EXECUTIVE OFFICER'S REPORT • December 2018

Covers October 16, 2018 – November 15, 2018

Contents

State and Regional

1. Personnel Report – *Eric Shay*

New Hires

- Laura Korman, Environmental Scientist, North Basin Regulatory Unit, South Lake Tahoe. This new position will primary work on Lake Tahoe water quality issues, including permitting for shoreline projects and scientific research.
- Valerie Enright, Seasonal Clerk, Victorville. This position provides basic administrative support, such as typing and reception.

Promotions

- Sandra Lopez, Associate Governmental Program Analyst, Victorville. This position provides administrative support to the region in the areas of personnel analysis, workforce planning and analysis, contract management, and procurement.

Vacancies – We are currently recruiting for the following positions:

- Engineering Geologist, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe. This position provides oversight on Underground Storage Tank sites and other sites in the Emergency, Abandoned, and Recalcitrant Fund as well as the Expedited Claim Account Program. Oversight is also provided for mines and a Department of Defense site.

- Office Technician, Victorville. This position supports our technical staff by finalizing staff correspondence and State Water Board meeting agenda packets.

- Scientific Aid, Non-Point Source Unit, South Lake Tahoe. This position compiles and organizes scientific data from water quality investigations and implementation and effectiveness monitoring reports; and assists technical staff in collecting data during field visits for various activities, including timber harvest, stream restoration, meadow restoration, and grazing projects.

- Scientific Aid, North Basin Regulatory Unit, South Lake Tahoe. This position assists staff with administering storm water and water quality certification permitting actions, conducting inspections, reviewing reports, and maintaining databases.

Departures

- Ananda Thomason, Scientific Aid, North Basin Regulatory Unit, South Lake Tahoe.

2. 2018 California Bioassessment Workgroup (CABW) – *Ed Hancock*

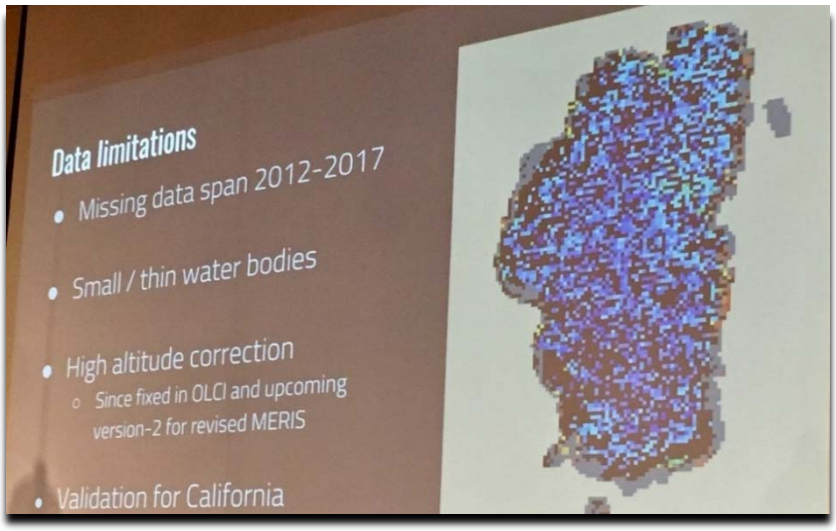
The CABW celebrated its 25th installment this year, pausing to reflect on twenty-five years of bioassessment research in California. Speakers included many of the freshwater scientists who were present at the inception of California's bioassessment program, such as Jim Harrington, California Department of Fish and Wildlife (CDFW), John Olson (CSU Monterey Bay) and Pete Ode,CDFW, all of whom shared insights regarding the formulation and implementation of bioassessment in the state. The two-day meeting held on the University of California-Davis campus (October 23 and 24, 2018) was not all retrospection, and focused on how bioassessment data can be effectively used in modern water resources management. The last 25 years of bioassessment in California focused on gathering data and developing standardized field methods and data assessment practices. The bioassessment workgroup has worked to ensure that these methods are consistently followed throughout the state. This work created a robust bioassessment dataset for most ecoregions in California.

The 2018 CABW reflected a shift among the community towards developing the best applications of bioassessment data and methods to support the multitude of planning and permitting efforts undertaken by the Water Boards. With this purpose in mind, the event included presentations from several organizations including *USGS*, *US EPA*, the Sierra Nevada Aquatic Research Laboratory (SNARL), *the Water Board,* and the Southern California Coastal Water Research Project (SCCWRP) regarding techniques to statistically and visually analyze bioassessment data to create useful and useable management information. Moving forward, CABWs will focus on translating bioassessment science into information which can be used in Basin Planning efforts, in the regulatory work performed by the Water Boards, and as a tool to support enforcement actions. There was consensus that critical work to translate bioassessment science to water management information is the next challenge facing the bioassessment workgroup. This challenge will likely be overcome using the wealth of information technology available to the Water Boards whereby data are translated to valuable information through mapping, data visualization, and statistical modeling.

Dave Herbst, PhD, of SNARL presented his bioassessment research from the Leviathan Mine watershed, sharing with the group 20 years of monitoring on Mountaineer, Leviathan, and Bryant Creeks. Using trend analysis, Dr. Herbst was able to show how the remediation work led by the Water Board has positively affected the biology of Leviathan and Bryant Creeks (Mountaineer Creek is the reference creek). Dr. Herbst illustrated the value of bioassessment in tracking long-term water quality trends and was able to show how the three different functional feeding groups Ephemeroptera (mayflies), Plecoptera (stoneflies),

and Trichoptera (caddisflies) perform well as indicators of water quality in the system. By analyzing bioassessment data against seasonal hydrological trends and data from the remediation work at the mine site, Dr. Herbst was able to demonstrate the positive effects to stream biology related to treatment and other remediation activities, while also illustrating the sensitive nature of benthic macroinvertebrates to changes in water chemistry brought about by fluctuations in precipitation on both a seasonal and a longer-term scale.

Other research applicable to the work of the Water Board (see inset photo) was presented by Lawrence Sim from the San Francisco Estuary Institute (SFEI) regarding the development of remote-sensing tools for the timely detection of human and wildlife health hazards, including those associated with cyanobacterial harmful algal blooms (CyanoHABs). In coordination with the National Oceanic Atmospheric Administration (*NOAA*) and the Water Board, SFEI is developing a satellite imagery analysis tool and notification system that estimates and visually displays the abundance of cyanobacteria in large waterbodies. Data provided by the tool indicate potential harmful algal blooms based on signals that correspond to high densities of cyanobacteria. The tool is designed to alert the responsible management staff about waterbodies where high densities of cyanobacteria are detected. Upon review of the satellite data, staff can initiate a water quality investigation at the site to verify the suspected bloom and to determine the presence of toxic species that may be harmful to human and animal health.



Because of interferences related to high elevations and high salinity waters, the satellite tool is considered provisional at this stage. To enhance the reliability and quality of the data, Water Board staff is participating in a satellite field verification study with SFEI and the Water Board to ground truth satellite images in areas where the tool experiences interferences. Field crews visited Crowley Lake on October 11, 2018 to gather surface and depth integrated water samples, radiometer readings, and water chemistry measurements to compare against the satellite imagery data. The satellite field verification project is essential to refine the satellite imagery tool. Once fully operational, Water Board staff can use the tool to efficiently screen for cyanobacteria from remote office locations, helping to determine CyanoHAB response for specific waterbodies in a timely fashion. Remote-sensing of important water quality issues such as CyanoHABs will help the Water Board overcome the challenges posed by the Lahontan Region's extensive geography, enabling more efficient and rapid responses to water quality problems with human health implications.

To complement this years' theme of data analysis and visualization, Marcus Beck, SCCWRP, led a workshop designed to visualize and map bioassessment data using a free, open-source statistical software package known as *R*. This tool allows staff to explore and synthesize bioassessment data into actionable information and enables watershed planning that accounts for long-term trends in water quality. This approach expands upon decades of planning and permitting that has been based solely on water chemistry grab sampling, allowing water quality managers to improve watershed management using

information based on data reflecting long-term conditions in a watershed or sub-watershed. *R* allows the user to easily and rapidly analyze data and has a host of visualization and mapping options which can be deployed to detect previously unseen trends in water quality. The data visualization features of the program can communicate a wealth of complex technical information in easy to understand formats that will be useful to Water Board staff, stakeholders, and the general public.

The 2018 CABW was a testament to the continuing progress made by California freshwater scientists, providing a forum to share, discuss, and troubleshoot current water quality challenges in the state. As in previous years, the 2018 meeting provided a venue for those working in this field to collaborate and advance the important work of water quality protection and restoration in California. All presentations from this and previous (2003-2017) year's CABW are available at http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/training.shtml

3. 14th Annual CASQA Conference - *Robert Larsen, Elizabeth van Diepen, Thomas Browne, Tiffany Steinert*

The California Stormwater Quality Association (CASQA) is the state's largest non-profit, professional association focused on stormwater quality issues. For 25 years, CASQA has assisted municipalities, special districts, businesses, and State and Federal agencies in developing and implementing effective stormwater quality management programs. Each year CASQA hosts a gathering of stormwater professionals to share knowledge and experience through training workshops, technical presentations, and exhibits.

The 2018 CASQA Conference was held at the Riverside Convention Center on October 15th, 16th, and 17th with the theme "Connecting the Drops from the Summit to Sea." Water Board staff took advantage of the opportunity to network, share experiences, and learn from other stormwater management practitioners.

Water Board staff Robert Larsen, Elizabeth van Diepen, Tom Browne, and Tiffany Steinert joined other stormwater program managers from the State and regional Water Boards during the three-day event.

All staff attended multiple presentations, and Mr. Larsen and Mr. Browne participated in multi-jurisdictional panel discussions. Mr. Browne joined a group of State and Regional Water Board staff for a regulatory discussion of the construction general permit. One of the presentations on this panel showed the devastation caused by the Mendocino Complex fire, including damage to culverts and other permanent stormwater infrastructure. This presentation highlighted the importance of post-fire response to protect burned slopes, and the Water Board's role to work with cities and counties in deploying temporary erosion protection measures before the next rain. In addition to presentations on the importance of soil health and proper use of soil loss estimation tools, the group fielded questions regarding post-fire erosion control approaches and solar site management details. Mr. Larsen's panel highlighted recent efforts to leverage stormwater activity tracking software developed at Lake Tahoe to support program efforts in Orange County. A morning session on challenges related to municipal stormwater regulation referenced the Lake Tahoe permit and program as a model regulatory approach that could be applied in other portions of the state.

The conference was attended by more than 1,000 participants. The event afforded Water Board staff the opportunity to learn from other regulatory, municipal, and private sector stormwater professionals, gain exposure to a wide range of new technical innovations, and add the Water Board perspective to the larger conversation regarding stormwater management. Staff learned much and look forward to next year's conference in Monterey.

4. ***Saxon Creek Culvert Removal and Bridge Installation Project, United States Forest Service—Lake Tahoe Basin Management Unit*** *– Jim Carolan*

During the 2018 field season, the US Forest Service – Lake Tahoe Basin Management Unit (LTBMU) replaced a 6-foot-diameter culvert crossing with a 30-foot-span concrete bridge (Project) along Fountain Place Road on Saxon Creek in South Lake Tahoe, El Dorado County. The Project was conducted under a 401 Water Quality Certification issued to the LTBMU on July 2, 2018.

Prior to Project implementation, the culvert crossing was rated as impassable for adult salmonids, juvenile salmonids, and sculpin as documented in the LTBMU's 2010 Aquatic Organism Passage (AOP) Assessment. As part of its assessment of the culvert crossing, the LTBMU identified downstream channel incision and the presence of excessive upstream woody debris as primary impairments to stream channel function in this portion of Saxon Creek. Due to funding constraints, the LTBMU focused current Project activities on mitigating downstream channel incision and improving juvenile and adult salmonid aquatic passage near the culvert crossing. To mitigate the impacts of excessive upstream woody debris and improve sculpin aquatic passage in Saxon Creek, the LTBMU is currently pursuing grant funding for future project implementation.

The overall purpose of current and future restoration activities along Saxon Creek is to improve resiliency, stability, and habitat quality to Saxon Creek and its floodplain, as well as restore natural floodplain processes to reduce peak flows and capture fine sediment and nutrients during over-bank flood events. Current Project activities included culvert and fill removal; placement of simulated streambed material within a framework of pre-existing and placed in-instream boulders that will serve as natural grade control structures; stream bank stabilization, bridge installation, construction of stormwater conveyance ditches and infiltration basins along Fountain Place Road; and re-paving a portion of Fountain Place Road.

Post-Project monitoring will be conducted for two years after Project construction completion and includes a California Rapid Assessment Method (CRAM) survey to evaluate wetland condition, stream channel stabilization monitoring, disturbed soil area stabilization monitoring, and potential invasive weed colonization monitoring. The post-Project monitoring information will be used to determine if adaptive management is required, and if deemed necessary, to develop appropriate adaptive management strategies.

Photo 1: Completed Saxon Creek Bridge

South Lahontan Region

5. High Desert Community-Based Water Resiliency (CBWR) Workshop – *Sergio Alonso*

On October 17, 2018, Water Board staff attended the High Desert Community-Based Water Resiliency (CBWR) Workshop hosted by the US EPA at the Mojave Water Agency. The purpose of the workshop was to assist public and private utilities, and high desert communities in addressing water interruptions following an earthquake event. Topics of discussion included the interdependencies of public and private sector parties in response to an emergency, the impacts of a loss of service, and how to recover from a water emergency. The major theme of the workshop was how to respond following an earthquake.

USEPA is promoting an online tool for water and wastewater utilities to develop an outline for water resilience. The online tool assists utilities in how to assess, plan, train, respond, and recover for emergencies. Some of the earthquake mitigation strategies discussed were employee emergency access drills and the usefulness of every building having an evacuation plan. It was also recommended that utility buildings and water tanks should be retrofitted to prevent collapse. Earthquake preparedness should be a collaborative process with key partners such as power providers and local hospitals to provide immediate assistance to the public.

Logan Olds, General Manager of the Victor Valley Wastewater Reclamation Authority (VVWRA), shared his experience of water resiliency during a 2010 sewage spill from VVWRA to the Mojave River. Mr. Olds mentioned that preemptive planning and the pre-existing relationships with other responders and public agencies helped to mitigate the impact of the sewage spill. Permits that typically take weeks to obtain were provided within hours, and the thousands of dollars spent on sampling and mitigation immediately following the occurrence helped prevent VVWRA from being liable for hundreds of millions of dollars.
Golden State Water Company gave a presentation on the impacts of power outages. Power outage impacts to water sources vary from water pressures being either too high or

too low, which can affect distribution, or in some cases cause overflows leading to unauthorized discharges. It is recommended that each facility be assessed for the need of portable generators which may be crucial during and after earthquakes, floods, fires, etc. Wastewater treatment plants would greatly benefit from permanent backup generators since power outages can happen without the need of an earthquake. The biggest challenges in preparing for power outages is in training staff for proper response, securing generators from theft, and providing frequent equipment inspections.

Another topic that was addressed in the workshop was the mitigation of wildfires. Eight of the 20 most destructive California wildfires have happened since 2015. Mitigation steps include vegetation management, tree inspections, and tree trimming. Southern California Edison (SCE) inspects approximately 900,000 trees per year and trim 690,000 trees per year. Extreme weather changes have seen an accelerated amount of tree inspections over the last few years. The use of weather stations, high resolution weather data visualization, fire monitoring cameras, and public safety power shutoffs are some of the tools used to prepare for and mitigate wildfires.

The afternoon session of the workshop focused on the response to a simulated earthquake event. The earthquake had a 7.8 magnitude on the Richter scale and occurred on the San Andreas Fault with the epicenter near the Salton Sea. Such an earthquake would lead to damaged sewer lines, power outages, and cross contamination of potable and sewer water. Further damage from aftershocks could affect access to the populated areas and leave more people seeking shelter. Wastewater treatment facilities would experience damage to infrastructure. There would be main breaks, damaged pump stations, and overflows all resulting in substantially reduced treatment quality. Access to drinking water would be a major concern for responders.

All these scenarios should be considered by public and private utilities in anticipation of an earthquake. Although Water Board staff deals mostly with water quality regulation, staff will be expected to verify that proper steps are taken to restore water quality to the public following an emergency event.

6. **Per- and Poly-Fluoroalkyl Substances (PFAS) and Drinking Water in Southern California, A Conference at the California Endowment Center in Los Angeles** – *Jan Zimmerman*

California Communities Against Toxics (CCAT) is a not-for-profit environmental advocacy organization based out of Rosamond in Kern County. The organization focuses on environmental justice, pollution prevention, and world peace. On October 5, 2018, CCAT hosted the “PFAS Compounds and Drinking Water in Southern California” conference at the California Endowment Center in Los Angeles. The conference was well attended with over 50 attendees representing various local and state regulatory agencies and several private citizens. The conference was an all-day event and featured guest speakers from academia (Dr. May Kyle, retired from University of California, Berkeley), the Los Angeles Regional Water Board (Arthur Heath, Environmental Program Manager and Section Chief, and staff from the Site Cleanup/Department of Defense Unit), the Division of Drinking Water (Jeff O’Keefe, Supervising Sanitary Engineer), the Department of Toxic Substances Control (Dr. June-Soo Park, Research Scientist Supervisor II), and the Office of Environmental Health Hazard Assessment (OEHHA; Dr. Lauren Zeise, Director).

Conference attendees came away with a greater appreciation of what PFAS are and the growing literature associated with this emerging contaminant of concern. PFAS are a group of chemicals, comprised of chains of carbon-fluorine compounds, that were first manufactured for their water-repellant properties in the 1940s by the 3M Company. Today there are over 6,000 PFAS chemicals used in a variety of everyday products such as: firefighting foam; surface protection products for carpet and clothing; coatings for paper,

cardboard, and leather products; industrial surfactants; nonstick coatings on cookware; membranes for clothing that are both waterproof and breathable; electrical wire casing; fire and chemical resistant tubing; plumbing thread seal tape; and pesticides. PFAS are considered “forever chemicals;” they are persistent in the environment because the chemical bond between the carbon and fluorine atoms is extremely strong and stable; they bioaccumulate in organisms; and they are toxic. Unfortunately, traditional treatment technologies appear to be ineffective; current research is investing in developing treatment technologies and considering “treatment trains” to target and treat one or more PFAS chemicals at a time.

The later part of the event featured a four-member panel discussion focusing on the topic, “How Can State and Local Agencies Coordinate on a PFAS Response Which Protects Public Health?” Panel members included Jonathan Bishop, Chief Deputy Director of the Water Board; Angelo Bellomo, Deputy Director of the Los Angeles County Department of Public Health; Dr. Lauren Zeise, Director of the Office of Environmental Health Hazard Assessment; and Arthur Heath, Los Angeles Regional Water Board Environmental Program Manager and Section Chief. Jonathan Bishop indicated that the state needs to build capacity to test for PFAS, currently there are 12 laboratories in the United States certified to test for PFAS. Mr. Bishop also stated that the Water Board is developing a strategy to systematically test for PFAS at potential source areas and is committed to working with OEHHA to develop preliminary health goals and maximum contaminant levels for drinking water. Angelo Bellomo agreed that laboratory testing for PFAS needs to be standardized, and that a solid research base is needed before any regulatory decisions are made. Mr. Bellomo suggested that chemical manufacturers and other responsible parties could help fund the necessary research. Dr. Zeise pointed out that we need to get a handle on what these chemicals are and how they are used, including a complete inventory list of PFAS chemicals; then efforts can focus on releases to the environment and the extent of chemical transformation in the environment. The panel members agreed that the PFAS problem is more prevalent than anyone initially thought and will likely take considerably more effort to address than previously anticipated, an undeniably collaborative effort.

Dr. Kyle summed it up with respect to what we know about PFAS saying, “right now, we are in the ‘clues’ stage in our research,” in essence we are still figuring out the what, why, and where of PFAS. In the Lahontan region, a next step is to start gathering water quality data for PFAS throughout the region. Because residential and commercial household wastes and fire- and disaster-related debris are disposed of at municipal solid waste landfills, these types of facilities are identified as a potential major source of PFAS found in groundwater. Other potential sources of PFAS include military bases, fire training sites, PFAS production and industrial use sites, wastewater treatment plants, and biosolids land application sites. PFAS testing has begun at our military installations (see July 2018 EO Report) for some onsite monitoring wells and facility supply wells; however, additional testing is needed.

7. Inyo-Mono Regional Water Management Group Stakeholder Meeting – *Jeff Fitzsimmons*

The Inyo-Mono Regional Water Management Group (RWMG) held its regularly scheduled stakeholder meeting on October 24, 2018. The Fort Independence Indian Community of Paiute Indians hosted the meeting. These stakeholder meetings allow representatives and citizens of the Inyo-Mono RWMG area to voice their concerns and provide an opportunity for discussion and collaboration of efforts to manage regional water issues, taking into consideration social and economic concerns. A quorum of representatives of the Inyo-Mono RWMG were present to approve minutes from the prior meeting on June 27, 2018.

Updates to the Integrated Regional Water Management (IRWM) Plan are required by the California Department of Water Resources and remain the priority of the Inyo-Mono RWMG. The current plan updates are addressing water quality, climate change, and stormwater management. The Inyo-Mono RWMG anticipates the development of a salt and nutrient management plan following the completion of the required IRWM plan updates. At the meeting, stakeholders also discussed the success of the current internal fundraising efforts, the statuses of current projects and proposed Proposition 1 and Proposition 84 Implementation Grant funding opportunities, as well as prioritizing projects for future grant proposals. To date, four of the seven Proposition 84 grant-funded projects have been completed, and the remaining three projects are in progress and expect to be completed soon.

Local Tribal Historic Preservation Officers are working to nominate Patsiata (Owens Lake) to the National Register of Historic Places. To support that effort, the Great Basin Unified Air Pollution Control District is sponsoring the "Patsiata/ Owens Lake Tribal Values Documentation Project." The goal of the Patsiata project is to document the cultural values that Tribes attribute to Owens Lake, including its shorelines and other archaeological sites. Local Tribes participating in the project include Lone Pine Paiute-Shoshone Tribe, Bishop Paiute Tribe, Timbisha Shoshone Tribe, Big Pine Paiute Tribe of Owens Valley, and Fort Independence Indian Community of Paiute Indians. An information gathering meeting was held on October 23, 2018, at the Lone Pine Paiute-Shoshone Reservation community center, which included a field trip to Owens Lake. Ultimately, the cultural values identified by the Patsiata project will be used to nominate all or parts of Owens Lake to the National Register of Historic Places. Additionally, the Great Basin Unified Air Pollution Control District intends to consider the cultural values identified by the Patsiata project in future dust mitigation requirements associated with Owens Lake.

The next RWMG meeting will occur late December 2018 or early January 2019.

8. Drought Causes Delay in Completing Sewage Collection System Infiltration/Inflow Analysis in Lake Arrowhead, as Required by Cease and Desist Order - *Francis Coony*

Lake Arrowhead Community Services District (CSD) is under a Cease and Desist Order (CDO) to reduce infiltration and inflow (I/I) into their sewage collection system and reduce maximum daily flow into the treatment plants from 7.9 million gallons per day (MGD) to 5.8 MGD by June 30, 2026. Infiltration is soil-saturated water that enters into a sewage collection system *after* a storm event, and inflow is stormwater that enters a sewage collection system *during* a storm event.

The Water Board issued the CDO on March 14, 2013, to curtail the rain-induced discharges that exceeded the capacity of the outfall to the Hesperia percolation pond disposal site. The rain-induced discharge is to an unnamed tributary to Grass Valley Creek. The water in this creek flows through the Mojave River Forks Dam and then to the Mojave River. Both Grass Valley Creek and the Mojave River are waters of the United States.

Before issuance of the CDO, Lake Arrowhead CSD considered applying for an NPDES permit that would authorize a surface water discharge. Unfortunately, special sampling of plant effluent indicated that the discharge would not meet the California Toxics Rule, a condition for issuance of an NPDES permit. As such, Lake Arrowhead CSD selected sewage collection system repair and replacements to reduce I/I. Because of the need to replace many sewer lines, the Water Board gave Lake Arrowhead CSD 13 years (to June 30, 2026) to cease unauthorized surface water discharges.

The San Bernardino Mountains have steep northern slopes facing towards Lake Arrowhead. Shallow soils overlying granitic rock collectively contribute to higher than normal I/I in the Lake Arrowhead CSD sewage collection system. Additionally, these shallow soils prohibit sewer pipes from being placed sufficiently underground to avoid surface loads, the effects of erosion, and tree-root growth into the sewage collection system. Additionally, 25% of the sewage collection system pipelines were installed between the 1920s and 1950s, prior to modern pipe joints; these pipelines are poured in-place concrete.

Lake Arrowhead CSD's I/I reduction program consists of two components: system analysis and I/I correction. The system analysis component is flow metering of sub-basins during storm events to isolate areas needing sewage collection system pipeline replacement projects. The I/I correction component consists of system repairs to stop known I/I and capital improvement projects to replace or rehabilitate pipelines and manholes.

When the Water Board adopted the CDO, the plan was to complete system analysis in the near-term by June 15, 2017, to allow enough time to execute and complete all I/I reduction projects by 2026. The CDO requires the Lake Arrowhead CSD to submit separate annual status reports for system analysis and I/I project completion, with the final system analysis report submitted on June 15, 2017. Since adoption of the CDO in 2013, California has experienced extreme drought. There has been only one winter season, 2016 to 2017, of normal precipitation (snow and rainfall) in Lake Arrowhead. Therefore, the plan to isolate areas and develop an I/I reduction project list has fallen behind schedule.

Lake Arrowhead CSD met with Water Board staff on June 21, 2017, to discuss the plan to complete the system analysis component. Lake Arrowhead CSD committed to continue with system analysis and report on progress in the annual I/I project status report. Lake Arrowhead CSD fulfilled its commitment and included system analysis results in the annual project report due and submitted on July 31, 2018. The annual project reports include projects and work completed in the prior fiscal year and projects to be completed for the upcoming fiscal year. However, with the completion of pipeline replacements/repairs since 2014, it is difficult, if not impossible, to verify that the repairs made to date are sufficient to quantify and establish that the requirements of the CDO are met because of few significant winter precipitation events.

Water Board staff recommended that Lake Arrowhead CSD conduct system analysis at least one more year to make-up for drought years. Lake Arrowhead CSD will report system analysis results in the annual report due August 1, 2019, after which we will reassess the ability of Lake Arrowhead CSD to achieve the final CDO standard by June 30, 2026.

In the past, Lake Arrowhead CSD has discussed with Water Board staff a possible project to directly discharge treated effluent to Lake Arrowhead (a source of drinking water). This surface water augmentation project was conceived as a possible measure to remedy the effects of the prolonged statewide drought. However, additional evaluation and reports would need to be submitted to the Water Board prior to this project being implemented, including a California Code of Regulations, title 22, Engineering Report to our Division of Drinking Water for their review and approval.