

After a dry November and early December, the East Bay water board agreed Dec. 9 to authorize the start of pumping. Then it rained, brightening the water outlook somewhat.

Rainfall at and near East Bay reservoirs this season is up to 14.7 inches, 137 percent of normal.

Water totals, however, are below average in the Central Sierra region where EBMUD captures its Mokelumne River supply. About 15 inches of precipitation have fallen there, 80 percent of seasonal normal.

The East Bay water board is scheduled to discuss the emergency supply at its meeting at 1:15 p.m. Jan. 13 in Oakland.

The district supplies water to a 331-square-mile area in Contra Costa and Alameda counties. It includes Oakland and Berkeley in the center, Crockett to the north, San Leandro to the south, and Walnut Creek and the San Ramon Valley to the east.

# # #

Citing drought, California town rushes water plant
Associated Press | January 4, 2015

SAN FRANCISCO (AP) — California's drought declaration has triggered only local limits such as restrictions on washing cars or watering lawns for most communities, but one Pacific Coast tourist town has seized it as an opportunity to build a long-desired desalination plant.

The new project will turn salty water to drinking water for the 6,000-resident town of Cambria, which hugs the cliffs of the central coast, 6 miles south of William Randolph Hearst's famous castle at San Simeon. It is one of the biggest infrastructure projects undertaken in response to Gov. Jerry Brown's drought emergency decree last year.

The plant is expected to go online early this month after being finished in just six months, unusually fast in California. Projects of this sort typically take years, and often decades, of environmental reviews, public hearings and lawsuits.

Dozens of other cities and towns over the years have considered desalination plants as the way out of water shortages. Critics, however, say the technology is expensive, energy intensive and produces huge amounts of brine waste that damages the environment. California has 11 other desalination plants, and another 16 proposed.

Citing Brown's drought declaration, San Luis Obispo County and local Cambria officials announced the water-plant project in May and finished it by December.

The project, which uses a novel mix of fresh water, estuary water and highly treated sewage wastewater, will be capable of providing about a third of the town's water demand. It makes Cambria one of the first communities in the state to recycle sewage wastewater as an eventual drinking-water source.

Brown's emergency declaration significantly cut through the usual advance state scrutiny for projects, including the public hearings, said Harvey Packard, supervising engineer for the state's Central Coast Water Quality Control Board. In waving the project through, water board officials had been "clear this is exactly what the governor had in mind with the proclamation," Packard said.

A California Natural Resources Agency spokesman said the emergency decree supports Cambria's action, but did not specifically direct it. The declaration ordered state officials to assist communities in need of water, measures called for "under the extraordinary circumstances of the worst drought in 40 years," Richard Stapler said in an email.

California has suffered under some of its driest conditions on record in recent years. Winter rains have somewhat eased the drought statewide, but experts say it's far from over.

Cambria desalination plant supporters aren't apologizing for the emergency rush. Town water officials have battled for a desalination plant since the 1990s and the community has cut residential use rates by 40 percent — twice the rate Brown asked of all state residents in an emergency water-saving plan.

The drought has helped kill off one-quarter of the 3,000 acres of rare Monterey pines for which Cambria is known, and short water supplies overall have impeded development and helped keep the town's population at a standstill this decade.

Mark Rochefort, a retired trial lawyer in Cambria, did his part, keeping a bucket in the shower and using that water to flush toilets and water plants.

"Once this project is up and operating and we have a couple weather cycles ... I think people who were opposed to it will look back on it and say this hasn't been a dramatic change for Cambria," Rochefort said.

Cambria water officials signed a $13 million loan for the project, and district customers will bear part of the cost through rate increases.

The project for now will dump the ocean brine produced by the desalination into a man-made pond. The water district is now obtaining what's expected to be a $2.67 million insurance policy to cover any leaks, in one of the last steps required by the state before the plant goes online for customers, district spokesman Tom Gray said.

Authorities have allowed the water district to obtain some permits as it goes and others after the plant is in operation.

A local citizens group sued the Cambria water district in October, saying authorities improperly skipped over environmental safeguards.

State Coastal Commission officials warned the water district in July that the plant raised significant policy concerns.

Some opponents say they fear the new water plant will help trigger a building boom on that stretch of the coast, particularly if surrounding communities make deals to acquire some of the newly available water.

Connie Gannon, a Cambria resident and fifth-generation Californian, says she opposes the plant as unnecessary for those prepared to live within the means of a semi-arid state.

"Whether there's an emergency or not," she said, "... it doesn't have an impact on the lives of people who are used to living in California with a limited water base."

# # #

California needs 11 trillion gallons of water to recover from ongoing drought
Boing Boing.net | Dec 16, 2014

A new analysis of NASA satellite data reveals that it will take about 11 trillion gallons of water (42 cubic kilometers), which is about 1.5 times the maximum volume of the largest reservoir in the USA, to recover from California's continuing drought. Cool, no big deal.

More from the presentation by NASA scientists Dec. 16 at the American Geophysical Union meeting in San Francisco:

A team of scientists led by Jay Famiglietti of NASA's Jet Propulsion Laboratory in Pasadena, California, used data from NASA's Gravity Recovery and Climate Experiment (GRACE) satellites to develop the first-ever calculation of this kind -- the volume of water required to end an episode of drought.

Earlier this year, at the peak of California's current three-year drought, the team found that water storage in the state's Sacramento and San Joaquin river basins was 11 trillion gallons below normal seasonal levels. Data collected since the launch of GRACE in 2002 show this deficit has increased steadily.

"Spaceborne and airborne measurements of Earth's changing shape, surface height and gravity field now allow us to measure and analyze key features of droughts better than ever before, including determining precisely when they begin and end and what their magnitude is at any moment in time," Famiglietti said. "That's an incredible advance and something that would be impossible using only ground-based observations."

GRACE data reveal that, since 2011, the Sacramento and San Joaquin river basins decreased in volume by four trillion gallons of water each year (15 cubic kilometers). That's more water than California's 38 million residents use each year for domestic and municipal purposes. About two-thirds of the loss is due to depletion of groundwater beneath California's Central Valley.

In related results, early 2014 data from NASA's Airborne Snow Observatory indicate that snowpack in California's Sierra Nevada range was only half of previous estimates. The observatory is providing the first-ever high-resolution observations of the water volume of snow in the Tuolumne River, Merced, Kings and Lakes basins of the Sierra Nevada and the Uncompahgre watershed in the Upper Colorado River Basin.

# # #

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Catching rainwater from the sky eases drought's grip for Bay Area innovators
San Jose Mercury News | December 16, 2014

LOS GATOS -- When rain drenches Mark Wialbut's mountain home, it sprouts inspiration.

His vast network of gutters, pipes, tanks and filters has captured more than 10,000 gallons so far this month, with more to come -- enough for his family to be self-sufficient this winter in their Los Gatos aerie.

For most Californians, rain-catching is a seasonal hobby and not practical enough to wean us from our dependency on snowmelt, reservoirs and groundwater.

But for Wialbut -- and the growing number of collectors like him -- rainwater systems are elaborate enough to weaken drought's fierce grip.

"The water is used for everything," said Wialbut, a salesman at Applied Power Technology at work but a water sanitation specialist, maintenance mechanic and troubleshooting technician at home.

"It tastes great," he said, triumphantly. "And this morning, I took a nice long hot shower."

In the East Bay, Tony Poeck of Indira Designs reports a 30 percent jump in revenue this year for sales of rainwater and "greywater" (to reuse household water) collection system equipment, design and consultation.

Several 20,000-gallon systems are being installed in San Francisco, Marin and the East Bay, he said. A 40,000-gallon system -- enough to supply an average family for about 235 days -- is being planned in Pleasanton. In Los Altos Hills, an advanced collection system has been added to a multimillion dollar luxury "spec house," in an effort to attract environmentally conscious buyers.

The big systems can cost as much as $70,000, which might explain why smaller cisterns are even more popular. In North Oakland, Elizabeth Doughtery has filled her three large cisterns with a total of 1,100 gallons, and she plans to hook up more to boost capacity another 1,000 gallons.

"Any amount of water saved is worth our while," said Poeck. "And when people have a cistern, they see how fast it goes. They start thinking about conservation."

The math is simple: For every 100 square feet of roof, 1 inch of rain yields 60 to 100 gallons of water. So if you have a 1,000-square-foot roof, an inch of rain will give you 600 to 1,000 gallons, or enough to last three to five days of indoor use by the average California household.

In places where the average annual rainfall is 12 inches of precipitation, it is possible to collect 10,000 gallons annually from a 1,500-square-foot residential roof or 700,000 gallons annually from a 100,000-square-foot commercial building, according to the American Rainwater Catchment Systems Association.

Some opponents of rainwater harvesting have argued that it deprives flow to streams and aquifers, where it is needed for wells. But proponents say it eases pressure on other sources of water, as well as helps manage stormwater runoff. For Wialbut, whose home is perched 1,400 feet high in one of the wettest spots in the Bay Area, a solution just required a bit of ingenuity -- and about $8,000.

Far from municipal systems, his home had poor well water -- "ugly and smelly," he recalls -- and its supplies were unreliable after the 1989 Loma Prieta earthquake fractured the aquifer. So he had to buy water by the truckload, delivered at $340 a pop. (He still relies on trucked-in water in the summer.)

Rain that falls on his large composite roof is captured and conveyed via gutters and 60 feet of piping. From there, it empties into two 5,000-gallon tanks, fitted with microfilters, and secured on a flat gravel pad. They were installed one Saturday morning with the help of a dozen strong friends and a brave neighbor with a Bobcat.

"It was nerve-racking," he said. "I had visions the night before of them rolling and smashing into thousands of pieces."

Then, because the tanks are downhill from his home, a powerful pump sends the water uphill to a third tank, where ozone kills bacteria and any other pathogens.

Its final stop is a smaller pressure tank, designed to prevent erratic surges to his modern plumbing. Then it goes to his home, his expansive garden and his large and lively koi pond.

The occasional mishap -- such as a weakened pipe thread -- has sent precious water spewing.

"It's definitely trial and error," he said, brightly. "Imagineering!"

The only frustration, he said, is its size. With so much rain this month, he's had to release thousands gallons of water deep underground. So he plans to double capacity, ultimately saving enough water to last all year long.

"We are creating a solution, like people do it all over the world," he says. "There's no water in the ground -- so we get it from the sky."

Rain Barrel and Cistern Basics

- Rainwater should not be harvested from roofs covered with copper or treated with fungicides or herbicides.
- Rain barrels and cisterns come in a variety of shapes, colors, and sizes, but should be opaque, watertight and made of durable materials.
- The lid or screen on your rain barrel or cistern should be secured to prevent access to the stored water.
- Rain barrels and cisterns should be equipped with an overflow valve.
- If your downspout is connected to the sewer system, cities require a permit from the department of building inspection.
- Periodic maintenance is required. Gutters and pipes must be kept free of leaves and other detritus. Tanks need periodic flushing. Filters need to be replaced on a regular schedule. Pumps and ozonation systems require occasional servicing.
- For more information, go to American Rainwater Catchment Systems Association at www.arcsa.org.

REBATES FOR RAIN BARRELS

The Bay Area Water Supply and Conservation Agency now grants $100 rebates for purchases of rainwater collection barrels for property owners who collect rainwater for their own use in the areas just outside San Francisco. A San Francisco initiative offers discounted rain barrels, how-to guides and workshops. For more information, go to http://bawsca.org/