Los Angeles Chapter of the WateReuse Association

October 9, 2018 MEETING SUMMARY

Location:	Central Basin Municipal Water District
Address:	Central Basin Municipal Water District 6252 Telegraph Rd. Commerce, CA 90040-2512
Purpose:	Bi-Monthly Meeting
Date and Time:	October 9, 2018 from 11:30 a.m. – 1:30 p.m.
Distribution:	Los Angeles WateReuse Association Chapter Members

Lunch: Sponsored by Kennedy Jenks Consultants

Below is a summary of the highlight from the August 2018, bimonthly member meeting of the Los Angeles Chapter of the WateReuse Association.

The presentations from this meeting can be found at:
http://www.watereuse.org/sections/california/losangeles/meetings

1. **Sponsor presentation: Understanding Your Options for Brine Management: Treatment Technologies and Application in Design** *(Alan Bracewell / Kennedy Jenks)*

   Alan Bracewell is a Process Engineer in Kennedy Jenks' Irvine office. He spoke on the reasoning for managing brine and minimizing brine waste as well as maximizing our existing water supply with respect to multiple source waters including wastewater effluent, brackish groundwater and ocean desalination. Alan Bracewell's presentation focused on the reverse osmosis (RO) treatment process of the advanced water treatment train, especially the waste stream from RO to the brine line. Four brine minimization technologies are considered including two-stage RO (with no minimization), multi-stage concentrator, closed circuit RO and electrodialysis reversal (EDR).

   For the two-stage RO (with no minimization) technology, there are trade-offs in that it maintains a low recovery rate, from 75% to 80%, and a large volume of RO concentrate disposal is required, whereas it has a low capital cost, low energy usage and maintains a "dilute" RO concentrate. An example of this technology in use is the 5 MGD Pure Water Monterey Facility that Kennedy Jenks designed. With a recovery rate of 81%, the brine waste is mixed with wastewater treatment plant effluent at its ocean outfall.

   The multi-stage concentrator technology has a recovery rate from 85% to 90%, and although it has an increased energy usage and requires careful operation to protect its 3rd stage RO process, it has a medium capital cost, increased recovery rate with reduced brine and is a more familiar technology.

   The closed circuit reverse osmosis (CCRO) technology has a flexible recovery rate range from 75% to 95%, lower energy consumption as well as reduced antiscalant usage. However, it is a proprietary technology by Desalitech, and has a generally higher capital cost. An example demonstration facility utilizing the CCRO technology is Padre Dam in San Diego, California. This is planned to be a 12-MGD facility where an additional 1 MGD from secondary CCRO will be discharged to Santee Lakes and the RO waste is to be blended with the microfiltration (MF) waste and sent to the sewer system.

EDR recovery rates range from 70% to 90%. A benefit of EDR includes reduced particulate fouling in that there is no barrier involved in the process. EDR, however, can only remove cations and anions therefore only charged pollutants are removed because it does not provide a physical barrier.

When comparing the four technologies against one another in terms of performance for a 7.4-MGD facility including a brine line, the two-stage RO and multi-stage concentrator technologies are rated best for brine reduction and recovery, installation and permitting, ease of operations and maintenance, water quality as well as footprint and constructability. However, these two technologies are also the costliest, in terms of the brine line capital cost and life cycle unit cost. The technology that ranks the least cost when comparing the four technologies is CCRO. For overall ranking when considering both cost and performance categories, the multistage concentrator and CCRO technologies are ranked on top. In the cost comparisons, costs were very site dependent and highly influenced by ocean outfall proximity, construction space availability, and the service areas water needs.

As for planning for brine minimization, it is “never too early” or “never too late”. This can be conducted at various levels in the project development process: at the feasibility level by comparing cost and performance comparisons between different technologies, with a demonstration plant of the best technologies according to the feasibility comparison while drafting a preliminary design report, and then applying what is learned from the demonstration plant for final design.

2. **Technical topic: Water Code Section 1211 Process** *(Vidal Cortes / Los Angeles County Sanitation Districts)*

The Los Angeles County Sanitation Districts (LACSD) collects and treats sewage from 5.6 million people. There are 24 special districts that serve 824 square miles including 78 cities and unincorporated county areas. In total, there are 1,400 miles of sewers, 11 wastewater treatment plants, where the inland plants are purposely located where recycled water demand is highest, and a joint ocean outfall system. Over the past several years, the demand for reuse has increased because of the drought. However, because of the drought and water conservation efforts, the production of treated wastewater effluent has decreased.

LACSD is the nation’s leader in water recycling for the past 50 years. In support of increasing recycled water reuse, the San Gabriel River Watershed Project will result in reductions to the current rates of treated wastewater effluent into the San Gabriel River. Considering Pomona Water Reclamation Plant (WRP), San Jose Creek WRP, Whittier Narrows WRP, Los Coyotes WRP and Long Beach WRP, there is a total annual daily average discharge of 82 MGD, currently, and a proposed annual daily average discharge is 40 MGD from all five plants. There is a large variability in discharge to the San Jose Creek from month to month and year to year, however, a goal of a slightly greater than 50% reduction in annual daily average discharge is proposed.

There is a high demand for recycled water and one of the largest beneficiaries is the Water Replenishment District of Southern California (WRD). There is a total demand for recycled water of 24,200 AFY from the San Jose Creek WRP, primarily for WRD’s Albert Robles Center for Water Recycling and Environmental Learning (“ARC”, formerly GRIP); 2,000 AF from San Jose Creek and Los Coyotes WRPs for Central Basin Municipal Water District, and a 3,360 AFY

demand from Pomona WRP for the City of Pomona. Water will be diverted to the ARC for advanced water treatment to replenish water at the aquifers.

The riparian habitat areas support endangered species such as the Bell's Vireo. LACSD has mapped this habitat area in order to more efficiently irrigate its vegetation to secure homes for endangered species. The water demand for irrigation is 1.22 MGD. LACSD has investigated adaptive management monitoring strategies including Stem Water Potential (SWP) that directly assesses water availability to individual plants, Canopy Volume (CV) to measure plant response to stress, soil moisture monitoring, vegetation mapping to compare total areas annually and recruitment analysis.

The California Water Code Section 1211 states "Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of any wastewater treatment plant shall obtain approval of the board for that change. The board shall review the changes pursuant to the provisions of Chapter 10 (commencing with Section 1700) of Part 2 of Division 2." The San Gabriel River is fully appropriated and, therefore, water rights are not expected to be an issue. As for loss of habitat, due to the Adaptive Management Plan (AMP), there will be a less than significant impact with mitigation with regards to hydrological and biological resources as groundwater will not be affected and since the users of the recycled water manage the groundwater.

The next steps that LACSD will plan to take include continuing to collect and analyze baseline data in October 2018. In December 2018, a decision on CEQA is expected to be made where a filing of a 1211 Application will follow and the SWRCB 1211 Review Process will then begin.

For questions, contact Vidal Cortes at vidalcortes@lacsd.org.

3. **Venue host presentation: Central Basin MWD's Recycled Water Projects and Operations**
(Jacque Koontz and Donald Jones / CBMWD)

The Central Basin Municipal Water District (CBMWD) was established in 1952 and serves approximately 1.6 million people. CBMWD purchases treated potable water from Metropolitan Water District for sale to retail water agencies as well as untreated water for groundwater replenishment. CBMWD purchases recycled water from LACSD for distribution to retail agencies.

The San Jose Creek WRP has historically supplied CBMWD with 3,500 to 4,500 AFY while Los Coyotes WRP provided 300 to 500 AFY, however, this has recently changed. Due to water conservation efforts, there has been a reduction in recycled water production. This in turn reduces the availability of recycled water. In order to keep a greater supply in the northern area to serve recycled water demands from the San Jose Creek WRP, a pressure reducing valve is needed between the San Jose Creek WRP and the Los Coyotes WRP.

CBMWD awarded grant funding for disadvantaged neighborhood pipelines ranging from 4 inches to 12 inches in diameter. There are proposed recycled water lines currently planned for the City of Lynwood at 68 AFY, the City of Bell Gardens at 30 AFY, and the City of South Gate at 132 AFY. Loan and grant applications were submitted to the State to fund the construction of these projects. The Montebello Hills project at 135 AFY is a 16-inch diameter pipeline and includes a permanent pump station for the City of Montebello.

As for the recycled water site conversions completed, Heritage Plaza at 3 AFY and Moon Valley Nursery at 20 AFY were completed in September 2018 and UTC at 88 AFY completed in May

2018. The sites in progress include Montebello Golf Course at 255 AFY, as well as LAUSD schools such as Legacy High School, Legacy Middle School and Legacy Playfield at a total of 31 AFY. The design for the pump station for Montebello Golf Course is complete and it is ready to be installed, however, due to the Water Code Section 1211 issues, the project has been put on pause. Challenges include hotels surrounding the golf course which makes a water shut down impractical for the hotel guests. Recycled water lines projects ranging large to small are being implemented within the community due to the avid participation of community members to conserve water. These customers also receive a flash drive with a wealth of information including contacts and all the forms needed to analyze the cost effectiveness of their project.

4. **Water Recycling Legislative/Regulatory Updates** *(Raymond Jay)*

California Legislation

SB 966: onsite treated nonpotable water systems – sponsored by San Francisco Public Utilities Commission (SFPUC) to adopt risk-based regulations to encourage use within buildings of graywater, rainwater, stormwater, or blackwater; prohibits installation except under adopted local program, systems approved by local agency prior to State Board adoption of regulations have up to two years to comply with statewide regulations. The **Governor has thus approved** the abilities of agencies to use onsite treated nonpotable water.

SB 1422: California Safe Drinking Water Act: Microplastics – Adopt definitions of microplastics in drinking water by July 2020. Prior to July 2021, adopt standard methodology for testing, requirements for 4 years of testing and reporting, issue notification level/guidance for interpreting results, and accredit qualified laboratories in California. **This has been approved by the Governor.**

AB 2062 State Highways: Landscaping – landscaping on state highways should require use of non-water intensive landscaping and drought resilient plants. Pushes for recycled water to be used on highways. **This has been approved by the Governor.**

Recycled Water Quick Links are provided on the State Board's website (link below); can monitor the status of the recycled water survey; caution: website is a little outdated.

https://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/recycledwater_research.shtml

Federal Legislation

Both House and Senate have passed appropriations bills and are coming to a negotiation. The Clean Water State Revolving Fund will likely get $1B along with the Drinking Water State Revolving Fund.

5. **Regulatory Agency Update**:
   a. Los Angeles County Department of Public Health *(Robert Bueras)*
      - Newly constructed industrial sites that use recycled water need to have a backflow preventer on the recycled line as well as the domestic meter side for redundancy measures
      - Still enforcing the 10-foot horizontal separation between recycled water and potable water

- "Plan-Check" needs plans delivered early to get them approved in the most efficient way possible; no inspections will be completed until a plan-check is submitted. "Over-the-counter" plan check offered through Tier 1 to Tier 3. Need to submit 2 sets of plans and a flashdrive with full electronic set of plans.
- Please call 213-430-5290 if you have any questions.

6. **California State Section Update** *(Monica Gasca)*
   - WateReuse California Annual Conference – March 17-19 in Garden Grove. Call for abstracts just ended but there are opportunities for volunteering at the conference – Scott Lynch, Orange County Chapter Secretary, is taking volunteers lynchst@bv.com
   - The LA Chapter, we're looking for one volunteer to be on the Awards Committee and one for the Technical Committee to review nominations and abstracts – please contact Raymond or Judi if you are interested in representing the Chapter on these committees.

7. **Chapter Updates** (*Judi Miller)*
   a. Approval of August 2018 Member Meeting summary
      - August 2018 Member Meeting Summary was approved with all in favor.
   b. Volunteer opportunities to contribute to chapter:
      - There are plenty of opportunities for those who want to get more involved in the Chapter
      - Structure of the LA Chapter:
        - Officer elections for 2-year terms will be held at the next (Dec. 4) member meeting – one vote per member organization (of the National WateReuse Association) can be cast
        - There are 5 Chapter Officer positions in bylaws; 4 positions are up for re-election (one is Past-President) – below are the primary responsibilities of each Officer:
          - President – runs meetings
          - VP – coordinates venues/sponsors for the bimonthly member meetings
          - Secretary/Treasurer – handles Chapter correspondence, including meeting agendas and summaries; overall rule- and record-keeper
          - Chapter Trustee – represents Chapter on California Section Board and attends Section meetings ~quarterly, which are held in Sacramento & Irvine (via videoconference)
          - Past-President – assists with communications and special projects
        - Other volunteer opportunities:
          - Chapter Photographer (Jared Lee has been serving in this capacity – thank you, Jared!)
          - Technical committee
          - Newsletter committee
          - Leg/Reg reporting/Chapter liaison
          - Present at a meeting
          - Contribute to newsletter
          - Suggest ideas for presentation topics or meeting/chapter announcements

- *Bring updates from your agency/firm to member roundtable discussions*
- We're looking for sponsors for upcoming member meetings – 2 small firms may want to consider combining resources for a joint sponsorship

  - We were recognized by WateReuse California for our attendance of typically ~70 people!

8. **Membership Roundtable** *(Fred Gerringer)*

   - WateReuse Conference:
     - Community Water Champion Award for exemplary water reuse projects award went to LA Sanitation and Environment for thir LA 2040 plan

9. **Next Meetings**
   - December 4, 2018 – Host: *Las Virgenes Municipal Water District;* Sponsor: *Parsons*
   - February 12, 2019 – Host: *City of Los Angeles;* Sponsor: *Carollo Engineers*

10. **Adjournment** ..... 1:30 p.m.

Los Angeles Chapter Officers for 2018

Raymond Jay, President	213-217-5777	rjay@mwdh2o.com
Fred Gerringer, Vice President	626-463-0390	fredg@trusselltech.com
Judi Miller, Secretary/Treasurer	213-228-8236	judi.miller@ch2m.com
Monica Gasca, Chapter Trustee	562-908-4288 x3508	mgasca@lacsd.org
John Robinson, Past-President	626-375-9389	jrobinson@johnrobinsonconsulting.com

Meeting Attendees

MEMBER		ORGANIZATION
Carlos	Aguilar	California Water Technologies
Manuel	Aguilar	LADWP
Shahnawaz	Ahmad	SA Associates
Chaleie	Amandine	CDM Smith
Jenny	Anderson	Santa Clarita Valley Water Agency
Shadi	Bader	Santa Clarita Valley Water Agency
Mario	Bautista	West Basin MWD
Erika	Bensch	LACSD
Alan	Bracewell	Kennedy/Jenks
Suzanne	Brown	LACSD

MEMBER		ORGANIZATION
Robert	Bueras	LA County Department of Public Health
Flor	Burrola	LASAN
Ryan	Bye	Santa Clarita Valley Water Agency
Susan	Chang	LASAN
Paul	Chau	Kennedy/Jenks
Denise	Chow	LASAN
Vidal	Cortes	LACSD
Veronica	Cuevas	Los Angeles Regional Water Quality Control Board
Matt	Elsner	Woodard & Curran
Everett	Ferguson	WRD
Erin	Fleming	LASAN
Frank	Fuchs	West Basin MWD
John	Fuerta	LA County Department of Public Health
Monica	Gasca	LACSD
Fred	Gerringer	Trussell Technologies
Roman	Gonzalez	Central Basin Municipal Water District
Cory	Heggtveit	Tetra Tech
Scott	Hoag	LA County Department of Public Health
Scott	Hungerson	LADWP
Humberto	Jaramillo	HDR
Raymond	Jay	Metropolitan Water District of Southern California
Christina	Jones	LASAN
Don	Jones	Central Basin Municipal Water District
Jacque	Koontz	Central Basin Municipal Water District
Sam	Landsman	CDM Smith
Elisa	Lee	Woodard & Curran
Jared	Lee	Burbank Water and Power
Qiong	Lei	LASAN
Brittany	Liu	WRD
John	Lockett	LADWP
Terrence	Mack	LAUSD
Danielle	Maurizio	LACSD

MEMBER		ORGANIZATION
Sophia	McDonald	LA Couny Department of Public Works
Sarah	Melberg	LASAN
Judi	Miller	CH2M, now Jacobs
Dusty	Moisio	Rowland Water District
Tom	Monk	Walnut Valley Water District
Monica	Morales	CH2M, now Jacobs
Jeff	Mosher	Carollo Engineers
Cherie	Nixon	CNE
Sergio	Nunez	West Basin MWD
Stephen	Opot	LASAN
Gilberto	Ramirez	LA County Department of Public Health
Elisa	Reynolds	LADWP
Julie Ann	Robinson	Glendale Water & Power
Jeremiah	Shea	West Basin MWD
Eric	Smith	CDM Smith
Camille	Stephens	Katz & Associates
Alton	Ta	LA County Waterworks
Shieva	Taat	LASAN
Belal	Tabannaj	LA County Waterworks
Dawn	Taffler	Kennedy/Jenks
Yoshiko	Tsunehara	LADWP
Yvonne	Valenzuela	LASAN
Joe	Walters	Purple Pipe Consulting
Dean	Wang	Long Beach Water Department
Ling	Wang-Stanley	CH2M, now Jacobs
Ryan	White	Rowland Water District
Eric	Wood	LA County Department of Public Health
Jason	Yim	Santa Clarita Valley Water Agency
Christina	Zabalza	LASAN
Adam	Zacheis	Carollo Engineers
Rick	Zimmer	Eurofin

TOTAL: 74