LOS ANGELES CHAPTER
WATEREUSE CALIFORNIA
Chapter Newsletter
JUNE 2013

IN THIS ISSUE

NEXT MEETING

Tuesday, June 11th
11:30 A.M.

LOCATION:

Weymouth Water Treatment Plant
700 North Moreno Avenue
La Verne, CA 91750

Lunch sponsored by RainBird

Los Angeles Chapter Members Present at 2013 California Water Reuse Conference

Congratulations to our chapter members who presented their work at the state conference.

Chapter members at April's meeting at the Los Angeles Department of Water and Power's Donald C. Tillman Water Reclamation Plant

Dr. Cathy H. C. Chang
Water Replenishment District of Southern California
Implementing California's New Draft Groundwater Replenishment Reuse Regulations and 2013 Amended Recycled Water Policy, Los Angeles County, California

Dr. Andrew Eaton
Eurofins Eaton Analytical Inc.
How Reliable is the Recycled Water Monitoring List?

Thomas R. Martin
Water Replenishment District of Southern California
Educating the Community on Recycled Water Use

Judi Miller
CH2M Hill
Planning for Water Independence by Optimizing the Use of Groundwater Resources: A Case Study of a Southern California System

Lorraine Moreno
City of Los Angeles
Los Angeles Environmental Learning Center: Demonstrating and Teaching Sustainable Water Resources Management

Tom Richardson
RMC Water and Environment
Economic and Environmental Drivers for Direct Potable Reuse (in Los Angeles)

Inge Wiersema
Carollo Engineers
Challenges and Opportunities of Serving Recycled Water to High-End Customers Like Disneyland Park and Resort

City of Oxnard – Advanced Water Purification Facility (AWPF)

The City of Oxnard's Groundwater Recovery Enhancement and Treatment (GREAT) Program is an innovative and aggressive approach to managing its water supply through. Started in 1999, the GREAT program combines wastewater recycling and reuse, brackish groundwater desalination, aquifer storage and recovery, and restoration of local wetlands to provide Oxnard with a reliable water supply for current needs and future generations.

In 2012 the city completed construction of the Advanced Water Purification Facility (AWPF), Recycled Water Distribution System, and Demonstration Treatment Wetlands. The AWPF can produce 6.25 MGD (7000 AFY) of ultra-pure recycled water which is fully subscribed. The AWPF includes an innovative treatment wetland, which uses wetland plants to reduce pollutants in the brine produced in the treatment process.

Reusing water gives the city a dependable, locally controlled water supply that is beneficial to the environment and independent of influences such as climate, regional demand and judicial rulings. Recycled water will decrease Oxnard's dependence on imported water and help to alleviate groundwater overdraft and seawater intrusion. Total construction cost was $80 million of which the Bureau of Reclamation contributed $20 million and the city contributed $60 million.

The AWPF is designed to meet resource conservation standards set by the U.S. Green Building Council's LEED program and is community-oriented with

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President's Column

As spring turns to summer, I remain energized from attending the California Annual Conference in Monterey and look forward to the 28th Annual Conference in Denver this fall. There were lots of great discussions with friends and colleagues on new technologies, laws and regulations. I was encouraged by the level of detail and interaction available. I was most impressed by the outstanding presentations by LA Chapter members. Congratulations also go out to the Los Angeles County Sanitation Districts and the Rowland Water District for their awards as large and small Recycled Water Agencies of the Year.

In order for California to achieve its recycled water goals and a safe and reliable water supply we need to consider all options including Direct Potable Reuse (DPR). I am encouraged by the support for DPR that I heard at the conference. Over $3.5 million has been donated to WateReuse's DPR imitative to support research, education and outreach. While there are still some significant technical and regulatory hurdles to ensure protection of public health, it appears that we are near a tipping point where recycled water can fill a substantial portion of California's water portfolio. The Water Recycling Act of 2013 (AB 803) advances DPR by authorizing RWQCB's to permit the introduction of advanced treated purified water into conveyance systems prior to comingling with raw water. Although there have been significant changes to AB 803, most notably removal of the Title 22 and Title 17 revisions, the legislation has received favorable support and has made it to the Senate for consideration. A WateReuse subcommittee, with several LA Chapter members, has been working on an amendment to allow the use of hose bibs and swivel-ellz. SB 322 also advances DPR by requiring CDPH to convene and administer an expert panel and complete feasibility studies in a timely manner. I expect the Direct Potable Reuse conference scheduled for November 7-8 in Newport Beach will provide a great forum for you to get involved.

I look forward to seeing you at our next LA Chapter meeting.

– Raymond Jay

City of Oxnard AWPF *continued from pg. 1*

Completed in 2012, the 6.25 mgd Advanced Water Purification Facility includes a demonstration wetland area which serves to filter the brine produced by water treatment.

an auditorium, informational kiosk, wetland trail and viewing platforms above the treatment works. The city plans to host school tours of AWPF beginning in Fall 2013 to teach about water supply, careers in water and the importance of water conservation.

The AWPF's new technologies are used in only a handful of recycled water facilities throughout the world. The multiple-barrier treatment train consists of microfiltration, reverse osmosis and ultraviolet-light advanced oxidation. These processes turn treated wastewater that would otherwise be dumped in the ocean into high quality recycled water suitable for irrigation, manufacturing and industrial uses and groundwater recharge.

The demonstration treatment wetlands encircle the AWPF giving visitors an up-close view of the innovative and aesthetically pleasing system. This pilot is the next step in bringing treatment wetlands to a scale where they can become part of the restoration of nearly 400-acres of wetlands adjacent to the AWPF. The demonstration wetlands at the AWPF are already providing very valuable information for Bureau of Reclamation researchers and scientists.

Successful construction management techniques included a partnering/team-oriented approach with the Construction Manager, Owner, Contractor and Designer to resolve issues quickly and effectively. This approach succeeded in resolving issues quickly, minimizing potential impacts and keeping the project on schedule. Safety on the job site was always top priority. The contractor implemented a very effective safety program.

Key Project Personnel:

Project Manager: Daniel Rydberg, City of Oxnard

Prime Project Designer: CH2MHILL

Architect: Mainstreet Architects

Prime Construction Contractor: Mccarthy Building Companies

Construction Management: AECOM

Earle Hartling is the Water Recycling Coordinator for the Sanitation Districts of Los Angeles County, and has been involved with water reuse for going on 32 years. Ask your questions before it's too late!

Ask the Guru

Question: *Can fish from lakes or other surface waters consisting primarily of recycled water be safely eaten and what level of treatment would be required?*

- Evelyn from the City of Angels

Dear Evelyn,

In a word, yes, but with a few caveats. This kind of activity began way back just before man first stepped foot on the moon, June 1969, to be exact. The County of Los Angeles constructed the Antelope Valley Tertiary Treatment Plant at the site of the Sanitation Districts' Lancaster Water Plant to provide additional treatment to the recycled water in order to supply the brand new (at the time) Apollo Lakes County Park. The tertiary treated recycled water was used not only for construction of the park and landscape irrigation, but also for filling the 26 acres of lakes. Since that time, County Parks and Recreation has regularly stocked the three lakes with fish so that local fishermen can come and drown worms. Here's the first caveat. County Parks and Recreation has intermittently performed "fish kills" in the lakes to do two things; 1) eliminate the "trash fish" that people have dumped in the lakes and 2) get rid of the older stocked fish that have eluded the hook. The older fish had been found to be bio-accumulating mercury; not from the recycled water, but from the surrounding native soil that was being blown into the lakes. This mercury accumulation would have made the fish possibly unhealthy to eat.

The City of Los Angeles followed in the early 1990's with the construction of the 27-acre Lake Balboa that is filled with recycled water produced by the nearby Tillman Water Reclamation Plant. Fishing is also allowed at this site, as it is also stocked with fish for this purpose.

There are also plenty of fish in the various local waterways that receive recycled water discharges. The Guru has personally seen a school of very large common carp in San Jose Creek and literally a million Tilapia in the lined portion of the San Gabriel River. Blue gill, bass and other fish also populate local waterways. Here's the second caveat. Even though the majority of the water in these rivers is of recycled water origin, there is still a component of "urban slobber", the runoff from sprinklers and hoses and other non-recycled water sources that carries heavy metals (from brake pads), pesticides, herbicides, oil, chemical dumping, etc., all of which can bio-accumulate in the local fish making eating the big ones on a regular basis a health concern.

The consumption of fish caught from recycled water-filled lakes has been going on for decades, with no discernible impact on public health. There is nothing in Title 22 which deals directly with eating fish caught from recycled water lakes; the closest we have is Section 60305(d), which allows for disinfected secondary-2.2 recycled water to be used for restricted recreational impoundments that allow for non-contact activities, such as fishing. But since nearly every drop of recycled water produced in Los Angeles County is tertiary treated and most likely meets all or nearly all of the drinking water standards, the occasional consumption of these fish (from the stocked lakes, not the rivers) should not be an issue.

Who has been in the Newsletter Spotlight?

In our newsletter we like to focus on one of the Los Angeles section's agency members. This spotlight focuses on how each agency implements water reuse with their unique or efficient manner. Lately the spotlight has been broadened to include consulting firm-members. Below is a list of the past spotlights:

- January 2010: Burbank Water and Power
- April 2010: Long Beach Water Department
- August 2010: Los Angeles Department of Water and Power
- October 2010: West Basin Municipal Water District
- February 2011: Upper San Gabriel Valley Municipal Water District
- July 2011: Metropolitan Water District of Southern California
- January 2012: County Sanitation Districts of Los Angeles County
- August 2012: City of Glendale
- December 2012: Rowland Water District
- March 2013: RMC Water and Environment

The newsletters which contain these spotlights can be found on the Los Angeles Chapter's page of the WaterReuse Association's website: www.waterreuse.org If you would like your agency or company highlighted in a future newsletter, send your spotlight to one of our editors whose emails appear on the membership page. Spotlights are between 300 and 500 words and pictures and graphics are welcome.

Consultant Spotlight: Dudek

DUDEK

As both an environmental and engineering consultant to Southern California water and wastewater agencies we often get a 360-degree view into the strategic and operational challenges districts face. While there are many projects notable for interesting and creative approaches, we've selected three to highlight for our newsletter profile:

South Coast Water District Aliso Creek Water Runoff Recovery And Reuse Facility

The new treatment facility taps into a local water source, reduces poor quality urban runoff from reaching the ocean, and will conserve 50 acre-feet per year of potable water by converting golf course irrigation to the higher quality recycled water.

The facility treats water harvested from Aliso Creek and tertiary-treated wastewater to lower salts in a recycled water irrigation system. Between 300,000 to 800,000 gallons per day of urban runoff in the creek will be treated based on customer demand and available creek flow. Total dissolved solids (TDS) will be reduced from up to 1,300 ppm to an average of 800 ppm, which is more compatible for landscape irrigation.

The challenge for the district and Dudek engineers was designing an economic ultrafiltration/reverse osmosis (UF/RO) membrane treatment facility to that would successfully reduce the salts by selectively drawing water from the creek and operating in tandem with the coastal wastewater treatment plant.

Web-Based and Mobile GIS

The power of GIS is now more accessible – even to the non-technical person – than ever for managing location-based data. New web-based applications provide interactive access to GIS maps and databases with easy-to-use interfaces to collect, view, query and track resources tagged with spatial coordinates. Mobile applications enable direct uploads of field data (text and photos) directly into GIS databases for immediate access and analysis. The benefits are streamlined operations and improved data quality. Dudek has developed a GIS web and mobile application geared specifically to water and wastewater infrastructure. Pauma Valley Community Services District used Dudek's application to create a GIS database from scratch of the district's water meters. Four people were equipped with iPads and mapped 400 data points throughout the district in less than six hours. Data was uploaded from the field in real-time directly to a GIS database. A GIS manager monitored the data upload in real-time to ensure accurate, quality data was collected.

O&M and CIP Programmatic Permitting

A programmatic permitting approach for O&M and CIP projects offers significant advantages compared to permitting on a per-project basis. Dudek environmental planners have helped many district, including the Metropolitan Water District and San Diego County Water Authority, develop programmatic permitting strategies. Costs analysis of programmatic permitting program show that the up-front costs are more than off-set by advantages that include:

- Significant cost savings in reduced consultant, permitting and mitigation fees. Retaining consultants and paying permit fees (which are often upwards of $10,000 for the RWQCB) is costly, on a project basis. With programmatic permitting, mitigation activities only need to be conducted one time, per activity location, for the life of the permit (5 years), rather than each time an activity is conducted at a location (which may be annually).
- Assurance that necessary work may be conducted. The need to obtain technical studies, CEQA/NEPA compliance, and resource agency permits, combined with the ever changing nature of the regulatory environmental in California, has created uncertainty in whether projects can move forward as needed, even when there are potential risks to safety or facility closures. Programmatic permits allow work to move forward, within pre-determined conditions and with identified mitigation, providing districts the assurance that maintenance can be conducted in a timely manner, while complying with state and federal laws.
- Valuable Staff Time Savings. Preparing multiple RFPs to obtain individual permits for activities and managing those contracts involves significant staff time. Efficiencies are gained when staff can devote time to managing conditions associated with an established programmatic permitting program.

OUR MEMBERS

AECOM
Black and Veatch
Burbank Water and Power
California Department of Public Health
California Department of Water Resources
California Regional Water Quality Control Board
California State Water Resources Control Board
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RBF Consulting, a Baker Company
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United Water
Upper San Gabriel Valley Municipal Water District
Valencia Water Company
City of Vernon
Walnut Valley Water District
Water Replenishment District of Southern California
WateReuse California
West Basin Municipal Water District

CHAPTER OFFICERS

Raymond Jay, President
Metropolitan Water District of Southern California
rjay@mwdh2o.com

Kraig Erickson, Vice President
RMC Water and Environment
kerickson@rmcwater.com

Judi Miller, P.E., Treasurer/Secretary
CH2M Hill
judi.miller@ch2m.com

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. Email articles or ideas to Matthew Elsner (melsner@ci.burbank.ca.us) or Shelah Riggs (sriggs@dudek.com)

WateReuse Association: www.watereuse.org/sections/california/losangeles

Newsletter design by DUDEK