

**Minutes of the Regular Commission Meeting of the
Southern California Coastal Water Research Project Authority (SCCWRP)**

**Held at the offices of the Authority:
3535 Harbor Blvd., Costa Mesa, California 92626**

**September 6, 2019
9:00 AM**

COMMISSIONERS PRESENT

Diane Fleck— *U.S. Environmental Protection Agency, Region 9*
Karen Mogus — *State Water Resources Control Board*
Mark Gold (Chair) — *California Ocean Protection Council*
Renee Purdy — *Los Angeles Regional Water Quality Control Board*
Jayne Joy— *Santa Ana Regional Water Quality Control Board*
David Barker — *San Diego Regional Water Quality Control Board*
Mas Dojiri — *City of Los Angeles*
Robert Ferrante — *Los Angeles County Sanitation Districts*
Lan Wiborg — *Orange County Sanitation District*
Peter Vroom — *City of San Diego*
Arne Anselm — *Ventura County Watershed Protection District*
Daniel Lafferty — *Los Angeles County Department of Public Works*
Amanda Carr — *County of Orange*
Todd Snyder (Vice Chair) — *County of San Diego*

STAFF PRESENT

Stephen Weisberg — *Executive Director*
Bryan Nece — *Administrative Officer*
Wes Beverlin — *Legal Counsel*
Ken Schiff — *Deputy Director*
Steve Bay — *Department Head*
John Griffith — *Department Head*
Eric Stein — *Department Head*
Martha Sutula — *Department Head*
Charles Wong — *Department Head*
Rachel Diner — *Scientist*
Katie Irving — *Scientist*
Scott Martindale — *Communications Coordinator*
Abel Santana — *Senior Research Technician*
Josh Steele — *Scientist*
Kristine Taniguchi-Quan — *Scientist*
Susie Theroux — *Scientist*
Amy Zimmer-Faust — *Scientist*

OTHERS PRESENT

John Bishop — *State Water Resources Control Board*
Samuel Choi — *Orange County Sanitation District*

Jill Harris — *Regional Water Quality Control Board*
Chad Loflin — *Regional Water Quality Control Board*
Darrell Nolta — *Public*
Phil Markle — *Los Angeles County Sanitation Districts*
Nikos Melitos — *Los Angeles County Sanitation Districts*
Hassan Rad — *City of Los Angeles*
Jason Thompson — *Oceankind*
Martha Tremblay — *Los Angeles County Sanitation Districts*
Keith Yaeger — *Regional Water Quality Control Board*

Commission Vice Chair Todd Snyder called the meeting to order at 9:04 AM.

CONSENT AGENDA

- 1. Minutes of Meetings Held June 21, 2019**
- 2. Quarterly Financial Statement for the Period Ended June 30, 2019**
- 3. Quarterly Statement of Investments at June 30, 2019**
- 4. Minutes of CTAG Meetings Held August 8, 2019**

Commissioner Carr motioned to approve Consent Items 1-4, and Commissioner Wiborg seconded the motion. The Commission approved the motion unanimously with Commissioners Purdy and Fleck abstaining.

REGULAR AGENDA

5. Personnel and Finance Committee Report

Commissioner Vroom, Chair of the Personnel and Finance Committee, reported that SCCWRP remains in strong financial health with sufficient cash reserves. He said the Committee is recommending that SCCWRP raise the salaries of some Senior Research Technicians effective January 1, 2020. Vroom explained that SCCWRP's Senior Research Technicians are exempt from overtime, and exempt employees are required under State law to be compensated at least twice the State minimum wage. When the State minimum wage rises to \$13/hour on January 1, SCCWRP has the option to either reclassify affected employees as non-exempt or to raise their salary so it is at least twice the State minimum wage; this item will come before the full Commission for consideration in December 2019.

Vroom said the Committee worked with Executive Director Steve Weisberg to draft a list of performance review goals for next year. The goals are available to the full Commission upon request.

Vroom announced he has been re-elected Chair of the Personnel and Finance Committee, and thanked fellow Committee members for their support and confidence.

6. Election of Commission Chair and Vice-Chair

The Commission rearranged the agenda to consider this item after Agenda Item 8.

Executive Director Weisberg explained that the Commission is required to elect a Chair and Vice Chair annually. He noted that the titles travel with the member agency, not the individuals. The current Chair and Vice Chair have completed one year of service. Historically, the Commission has re-elected the Chair and Vice Chair after one year of service to serve a second one-year term.

Commissioner Ferrante nominated Gold as Commission Chair, and Commissioner Snyder as Commission Vice Chair. Commissioner Dojiri seconded the motion. The Commission approved the motion unanimously.

7. Future Meeting Dates

Executive Director Weisberg proposed holding the 2020 Commission meetings on March 6, June 5, September 11 and December 4. He explained that Commission meetings are historically held on Fridays, although the Commission is under no obligation to hold its meetings on Fridays.

Commissioner Mogus motioned to approve the proposed 2020 meeting dates, and Commissioner Vroom seconded the motion. The Commission approved the motion unanimously with Commissioners Fleck abstaining.

8. Executive Director's Report

Executive Director Weisberg welcomed four new Commissioners: Alternate Commissioner Martha Tremblay, Department Head for Technical Services for the Sanitation Districts of Los Angeles County; Commissioner Shauna Lorange, Director of the City of San Diego Public Utilities Department; Alternate Commissioner Jenny Newman, Assistant Executive Officer for the Los Angeles Regional Water Quality Control Board; and Commission Chair Mark Gold, Executive Director of the California Ocean Protection Council and Deputy Secretary for Oceans and Coastal Policy for the California Natural Resources Agency. Weisberg explained that Gold replaced Deborah Halberstadt effective July 2019, making Gold the SCCWRP Commission Chair.

Weisberg welcomed four new staff members: Charles Wong, Head of SCCWRP's Chemistry Department, who has worked for the past 19 years as a professor in Canada; Katherine Irving, a Scientist in the Biology Department who just completed a Ph.D. studying flow ecology in Berlin; Elizabeth Fassman-Beck, a SCCWRP Principal Engineer who worked as a professor for the past 15 years in New Zealand and New Jersey; and Eddy Zeng, a Visiting Scientist in the Chemistry Department who is Dean of the School of Environment at Jinan University in China and former head of SCCWRP's Chemistry Department.

Weisberg announced that SCCWRP has made three major facilities upgrades: (1) SCCWRP built a dynamic exposure laboratory to quantify how aquatic organisms respond to fluctuations in pH, dissolved oxygen and other parameters from ocean acidification. Weisberg explained that the Dynamic Stressor Exposure Research Facility (DSERF) is a significant advancement because it allows researchers to move beyond experiments with static exposure scenarios and better replicate realistic exposures resulting from tidal

cycles, seasonal changes and other site-specific conditions. (2) SCCWRP is in the process of upgrading its Chemistry Instrument laboratory to exclude microplastics contamination, which can support its member agencies and enable SCCWRP to serve as a training and measurement center for an international study to develop standardized methods for measuring microplastic particles in aquatic environments. The construction upgrades include a new air circulation system with positive pressure and HEPA filtration to ensure microplastics do not enter the laboratory. (3) SCCWRP has installed new web conferencing cameras and microphones in the Large Conference Room that make it easier for remote meeting participants to see and hear individuals in the room. Asked by Commissioner Todd Snyder if the Commission meetings will be recorded and placed online, Weisberg said it was possible, but at the Commission's discretion.

Weisberg highlighted four examples of recent SCCWRP activities that exemplify SCCWRP's role as a scientific facilitator, consensus-builder and regional meeting center: (1) SCCWRP has been asked to moderate a meeting between the California Stormwater Quality Association (CASQA) and the Southern California Association of POTWs (SCAP) to discuss how to enhance interactions between wastewater and stormwater agencies. (2) The Southern California Stormwater Monitoring Coalition (SMC) will host a three-day expert panel at SCCWRP on November 20-22 to develop recommendations for the SMC's long-term research agenda. (3) The California Stormwater Authority, a newly formed organization working to enhance collaboration among stormwater managers statewide, will hold its next meeting at SCCWRP on September 20. (4) SCCWRP has been asked to help the West Coast Ocean Alliance, a regional planning body, develop an ocean report card that will span three U.S. states.

Weisberg said planning for SCCWRP's one-day 50th anniversary celebration on October 11 at the Aquarium of the Pacific in Long Beach is going well. He said the celebration will consist of an afternoon technical program focusing on SCCWRP's greatest accomplishments, followed by an evening recognition program focusing on the people and institutions that have contributed to SCCWRP's success. Weisberg said that there is more room to accommodate additional invitees from SCCWRP member agencies, and that he will work through CTAG to extend additional invitations.

Commission Chair Mark Gold arrived at 9:25 am.

9. CTAG Report

CTAG Chair Chad Loflen provided an update on CTAG's August 8 meeting. Loflen reported that CTAG is enthusiastic about the SCCWRP's HF183 research and stormwater BMP research, including SCCWRP's newly published Stormwater BMPs thematic research plan and SCCWRP's new BMP researcher, Principal Engineer Elizabeth-Fassman Beck. Regarding SCCWRP's modeling work to understand the influence of land-based nutrient sources on biogeochemical cycling in the Southern California ocean, Loflen said CTAG will hold a special subcommittee meeting September 19 led by George Robertson of the Orange County Sanitation District to work through model validation issues. A second subcommittee led by Katherine Walsh of the State Water Board, focusing on model application, is just getting started. Loflen said CTAG's next intersessional research planning

workshop will focus on SCCWRP's Bioassessment research theme and will be held January 30, 2020. The Eutrophication research theme that was originally scheduled for fall 2019 has been postponed to allow the CTAG modeling subcommittees to make progress first.

Executive Director Weisberg added that CTAG's modeling subcommittees represent CTAG at its best. Although SCCWRP researchers have undertaken the technical validation steps to ensure the models are functioning well, it is more relevant for SCCWRP member agencies to decide what validation steps are meaningful before having confidence that the model should be relied upon as the basis for management decisions. Moreover, interpretation of model output is something appropriately taken on by the member agencies.

Commission Chair Mark Gold said goals and targets for optimally managing the impacts of coastal ocean acidification and hypoxia will be part of the California Ocean Protection Council's strategic plan, which will be considered for approval in November 2019.

Loflen said CTAG recommends supporting the five contracts that CTAG reviewed.

10. Contract Review

SCCWRP's Joint Powers Agreement requires Commission approval of contracts of more than \$250,000, and the State of California requests a resolution of acceptance for contracts exceeding \$100,000 offered by the State or Regional Water Boards. Executive Director Weisberg said the one contract requiring Commission approval represents a continuation of SCCWRP's ongoing work to develop multitrophic indices using genomic technologies:

- 1) SEPA (\$296,820)
Next-generation Molecular Tools for Assessing Stream Ecosystem

Commissioner Dojiri motioned to approve the contract requiring Commission approval, and Commissioner Carr seconded the motion. The Commission approved the motion unanimously, with Commissioner Fleck abstaining.

Weisberg presented the remaining seven contracts, all of which have values of \$250,000 or less and thus do not require Commission approval. The contracts were presented to ensure consistency of the agency's directions with the Commission's intentions.

- 2) County of San Diego (through Weston) (\$50,000)
City of San Diego (through Tetra Tech) (\$50,000)
Facilitation to Identify Sources of Fecal Material to the San Diego River
- 3) San Diego County (through Weston) (\$42,462)
Sewer Exfiltration Pilot Study
- 4) City of San Diego (through Wood) (\$83,600)
ASBS Rocky Intertidal Habitat Surveys
- 5) County of Los Angeles (\$78,000)

Glyphosate Alternatives Technical Advisory Committee Facilitation

- 6) County of Ventura (\$189,324)
Coliphage Evaluation Study
- 7) San Diego County (through Wood) (\$46,952)
Cross Border Study
- 8) Puget Sound Restoration Fund (\$92,374)
Kelp Mitigation for Pteropods

The Commission did not raise any objections to the contracts.

11. Sewage Conveyance System Exfiltration Studies

Executive Director Weisberg introduced this presentation by explaining that the management strategy surrounding human fecal contamination in aquatic systems is evolving. Initially, managers focused on looking at whether there is fecal contamination using traditional measures. This elevated to assessing how many of those contamination events resulted from human sources, leveraging the HF183 human marker that SCCWRP helped develop. The management questions are now evolving from if there is human fecal contamination to what is the source of the human fecal contamination; this information need is reflected in an investigative order recently promulgated by the San Diego Regional Water Quality Control Board and SCCWRP is further advancing the field to help fill that need.

Deputy Director Ken Schiff explained that human fecal contamination could be coming from public sewers, private sewer laterals, septics, homeless populations, and/or from illicit connections/discharges. SCCWRP is working to distinguish among these human fecal sources by focusing on the unique microbial communities growing in biofilms lining the inside of wastewater and stormwater pipes. Preliminary measurements appear to distinguish microbial communities that originate from wastewater vs. stormwater pipes, and potentially also among individual wastewater pipes. Equally as important, researchers are developing approaches to assess the transport of contamination after exiting sewage pipes, and then finding ways to extrapolate findings to the entire watershed. Schiff said researchers are also working on accessing private laterals and septics, including offering complimentary inspections and subsidizing the cost of fixing identified leaks. Researchers are pursuing development of a field census and a survey of people experiencing homelessness to assess their fecal contributions. The full study workplan is scheduled to be finalized December 12.

Asked by Commissioner Robert Ferrante if the biofilm community is altered as it travels through the environment, Schiff said researchers expect the community will change, especially over long distances, but that it likely will not be necessary to track the entire community, as researchers hope to be able to focus on tracking just a handful of sentinel microbes. Asked by Commissioner Peter Vroom if the study design will include measuring fecal contamination in the water surrounding pipes, Schiff said the initial focus is to

determine if the pipes are leaking. Commission Chair Mark Gold commended SCCWRP for the scope, scale and creativity of this study, and asked if SCCWRP is coordinating with county health departments to get information on known sewer leaks. Schiff said not all sewer spills get reported, limiting the effectiveness of relying on such data. Asked by Commissioner Amanda Carr if homeless advocates are being consulted, Schiff said that it is a priority and that the San Diego River Park Foundation, a project partner, has an active homeless outreach program.

12. Antibiotic Resistance

Scientist Joshua Steele described a SCCWRP study to investigate effectiveness of wastewater treatment processes in removing antibiotic-resistant bacteria (ARB) by comparing the kinds and numbers of ARB entering treatment plants with that being discharged. Initial results indicate that ARB and ARB genetic material are present in effluent discharges at considerably lower levels than in influent. The magnitude of reduction was dependent on the level of treatment, which was routinely greater than 95% at facilities with tertiary treatment. Steele next described SCCWRP's upcoming research into assessing how ARB's redistribute in ambient waters once discharged.

Asked by Commission Chair Mark Gold about how to assess risk from ARB that colonizes in human gastrointestinal tracts and nasal passages, Steele said it is an evolving area of investigation among researchers with no clear answers yet. Asked by Commissioner Peter Vroom how researchers can tease apart stormwater influences from wastewater discharge influences on ambient ARBs, Steele said our first step is to measure ARB in wastewater discharges. Weisberg said an important take-home message is that wastewater agencies are not incubators of ARB, but researchers have not yet fully assessed risk, if any, associated with the ARB levels being discharged into the environment.

13. Newport Bay Shellfish Study Update

Executive Director Weisberg introduced this presentation by explaining that most Southern California waters consistently meet recreational bacterial water-quality standards, but that most Southern California water bodies are not meeting a second, more stringent, bacterial standard known as the SHEL standard that is intended to protect shellfishing waters. SCCWRP is conducting a study to revisit the scientific basis for the SHEL standard. Scientist Amy Zimmer-Faust explained that SCCWRP is investigating the connection between the fecal coliform targets codified in the SHEL standard and pathogen contamination in shellfish that impart health risk. Locally harvested oysters were deployed in cages in September in geographically diverse areas of Newport Bay to measure the pathogen levels these filter feeders accumulate in their tissue. The tissue levels will be compared to the coliform levels in water samples collected from the same sites. SCCWRP completed a pilot study over the summer to work through potential challenges, including whether locally harvested oysters could be fully depurated prior to deployment, whether oyster mortality would be an issue upon deployment and whether pathogen levels could be measured in the oyster tissue. The pilot study was successful, with no major challenges or concerns. The full study's findings are expected to be released in draft form in spring 2020.

Asked by Commission Chair Mark Gold if the SHEL standard protects a significant beneficial use, Weisberg said studies have been conducted in Newport Bay to quantify the number of people consuming shellfish and that none had documented human recreational consumption. Commissioner Amanda Carr said the Newport Bay surveys indicate that people who harvest shellfish use them as bait. Commissioner Karen Mogus said that the State Water Board is scheduled to be briefed on the Newport Bay work in December 2019, and that it may be incorporated into an upcoming triennial review of State water-quality standards.

Weisberg added that while the focus of this study is on fecal coliform, SCCWRP is leveraging this shellfish effort to also look at a related microbial water quality issue, such as whether pathogenic *Vibrio* bacteria have become more prevalent in Southern California as waters warm. In specific, SCCWRP has partnered with visiting scientists from University of Arizona and the Craig Ventner Institute in San Diego to quantify other, less frequently measured, shellfish pathogens. Carr commended staff for this addition, noting the importance of examining whether other indicators are more effective and/or relevant for protecting public health.

14. Bight Coliphage Update

Executive Director Weisberg introduced this presentation by explaining that the U.S. Environmental Protection Agency is considering adopting coliphage as an indicator of microbial contamination. The Southern California Bight Regional Monitoring Program has begun evaluating the performance of coliphage as a beach water-quality indicator in comparison to the performance of the existing *Enterococcus* indicator to help inform that decision.

Department Head John Griffith explained that *Enterococcus* is an imperfect indicator for two reasons: 1) It is known to regrow in the environment, potentially overestimating fecal contamination risk; and 2) It is more susceptible to treatment processes than pathogens, potentially underestimating fecal contamination risk. Coliphage is being considered by EPA because it is not believed to regrow in the environment and is a closer mimic to human viruses in its response to wastewater treatment processes. Bight '18 is pursuing creation of a Venn diagram showing the relative occurrence of *Enterococcus* and coliphage on southern California beaches. The first phase of the study was a two-day training exercise to train study participants in the EPA's newly adopted coliphage method. Then, during the second phase, a laboratory intercalibration exercise was completed to ensure participants could get comparable, repeatable results; all labs demonstrated proficiency, enabling researchers to initiate the full study. The third phase involves sampling using both methods at representative Southern California beaches for two years, including both wet and dry weather conditions. That sampling has just begun and he would be glad to provide the Commission with interim results in about a year.

Commission Chair Mark Gold commented that he wishes more beaches representing an even broader range of sites could be added to the study. Asked by Commissioner Todd Snyder what epidemiological work has already been done with coliphage, Weisberg said about half of the coliphage data that the EPA considered when developing its coliphage

method was data from SCCWRP's epidemiological studies in southern California. Those studies found that coliphage worked as well as *Enterococcus* in predicting health risk.

15. Other Business and Communications

Commissioner Amanda Carr said that the California Stormwater Quality Association (CASQA) is visiting a number of water-quality management agencies to present its long-term stormwater vision. She suggested that CASQA could make a future Commission meeting one of its stops. Executive Director Weisberg said that it is rare to have external presenters at Commission meetings, with the Commission historically preferring to use that time to discuss SCCWRP's directions, but that it could be relevant if the talk focused on the nexus between the CASQA initiative and SCCWRP research.

16. Future Meeting Agenda Items

Executive Director Weisberg reminded Commissioners that they previously requested that the December 2019 meeting focus on contaminants of emerging concern (CECs), including transfer of bioanalytical screening tools for management use, pilot testing from the application of CEC monitoring tools in receiving waters, and an update on a SCCWRP-facilitated expert panel that will focus on CECs discharged into the ambient environment. Weisberg also recommended that the Commission hear about the planned development of a West Coast Ocean Alliance ocean health report card. Weisberg said CTAG has requested that a representative from the San Francisco Estuary Institute come to the next CTAG meeting to discuss SFEI's work to document microplastics in the San Francisco Bay Area; Weisberg said he will summarize this presentation at a future Commission meeting. Commission Chair Mark Gold commented that nanotechnology is likely to emerge as a key CEC issue within the next few years, and is related to SCCWRP's existing CEC/microplastics research. Commissioners did not raise any objections to the planned agenda items for the December 2019 Commission meeting. Chair Gold commented that it appeared there would be room in the December 2019 agenda to include a presentation by the California Stormwater Quality Association on its stormwater vision.

Weisberg initiated a discussion regarding agendas for 2020, explaining that the Commission has historically developed agendas for its future meetings for the December agenda using a three-part process: 1) Soliciting ideas for meeting topics from both the Commissioners and CTAG during October, 2) Sending that list to Commissioners for voting in November, and 3) Presenting the voting outcomes with strawman agendas for next year's quarterly meetings at the December meeting. Commissioners expressed support for continuing this practice.

17. Public Comments

Darrell Nolta expressed support for broadcasting Commission meetings online. He said that he had recently spoken with a student studying organic contaminants in sharks who was unaware of SCCWRP's existence; he said such individuals would benefit from more options for accessing Commission meetings. Commissioners asked about the cost of live-streaming Commission meetings. Commission Chair Mark Gold suggested bringing this issue initially to the Personnel and Finance Committee for consideration.

18. Adjournment

Commission Mark Gold adjourned the meeting at 11:55 AM until the next Commission meeting on December 13, 2019 at 9:00 AM.

Attest:

Bryan Nece
Secretary