

**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 3, 2021
9:00 AM**

COMMISSIONERS PRESENT

Ellen Blake — *U.S. Environmental Protection Agency, Region 9*
Karen Mogus — *State Water Resources Control Board*
Jenny Newman (Vice Chair) — *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*
Jim Herberg — *Orange County Sanitation District*
Peter Vroom — *City of San Diego*
Arne Anselm — *Ventura County Watershed Protection District*
Mark Lombos — *Los Angeles County Department of Public Works*
Amanda Carr — *County of Orange*
Todd Snyder (Chair) — *County of San Diego*

STAFF PRESENT

Stephen Weisberg — *Executive Director*
Bryan Nece — *Administrative Officer*
Brant Dveirin — *Legal Counsel*
Ken Schiff — *Deputy Director*
John Griffith — *Department Head*
Alvina Mehinto — *Department Head*
Eric Stein — *Department Head*
Martha Sutula — *Department Head*
Charles Wong — *Department Head*
Scott Martindale — *Communications Director*
Amy Zimmer-Faust — *Senior Scientist*
Joshua Steele — *Senior Scientist*

SCCWRP displayed an opening slide that described the operating procedures for the remote meeting, which was conducted via Zoom. Audience members were invited to address the Commission by making a request via the Zoom Q&A box.

Commission Chair Todd Snyder called the meeting to order at 9:00 AM

CONSENT AGENDA

1. Minutes of Meetings Held June 11, 2021

2. Quarterly Financial Statement for the Period Ended June 30, 2021

3. Quarterly Statement of Investments at June 30, 2021

4. Minutes of CTAG Meetings Held August 5, 2021

Commissioner Carr motioned to approve Consent Items 1-4, and Commissioner Dojiri seconded the motion. The Commission approved the motion by roll call vote.

REGULAR AGENDA

5. Personnel and Finance Committee Report

Peter Vroom, Chair of the Personnel and Finance Committee, reported that the Committee had re-elected him the Chair. Vroom said SCCWRP remains in strong financial health, with a strong revenue funnel and exceptionally high staff productivity. About half of SCCWRP staff have been coming into the office each day following SCCWRP's decision to partially reopen to staff on August 1, 2021. Vroom said there have been no known instances of workplace-related COVID-19 transmission at SCCWRP to date.

Vroom reported that the Committee is recommending that the Commission consider offering a remote teleconferencing option for two of its four meetings each year. Under this proposal, multiple teleconferencing hubs would be set up at publicly accessible, central locations statewide (e.g., Sacramento, San Francisco, San Diego), enabling both Commissioners and members of the public to attend Commission meetings at these sites. The Committee is recommending that the teleconferencing hubs be used for the March and September meetings, while all Commissioners come to SCCWRP for the June and December meetings.

Commissioners expressed support for the Committee's recommendation. Commissioner Mogus said her office had recently upgraded its conference rooms and could host the teleconferencing hub in Sacramento.

6. Election of Commission Chair and Vice-Chair

Executive Director Weisberg explained that the Commission is required to elect a Chair and Vice Chair annually. While elections occur annually, the Commission Chair and Vice Chair typically serve two successive years. The current Chair and Vice Chair have served one year.

Commissioner Vroom nominated Todd Snyder as Commission Chair, and Renee Purdy as Commission Vice Chair. Commissioner Ferrante seconded the motion. The Commission approved the motion by roll call vote.

Commissioner Mogus suggested that the Commission agendize the annual election of the Chair and Vice Chair at its June Commission meeting going forward, to give Commissioners

an opportunity to begin discussing who they plan to nominate to these leadership positions in the Commission's September meeting.

7. Future Meeting Dates

Executive Director Weisberg proposed holding the 2022 Commission meetings on March 4, June 3, September 9, and December 2. He explained that Commission meetings have historically been held on Fridays, although the Commission is not obligated to hold its meetings on Fridays. Commissioners agreed to hold their 2022 Commission meetings on these dates.

8. Executive Director's Report

Executive Director Weisberg reported two changes on the Commission: (1) Alternate Commissioner Jayne Joy has been promoted to full Commissioner following her promotion to Executive Officer for the Santa Ana Regional Water Quality Control Board; Joy replaces Hope Smythe, who retired. (2) Mark Lombos was appointed a one-time Commission substitute for the Los Angeles County Flood Control District, with his appointment to the role likely to become permanent following Alternate Commissioner Paul Alva's retirement.

Weisberg reported that SCCWRP remains highly successful from a productivity and national leadership perspective throughout COVID, providing several examples: 1) SCCWRP's work is a central part of the evidence EPA is using as they consider coliphage as a potential alternative fecal indicator bacteria for beach water quality monitoring; 2) Our work on use of DNA sequencing for bacterial source identification is unparalleled; 3) SCCWRP is at the center of international efforts to produce synchronized chemistry and biology data sets for tracking the effects of ocean acidification, presently coordinating those efforts for four prominent West Coast regional marine monitoring programs: Bight '18, the National Oceanic and Atmospheric Administration (NOAA) coastal survey, California Cooperative Fisheries Investigations (CalCOFI), and Applied California Current Ecosystem Studies (ACCESS) Program; 4) SCCWRP has been facilitating a year-long, international workshop to develop scientific consensus on the health-based thresholds at which aquatic life and humans begin to experience adverse effects from microplastics exposure; about 900 people from around the world attended workshop sessions virtually, and SCCWRP is co-authoring about a dozen journal articles based on the consensus and insights developed during the workshop; and 5) SCCWRP is hosting two international scientific conferences in early 2022 that will examine (a) how to improve management of urban stormwater drainage systems and (b) how the DNA that aquatic organisms shed into their environment – known as environmental DNA, or eDNA – can be used for routine monitoring.

9. CTAG Report

CTAG Chair Choi reported that CTAG Representative Chad Loflen has agreed to serve as CTAG Past Chair to complete the term of Past Chair Neil Searing, who recently took a new job. Choi said Alternate Commissioner Justine Kimball will serve as the California Ocean Protection Council's temporary CTAG substitute for Holly Wyer, who recently took a new job. CTAG Representative Philip Markle will retire in October 2021; his replacement has not yet been named. CTAG has decided to hold virtual meetings for the remainder of 2021 and is in the process of developing a plan for potentially resuming at least some CTAG

meetings in person in 2022. CTAG is in the process of reviewing an updated Research Plan for SCCWRP's Bioassessment research theme; it will be published to SCCWRP's website following CTAG review.

Asked by Commissioner Mogus why causal assessment and protective assessment are grouped together in SCCWRP's Bioassessment Thematic Research Plan, Department Head Stein said that diagnosing causes of degraded condition (i.e., causal assessment) is becoming as much of a management priority in California as diagnosing threats to healthy water bodies (i.e., protective assessment).

Choi said CTAG recommends Commission approval of SCCWRP contracts (Agenda Item 10).

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. Weisberg recommended approval of the following contracts:

- 1) Ocean Protection Council (\$618,000)
OAH Biomonitoring
- 2) EPA (through Ecosystem Planning & Restoration) (\$1,215,371)
Stream Assessment
- 3) State Water Board (through Paradigm Environmental, Inc) (\$800,000)
Environmental Flows

Asked by Commissioner Dojiri about the relationship between cannabis cultivation and environmental flows in California (Contract #3), Department Head Stein said the State Water Board has begun implementing the new California Environmental Flows Framework for priority areas, including State licensing to grow cannabis, which requires the State to assess whether there will be any adverse effects from diverting water resources to support cannabis cultivation.

Commissioner Carr motioned to approve the contracts requiring Commission approval, and Commissioner Dojiri seconded the motion. The Commission approved the motion by roll call unanimously, with Commissioners Mogus, Newman, Joy and Barker abstaining on Contract #3, and Commissioner Blake abstaining on all.

Weisberg presented the remaining four 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.

- 4) City of San Diego (\$80,000)
City of Los Angeles (\$44,000)
SARS-CoV-2 Sample Analysis

- 5) Miller Marine Science & Consulting (\$7,400)
Huntington Beach Desalination Plant
- 6) California Fish and Wildlife (through San Diego Natural History Museum) (\$62,875)
Baja Estuary Assessment
- 7) Los Angeles County Sanitation Districts (\$90,897)
San Gabriel and San Clara Rivers Temperature Study

The Commission did not raise any questions about, or objections to, the contracts.

11. Vibrio

Senior Scientist Zimmer-Faust began her presentation by explaining that while the traditional focus of fecal pollution management in recreational water bodies has been on norovirus and other pathogens that cause gastrointestinal illness, there is growing concern about *Vibrio* bacteria, which can cause both GI illness and wound infections. *Vibrio* are becoming more common in Southern California as a result of warmer waters stemming from climate change. In recent years, SCCWRP has been taking advantage of water-quality sampling activities that were conducted as part of other studies to opportunistically monitor *Vibrio* across multiple sites in multiple Southern California embayments at multiple times of the year. SCCWRP found *Vibrio* in all of these samples. The challenge is that there is limited information on how to correlate *Vibrio* levels to health risks. For recreational waters, there are no *Vibrio* health-based thresholds. For locally harvested shellfish, SCCWRP found that the *Vibrio* levels in oysters in Newport Bay were often above FDA (Food and Drug Administration) thresholds for *V. parahaemolyticus*, one of the most common types of *Vibrio* that can sicken humans. SCCWRP is working to improve and automate measurement of pathogenic *Vibrio*, expand screening for more *Vibrio* types, and understand relationships among environmental co-variates and how they correlate to health risks.

Asked by Commission Chair Snyder about a tentative threshold for *V. parahaemolyticus* that was established by the California Department of Public Health, Zimmer-Faust said this threshold may not be accurately reflecting illness risk and is intended to serve as a threshold informing when follow-up monitoring should be conducted. Asked by Commissioner Ferrante how much of an issue *Vibrio* is in parts of the country with warmer waters than Southern California, Zimmer-Faust said health warnings are routinely issued for recreational waters in the U.S. Southeast; moreover, with more historical data, other parts of the country have established a strong correlation between *Vibrio* levels and water temperature. Commissioner Carr commented that while existing bacterial water-quality standards for local shellfish harvesting don't appear to correlate to health risks, the standards may need to be revised to consider *Vibrio* – a pathogen that is likely to correlate to increased health risks despite there being no recreational water-quality standards for it. Asked by Snyder about *Vibrio* sampling in open waters, Zimmer-Faust said the data are much more limited.

12. Coliphage

Department Head Griffith began his presentation by explaining that the U.S. Environmental Protection Agency is pursuing the development of coliphage viruses as an alternate indicator for routine beach water-quality monitoring. Unlike fecal bacterial indicators, coliphage are viruses, making them more similar than bacterial indicators to the viruses that sicken humans. Coliphage viruses also can survive wastewater treatment processes and have different fates and transport in the environment. Data from SCCWRP-led epidemiological studies in Southern California were a main driver of the EPA's interest in developing a coliphage-based fecal contamination indicator. Already, the EPA has published standardized methods for measuring coliphage in recreational waters. The EPA is now pursuing development of health-based coliphage thresholds for recreational waters. As part of the Southern California Bight 2018 Regional Monitoring Program, SCCWRP and its member agencies are directly comparing the coliphage-based method to the established *Enterococcus* bacteria-based method. Based on preliminary results, there appears to be a strong correlation between the coliphage and *Enterococcus* measurements. The strength of this correlation in dry weather is based on the small portion of sites where the coliphage method detected human fecal contamination; there were numerous sites where no contamination was detected by the coliphage method, but where contamination was detected by the *Enterococcus* method – likely due to the fact that the *Enterococcus* method detects all sources of fecal contamination, not just human.

Asked by Commissioner Carr about the management utility of using a second water-quality indicator that may offer conflicting results, Griffith said the likely use case for the coliphage method is to help managers prioritize sites where action is needed most to reduce fecal contamination levels; agreement from both indicators would increase confidence in proposed management actions, while in other cases, each line of evidence would provide different types of insights that will be relevant in context (neither indicator is the perfect method – both indicators have flaws). Asked by Commissioner Dojiri how rapidly coliphage can provide results, Griffith said it is an overnight method.

13. HF183 Threshold

Senior Scientist Zimmer-Faust began her presentation by explaining that although the genetic bacterial marker known as HF183 is a widely used indicator of human fecal contamination, managers do not yet know the relationship between HF183 levels and health risk for humans who ingest contaminated water in recreational settings. SCCWRP is working toward developing risk-based thresholds for HF183 in stormwater using a modeling approach known as Quantitative Microbial Risk Assessment (QMRA). During a three-year study that is just kicking off, both HF183 and pathogens will be measured in the same stormwater samples, and modeling will be used to produce data for different HF183 concentrations under different hypothetical ingestion volumes. The goal is to develop health-based thresholds for HF183.

Asked by Commissioner Vroom if the QMRA model would be validated, Zimmer-Faust said that there are no present plans to validate it, but she noted that QMRA is an EPA-approved modeling method and SCCWRP already has extensively validated the data that will be fed into the model via prior Southern California epidemiological studies. Commissioner Carr

commented that there is no regulatory standard for HF183 and asked if such a standard might eventually be developed for HF183. Commissioner Barker said the San Diego Regional Water Quality Control Board is exploring potentially moving in this direction. Asked by Carr about the value of measuring HF183 given that it cannot distinguish between viable and nonviable bacteria, Zimmer-Faust said the tool's anticipated primary utility is for monitoring wet-weather flows.

14. Methods for Determining Potential Exfiltration from Wastewater Conveyance Systems

Senior Scientist Steele began his presentation by explaining that although it is possible to measure human fecal contamination in receiving waters, scientists are still working to develop methods to help managers identify which specific upstream sources are the most likely major contributors. With fecal contamination widespread in wet weather, researchers hypothesize that this contamination could be coming from exfiltration from public sewer lines, sewer overflows, lateral lines, septic system leaks, and/or direct deposition of fecal matter in and near waterways. SCCWRP has begun investigating how to identify fecal contamination that originated from one of these potential sources: exfiltration from public sewer lines. SCCWRP is investigating whether the microbial community that grows inside sewer pipes – known as biofilm – can be identified in stormwater runoff making its way to the San Diego River and its tributaries, and whether the biofilm is unique to the sewer pipes. SCCWRP also is working to develop a method to directly measure any volumetric loss in sewage as it travels through a given section of sewer pipe. Initial results from the biofilm investigation show that the biofilm inside sanitary sewer pipes is distinct from the biofilm community inside storm drain pipes. Meanwhile, researchers found the sewer biofilm at every stormwater site that was sampled to date in San Diego, albeit at very dilute concentrations. Work is ongoing to understand what these findings mean, including putting them into a managerially relevant context.

Asked by Commissioners Carr and Herberg about whether the biofilm method is capable of distinguishing among different types and sizes of sewer infrastructure, Steele said this is an active area of investigation.

15. COVID-19

Senior Scientist Steele began his presentation by explaining that California's wastewater management community has been working proactively to measure COVID-19 viral levels in wastewater influent as a strategy for tracking the prevalence of infections in communities. Over the past two years, more than 40 POTW facilities have been collecting data. SCCWRP is working to help this community effectively transition wastewater-based epidemiology into a management tool that can inform future public health decisions. Through the California Water Quality Monitoring Council, SCCWRP is helping to coordinate a statewide effort to unify and improve sample collection and measurement methods, as well as data analysis and interpretation methods. All of these standardized methods and best practices can then be used to improve the quality of data being generated. SCCWRP also is exploring the feasibility of monitoring SARS-CoV-2 variants.

16. Other Business and Communications

None

17. Future Meeting Agenda Items

Executive Director Weisberg said the Commission previously asked for a presentation in December 2021 on how SCCWRP's environmental flows research is being adapted for use in a management context. Commissioners agreed to let CTAG set the rest of the meeting agenda items. Commission Chair Snyder invited Commissioners to suggest agenda items and said he will be in touch when a decision is made regarding when SCCWRP will begin using multiple teleconferencing hubs for Commission meetings.

18. Public Comments

None

19. Adjournment

Commission Chair Todd Snyder adjourned the meeting at 11:17 AM until the next Commission meeting on December 10, 2021 at 9:00 AM.

Attest:

Bryan Nece
Secretary