

IN THIS ISSUE

President's Column

Page 2

RMC Consultant Profile

Page 3

Ask the Guru: A Reader Recap

Page 4

2013 Conference Tours and Workshops

Page 4

NEXT MEETING

Tuesday, April 9
11:30am

LADWP Donald C. Tillman
Water Reclamation Plant

6100 Woodley Avenue
Van Nuys, CA 91406



Los Angeles
Regional Chapter
Newsletter

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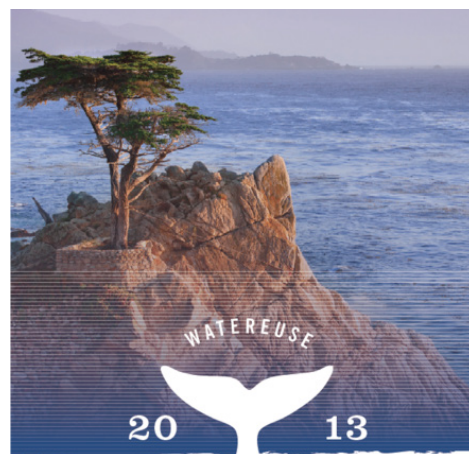
WaterReuse 2013: L.A. Chapter Meet-Up in Monterey!

WaterReuse California hosts its 2013 Annual Conference on March 17-19 at the Portola Hotel & Spa in Monterey.

The conference is designed for individuals, organizations, and agencies associated with or interested in the design, management, operation, and use of water recycling and desalination facilities and projects in California. Topics include recycled water planning, operational issues, regulatory issues, financial considerations, and environmental benefits.

Please join your fellow LA Chapter members for a special post-dinner cocktail hour Monday starting at 10 p.m. in Jack's Lounge at the Portola Hotel to discuss conference highlights. Also, check the Tours and Workshops available on page 4 of this newsletter.

For more information on the conference please visit: <https://www.watereuse.org/conferences/california/13>



CALIFORNIA ANNUAL CONFERENCE
MARCH 17-19, 2013 • PORTOLA HOTEL & SPA • MONTEREY, CA

LADWP's Crossed Arches Pipe Bridge

A unique pipe bridge was recently built across the Tujunga Channel to supply recycled water to the Hansen Dam Municipal Golf Course in the Lake View Terrace area of Los Angeles. The bridge is part of the Hansen Dam Golf Course Water Recycling Project of the Los Angeles Department of Water and Power (LADWP). Bridge designer William W. Lai, PE, came up with the novel concept of crossed arches after wrestling with the problem of how to provide resistance to lateral loads, including seismic. Instead of inserting braces between the arches, crossing the arches resulted in an efficient way to resist lateral forces. Until recently the authors were unaware of other examples of bridges with crossed arches. The December 2012 issue of Structure magazine features the award-winning Tempe (Arizona) Town Lake Pedestrian Bridge, designed by T.Y. Lin International, which prominently utilizes

crossed arches to support the pedestrian deck.

The United States Army Corps of Engineers (USACE) and the Los Angeles County Flood Control Districts (LACFC-D) regulate work within the Tujunga Channel right-of-way. These agencies required the following:

- Easement for the pipe and bridge to be as narrow as

possible.

- Minimal surcharge to the channel walls from the bridge footings.
- Shortest possible construction duration.
- Twelve foot minimum vertical clearance to the channel.

The use of arches also allowed the design of drilled

Continued on page 2 ...



View of the completed crossed arches pipe bridge.

President's Column



2012 was a very active year for the Los Angeles Chapter. John Robinson led us to become one of the larger chapters through continued education and outreach. We now regularly have about 50 members from various water agencies, engineering firms, and regulatory agencies sharing information at our meetings. I welcome the election of Kraig Erickson as the new Vice President and look forward to working closely with him on evaluating expansion of stormwater capture and other

local supplies issues. Judi Miller, our Secretary/Treasurer, has done a thankless job keeping the Chapter records and expanding access through our website (<http://www.watereuse.org/sections/california/losangeles>). Monica Gasca, our Chapter Trustee, has been vital in keeping us informed of WaterReuse California's Board of Directors activities and direction. I would also like to thank Matt Elsner, Shelah Riggs, Mark Forster, the "Guru" Earle Hartling, and all the others that contribute to producing the Chapter newsletter.

In 2013, I hope to build on the solid foundation established by John

Robinson and our previous Chapter Presidents. I look to expanding our involvement in developing state wide recycled water policy and legislation, educating the public and facilitating funding of local projects. I plan to work closely with Chapter Officers to try and provide additional value to the members.

Please feel free to contact me if you would like to become more involved in the Chapter or have suggestions for future meetings.

Raymond Jay

LADWP's Crossed Arches Pipe Bridge *Continued from page 1...*

pier foundations that fit within the narrow right-of-way available. The decision to use pipe for the arches was a result of the desire to use stainless steel for long service life. The number of structural shapes available in stainless steel is limited, but pipe is readily available. Yousef A. Gobran, PE, designed four reinforced concrete drilled pier foundations. Jianping Hu, Ph.D., PE, GE, provided a finite element method soil stress analysis to the USACE demonstrating that forces transmitted to the walls of the Tujunga Channel from the piers were within acceptable limits.

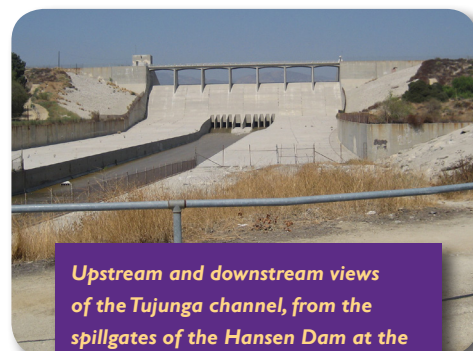
Fabrication was by the LADWP's Structural Steel Shop under the direction of Stan Brown, now retired. The pipe arches were rolled to a radius of 86 feet by Marine

Valve and Supply Co. of Whittier, CA.

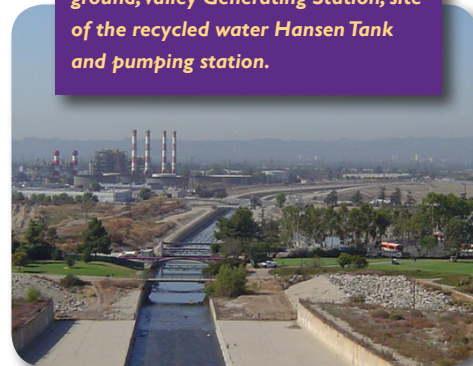
LADWP's Integrated Support Services Division (ISS) built the foundations, erected the bridge, and installed the recycled water pipe and thrust blocks. (Concrete thrust blocks are provided at each end of the welded steel water pipe where it bends down 45 degrees

to join the buried ductile iron pipeline.) The completely assembled bridge was hoisted into place across the Tujunga Channel with a mobile crane. No equipment entered the channel, as required by the Los Angeles Regional Water Quality Control Board.

The Hansen Dam Golf Course Recycled Water Project includes a pumping station, about 4,500 feet of 20-inch nominal diameter ductile iron pipeline, and the pipe bridge. A one-million gallon hill-top tank is planned for the future. Construction of the ductile iron pipeline began in September 2012 by LADWP's Water Distribution Division. The pipeline was designed by Salman A. Sufi, PE; he also coordinated the right-of-way effort. The recycled water originates at the Tillman Water Reclamation Plant in Van Nuys, CA. The pumping station will take suction from the 7-million gallon Hansen Tank at the LADWP's Valley Generating Station in Sun Valley, CA. David R. Rice, PE, was the pumping station design manager. The outdoor station will include three vertical turbine



Upstream and downstream views of the Tujunga channel, from the spillgates of the Hansen Dam at the source, to the bridge and in the background, Valley Generating Station, site of the recycled water Hansen Tank and pumping station.



pumps, each rated at 1300 gallon per minute. Initially the project will deliver about 500 acre-feet per year of recycled water for irrigation of the golf course. However, the pipeline and pumping station were sized anticipating additional customers.

Article by Wayne A. Bamossy, PE; Jennifer A. Barrick, PE; and William W. Lai, PE are with the Los Angeles Department of Water and Power.



Temporary plates, braces, and supports help to fit up the mid-span weld of the crossed arches pipe bridge.

Consultant Spotlight: RMC Water and Environment



RMC has been working with West Basin MWD since the 1990's. The company worked closely with the District to market the recycled water and retrofit customers, including expansion of the Carson Plant to serve the neighboring refineries.

RMC Water and Environment is a California-based environmental engineering company focused exclusively on water. Included on ENR's list of 2012 Top 500 Design Firms and Top 200 Environmental Firms, RMC works with public agencies and local communities to develop innovative solutions for managing one of the earth's most vital resources. With eight offices and 112 employees throughout California - in Irvine, Santa Monica, Los Angeles, San Diego, Walnut Creek, San Jose, San Francisco, and Sacramento - RMC has a strong focus on water recycling.

WATER RECYCLING IS OUR BUSINESS CORNERSTONE

RMC's principals include founding members of WaterReuse Association and Research Foundation - who continue to actively serve on committees such as the Indirect Potable Reuse Committee and Industrial Use Committee - and have been longstanding members of the Board of Directors of the WaterReuse Research Foundation.

CUSTOMER DEVELOPMENT, SERVICE AND CONVERSIONS IN THE SOUTH BAY

RMC has been working with West Basin MWD since the 1990's. The company has worked closely with the District to market the recycled water and retrofit customers, including expansion of the Carson Plant to serve the neighboring refineries. RMC has assessed the fea-

sibility of recycled water service to both industrial and irrigation customers, obtained customer agreements, developed necessary reports, and construction assistance. RMC is developing the Engineering Report for use of RO recycled water at NRG-El Segundo

A LONG-STANDING RECYCLED WATER PROGRAM FOR PASADENA

RMC is providing engineering services to support the design of Pasadena Water and Power's recycled water project. RMC evaluated the potential for year-round water reuse and seasonally available recycled water in order to utilize existing groundwater extraction assets. Key recycled water customers will include Art Center College of Design, Brookside Golf Course, Rose Bowl, and City Parks.

CUTTING EDGE RECYCLED WATER PLANNING

RMC completed a comprehensive recycled water planning efforts to expand Los Angeles's recycled water systems to meet the City's target of 59,000 AFY by 2035, with 30,000 AFY for indirect potable reuse via groundwater recharge and 10,000 AFY of new non-potable uses. RMC worked with LADWP, multiple agencies and stakeholders to identify non-potable reuse opportunities and recycled water demand. These included conducting recycled water conversion assessments for over 100 target customers; resolving existing system reliability issues, such as pressure

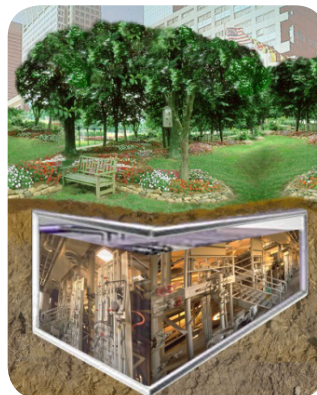
surges and poor water quality; and identifying multiple regional opportunities. RMC investigated possibilities for expanding recycled water use and reducing LA's need for imported water.

REDUCING THE NEED FOR IMPORTED WATER

RMC conducted an alternatives analysis to develop projects to offset the need for imported replenishment water used in the Central and Main San Gabriel Basins. We developed alternatives that provided a more reliable source of replenishment water for the groundwater basins for Water Replenishment District (WRD) of Southern California for their Groundwater Reliability Improvement Program (GRIP). RMC conducted analysis of recycled water supply options, conducted analysis of recycled water facility options, participated in outreach efforts with key stakeholders, and procured funding from SWRCB Water Recycling Facilities Planning Program. RMC's work with GRIP will increase groundwater recharge in the San Gabriel Basins

RECYCLED WATER ACROSS THE STATE

In the Central Valley, RMC is working with Del Puerto Water District to evaluate pipeline and river conveyance alternatives for recycled water, including use of the San Joaquin River and the Delta Mendota Canal. RMC evaluated recycled water supplies; market assessment; institutional, regulatory, and legal constraints; and conveyance alternatives. In Northern California, RMC is working with the Sacramento Regional County Sanitation District to determine the feasibility of serving up to 53,000 acre-feet per year of tertiary treated recycled water to agricultural users, habitat restoration lands, and managed wetlands in South Sacramento County.



Earle Hartling is the WateReuse Guru and has been answering reader's water-related inquiries

for the past three years. If you have a question for our Guru, contact our editors and we'll make sure Earle bestows his wisdom once again.



ASK THE GURU: A Reader Recap

As our newsletter begins its fourth year, I was surprised to see all the great information contained in the previous ten issues. One of our reader's favorite columns is "Ask the Guru" written by Earle Hartling and a summary of the sage knowledge the guru has bestowed on the readers is in order. Here is a list of questions the guru has answered and in which newsletter they can be found. Hopefully reading through them will trigger some questions of your own.

August 2010: *Why is tertiary-disinfected water called 'Title 22' water, when in fact, advanced treated water for groundwater recharge is also regulated under Title 22?*

October 2010: *I am relatively new to California. Why did we switch to calling it "recycled" water when the rest of the world calls it "reclaimed"?*

February 2011: *Why do we use Pantone 512 to designate recycled water? I heard that the original LA County color was yellow.*

April 2011: *When and where was recycled water used for the first time as a source of replenishment water for groundwater basins in Los Angeles County?*

July 2011: *Why have I seen both wet and dry sprinkler systems that utilize recycled water in the same jurisdiction? Why would a town choose one or the other?*

August 2012: *Why can we not flush our recycled water into the storm drain system, with dechlorination, if the system drains to the same receiving water as the wastewater plant does?*

December 2012: *A lady from Burbank asked me a few weeks back if there are any regulations or state laws regarding the consumption of recycled water by animals?*

The newsletters can be found on the Los Angeles Chapter's page of the WateReuse Association's website: www.watereuse.org. As always, if you have a question to ask the Guru, send it to one of our editors and we will get it answered.

Join the 2013 Conference's Tours and Workshops

TOUR: BEHIND-THE-SCENES OF THE MONTEREY BAY AQUARIUM

Sunday, March 17, 2013

1:00 pm – 5:00 pm

Tour Fee: \$75

Limited to 70 people

Transportation to and from the hotel

Be amazed and entertained by experiencing the world-renowned marine life exhibits at the Monterey Bay Aquarium on historic Cannery Row. See the operations of the Monterey Bay Aquarium. Included in this tour will be the chance to learn about how the aquarium uses fresh sea water in its exhibits and returns it to the Monterey Bay thereby preventing salt loading in the regional sanitary sewer system. Admission includes transportation to and from the hotel and the aquarium as well as full access to all aquarium exhibits.

WORKSHOP: COMMUNICATING POTABLE REUSE MESSAGES FOR PUBLIC ACCEPTANCE

Sunday March 17, 2013

2:00 pm – 5:00 pm

This workshop will look at authentic and meaningful channels of communicating, and effective messages that could resonate with the public as well as the challenges we will obviously face.

Speakers will provide an overview of new real time monitoring techniques, a description of successful outreach already underway and a view from a newspaper reporter. This is your chance to learn and ask questions about the future of where Potable Reuse is headed.

TOUR: CARMEL AREA WASTEWATER DISTRICT AND PEBBLE BEACH COMMUNITY SERVICES DISTRICT TECHNICAL TOUR

Tuesday, March 19, 2012

1:00 pm – 5:00 pm

Tour Fee: \$45

Transportation to and from the hotel

Visit a microfiltration and reverse osmosis reclamation plant that is reducing salts for turf irrigation. Learn how they solved the algae problem for Forest Lake, which is an open recycled water reservoir. See an updated golf course irrigation system on some of the most famous facilities in the country.

WORKSHOP: APPROACHES TO SALT AND NUTRIENT MANAGEMENT PLANS

Sunday, March 17, 2013

2:00 pm – 5:00 pm

Workshop Fee: \$75

This SNMP workshop will focus on the practical methodologies that are being used and applied to the technical analyses that are underway or completed SNMPS. Several SNMP approaches/methodologies will be presented representing a mix of basin settings (urban, agricultural, basins with recycled water recharge, basins with good available data, basins with limited available data, etc).

Our Members

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California Department of Water Resources
California Regional Water Quality Control Board
California State Water Resources Control Board
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Cannon
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Surfrider Foundation
Test America
Three Valleys Municipal Water District
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

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Got News?

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

WateReuse Association www.watereuse.org/

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