



WATER REUSE

ORANGE COUNTY

Chapter Newsletter

Spring/Summer 2016

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NEXT MEETING

Thursday,
June 16th
11:30 - 1:30 P.M.

LOCATION:

Moulton Niguel Water District
27500 La Paz Road
Laguna Niguel, CA 92677

MISSION STATEMENT:

To advance the beneficial and efficient uses of high-quality, locally produced, sustainable water sources for the betterment of society and the environment through advocacy, education, and outreach, research, and membership.

San Clemente's Recycled Water Expansion Project

by David Rebensdorf | City of San Clemente and Kraig Erickson | RMC Water and Environment

In facing the State's drought conditions, the City of San Clemente has recognized the long term benefits of utilizing recycled water since it provides an alternative source of water, conserves the limited resource of potable water, and increases the City's overall water supply reliability, consistent with the State's sustainability goals.

Since 1991, the City has supplied recycled water to 2 irrigation customers: City's municipal golf course and Bella Collina Golf Club, along with supplying process water at the City's Water Reclamation Plant (WRP). Although the City WRP's capacity is 2.2 million gallons per day (MGD), demands have been limited to just the 3 customers and the WRPS's full capacity has not been used due to limited distribution lines and lack of storage. The distribution system included 7 miles of recycled water pipe with 2 booster stations just to serve these 2 large irrigation customers. Recycled water use represented 4% of the City's total water supply portfolio with another 6% (620 AFY) from groundwater wells and the remaining 90% (8,750 AFY) solely

imported from Metropolitan Water District. (MWD)

As an environmentally friendly green initiative and to increase the reliability of water supplies, the City sought to reduce its dependency on imported water from MWD by approximately 8% by expanding the recycled water distribution system throughout the City to serve parks, medians, schools, HOA communities, golf courses and new development irrigation uses.

Local water reuse projects, such as this one, can have a significant impact on the local community by conserving our most precious resource and help the City reduce costs. These projects are the way of the future in drought plagued states like California. Investing in innovative water recycling projects is one of the smartest investments a local government can make.

RECYCLED WATER EXPANSION PROJECT

In 2012, the City broke ground on the Recycled Water Expansion project to double the production of tertiary treated recycled water at the City WRP and provide for



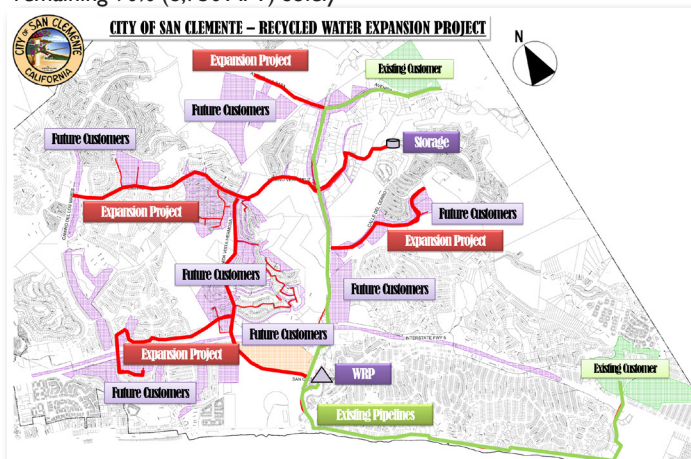
The City of San Clemente's Recycled Water Expansion Project extends pipelines and access to recycled water to over 100 new recycled water services throughout the area.

expansion of the City's recycled water storage and distribution network.

The 2½ year long Recycled Water Expansion project, which was recently completed in Fall 2014, represents the third largest project in the City's history that will extend pipelines and access to recycled water to over 100 new recycled water services throughout San Clemente. The \$25.1 million project more than doubled the amount of tertiary treated recycled water produced at the City's WRP from 2.2 to 5 MGD and construction of 9 miles of pipelines, 2 MG reservoir conversion, new 0.2 MG potable water reservoir, and new pressure reducing station.

The City commenced work before shovels broke ground in 2012 by securing \$5.6 million in State Proposition 50 grant funding, \$0.5 million in Federal EPA funding,

continued on page 2



Regulatory & Legislative Corner

by Christine Compton, Irvine Ranch Water District



The Future of Water Reuse in California: SB 163 Proposes a Ban on Ocean Discharges

On September 3, 2015, Senator Bob Hertzberg (D, Van Nuys) amended SB 163, which had previously dealt with elections, in order to propose a 100 percent ban

on ocean discharge of treated wastewater. If enacted, the bill would declare that the discharge of treated wastewater from ocean outfalls is a waste and unreasonable use of water in light of the cost-effective opportunities to recycle water for further beneficial use. It would also impose a mandate on each agency that discharges through an ocean outfall, mandating 50 percent reuse of the facility's actual annual flow by 2026, and 100 percent reuse of the facility's actual

annual flow by 2036.

WaterReuse California along with the California Association of Sanitation Agencies, the Association of California Water Agencies the California Municipal Utilities Association and a coalition of water and wastewater agencies have opposed the mandate and are seeking to have it removed from the bill. This coalition is working with the Senator and other stakeholders to develop an alternative to the mandate proposed.

SB 163 will likely be heard in an Assembly policy committee in June. To read the bill, visit http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB163.

San Clemente's Recycled Water Expansion Project (cont.)

\$14.4 million in State Revolving Fund Loans, and City funds along with financial incentives through MWD's Local Resource Program.

For a video highlighting the City of San Clemente's Recycled Water Expansion project, WRP and its facilities, please visit: <http://vimeo.com/88208286>.

CUSTOMER DEVELOPMENT + OUTREACH PROGRAM

The City adopted a Mandatory Use Ordinance in 2010 to aide in converting customers to recycled water and to build upon its 2007 Recycled Water Master Plan update. In mid-2014, the City hired RMC Water and Environment as a consultant to provide customer retrofit designs, cost estimates, and to assist customers and the City with the permitting process. In late-2014, the City adopted a zero-interest loan program to aide private sites with the upfront capital costs associated with the conversion to recycled water. Recycled water rates are lower than potable water rates and customers will repay the loan through a one (\$1.00) dollar surcharge per billing unit until the loan is repaid. This loan program supplemented MWD's Onsite Retrofit Program incentives at \$975/AFY.

As of January 2016, the City has brought online 46 customers with 110 new recycled water meters offsetting 1,200 AFY of imported water demand. Customers are primarily irrigation (parks, schools, medians, HOAs, golf courses, commercial landscape) however, there are also commercial fill stations for recycled water use in construction water trucks (dust control, soil compaction), watering bags, street sweeping, and power-washing. The City has secured over \$708,000 from MWD to assist with the customer retrofits which accounts for 70% of the total construction costs on average. The City plans to bring online another 40 recycled water meters by the end of 2016 increasing the recycled water demand to 1,400 AFY. This has increased the City's recycled water usage to 15% of the total water supply.

The City of San Clemente is evaluating expanding its recycled water distribution system to more HOA communities to offset an additional 400 AFY of potable water demands as well as an interconnection with Santa Margarita Water District for seasonal storage.



Water Conservation Report Card (June 2015-March 2016)

by Debbie Burris and Crystal Mena | DDB Engineering, Inc.

We all know our “water conservation number”. That is, we know our local water use conservation/reduction standard set by the State Water Resources Control Board (SWRCB).

Now the question is: How are we doing so far?

Background

Governor Jerry Brown issued Executive Order B-29-15 on April 1, 2015, that required the SWRCB to impose water restrictions to achieve a statewide 25% reduction in potable urban water use. In response, the SWRCB adopted an emergency regulation that became effective on May 15, 2015, and implemented mandatory water reductions. The regulation established nine tiers mandating water use reductions ranging from 4% to 36% and assigned each of California's 411 urban water suppliers a tier water reduction based on historical reductions in water use per region. The reduction is based on 2013 water use as the baseline. In other words, the SWRCB compares the water production during the compliance period with the corresponding water production during the same period in 2013. The compliance period for the statewide 25% reduction, and for the tiered conservation/reduction standards, began on June 1, 2015 and ends on February 29, 2016, unless the SWRCB adopts an extension.

On November 13, 2015, the Governor issued Executive Order B-36-15 giving the SWRCB the authority to extend and revise the emergency water conservation regulation if the drought conditions persist through January 2016. If the drought continues, the water conservation/reduction measures would be extended until the end of October 2016. The SWRCB held a public workshop on December 7, 2015, to receive input on the potential extension and modification of the existing emergency water conservation regulation. On February 2, 2016, SWRCB approved the Executive Order B-36-15 to update and extend the emergency water conservation regulation to continue mandatory reductions through October. The extension of the regulation will continue using previous conservation methods while considering factors that influence water use: climate, population growth, and investments in new water supplies.

After winter rain and snow, the severity of the drought is still of high importance. On May 9, 2016, Governor Brown has issued Executive Order B-37-16 focused on using water wisely, eliminating water waste, strengthening local drought resilience, and improving water efficiency. Building upon the previous regulations, the newest executive order establishes longer-term water conservation measures, permanent water use standards, and bans on wasteful water practices. The SWRCB has extended the emergency regulations for urban water conservation through the end of January 2017. Revised regulations were adopted by the SWRCB on May 18, 2016 and became effective in June 2016. The emergency regulation replaces the previous percentage reduction-based water conservation standard with a localized “stress test” approach. It will focus on local water suppliers ensuring they have at least a three year supply of water for customers based on each agency's conditions..

Compliance in Orange County

Water suppliers are required to report their urban water use monthly to the SWRCB to assess their potable water production in comparison with their assigned conservation/reduction standard. The SWRCB tracks the water savings on a cumulative basis.

In Orange County, our water conservation/reduction standard

targets range from 8% (Tier 2) to 36% (Tier 9). The table below presents the “June through October water conservation report card” for Orange County water agencies.

Orange County Water Supplier	Tier	Cumulative Water Savings (June 2015 -March 2016 ¹)	New Conserv./ Reduction Standard ²	Missed Target by %	Compliance Priority ³
Water Districts					
East Orange County Water District ⁴	9	38.8%	36%	-2.8%	0
El Toro Water District	6	25.8%	24%	-1.8%	0
Emerald Bay Service District	6	20.1%	24%	3.9%	3
Golden State Water Company (West Orange)	2	20.9%	9%	-11.9%	0
Golden State Water Company (Cowan Heights)	7	32.2%	29%	-3.2%	0
Golden State Water Company (Placentia)	4	24.8%	17%	-7.8%	0
Irvine Ranch Water District	2	14.5%	8%	-6.5%	0
Laguna Beach County Water District	6	20.1%	24%	3.9%	3
Mesa Water District	3	22.7%	13%	-9.7%	0
Moulton Niguel Water District	5	19.3%	20%	0.7%	0
Santa Margarita Water District	5	24.3%	23%	-1.3%	0
Serrano Water District ⁴	9	41.9%	36%	-5.9%	0
South Coast Water District	6	26.8%	24%	-2.8%	0
Trabuco Canyon Water District	7	27.7%	28%	0.3%	0
Yorba Linda Water District	7	36.9%	28%	-8.9%	0
City Water Departments					
City of Anaheim	3	22.4%	13%	-9.4%	0
City of Brea	6	20.3%	24%	3.7%	3
City of Buena Park	3	22.4%	13%	-9.4%	0
City of Fountain Valley	3	21.6%	13%	-8.6%	0
City of Fullerton	5	20.0%	21%	1%	0
City of Garden Grove	5	20.7%	20%	-0.7%	0
City of Huntington Beach	3	20.7%	13%	-7.7%	0
City of La Habra	7	20.0%	28%	8.0%	2
City of La Palma	3	22.7%	13%	-9.7%	0
City of Orange	5	26.6%	21%	-5.6%	0
City of Newport Beach	5	21%	21%	0.0%	0
City of San Clemente	6	25.6%	24%	-1.6%	0
City of San Juan Capistrano	6	21.4%	27%	5.6%	2
City of Santa Ana	2	16.7%	8%	-8.7%	0
City of Seal Beach	3	16.4%	12%	-4.4%	0
City of Tustin	5	25.7%	21%	-4.7%	0
City of Westminster	3	18.1%	13%	-5.1%	0

Santa Margarita Water District's Advanced Purified Water Treatment Facility Project

by Don Bunts | Santa Margarita Water District



This project is one of many actions targeted towards water conservation that are being implemented to reduce potable water usage throughout the state.

Santa Margarita Water District (SMWD) is constructing an Advanced Purified Water Treatment Facility (APWTF) to produce purified recycled water to provide a sustainable make-up water supply for Lake Mission Viejo. The lake requires a total of approximately 600 acre-feet per year (AFY) to maintain its water level. Refill sources presently include:

- | | |
|-----------------|-------------|
| • Rainfall | 100-300 AFY |
| • Groundwater | 150 AFY |
| • Potable water | 150-350 AFY |

The APWTF Project will produce up to 600 AFY of purified recycled water to offset the potable water demands of the lake and provide a drought-proof supply.

The project site is located on SMWD Finisterra Pump Station property. In addition, the facility is across the street from Lake Mission Viejo, simplifying pumping and project implementation.

The advanced purified water system will treat recycled tertiary effluent to produce advanced purified recycled water to refill the manmade Lake Mission Viejo in lieu of potable water; and for other uses within the SMWD service area. The treatment system will consist of ultrafiltration, reverse osmosis, and ultraviolet light disinfection processes.

The estimated costs for the APWTF have been broken down to \$5.1 million of capital expenses and \$406,000 per year for operations and maintenance. Based on an annual production of 300 AFY, the net unit water cost is estimated at \$1,525 per AF, after receiving Metropolitan Water District's (MWD) Local Resources Program contribution of \$475 per AF (for 15 years). As an innovative approach to project delivery, SMWD is partnering with the City of Mission Viejo for the timing of the project. The City of Mission Viejo has provided a \$1 million grant and a \$3 million loan for 25 years to SMWD for the construction of the APWTF. The Lake Mission Viejo Association will repay SMWD for the capital costs and the operating costs to produce the purified water used to replenish the lake.



The construction phase of the project is expected to begin in 2016 and should take about 4.0 months. Part of the construction phase will consist of site preparation, installation, and paving. Implementation of environmental mitigation requirements are included during construction and operation to reduce environmental impacts.

DO monitor and adjust irrigation system coverage on a regular basis.

DON'T over irrigate, utilize current technology to achieve efficient irrigation practices.

**DOs
DONT's**

PUBLIC AGENCIES

California Department of Public Health
El Toro Water District
Irvine Ranch Water District
Mesa Water District
Metropolitan Water District of Southern California
Moulton Niguel Water District
Orange County Water District
Santa Margarita Water District
South Coast Water District
South Orange County Wastewater Authority
State Water Resources Control Board - Division of Drinking Water

ASSOCIATES

AECOM
ARCADIS
Black & Veatch
Brandt Water Strategies
Brown & Caldwell
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CDM Smith
CH2M
DDB Engineering, Inc.
Dudek
Eurofins Eaton Analytical Inc.
GHD
Hazen and Sawyer
HDR
John Robinson Consulting, Inc.
Michael Backer International
MWH
PACE
Pacific States Environmental
Psomas
RMC Water and Environment
Stantec Consulting
Tetra Tech

Water Conservation Report Card Cont.

FOOTNOTES TO CONSERVATION SCORECARD TABLE FROM PG. 5

¹ Cumulative reduction/savings achieved from June through October 2015 in comparison with the same period in 2013 water use.

² New standard as of 3/1/16

³ Compliance priority based on:
1 > 15% from meeting standard
2 > 5% and < 15% from meeting standard
3 > 1% and < 5% of meeting standard
4 < 1% of standard

⁴ Data based on October 2015

On a statewide basis, Californians reduced their cumulative water use by 23.9% from June 2015 through March 2016, compared to the cumulative water use in 2013. The majority of California water suppliers achieved their assigned water conservation/reduction targets as shown below:

	Compliance Priority	Number of Water Suppliers
1	Greater than 15% from meeting standard	4
2	More than 5% and less than 15% from meeting standard	51
3	Between 1% and 5% of meeting standard	63
4	Met or within 1% of standard	282

¹ suppliers did not report data by the 4/21/16 deadline
Source: SWRCB June 2015 - October 2015 Cumulative Savings and Urban Water Supplier Conservation Compliance Dataset (11/18/15)
www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml

How well did your local water agency fare? Did you “make the grade” and earn a “gold star”? Or, were you encouraged to “try harder”? Either way, we’re all doing a lot better than when the water targets were first put in place last June. But, we can always do a little more to make water conservation a part of our daily lives.

What can the SWRCB do if a water supply agency has not met its designated water conservation/reduction standard?

- Issue notices of violation and impose fines for suppliers more than 15% below their standard (Priority 1)
- Issue information orders for suppliers that are between 5% and 15% of meeting their standard (Priority 2)
- Send warning letters for suppliers that are between 1% and 5% of meeting their standard (Priority 3)

What can water suppliers do to encourage customers to conserve water?

- Public education
- Deliver notices of violation to customers and possible future penalties and fines for continued over use of water
- Hire extra staff to track water waste complaints and assist customers to save water
- Prohibit use of potable water to irrigate turf on public street medians
- Limit outdoor irrigation to no more than two days per week
- Prohibit gutter flooding, leaks, washing down hard surface areas, waste, and runoff water waste

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GOT NEWS?

We’re always looking for interesting stories and informational articles to keep our members up to speed on all that’s happening in water reuse and reclamation. If you would like to contribute an article or have other ideas about this newsletter, please email Debbie Burris (dburris@ddbe.com) or Lisa Knox (llknox@dudek.com)

WaterReuse Association www.watereuse.org/sections/california/orange-county

Newsletter design by **DUDEK**

255 Total Attendees – the largest attendance on record
The most conference abstract submissions (77 abstract submissions)