American Water Works Association
California-Nevada Section

PRELIMINARY TECHNICAL PROGRAM

Building a Sustainable Future

MARCH 21-24

SACRAMENTO CALIFORNIA

2016

CA-NV SECTION AWWA SPRING CONFERENCE
SACRAMENTO CONVENTION CENTER

TUESDAY SESSIONS

Session Number 1 - Safe Drinking Water Act Committee

2:00 PM - 2:30 PM
United States Environmental Protection Agency (USEPA) Regulatory Update
Bruce Macler, USEPA
An update on current events and trends in federal regulations.

2:30 PM - 3:00 PM
AWWA Cyanotoxins Guidance
Adam Carpenter, AWWA
An introduction to using AWWA's guidance on addressing potential cyannotoxin issues.

4:15 PM - 4:45 PM
California ELAP Update
Christine Sotelo, Environmental Laboratory Accreditation Program (ELAP)
An update on the California Environmental Laboratory Accreditation Program.

4:45 PM - 5:15 PM
California MCL for 1,2,3-TCP
Zach Rounds, Division of Drinking Water – California
An update on regulation of 1,2,3-TCP in California.

3:45 PM - 4:15 PM
California Regulatory Update
Mark Bartson, Division of Drinking Water – California
An update on current events and trends in California regulations.

Session Number 2 - Water Loss Control

2:00 PM - 2:30 PM
State to State: A Comparison of Water Loss Training & Technical Assistance Programs Across Multiple States
Steve Cavanaugh, Cavanaugh & Associates

Participants in this session will learn about how different states have implement successful water loss training & technical assistance programs, using different strategies.

2:30 PM - 3:00 PM
A Water Loss Snapshot – Examining the Country's Water Audit Submissions
Kate Gasner and Reinhard Sturm, Water Systems Optimization

This presentation will review the research's findings after examining more than 2,600 water audits from the likes of California, Georgia, Texas, Tennessee, Delaware and Wisconsin (twenty-four states will be involved). These water audits represent un-validated water audits since they have not been vetted or reviewed for reliability; however, these self-reported water audits can still provide a meaningful snapshot of national non-revenue water levels. The presentation will tackle two main subjects: Water Loss Regulations and Requirements By State and Nationwide Performance Indicator Summary.

3:45 PM - 4:15 PM
Under Pressure: Managing Water Loss, Energy and Asset Life through Optimized Pressure in the Water Network
Tory Wagoner, Cavanaugh & Associates

Participants in this session will learn about the 4 compelling benefits of optimizing pressure in our pipe networks.

TUESDAY SESSIONS

Session Number 3 - Energy

2:00 PM - 2:30 PM

Developing an Energy Master Plan

Suhail Malki, Los Angeles County Department of Public Works

As more finite resources are consumed each year, it is vital that public water utilities are able to provide high quality water in a cost-effective and environmentally responsible manner. One key element to maintaining an efficient water system is keeping energy costs, electrical consumption, and greenhouse gas (GHG) emissions to a minimum. We found that an energy master plan (EMP) is a practical next step in progress towards managing electrical costs and environmental concerns. The EMP, completed in June of 2015, provides an organized, systematic, and long-term strategy towards maintaining reasonable rates for its services. The EMP identifies a portfolio of 15 cost effective programs and projects to reduce future energy usage and costs, as well as reduce GHG emissions.

The process for developing this EMP includes the following: establishing a baseline/present state, forecasting future energy usage and costs, identifying projects that will reduce future energy usage and costs, evaluating and prioritizing these projects, and lastly, creating a project implementation schedule for these projects based on the priority order determined.

2:30 PM - 3:00 PM

Development, Engineering, Design, Contracting, and Implementation of Electric Grid-Tied In-Conduit Pressure Reducing Turbine (PRT)

Ahmet Tatlilioglu, County of Los Angeles - DPW Waterworks Division and
Narendra Amarnani, County of Los Angeles, Internal Services, Office of Sustainability

The Los Angeles County Waterworks Districts (WWD) in collaboration with the Los Angeles County, Internal Services Department's Office of Sustainability is scheduled to complete the installation of a 261 kW in-conduit Pressure Reducing Turbine (PRT) at the potable water distribution facility located in the city of Palmdale, California. The PRT will function in parallel with existing pressure reducing valves (PRV) to generate electricity that would significantly offset electricity costs associated with operating this facility. The PRT will control the water pressure drop, harvesting electricity, illustrating the interdependence of water and energy. The project demonstrates environmental stewardship of WWD by planning and investing in reliable, clean, and sustainable energy operations, resulting in shrinking carbon footprint by reducing greenhouse gas emissions up to 1.26 million pounds per year.

TUESDAY SESSIONS

Session Number 3 – Energy (continued)

3:45 PM - 4:15 PM

California Public Utilities Commission Rulemaking To Promote Water-Energy Nexus Programs

Representative TBD, California Public Utilities Commission

The California Public Utilities Commission (CPUC) developed an Order Instituting Rulemaking into Policies to Promote a Partnership Framework Between Energy Investor Owned Utilities (IOUs) and the Water Sector to Promote Water-Energy Nexus Programs. The final details of this Rulemaking will be discussed and how the CPUC envisions the future development of robust Water-Energy Nexus programs between California's IOU energy companies and the water sector. Attendees will learn how to engage their energy providers to help enhance their utility energy efficiencies.

4:15 PM - 4:45 PM

Water Utilities Perspective to the CPUC Rulemaking To Promote Water-Energy Nexus Programs

Jack Hawks, California Water Association

The California Public Utilities Commission (CPUC) developed an Order Instituting Rulemaking into Policies to Promote a Partnership Framework Between Energy Investor Owned Utilities (IOUs) and the Water Sector to Promote Water-Energy Nexus Programs. The final details of this Rulemaking will be discussed and how the CPUC envisions the future development of robust Water-Energy Nexus programs between California's IOU energy companies and the water sector. Attendees will learn how to engage their energy providers to help enhance their utility energy efficiencies.

4:45 PM - 5:15 PM

Energy Companies Response to the Final California Public Utilities Commission (CPUC) Water-Energy Nexus Proceeding Decision

The California Public Utilities Commission has now completed its Order Instituting Rulemaking into Policies to Promote a Partnership Framework Between Energy Investor Owned Utilities and the Water Sector to Promote Water-energy Nexus Programs. This presentation will provide insight into how Pacific Gas and Electric will be implementing the final decision and how water utilities can optimize their participation by reducing their energy needs by increasing their efficiencies in cooperation with PG&E.

Session Number 4 – Advanced Water Treatment

2:00 PM - 3:00 PM

Developing an Advanced Water Treatment Operator Certification Program--Issues & Progress

Angela Cheung, Santa Clara Valley Water District and Erin Mackey, Brown & Caldwell

Participants in this session will learn about the technical and regulatory issues related to developing an advanced water treatment certification and the committee's progress on answering these questions.

TUESDAY SESSIONS

Session Number 5 - Water Management & Efficiency

3:45 PM - 4:15 PM
Smart Infrastructure Solutions for Drought Mitigation
Todd Stocker, Aclara

Participants in this session will learn how technology can be used to reduce non-revenue water loss and will focus on how data can be used in various stages of the water audit process to make operational improvements.

4:15 PM - 4:45 PM
Case Studies for Water Management Strategies to Achieve Hex Cr Compliance
Tim Williams, Kennedy/Jenks Consultants

This presentation will share various strategies that several water systems in California are taking to comply with the new Hex Chromium drinking water standard that many water agencies are facing.

4:45 PM - 5:15 PM
Lake Don Pedro Community Services District – Developing a New Water Supply During the Drought Emergency
Mike Vasquez, Kennedy/Jenks Consultants

Participants will learn about the District's journey in developing a new groundwater supply during California's drought emergency as the District's surface water source at the Lake McClure Barrett Cove intake dries up.

Session Number 6 – Partnership for Safe Water

2:00 PM - 3:00 PM
Partnership for Safe Water: Optimization Programs and Case Studies
Panel Discussion to include: Cynthia Andrews-Tate – Long Beach Water Department, Robert Cheng – Coachella Valley Water District, Adam Feffer – San Jose Water Company, Hubert Lai – East Bay Municipal Utilities District, Barbara Martin – AWWA and Jessica Cullins – Modesto Irrigation District

This presentation will provide attendees with an overview of the Partnership for Safe Water program and how it relates to utility management principles, such as EUM, in addition to water quality. Case studies will share water treatment plant and distribution system lessons learned and success stories from local participating utilities including East Bay Municipal Utilities District, Long Beach Water Company, Modesto Irrigation District, and San Jose Water Company. Water quality data from utilities will be presented, demonstrating the program effectiveness.

TUESDAY SESSIONS

Session Number 7A - Source Water Quality

3:45 PM - 4:15 PM

EPA Movement Toward an Adaptive Systems Approach to Source Water Management and Regulation of Cyanotoxins in Drinking Water

H Kenneth Hudnell, Medora Corporation

Participants in this session will learn the likely near future for EPA's strategic plan to protect source waters from cyanobacteria and cyanotoxins, cyanotoxin monitoring requirements, and cyanotoxin regulation through maximum contaminant levels.

4:15 PM - 4:45 PM

The Use of Bubble Aeration, Catalytic GAC, and Ion Exchange For Removal of Hydrogen Sulfide In Groundwater

Kenny Chau, Hazen and Sawyer

Participants in this session will learn about the pilot performance of three non-conventional treatment processes comprising of a bubble aeration process, catalytic granular activated carbon (GAC), and ion exchange for sulfides removal and other constituents in challenging groundwater sources.

4:45 PM - 5:15 PM

Algal Toxin Monitoring at San Francisco Public Utilities Commission Reservoir and Comparison of Bench-Test and Full-Scale Treatment Performance

Gregg Olson, San Francisco Public Utilities Commission

How San Francisco Public Utilities Commission is monitoring algal toxins in a source water reservoir and how algal toxin bench tests and the AWWA calculator compare to full-scale treatment monitoring results.

Session Number 7B - Water Treatment

2:00 PM - 2:30 PM

Investigating Coagulant Aid Alternatives to polyDADMAC Polymers - Pilot Studies

Rich Brown, Environmental Engineering & Technology, Inc.

Nitrosamines are potential carcinogenic agents in drinking water. Nitrosamines are occasionally present in some source waters. However, most nitrosamines in drinking water are formed by reaction of precursor material with chloramines in chloraminated water. Nitrosamine precursor material can be present in the source water (naturally occurring or contributed by upstream wastewater discharges) or it can be contributed by polyallyldimethlyammonium chloride (polyDADMAC) or epichlorohydrin dimethlyamine (epi-DMA) polymers used to enhance particle removal in drinking water. This research focused primarily on ways to reduce nitrosamine precursor material contributed by polyDADMAC, but any of these approaches can also be applied to situations where epi-DMA polymers are used.

2:30 PM - 3:00 PM

The Effects of Bromide in Source Water on Residual Chlorine Analytical Methods

Vadim Malkov, Hach Company

Drinking water utilities, primarily in drought-stricken Western US, more and more frequently utilize water reuse technologies. This source water, especially under influence of seawater in coastal regions contains higher concentrations of NOM and especially bromide, which may form alternate and unwanted products in reactions with oxidants, e.g. ozone and chlorine. The brominated species may also form in chloramination processes and create largely unknown and unexpected difference in results of analytical methods measuring residual disinfectant, specifically DPD and Indophenol.

TUESDAY SESSIONS

Session Number 7B - Water Treatment (cont'd)

3:45 PM - 4:15 PM

Treatment for a Groundwater System with Trihalomethane Compliance and Naturally Occuring Ammonia

Tarrah Henrie, Corona Environmental Consulting and Rick Joyner, Quad Knopf

Corona Environmental Consulting (Corona) was contracted to conduct a Total Trihalomethane (TTHM) mitigation study for a central valley city. Depending on the chlorine dose applied the TTHM concentration can be as high as twice the Maximum Contaminant Level (MCL). Corona identified additional water quality parameters that required further study to determine the optimal treatment approach. Several additional water quality challenges have been identified (e.g, ammonia, maintaining distribution system chlorine residual, color, total organic carbon (TOC), odor, arsenic, iron and manganese) whose presence complicated the evaluation.

4:15 PM - 4:45 PM

When Performance Doesn't Match Design: Troubleshooting Operational Challenges at a Large Arsenic Treatment Facility

Eli Townsend, Corona Environmental Consulting

Will learn problem solving techniques used to address discrepancies between design and performance using a ten year old arsenic treatment plant as the case study. The lessons learned may help other treatment facilities using coagulation/filtration for arsenic removal.

4:45 PM - 5:15 PM

Nutrient Removal Optimization for Groundwater and Surface Water Remediation

Amanda Scott, GE Analytical Instruments

EPA and public health concerns about nutrient levels in drinking water require water plants to improve treatment methods. Nitrogen-based compounds from run-off, fertilization, sewage, and industry pose year-round problems to utilities trying to meet regulated nitrogen limits. Due to heightened industrial, human, and farming waste, nitrates have been recorded in high concentrations in both surface water and groundwater. In particular, high nitrate levels have been found in California groundwater wells. Therefore, nitrogen removal is becoming an important step in water treatment. One such method, biological denitrification, uses bacteria in an anaerobic setting to feed off a

TUESDAY SESSIONS

Session Number 8 - Research

2:00 PM - 2:30 PM
Premise Plumbing 101
Marc Edwards, Virginia Polytechnic Institute & State University

Premise Plumbing 101 is for all conference attendees. They will learn about why building systems are important factors for water distribution water quality.

2:30 PM - 3:00 AM
Hot and Cold Water Problems With Inorganics in Building Plumbing
Marc Edwards, Virginia Polytechnic Institute & State University

Participants will learn about risk factors and solutions that commercial and private residences have identified to better manage building system water quality issues.

3:45 PM - 4:15 PM
Are Green Buildings Going to Make You Blue?
William Rhoads, Virginia Polytechnic Institute & State University

"Are Green Buildings Going to Make You Blue?" will examine design of green builidings and indications that multiple collateral consequences also need to be considered. The audience will have a better understanding of the state of science for "green buildi

4:15 PM - 4:45 PM
Emerging Problems with Opportunistic Premise Plumbing Pathogens
William Rhoads, Virginia Polytechnic Institute & State University

This talk will focus on technical aspects of the problems being identified within building plumbing systems and how these problems are being researched at Virginia Polytechnic Institute & State University.

4:45 PM - 5:15 PM
Impacts on opportunistic pathogens in premise plumbing systems: plumbing conditions, water AOC and the microbiome
Dongjuan Dai, Virginia Polytechnic Institute and State University

Emerging pathogens in distribution system water quality is a high priority for all water professionals. Virginia Tech has been working on possible affects of premise plumbing items for many years and will share that with conference attendees through this presentation.

TUESDAY SESSIONS

Session Number 9 - Operator

2:00 PM - 2:30 PM
Surface Water Treatment Rules
Kurt Souza, Division of Drinking Water - California

The presentation will take the audience through a brief history and evaluation of the regulations which govern surface water treatment. The participants will gain a better understanding of the regulations, how they pertain to each portion of a treatment facility, and how to optimize your treatment performance in order to produce pure, wholesome and potable water at all times and under all conditions. The presentation will include conditions from the original surface water treatment rule, the Long Term 1 and Long Term 2 Rules along with the Disinfection Byproducts Rule which always has an impact on surface water treatment. The Cryptosporidium Action Plan will also be mentioned as a tool for operators to optimize their treatment facility and set goals and critical control points within the treatment facility to ensure continuous compliance.

2:30 PM - 3:00 PM
Impacts of Historic Drought on Water Treatment Processes
Lei Hong, Santa Clara Water District

Participants in this session will learn about impacts of drought on the source water quality and corresponding treatment processes that were implemented at Santa Teresa Water Treatment plant to manage multiple competing constituents in the raw water.

3:45 PM - 4:15 PM
Pre-oxidation and Coagulation Fundamentals
Joe Drago, Kennedy/Jenks Consultants

The objective of this presentation is to provide operators with a better understanding of two key treatment processes, pre-oxidation and coagulation, which are essential to achieving water quality objectives in surface water treatment plants. These two initial processes have historically been used to condition suspended and colloidal particles (turbidity and microbial organisms), natural organic matter (NOM), color, taste and odor causing compounds, and inorganic contaminants (e.g., iron and manganese) for removal from surface water sources.

4:15 PM - 4:45 PM
Pretreatment Process Fundamentals
Craig Thompson, West Yost Associates

Attendees will learn how drinking water regulations and different source water characteristics impact pretreatment process selection and which oxidants, coagulants, and coagulant aids can be used to optimize pretreatment and other treatment systems' performance.

4:45 PM - 5:15 PM
Fundamentals of Granular Media Filtration for Surface Water Treatment
Gordon Williams, Ph.D., P.E. East Bay Municipal Utility District

Granular media filtration is the backbone process of traditional water treatment, providing an important barrier, removing particulates and pathogens. This presentation will provide an overview of the granular media filtration process geared for water treatment plant operators. Filtration design balances the tradeoffs of effluent quality versus minimizing filter head loss, maximizing filter run length, and ultimately the filter production capacity. This presentation will include understanding the components of the filter, basics of filtration theory, media selection, key trade-offs in filter design, filter backwashing, and understanding filter performance.

WEDNESDAY SESSIONS

Session 10 - Tanks, Reservoirs and Structures Committee

8:00 AM - 8:30 AM

A Case Study: Permitting, Designing and Constructing a Pre-stressed Concrete Water Tank on California's Coast

Quanxin Mao, SRT Consultants

This case study illustrates the level of effort, perseverance, flexibility, and innovation that water districts need to demonstrate to complete small to middle size construction projects on the environmentally protected California Coast.

8:30 AM - 9:00 AM

AWWA Tank Standard D101

Mark Griffin, Tank Industry Consultants

This presentation will give a brief overview of the AWWA Tank Standards, the standard development and revision process, and how tank owners and engineers can utilize the standards to obtain quality tank construction and rehabilitation projects and facilitate communication between all parties. The presentation will provide insight into what will and will not be included in the new D101 standard and how it will become a valuable tool for tank owners and operators nationwide.

9:00 AM - 9:30 AM

Tips for a Successful Protective Coating Application Project in Water Treatment Structures

Manny Najar, V&A Engineering

This presentation will be an overview of recommended processes for gathering information before a project is started on an new or existing facility. Engineering staff and operations staff will learn about the different types of coatings and where they should be used within water treatment plants, transmission pipes, and storage tanks. Learn several tips for coating selection, coating longevity, and avoiding cost over runs.

10:30 AM - 12:00 PM

Roof Construction Details for Asset Preservation of Welded Steel Storage Tanks

Leslie Scott, Paso Robles Tank

This presentation will educate attendees on enhanced asset preservation strategies for new welded steel tanks and for refurbishment projects for existing welded steel tanks. There are certain aspects of tank design, tank construction details, and tank coating systems that can be improved using requirements that exceed the minimum requirements of the AWWA standards. The objective of this presentation is to identify those options available to owners and specifiers that will enhance the conditions for the application of protective coatings, improve corrosion protection of the roof and roof structure portions of the tank, reduce long-term maintenance requirements of these areas, and strengthen a utility's tank asset preservation program.

WEDNESDAY SESSIONS

Session 11 - Security and Emergency Planning

1:30 PM - 2:00 PM

Developing a Customer Complaint Surveilance Program for Water Contamination Detection

Sheila Garret, San Francisco Public Utilities Commission

Participants in this session will learn the process and steps used in developing a comprehensive consumer complaint collection and data management system, setting alert thresholds for event detection, and developing notification and response procedures. In June 2008, SFPUC received a grant from United States Environmental Protection Agency (EPA). to implement a pilot water security program. As part of the grant project, SFPUC developed a comprehensive consumer compliant surveillance program. The corner stone of the program is employing Inspectors quickly in the field to detect any unusual pattern of consumer compliant calls and improve detection and response to any potential water contamination event.

2:00 PM - 2:30 PM

A Low Cost, Robust Emergency Water System

John Novitsky

The Fire Chief of the Woodside Fire Protection District, along with a citizen, have come up with an inexpensive way to make his 3 city fire district "self-sufficient". The Fire Chief does not want to be in the business of providing a water utility; he wants to be the first responder to emergencies.

In this presentation, we will examine the alternatives ($/liter, bottled water, vs FEMA supplied vs locally produced), and show how putting a low cost, robust purification system into each CERPP neighborhood both reduces risk, and saves tons of money.

2:30 PM - 3:00 PM

Multi-Agency Collaboration for Improved Seismic Resilience of Imported Water to Southern California

David Clark and Craig Davis, Metropolitan Water District

Participants will learn how three major California water agencies are cooperating to improve the seismic resilience of imported water to southern California which will benefit over 18 million residents.

3:30 PM - 4:00 PM

Asset and Perimeter Security

Thomas M. Murphy, Heightened- Security Inc.

Participants will learn methods to secure all water authority perimeters and assets from vandalism, theft and terrorist activities.

4:00 PM - 4:30 PM

Cyber Threats to Critical Infrastructure

Ronald T. Williams, Talon Industries

Participants in this session will learn about the nature and scope of Cyber Threats to Critical Infrastructure industry/systems such as SCADA

4:30 PM - 5:00 PM

Mutual Aid: The Challenges of Providing and Recieving Help

Mary Ellen Carroll, San Francisco Public Utilities Commission

Participants will learn the challenges associated with providing and accepting mutual aid in a disaster, specific to a water utility. Participants will get an overview of the local, state and federal partners that provide mutual aid to utilities during and after a disaster, what their respective roles are, and why communication between these entities is critical.

WEDNESDAY SESSIONS

Session 12A - Environmental, Health & Safety

8:00 AM - 9:00 AM

Screw Press Performance for WTP Solids Residuals Dewatering

Sami Kader, Water Works Engineers

Participants in this session will learn about screw press operational theory, and considerations for practical application to water treatment plant residual solids handling.

9:00 AM - 9:30 AM

Recycled Water Treatment Permitting 101

Uzi Daniel, West Basin MWD

Recycled Water continues to play a larger role in the management of our water portfolios. Recycled Water can come in more than one common “Title 22” form as demonstrated by the West Basin Municipal Water District which is able to produce 5 types of recycled water. Permitting recycled water treatment and distribution has some specific nuisances in addition to common treatment plant practices. Some regulations are still unclear on how to classify recycled water treatment therefore, often toss both drinking water and wastewater regulations at them. This presentation should enlighten attendees to the basic permits required to treat and serve recycled water and include some of the specialty cases as well.

Session 12B - Environmental, Health & Safety & Partnering with Operators Committee

10:00 AM - 11:00 AM

Touch this BMP!

Neil McQueen, McQueen Environmental Consulting

Participants will learn about the latest sediment removal and dechlorination BMPs that can be deployed during a range of real drinking water discharges. They'll also become familiar with EPA approved handheld meters for Total Chlorine Residual and Turbidity.

WEDNESDAY SESSIONS

Session 12C - Environmental, Health & Safety and Engineering & Construction

1:30 PM - 2:00 PM

California's NPDES Storm Water Construction General Permit

Russell Hansen, Central Valley Regional Water Board

Participants will learn about the current regulations, how the permit impacts new construction projects and possible future updates to these regulations with a discussion on areas the program could be improved.

2:00 PM - 2:30 PM

Drinking Water System Discharges General Permit

Renan Jauregui, California State Water Resources Control Board/Division of Water Quality

The National Pollutant Discharge Elimination System (NPDES) Program is a Federal Regulating Program established under the Clean Water Act Section 402. Its main objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The NPDES regulations prohibit the discharge of any pollutant from a point source to US waters unless the discharge is allowed by an NPDES permit. Participants in this session will learn what the NPDES program is, what is an NPDES Permit, why Drinking Water Systems may need the General NPDES Permit, How the General NPDES Permit benefits the Water Systemsm, what is required and how to comply with the General NPDES Permit.

2:30 PM - 3:00 PM

NPDES in 2016: Are we better off?

Brandy Hancocks, Golden State Water Company

In 2014, the California State Water Resources Control Board adopted the Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Drinking Water Systems. Looking at 38 drinking water systems spread across 10 counties in California, this presentation will look for the winners and losers under this new permit while providing templates and checklists to ensure your utilty is in compliance.

3:30 PM - 4:00 PM

Statewide NPDES Discharge Enrollment For Drinking Water Systems – The Process, and Lessons Learned.

Kim Gregory, California Water Service

Participants will learn about the process taken by California Water Service to complete enrollment applications to the State Water Resources Control Board for the Company's 57 systems. Discussion will cover what worked well in the enrollment process, as well as lessons learned overall.

4:00 PM - 5:00 PM

Sharing Experiences Implementing the SWRCB Potable Discharge Permit

Greg Buncab, East Bay Municipal Utility District

Participants will learn about East Bay Municipal Utility District's lessons learned and challenges as they work through the implementation of the SWRCB's potable discharge NPDES permit.

WEDNESDAY SESSIONS

Session 13 - Desalination & Water Reuse

8:00 AM - 8:30 AM

Broad Application of Cost Effective ZLD Technology for Concentrate Management

Brent Alspach, Arcadis

Participants will learn practical information about zero liquid discharge (ZLD) technology, including advantages and disadvantages, as well as an innovative examination of associated costs.

8:30 AM - 9:00 AM

High Salinity Water Desalination Test Protocol for Ocean Water

Peter Shen, IDE Technologies

Participants will learn about chemical analysis, permitting and operational approaches to manage high salinity concentrate at the Carlsbad Desalination Plant, the largest desalination plant in the western hemisphere as of December 2015

9:00 AM - 9:30 AM

Resilient Water Supply Planning – Going from 100 Ideas to a Staged Water Supply Diversification Plan

Heidi Luckenbach, City of Santa Cruz and Erin Mackey, Brown and Caldwell

Participants in this session will learn about how engineers can effectively address both technical and non-technical issues related to developing water supply and treatment capital projects with public involvement.

10:30 AM - 11:00 AM

Surrogate Monitoring Performance for Pathogen Removal at the Silicon Valley Advanced Water Purification Center

Jeannine Larabee, City of Santa Clara

Presentation attendees will learn about the use and research of several different online surrogates in the Silicon Valley Advanced Water Purification Center to detect pathogen breakthrough across microfiltration, reverse osmosis, and ultraviolet light processes. Results showing the sensitivity of each surrogate and the impact on advanced treatment processes and confidence in pathogen removal will be presented.

11:00 AM - 11:30 AM

Big Data – The Use of Statistical Tools and Probability Distribution Functions to Predict DPR Performance

Austa Parker, Carollo Engineers

Participants in this session will learn about work being performed as part of WateReuse Research Foundation 14-16. This project focuses on the use of statistical tools to use online monitoring data from plants to understand what failures are occurring, how often they occur, and the extent to which water quality is compromised when a failure occurs. The potential health risks posed by these failures will be quantified.

11:30 AM - 12:00 PM

Making NEWater – Living The Singapore Experience With Recycled Water.

Melanie Tan, Kennedy/Jenks

Participants in this session will learn about living with recycled water - Melanie Tan grew up in Singapore and was the Plant Manager of the 21.5 MGD Bedok NEWater Factory. She will share her experience on running the facility, and what it feels like to live on a small island nation with recycled water as a major resource.

WEDNESDAY SESSIONS

Session 13 - Desalination & Water Reuse (cont'd)

1:30 PM - 2:00 PM

Online THM Instrument Monitors Free Chlorine Use for Potable Reuse Applications

Rick Bacon, Aqua Meteorology Systems

A case study of the Padre Dam Municipal Water District in Santee, California will be reviewed in the presentation; detailing the benefits of using an online THM monitor to measure DBP formation, aid the utility in evaluating their innovative free chlorine disinfection strategy, and ensuring the safety of potable reuse water produced at an 100,000 gpd Advanced Water Purification Demonstration Project.

2:00 PM - 2:30 PM

A Multipronged Approach Kept Brentwood as a Green Spot in the State of Brown

Casey Wichert, City of Brentwood

Participants will learn how foresight and planning, coupled with perseverance and adaptability, mitigated the effect of the drought on the quality of life in Brentwood

2:30 PM - 3:00 PM

Development and Use of Numerical Groundwater Models for Recycled Water Planning and Permitting

Brian Villalobos, Geoscience Support Services

Participants will learn how groundwater models are constructed and used to assess the impacts of adding treated wastewater to the groundwater aquifer through injection, surface spreading, or land application

3:30 PM - 4:00 PM

Reycled Water Funding

Ginger Bryant, Bryant & Associates and Pilar Quintana, The Onate Group

The presentation will provide an overview of both State and Federal funding assistance for Recycled Water and Desalination Projects and will review current opportunities in addition to those proposed in upcoming propositions and legislation. Also to be discussed are perspectives and thinking behind these potential new funding sources and how this information could help position your project for implementation funding assistance.

4:00 PM - 4:30 PM

Development of a Framework for Direct Potable Reuse

Jeff Mosher, National Water Research Institute

Participants in this session will learn about guidance for direct potable reuse (DPR). The framework is a starting point for a larger discussion of DPR regulations and addresses the wide range of topics to successfully implement DPR. This effort was funded by WateReuse, with support from AWWA and WEF.

4:30 PM - 5:00 PM

Operator Certification for Potable Reuse Facilities

Erin Mackey, Brown and Caldwell

This paper will describe how the CA-NV Section AWWA is working to address the shortfalls in the existing Operator Certification Program and how all the parallel activities among the California PR Expert Panel on Potable Reuse, the DPR Advisory Group, and others must be integrated into the development of the ultimate program.

WEDNESDAY SESSIONS

Session 14A

8:00 AM - 8:30 AM

Removal of Fecal Indicator Bacteria from Urban Stormwater Using Biochar Amended Biofilters: Effect of Biological Aging

Nabiul Afrooz, ReNUWIt/Stanford University

Participants in this session will learn about the effect of natural organic matter and biofilm formation on pathogen removal efficiency of stormwater biofilters. We will discuss various mechanisms responsible for E. coli removal in porous media in light of clean bed filtration theory; quantification of biofilm growth in a stormwater biofilter; and distribution of retained bacteria in a biofiltration unit.

8:30 AM - 9:00 AM

Fungal Degradation of the Urban Use Pesticide Fipronil

Jordyn Wolfand, ReNUWIt/Stanford University

Participants in this session will learn about ongoing research about the use of white rot fungi to degrade the persistent and prevalent urban-use pesticide, fipronil. We will discuss the use of white rot fungi in remediation, the transformation of fipronil by fungi, and potential applications for stormwater treatment.

9:00 AM - 9:30 AM

Cost-effective Strategies for Recharging Urban Groundwater With Stormwater and Recycled Water

Negin Ashoori, ReNUWIt/Stanford University

This presentation discusses ongoing research to identify the most cost-effective strategies for recharging urban groundwater using a combination of stormwater and recycled water. We are developing a computational model that can estimate the costs (i.e., funding needs) and benefits (i.e., additional water recharged) associated with connecting recycled water production facilities to stormwater spreading basins. Designing a system to connect recycled water to spreading basins involves many variables and typically does not have an obvious optimal solution; our model facilitates this design process by estimating the cost-effectiveness of different design scenarios and identifying the most cost-effective strategies. We are applying this model to a case study of Los Angeles to investigate how groundwater recharge with recycled water can be optimally implemented in a semi-arid city.

Session 14B - Water Well Technology and Government Affairs

10:30 AM - 12:00 PM

Sustainable Groundwater Management Act

Steven Springhorn, DWR

90 minute panel discussion on the on SGMA -Basin Boundary Revisions, Groundwater Sustainability, Plan Regulations and the State Board Role.

WEDNESDAY SESSIONS

Session 15 - Meter Committee

1:30 PM - 3:00 PM

Improving Water System Operations and Customer Service to the End User Through Use of an AMI Deployment. Actual Deployed Systems and Finding Will Be Reviewed

Rich Sanders, Zenner USA

Participants in this session will learn management of key assets and resources is a critical topic among utility executives. From balancing the load on an electrical grid to managing water supplies, minimizing labor costs and maximizing ROI on infrastructure investments, utilities are actively seeking a smarter approach.

3:30 PM - 4:00 PM

Why are Fixed Networks Challenging to Deploy?

Michele Harvey, Badger Meter

Participants will learn why radio frequency is important to fixed network device performance, what factors affect radio frequency line-of-site performance as demonstrated with real world scenarios and how utilities can mitigate radio frequency challenges.

4:00 PM - 4:30 PM

How Are Utilities Using Hourly Meter Reads to Find and Resolve Billing Disputes?

Michele Harvey, Badger Meter

Participants will learn how mobile and fixed network meter reading system provide hourly meter reads to utilities and how utilities are using hourly meter reads to find and resolve billing disputes using actual utility examples.

Session 16 - Water Treatment

8:00 AM - 8:30 AM

1,2,3-TCP Occurrence, Sources, Regulatory Status, and Cost Recovery Strategies

Todd Robins, Robins Borghei LLP

Participants in this session will learn everything they need to know about the groundwater contaminant 1,2,3-trichloropropane (TCP), including information about TCP's occurrence, health effects, sources, regulatory status, treatment options and cost-recovery strategies being pursued by dozens of affected utilities in California.

8:30 AM - 9:00 AM

Why Is 1,2,3-Trichloropropane (TCP) So Prevalent In California's Central Valley?

Ryan Alward, GEI Consultants

Participants will learn about TCP characteristics and hydrogeology of California's Central Valley as it relates to groundwater contamination from soil fumigants containing TCP. Learning outcomes: A better understanding of how California's hydrogeology plays a roll in the spatial distribution of TCP.

9:00 AM - 9:30 AM

Lessons Learned From Full Scale 1,2,3-Trichloropropane (TCP) Treatment

Stephanie Hearn, GEI Consultants

Participants in this session will learn about intricacies of treating for 1,2,3-trichloropropane (TCP). Full scale treatment systems installed at wells with fairly similar water quality have demonstrated significantly different performance. This presentation will highlight lessons learned from operating these systems.

WEDNESDAY SESSIONS

Session 16 - Water Treatment (cont'd)

10:30 AM - 11:00 AM

Enhanced coconut-based carbons for 1,2,3-trichloropropane treatment

Adam Redding, Evoqua Water Technologies

Participants in this session will learn about the use of enhanced coconut-based carbons for treating 1,2,3-trichloropropane (TCP) and methods for specifying carbons for TCP treatment.

11:00 AM - 11:30 AM

Upgrading 25 Year Old Air-Fed Ozone System to Meet T&O

Ali Sheikholeslami, East Bay Municipal Utility District

Participants will learn about East Bay Municipal Utility District efforts to upgrade from air-fed to oxygen-fed ozone systems at two of its water treatment plants (WTPs). The discussion will include design and operational challenges, process modifications and improvements, and control strategy changes.

11:30 AM - 12:00 PM

California and Nevada are the Epicenter of Ozone Use in Water Treatment in North America

Craig Thompson, West Yost Associates

The first use of ozone at a water treatment plant in the United States was in 1940. The use of ozone as part of water treatment has increased significantly since the early 1980s. California and Nevada account for over 40% of the water treatment capacity in the United States that uses ozone. The number and combined capacity of water treatment plants in California and Nevada that use ozone, and the reasons that ozone is part of the treatment process has evolved during the past 30 years. Participants will learn about ozone system trends and reasons that ozone is used to treat a wide range of source water supplies.

1:30 PM - 2:00 PM

A Definitive Demonstration that Pipelines Can Provide Perfect Plug Flow Behavior

Craig Thompson, West Yost Associates

Participants in this session will learn how a tracer study demonstrated that using a pipeline as a disinfection contactor can achieve perfect plug flow behavior for pipeline length to diameter ratios as low as 16 to 1 and as high as 190 to1.

2:00 PM - 2:30 PM

Verifying CT Compliance: Tracer Study Results Prove Hydraulic Efficiency of an Annular Raceway Contactor Designed within a Limited Footprint

Jacquelyn Cho, San Francisco Public Utilities Commission

Participants in this session will learn about the San Francisco Public Utilities Commission's (SFPUC) treated water reservoir design that consists of an annular raceway chlorine contactor constructed around a treated water storage tank, and the tracer study performed to verify the chlorine contactor's hydraulic efficiency.

2:30 PM - 3:00 PM

Chromium VI Treatment Research Update

Robert Thompson, California Water Service

WEDNESDAY SESSIONS

Session 16 - Water Treatment (cont'd)

3:30 PM - 4:00 PM

Building for the Future - California's Lower MCL for Hexavalent Chromium

Scott Rogers, Indio Water Authority

This presentation will explore compliance planning for the new chromium-6 MCL, management of fast track projects, evaluation of Best Available Technology (BAT), design of ion exchange treatment facilities, coordination with regulators, equipment procurement and importance of construction management and lessons learned from the entire process.

4:00 PM - 4:30 PM

Updating cost and performance for Cr(VI) Treatment Technologies

Craig Gorman, Corona Environmental Consulting

This presentation will provide a comparative look at the three leading Cr(VI) technologies, with an emphasis on recent process advances that have resulted in the technologies becoming more cost effective. The presentation will describe the site constraints and water quality constituents that have an impact on the treatment performance and residuals management and provide insight that utilities should consider before selecting a treatment strategy. Finally, we will discuss the results and cost implications of side-by-side RCF and SBA-IX pilot testing conducted at a utility in northern California.

4:30 PM - 5:00 PM

Minimizing Waste Brine Production from Ion-Exchange Plants Operated for Cr(VI) Removal from Groundwater

Issam Najm, WQTS, Inc.

Participants will learn about the feasibility of brine reuse in IX plants to reduce waste brine disposal cost.

Session 17 - Distribution System Water Quality

8:00 AM - 9:00 AM

Best Practices of Unidirectional Flushing (UDF): Improve Water Quality and Reduce Customer Complaints

Ramsey Hemaidan, Wachs Water Services/Pure Technologies

Join this audience and explore the essential steps to successfully creating and executing unidirectional flushing programs. Participants will gain new and valuable insight into the process by examining how two UDF programs overcame these challenges and achieved sustainable results.

9:00 AM - 9:30 AM

Point Of Use; Recycle Water By The Homeowner

Colter Andersen, Zone 7 Water Agency

10:30 AM - 11:30 AM

Water Quality Improvements in Clearlake Using Partnership for Safe Water as a Benchmarking Tool

Kate Martin, Golden State Water Company

This presentation will describe how the findings from the self-assessments performed have been applied at the Clearlake system to improve and optimize treatment plant and distribution system operations. The presenters will also describe how the changes implemented have improved water quality in the Clearlake system. Learning outcomes will include benefits gained from performing detailed self-assessments as part of the Partnership for Safe Water programs and how the Partnership's performance goals can be used as a benchmark to ultimately improve water quality.

WEDNESDAY SESSIONS

Session 17 - Distribution System Water Quality (cont'd)

11:30 AM - 12:00 PM
Important Considerations Prior to Bringing Online a New Source Water
Benjamin Klayman, Black &Veatch

Case studies will be presented highlighting challenges utilities have faced when integrating new water supplies into existing distribution systems without conducting proper due diligence first. Examples given will highlight both regulatory non-compliance (such as lead and copper rule, disinfection byproduct rule, and total coliform rule violations) issues, aesthetic concerns (such as taste and odor or discolored water, secondary MCL violations), and operational issues (such as excessive scaling).

1:30 PM - 2:00 PM
Spray Aeration
Guy Schott, State Water Resources Control Board, Division of Drinking Water

With the implementation of the Stage 2 DBP rule, many public water systems are finding it difficult to meet maximum contaminant levels for total trihalomethanes (TTHMs) at compliance monitoring locations. One post-treatment option for reducing TTHMs is spray aeration, in which water is sprayed through nozzles mounted in storage tanks. As water in the storage tank is recirculated through a specialized nozzle, TTHMs are volatilized and vented to atmosphere reducing dissolved TTHMs. Discussions will focus on spray nozzle characteristics, nozzle distance to water surface, tank operating volume, tank turnover and TTHM formation potential for determining the proper spray recirculation rate and air exchange rate for the reduction of TTHMs. Software (Excel) will be demonstrated for simple spray aeration designs incorporating empirical equations based on laboratory research (Journal AWWA, May 2014, Influence of selected variables on trihalomethanes removals by spray aeration).

2:00 PM - 2:30 PM
Open System Aeration
Kevin Chang, Los Angeles County Waterworks Division

Participants in this session will learn how the efficiency of Trihalomethane (THM) aeration is subject to normal operations in an open system, particularly with the observed distribution system in Palmdale, CA.

2:30 PM - 3:00 PM
Aeration THM Reduction
Charis Thompson, City of Santa Cruz

Participants will learn that THM mitigation strategies already being implemented or under review for implementation can be aided by the high frequency of rapid and reliable data on THM and THM Formation Potential levels available through online monitors.

Session 17B - Management Development & Leadership

3:30 PM - 5:00 PM
Women Leaders in the Industry
Amanda Kimball, University of California at Davis

At this workshop you will hear from the woman who spearheaded the UC Davis census of women directors and highest-paid executives in California. This will be followed by a proaction cafe style discussion that will examine the current state of the industry for women and how to improve it.

WEDNESDAY SESSIONS

Session 18 - Research

8:00 AM - 8:30 AM
Premise Plumbing Pathogens
Jennifer Clancy, Corona Environmental Consulting

Participants in this session will learn about the microorganisms responsible for causing diseases - including Legionnaires' disease - due to degradation of water quality in building plumbing.

8:30 AM - 9:00 AM
Development of a Risk Management Strategy for Legionella
Mark W. LeChevallier, American Water

Factors contributing to increased risk, as well as best management practices, will be summarized. The results of this project will be invaluable in proactively addressing and mitigating potential risks from Legionella in drinking water and reclaimed water and will benefit water utilities, scientists, and public health regulators.

9:00 AM - 9:30 AM
Legionella Reduction in Buildings after Conversion to Monochloramine
June Weintraub, San Francisco Department of Public Health

Legionella presence was determined from repeat samples from 53 buildings before and after the municipal water utility switched from chlorine to monochloramine for residual disinfection. The results demonstrate the efficacy of monochloramine in controlling Legionella in hot water systems.

10:30 AM - 11:00 AM
Our SCADA system is secure, right? Wrong
Daniel Groves and Joel Cox, Arcadis

Participants in this session will learn about the top mistakes utilities make when addressing cyber security and how to avoid them.

11:00 AM - 12:00 PM
Industrial Control System Security
Curtis Horn, AECOM

We will cover best practices for assessing and limiting risk to industrial control systems. We will also go over fundamental cultural, organizational and business environment barriers to adopting such best practices and potential ways to overcome those barriers.

1:30 PM - 2:00 PM
Removal of Cyanotoxins and MIB with Powdered Activated Carbon (PAC)
Issam Najm, WQTS

Participants will learn about the effectiveness of different commercial PAC material at removing cyanotoxins and T&O chemicals from water under actual treatment conditions.

2:00 PM - 2:30 PM
Addressing Cyber Security Concerns In The Age of Big Data
Esteban Azagra, Arcadis

Participants in this section will learn how to implement best practices to fully leverage analytical and decision support tools that are becoming available to the industry, while protecting the IT infrastructure from cyber security risks.

2:30 PM - 3:00 PM
Implementing an On-line Monitoring System
Brandon Grissom, San Francisco Public Utilities Commission

This discussion will present lessons learned from San Francisco Public Utilities Commission (SFPUC) experience in implementing the SFPUC on-line monitoring system.

WEDNESDAY SESSIONS

Session 18 – Research (cont'd)

3:30 PM - 5:00 PM

Automating Water Quality Management Using Cloud Computing

Neno Duplan and Marian Carr, Locus Technologies

Participants will learn how to automate water quality management workflow process, from sample planning, field sample collection, chain of custody, laboratory management, data validation, EDD loading from the laboratory into a web-based system and reporting. The complete process is automated using cloud-computing.

Session 19A - Financial Management & Communications

8:00 AM - 9:00 AM

Water Budget Rates: Why & How

Tom Ash, Inland Empire Utilities Agency

Participants will learn why water budget rates were developed, why they work for the agency and the customer, and what the impact has been for agencies

9:00 AM - 9:30 AM

Educating Customers on Budget Based Tiered Rate Implementation and Individual Water Management"

Meggan Valencia, Rancho California Water District

Participants will learn from IT and Public Affairs on how they worked together to implement Prop 218 rate structure changes through innovation and technology that enabled their customers to manage their water consumption data at their fingertips.

10:30 AM - 11:00 AM

Managing the Media During Unpopular Large Water Rate Increases

Damon Micalizzi, Yorba Linda Water District

How a new GM came to the conclusion that water rates must be doubled and the personal and threatening backlash the PIO and others managed from the public and media.

WEDNESDAY SESSIONS

Session 19B - Communications

11:00 AM - 11:30 AM

Impact of the Drought on Outreach

James Maughan, Division of Drinking Water – California

The drought has received extensive media coverage and virtually all California water districts have conducted some sort of outreach effort. Participants will learn from SWRCB representatives and Associated California Water Agencies on how the statewide campaign was developed, funded, coordinated and how this worked in conjunction with Prop 218 efforts throughout the state.

11:30 AM - 12:00 PM

Avoiding the Water Catch 22

Megan Yoo Schneider, Moulton Niguel Water District

Participants in this session will learn about potential opportunities to promote long-term water conservation and education that benefits the community as a whole. Discover the value of communicating, both internally and externally, to promote healthy long-term water operations and management.

1:30 PM - 2:00 PM

Community Outreach for a New Community Water System

Brian Shoener, Provost & Pritchard

The residents of a small community (41 residential units) obtain drinking water from private wells. Many of these wells have nitrate concentrations above the drinking water standards. Due to the current drought conditions in the State, at least eight of the private wells have gone dry. Participants will learn about some of the issues involved with keeping a small, rural community updated and informed as they go through the process of transitioning from private wells to a community water system.

2:00 PM - 2:30 PM

Effective Public Engagement in Water Supply Diversification Planning

Erin D. Mackey, Brown & Caldwell

Like many water agencies across the United States, the City of Santa Cruz, California (City) faces long-term shortfalls in meeting its water supply needs. This relatively small coastal City is home to the University of California, Santa Cruz, a premier research institution and educational hub in the process of expanding its mission and campus, as well as the Santa Cruz Beach Boardwalk, an oceanfront amusement park operating continuously since 1907. The Boardwalk draws in millions of tourists a year. Access to a limited range of water supply alternatives creates a problematic water supply. The recent drought in California has further highlighted the need for a more robust, diversified, drought-tolerant water supply portfolio. Historically, development of potential new supply approaches has been contentious. Santa Cruz has a very active, involved local community, so in beginning the process of planning to diversify its supply portfolio, the City of Santa Cruz developed and implemented a unique community outreach program. This process helped inform and guide the identification and evaluation of a wide range of water supply alternatives with the goal of developing a supply diversification plan that is technically feasible but simultaneously reflects consideration of public concerns, preferences and values.

WEDNESDAY SESSIONS

Session 19C - Financial Management

2:30 PM - 3:00 PM

Energy Intensity From the Ground Up

M. Lorraine White, GEI Consultants, Inc. and Kathleen Ave, Sacramento Municipal Utility District

This presentation presents results of a project that examined the water systems in the Sacramento Region to assess opportunities to reduce greenhouse gas (GHG) emissions for the Sacramento Municipal Utility District (SMUD). Readily available data and agency information was analyzed to determine energy intensities, load profiles and other baseline energy data for water systems in the Sacramento Region. Analyzing the drivers associated with the energy intensities, the study team found numerous opportunities to increase water and energy efficiency in the region lower associated GHGs. SMUD is using this information to leverage funding opportunities and better inform conservation, efficiency, and renewable program investment decisions.

3:30 PM - 4:30 PM

Water Budget-Based Rate Structures in the Wake of San Juan

Jonathan Cruz and Drew Atwater, Moulton Niguel Water District

How can water utilities ensure their existing rate structures are compliant with the newly clarified Proposition 218 requirements? How does an agency prove compliance? What recourse is there for those agencies who may have been in compliance previously and are no longer compliant under the new ruling? What rate structures are actually permitted? In the wake of the San Juan Capistrano rate case decision, many agencies are left wondering what options they have with regard to Proposition 218 compliance. Further compounding matters is the lack of consensus in public understanding of what the ruling actually stipulates. Given the lack of consensus, navigating the post-San Juan ruling world can be difficult for agencies, if not impossible, without expert legal counsel. The goal of this presentation is to concisely summarize what rate structure assumptions have been declared legal vs. illegal according to the Superior Court ruling (per the published opinion) and the superior defensibility of a Water Budget-Based Rate Structure as demonstrated by a number of successful examples.

4:30 PM - 5:00 PM

Brown Lawns and the Changing Landscape of California Water Rates: Next Steps?

Greg Clumpner and Kim Boehler NBS Utility Rate Study Practice

Residential water users in California have responded in a significant, and probably unanticipated fashion to the extended drought and the plea from Governor Brown and local water officials to “conserve, conserve, conserve…”. This presentation will cover some of the “new” (and often amusing) suggestions being discussed in public debates about water rates. We will combine this with the most fundamental and simple rate-making principles that should be guiding the debate in crafting new and improved rate structures.

WEDNESDAY SESSIONS

Session 20A - Operator

8:00 AM - 9:30 AM
Operator Roundtable
Larry Lyford, Helix Water

Operators join to share the issues associated with the water industry. This is where you share your solutions and problems with others who may have already resolved the issues you may be having, This is a panel session made up industry professionals ready to help and share their years of experience gained in the water industry. This is a panel session made up industry professionals ready to help and share their years of experience gained in the water industry. We may discuss supervision, safety, coagulation, filtration, water shed issues, regulations new and revised, water quality and more.

10:30 AM - 11:00 AM
FLASH MIXING, G, It is Important to Operators
James Samples and Jaime Halter, City of Redding

Learning Outcome: How we diagnosed the problem and ultimately resolved the flash mixer issue to ensure Tilte 22, 64659 Reliability requirements are met. i.e. Standby replacement equipment available to assure continuous operation and control of unit process for coagulation, flocculation, and disinfection.

11:00 AM - 12:00 PM
The First Line of Defense: Operator Tools and Resources for Watershed Spills
Elissa Callman, City of Sacramento Department of Utilities

Participants will learn about valuable tools and resources for operators for protecting water treatment plants from hazardous spills in the upstream watersheds. This includes sharing about important internet links, examples of useful resources that can be developed, and operator training.

Session 20B - Engineering & Construction

1:30 PM - 2:30 PM
Constructing the Highest Pressure Tunnel in the World To Maintain Drinking Water Supply For 42 Million People
Noah Hoefs, Southern Nevada Water Authority

What are the obstacles of tunneling under a lake? Come learn about Southern Nevada's challenges during construction of their Intake No. 3. Including a TBM drive through weak and highly fractured rock at 13.5 bars of pressure (a world record), the construction and placement of the intake structure under 250 feet of water, and driving the TBM into the intake structure.

2:30 PM - 3:00 PM
Constructing Large Diameter Pipelines under Challenging Seismic Conditions
Deborah Russell, Kennedy Jenks and Heather Manders, San Francisco Public Utilities Commission

Participants in this session will learn lessons from the construction of large-diameter pipelines under seismically challenging conditions. Design included unique solutions developed to withstand significant seismic loading. Construction challenges included routing through neighborhoods, construction during extreme rain events, and more.

3:30 PM - 4:00 PM
Converting an Open Channel to a Pipeline to Reduce Water Losses Up To 50%
Vance Cave, Kennedy Jenks and Erik Christeson, Amador Water Agency

Come learn how one agency came up with a solution to recover up to 50% of their water losses in a conveyance system by looked hard at opportunities to save water and finding one in the conversion of an existing 1870's water conveyance canal to a pipeline.

WEDNESDAY SESSIONS

Session 20B - Engineering & Construction – (cont'd)

4:00 PM - 4:30 PM

Risk-Based Pipeline Replacement Candidate Selection

Tara Sweet, East Bay Municipal Utility District

Starting in 2016 East Bay Municipal Utility District is taking a new approach to pipeline replacement candidate selection. We're saying so long to our cost-based algorithm and ushering in a new risk-based model coupled with better communication between Maintenance and Engineering.

4:30 PM - 5:00 PM

The Journey, not the Destination: A Collaborative Approach to Pump Station Management

Courtney Hall, West Yost & Associates

Participants will learn how a collaborative approach to pump station management can be used to develop a long-term rehab/replacement program. We will discuss which factors were used to develop a program for the City of Fairfield potable and raw water pump stations and how this can be applied to their own systems.

Session 21 - Asset Management

8:00 AM - 9:00 AM

Asset Management 101: Anatomy of an Asset Management Plan

Gregory Baird, Aging Water Infrastructure

9:00 AM - 9:30 AM

Water Distrubtuion Asset Management Approach to Valves and Hydrants

Ramsey Hemaidan, Pure Technologies, Ltd.

In this presentation we will share the proactive steps taken by some utilities to kick start their renewal program by teaming with experts in distribution system asset assessment and inventory. These programs produce immediate results by identifying gaps in system information and began the important process of documenting assets throughout the distribution system and improving operational intelligence. While this program is a "kick-start", and delivers meaningful, real results, the end game is to put in place, processes that will result in predictable and dependable system performance; a program that is well-defined, focused and will make a difference via real action – by DOING, rather than just studying the problem.

10:30 AM - 11:00 AM

Asset Management - Ventura Regional Project

Kurtis Warne, SEMS Technologies

Participants in this session will learn about the benefits Ventura Regional saw by implementing an asset management program. We will be discussing the improved accuracy they saw using mobile devices due to no longer having to rely on the operators memory to update them at the end of the day. They were able to automate their maintenance scheduling/planning of equipment. Lastly, we will be talking about how they were able to cut down on their rework due being able to know if the work actually got done or just "think" it got done, which in return they saw a reduction in there of work time.

WEDNESDAY SESSIONS

11:00 AM - 12:00 PM

Solving Asset Management Challenges - The Significance of the Right of Way Profession in Asset Management Programs

Fred W. Clark, Sr., Clark Land Resources, Inc.

Participants in this session will learn the importance of right of way in asset management for drinking water, waste water and other infrastructures. We will explain the variety of ways that right of way professionals can help facilitate the successful completion of public and private projects.

1:30 PM - 2:00 PM

Asset Management - Life Cycle

Kurtis Warne, SEMS Technologies

Participants in this session will learn the definition of life-cycle and about each stage an assets/equipment goes through from procurement to retirement/disposal. Also, we will look at how we can make better purchasing decisions based on these life-cycle stages such as: when a particular asset is about to retire/expire, and preparing for replacement of the asset, or setting up ways to manage/support the asset with proper maintenance.

2:00 PM - 3:00 PM

Fitness For Continued Service: A Risk Management Approach To Assessing Corrosion Risk And Prioritizing Infrastructure Improvement

Jeff Knauer, PE, Corrpro

Understanding the long-term effects of environmental and site-specific exposure factors on infrastructure integrity provides for the development of a consistent, system-wide evaluation and classification standard of an infrastructure risk factor associated with external corrosion. A number of non-destructive testing techniques can be leveraged to collect and consolidate data in order to facilitate decision making with respect to budgeting and planning for future repairs and/or replacements. Participants in this session will learn non-destructive data collection and risk ranking techniques used to assess infrastructure fitness for continued service.

3:30 PM - 4:00 PM

Reactive to Active - Bringing Real-time Monitoring to the Heart of Water Utility Operations and Asset Management

Cliff Jones, Syrinix

Participants in this session will learn how to use smart technologies as part of their operations, engineering and asset management tool box.

4:30 PM - 5:00 PM

San Jose Water Company Pipeline Consequence of Failure Methodology, Analysis, and Results

Andy Yang, San Jose Water Company

Participants will learn how San Jose Water Company formulated a customized pipeline consequence of failure methodology using cutting edge hydraulic modeling and GIS spatial analysis tools to successfully obtain a pipeline criticality score for every pipe segment in its 2,400 mile long distribution system.

THURSDAY SESSIONS

Session 22 - Water Well Technology

8:00 AM - 8:30 AM
Drilling Fluid Basics
Ron Peterson, Halliburton

Participants will learn about the role of drilling additives in the construction of a water-supply well using reverse rotary drilling methods, how they might influence well development, yield, and efficiency, and why planning for potential use of additives is important.

8:30 AM - 9:00 AM
Drilling Fluids from an Owner/Consultant Prospective
Larry Ernst, Wood Rodgers

This talk will illustrate case histories to highlight properly designed and executed programs and well projects that have not been successful due to poorly executed drilling fluids programs. The intent of this talk is to help the participants with their future well projects.

9:00 AM - 9:30 AM
Chemicals during Development to Address Fluids and Additives Used During Drilling
Edd Schofield, Johnson Screens

10:00 AM - 10:30 AM
Clean Water Act Coverage for Discharges from Supply Well Development/Rehabilitation
Diana Messina, State Water Resources Control Board

Participants in this session will learn about Clean Water Act requirements and the new statewide permit that provides streamlined regulatory coverage of discharges from supply well development/rehabilitation projects to municipal storm drains and/or surface waters.

10:30 AM - 11:00 AM
Water Well Game Changing Research: Chemical Rehabilitation
Todd Eden, Herc Chem Tech

11:00 AM - 11:30 AM
Water Well Asset Management
Kevin Barnes, Utility Service Group

Properly designed water well asset management programs offer a more sustainable alternative to this traditional operational approach. An effective well asset management program can maintain an established production rate, consistent water quality and overall lower pumping costs over the life of the well while extending the useful service life

Session 23 - Environmental, Health & Safety

8:00 AM - 8:30 AM
Don't get Caught "Out of Compliance" on a Multi-Employer Worksite!
Alexander Williams, California Water Service

"Multi-employer worksites with regards to OSHA/ General Order compliance" The overview will allow attendees to understand the what, how and when of a multi-employer worksite. The examples of real cases involving multi-employer worksites receiving citations and what could have been done to prevent such cases.

8:30 AM - 9:00 AM
Cal/OSHA Regulatory Update
David Gee, Cal/OSHA Consultation Unit

Despite the numerous Occupational Safety and Health Laws that are already on the books, the regulatory landscape is always constantly changing with new laws added every month. This module will provide the attendee with an update and a basic understanding as to newly enacted safety and health regulations that affect members of the association.

THURSDAY SESSIONS

Session 23 - Environmental, Health & Safety (cont'd)

9:00 AM - 9:30 AM

Trenching and Excavation Safety

David Gee, Cal/OSHA Consultation Unit

Trenching and Excavation accidents and near misses rank amongst the top activities amongst construction where injuries and fatallities occur next to falls from elevated work areas and struck by equipment & materials. Trench safety is often one of the most over looked, in terms of safety, in both private industries and self-performed government work. Learn how Cal/OSHA's requirement can help eliminate potential cave-ins and unexepected injuries that would lead to hidden costs and down time in your organization.

Session 24 – Security & Emergency Planning

8:00 AM - 12:00 PM

CalWARN Annual Meeting

In coordination and support from the California – Nevada Section of AWWA and the California and Nevada Water/Wastewater Agency Response Networks, we would like to invite you to the 2016 Spring WARN Meeting and Exercise: CalWARN - Back to Basics! The agenda for CA and NV WARN Meeting is as follows: What's in an Agreement? WARN and Other Mutual Aid Agreements; Legal Gaps and Bridges in Mutual Aid Agreements; Disaster Dujour – What Have We Learned Recently?

Session 25 - Water Treatment

8:00 AM - 8:30 AM

Spinning Into Control: New 360 mgd Solids Handling Facilities for The City of Sacramento

Thomas Gillogly, Carollo Engineers, Inc.

This presentation will review the previous solids handling systems, the challenges of the previous process to handle peak solids production events, and the development of the new handling system. Also reviewed will be the strategies to repurpose the existing solids lagoons to reduce the size of the centrifuge facilities and cost of the new systems by approximately $45 million. The presentation will also highlight some of the construction and startup challenges and provide some operational observations associated with the new systems.

8:30 AM - 9:00 AM

Sulfuric and Phosphoric and Citric, Oh My! - Neutralizing and Recycling Membrane Waste Cleaning Solutions

Katie Belluomini, Carollo Engineers, Inc.

This presentation will discuss the challenges with neutralizing waste cleaning solutions. It will also discuss the automated batch treatment process that is used to easily neutralize the cleaning solutions and allow operators to keep up with the busy cleaning schedule.

9:00 AM - 9:30 AM

San Juan Water District's Collaboration for Much Needed Floc/Sed Basin Improvements

Tim Williams, Kennedy/Jenks Consultants

Participants will learn how San Juan Water Districts's operations, engineering and management collaborated to select the most optimal cost-effective improvements to replace 40+ year old flocculation and sedimentation process equipment at the 150 MGD Water Treatment Plant.

THURSDAY SESSIONS

Session 25 - Water Treatment (cont'd)

10:00 AM - 10:30 AM
Dissolved Air Floatation Implementation for Pretreatment at Clear Lake
Joe Ziemann, Water Works Engineers

Participants in this session will learn how Dissolved Air Flotation (DAF) clarification can be used for the effective pretreatment of algae-laden source waters and how the individual components of the system can be adapted to varying source waters and potable water treatment facilities.

Session 26 - Research

10:30 AM - 11:00 AM
Nitrate Treatment for Underprivileged Communities
Dianna Jensen and Mike Waite, Ionex SG LLC

Participants in this session will learn about current work being done with underprivileged communities to treat nitrates in their groundwater with an affordable and sustainable project.

11:00 AM - 11:30 AM
Mid-Century Climate Change Impacts on Water Supply to Southern California
Brianna R. Pagan, University of California, Los Angeles

Participants in this session will learn about the most recent high resolution climate change projections and implications on water resources in the Western United States.

11:30 AM - 12:00 PM
Driving the costs for Cr(vi) compliance down - process improvements explained
Mike Waite, Ionex SG LLC

Over the last five years, we have been refining ion exchange treatment for Cr(VI) removal. This presentation will guide participants through the process improvement benefits and discuss the relevance of these to other emerging contaminants of concern.

Session 27 - New Technologies

10:00 AM - 10:30 AM
Three SCADA technologies that won't break the bank
Henry Palechek, Helix Water District

The drought and the associated water conservation has placed significant economic pressure on water utilities. This presentation will look at how newer technologies can be phased in to an existing SCADA system providing for a more powerful, open and cost effective solution than ever before. The phasing in of technology mitigates risk and spreads the cost over time. Examples will be shown of how both large and small water districts are doing this type of newer technology deployment.

10:30 AM - 11:00 AM
A Location Platform That Helps You Save Water
Suzanne Timani, ESRI

Conserving water in California is a strategic priority for all water utilities. Yet conservation is complex. To conserve water in an appreciable way, your utility must focus on increasing water efficiency & reducing customer demand. Map-based visuals, spatial analytics, & collaboration capabilities help you deploy proven workflows, templates, & applications that save water. Such as: Improve Water Conservation; Reduce Water Loss; Proactively Optimize Field Operations; Manage Conservation through Reporting.

THURSDAY SESSIONS

Session 28 - Distribution System Water Quality

8:00 AM - 9:00 AM

No Discharge flushing trucks and setting up a program to use them.

Susan K Willis, San Jose Water Company

Participants in this session will learn about implementation challenges and successes of a mobile closed-loop main flushing system in San Jose, CA

Session 29 - Engineering & Construction

9:00 AM - 9:30 AM

Make Difficult Spot Repairs Using Composite Pipe Wrap

Michael Hether, City of Napa

What do you do when you must make a spot repair to a thin-walled pipeline, but do not have enough wall thickness for welding? Come learn about City of Napa's experience using an alternative method, composite wrap, to make timely repairs.

10:00 AM - 10:30 AM

Building a Pre-stressed Concrete Water Tank on California's Coast: Not as Easy as it Sounds

Quanxin (Nina) Mao, SRT Consultants

Come hear about the challenges in permitting, design, and construction of a 0.5 MG pre-stressed concrete water tank on the coast of northern California. Challenges included working with the California Coastal Commission, the project site being on a local ridge, working in an endangered species habitat area, and others.

Session 29 - Engineering & Construction (cont'd)

10:30 AM - 11:30 AM

Constructing the Highest Pressure Tunnel in the World To Maintain Drinking Water Supply For 42 Million People

Noah Hoefs, Southern Nevada Water Authority

What are the obstacles of tunneling under a lake? Come learn about Southern Nevada's challenges during construction of their Intake No. 3. Including a TBM drive through weak and highly fractured rock at 13.5 bars of pressure (a world record), the construction and placement of the intake structure under 250 feet of water, and driving the TBM into the intake structure.

Session 30 - Meter Committee

8:00 AM - 9:00 AM

Water Loss Control, impacting your Non-Revenue Water through Large Meter Evaluation, Testing and Calibration

MIchael Simpson, M.E. Simpson Co., Inc.

An in depth exploration of the techniques of large meter evaluation, testing and calibration from an in the field, technical perspective as well as providing knowledge and information about the specific steps in calibration/repair of large meters.

9:00 AM - 9:30 AM

East & West Coasts Go With the Flow-NYC & LADWP Large Meter Customer Profiling for Meter Selection Decision Making

Kenneth Molli, Veolia North America

Better meter application decision can improve revenues and reduce future capital and operating costs. Learn how NYC Department of Environmental Protection and LA Department of Water & Power are using customer profiling techniques to improve application and meter management decisions.

THURSDAY SESSIONS

Session 30 - Meter Committee (cont'd)

10:00 AM - 10:30 AM
Analysis of Water Losses
Mark Carey, MC Engineering

Participants in this session will learn how to reduce Real and Apparent Losses within their water system and minimize non-revenue water.

Session 31 - Backflow Committee

8:00 AM - 9:30 AM
RP/DC operations and troubleshooting
Sean Perry, Watts Water Technologies

This presentation will discuss the basic hydraulics of two types of backflow preventer assemblies. Reduced pressure principal and double check assemblies with a brief review of how detector assemblies work. Basic definitions related to backflow prevention and testing will be reviewed. Through the understanding of the hydraulics of backflow you will be able to leave this presentation with a better understanding of how they work and how to troubleshoot them.

10:00 AM - 10:30 AM
A Day in the Life of a Backflow Tester
Ben Bennett, Backflow Prevention Specialists, Inc.

There is a lot more to backflow assembly testing than just testing backflow assemblies. Administrative Authorities, employers, and customer expectations all must be met. Take a journey through a day in the life of a backflow assembly tester and see what is really expected from them on a daily basis after they receive their tester certification.

10:30 AM - 11:00 AM
Navigating the Complexities of Recycled Water Use Site Requirements
Thomas Deeds, City Of San Diego Public Utilities Department

Participants will be able to locate and put into effect the appropriate rules and regulations for specific recycled water uses such as irrigation, cooling towers, and dual plumbing, including engineering reports. We will also discuss customer transition solutions.

11:00 AM - 11:30 AM
Recycled Water Shutdown Test Procedures/Issues
Ben Bennett, Backflow Prevention Specialists

Recycled water services are being installed and put into use faster than ever. Discussion will review some of the procedures being used and some of the issues facing Cross Connection Specialists performing these inspections.

11:30 AM - 12:00 PM
Backflow Hot Topics - Panel Discussion
Ben Bennett, Backflow Prevention Specialists, Inc. Sean Perry, Watts Water Technologies Dan Scott, Backflow Technologies, Brad Scott, Backflow Technologies

Open discussion on current backflow industry and operation issues/concerns.

THURSDAY SESSIONS

Session 33 - Materials Performance

8:00 AM - 9:00 AM

Carbon Fiber Reinforced Polymer in the Water Industry

Steve Behrens, Composites Engineering & Design

Participants will learn about carbon fiber reinforced polymers(CFRP) and the evolution from a classified military asset to the use of CFRP to structurally strengthen PCCP, RCP, tanks, reservoirs, and other infrastructure.

9:00 AM - 9:30 AM

The Value of Comprehensive Leak Detection: An Innovative Approach to Reducing Real Water Loss

Ramsey Hemaidan, Wachs Water Services/Pure Technologies

Participants will learn how implementing a comprehensive leak detection program and asset inventory process to identify and then remediate leaks on both large and small diameter mains can benefit their utility

THURSDAY SESSIONS

Session 33B - Pipeline Rehabilitation

10:00 AM - 10:30 AM
Water Main Rehabilitation in American Canyon using Pipe Bursting
George Mallakis, TT Technologies, Inc.

Attendees of this presentation will learn about the decision making process for pipeline rehabilitation that the City of American Canyon CA went through, as well as a review of construction sequencing, pipe material selection, and lessons learned.

10:30 AM - 11:00 AM
Remediation of a 72" Drinking Water Line Coated with Asbestos
Darrell Wagoner, The Trenton Corporation

Examining the factors that must be applied when making coatings decisions: Ease of Preparation, Ease of Application, Environmental Concerns, Total Cost and Performance of Material

11:00 AM - 11:30 AM
Bypass Pumping
Benjamin King, Rain for Rent

Participants will learn how to set up a safe, efficient bypass pumping. The workshop includes flow calculation and latest technology in temporary liquid handling.