

**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**

December 4, 2020

9:00 AM

COMMISSIONERS PRESENT

Ellen Blake — *U.S. Environmental Protection Agency, Region 9*
Karen Mogus — *State Water Resources Control Board*
Mark Gold — *California Ocean Protection Council*
Renee Purdy (Vice Chair)— *Los Angeles Regional Water Quality Control Board*
Terri Reeder — *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 Herzberg — *Orange County Sanitation District*
Peter Vroom — *City of San Diego*
Arne Anselm — *Ventura County Watershed Protection District*
Amanda Carr — *County of Orange*
Todd Snyder (Chair) — *County of San Diego*

STAFF PRESENT

Stephen Weisberg — *Executive Director*
Bryan Nece — *Administrative Officer*
Wes Beverlin — *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*
Elizabeth Fassman-Beck — *Principal Engineer*
Dario Diehl — *Marine Programs Coordinator*
Bowen Du — *Scientist*
Christina Frieder — *Scientist*
Leah Hampton — *Scientist*
Minna Ho — *Scientist*
Katie Irving — *Scientist*
Faycal Kessouri — *Senior Scientist*
Syd Kotar — *Research Technician*
Scott Martindale — *Communications Director*
Karen McLaughlin — *Senior Scientist*
Paul Smith — *Network Administrator*
Jayme Smith — *Scientist*

Joshua Steele — *Scientist*
Susanna Theroux — *Senior Scientist*
Kristine Taniguchi-Quan — *Scientist*
David Wanless— *Senior Research Technician*
Amy Zimmer-Faust — *Scientist*

Commission Chair Todd Snyder called the meeting to order at 9:02 AM. It was announced that Terri Reeder is attending the meeting as Commissioner Smythe's one-time replacement, and that Commissioner Anselm would be joining the meeting late due to another obligation.

CONSENT AGENDA

- 1. Minutes of Meetings Held September 11, 2020**
- 2. Quarterly Financial Statement for the Period Ended September 30, 2020**
- 3. Quarterly Statement of Investments at September 30, 2020**
- 4. Minutes of CTAG Meetings Held November 6, 2020**

Commissioner Carr motioned to approve Consent Items 1-4, Commissioner Ferrante 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 reviewed SCCWRP's most recent financial audit and recommends that the Commission vote to receive the 2020 audit. Vroom said SCCWRP remains in strong financial health with healthy reserves. Vroom said there have been no known COVID-19 transmissions in the workplace at SCCWRP, and that most SCCWRP staff continue to work remotely. Vroom provided an update on the status of SCCWRP's 2021-2026 Joint Powers Agreement, which will extend the agency's existence for five more years. JPA signatures have already been obtained for the County of Los Angeles, with other member agencies in the process of obtaining these signatures. Vroom said the Committee also completed a discussion on SCCWRP succession planning.

6. 2020 Financial Audit

Executive Director Weisberg presented the results of the agency's annual audit. The financial audit report was clean without deficiencies or matters of noncompliance. Weisberg noted that this audit is the 20th in a row that has come back clean, even as SCCWRP has worked with multiple auditors in that time span. Weisberg also said the auditor verbally told SCCWRP that the organization is among the most well-prepared organizations he's ever worked with.

Commissioner Dojiri motioned to receive the 2020 Financial Audit, and Commissioner Vroom seconded the motion. The Commission approved the motion unanimously by roll call vote.

7. Executive Director's Report

Executive Director Weisberg reported that SCCWRP staff remains productive while working primarily remotely. About 30% of staff come to SCCWRP regularly to use the agency's specialized facilities, but they only come during the times when they need to use these facilities, which minimizes in-person interactions in the workplace. SCCWRP has adapted well to hosting remote meetings, although these meetings are not a perfect substitute for the types of valuable interactions that happen at in-person meetings. Weisberg discussed three recent examples of SCCWRP's success hosting remote meetings: (1) In fall 2020, SCCWRP brought together an international panel of 24 experts specializing in the health effects of microplastics exposure to begin developing consensus on microplastics health thresholds for humans and wildlife. The meeting kicked off with a five-part weekly webinar series that attracted 715 people from 32 countries, including three-fourths of SCCWRP member agencies. (2) SCCWRP reconvened a statewide expert panel on the ecosystem impacts of CECs that will update its original 2012 guidance on how to protect California's aquatic ecosystems from CEC impacts. The public kickoff meeting was held via a series of shorter sessions over a four-day period in October, then the panel began meeting for a series of remote meetings. (3) CTAG has scheduled two SCCWRP research planning intersessionals for January and February 2021 that will update SCCWRP's full thematic CEC Research Plan and examine whether to develop a potential new Environmental Risk Assessment research theme, respectively. Instead of holding the CTAG meetings on a single day, the meetings will be broken up into multiple shorter sessions.

Weisberg also said SCCWRP has played an instrumental role in the recent development of two statewide reports scheduled to be published in 2021 that transcend SCCWRP: (1) SCCWRP codeveloped a new statewide technical framework designed to improve consistency and quality in how water resources managers set environmental flow targets across California. The California Environmental Flows Framework, which has been under development for the past three years, is made up of 12 steps that are chronicled in a forthcoming technical report. During the development of the framework, SCCWRP helped launch projects in the Los Angeles River and southern Orange County to test-drive this framework. (2) SCCWRP coauthored a statewide strategy with the State Water Board for how California can begin building capacity to comprehensively monitor freshwater harmful algal blooms (FHAB).

8. CTAG Report

CTAG Chair Neil Searing reported that CTAG has been working to calibrate the length and format of its remote meetings, as it is unlikely CTAG will be able to resume in-person meetings for many more months. CTAG has scheduled two intersessional research planning workshops that will be held remotely: The first in January 2021 will update SCCWRP's full thematic Research Plan for CECs, including deciding whether to house microplastics research under CEC research or make it a separate research theme; the second CTAG intersessional in February 2021 will explore whether to develop a potential new

Environmental Risk Assessment research theme. CTAG has decided to focus on reviewing SCCWRP's research on ocean acidification and hypoxia (OAH) modeling and biological effects at its upcoming February 2021 meeting. Searing said CTAG recommends approval of the contract requiring Commission approval (Agenda Item 9).

Asked by Commission Chair Snyder about the work products from intersessionals, Weisberg said SCCWRP staff, in collaboration with CTAG, will produce an approximately 20-page document that lays out the next 5-10 years of research for that thematic area. CTAG also uses the research planning intersessionals to inform an annual CTAG cross-prioritization exercise, where each member agency is given an imaginary \$1 million and asked to divvy up those funds among SCCWRP's research themes.

9. 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 contract:

- 1) County of San Diego (\$4,990,000)
Identify and Quantify the Sources and Transport Pathways of Human Fecal Material to the Lower San Diego River Watershed

Commissioner Dojiri motioned to approve the above contract requiring Commission approval, and Commissioner Carr seconded the motion. The Commission approved the motion by roll call vote unanimously, with Commissioners Snyder and Anselm abstaining.

Weisberg presented the remaining two contracts, both 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 Solutions) (\$20,000)
Evaluation of Biological Water Quality Objectives
- 3) Los Angeles County Flood Control District (\$42,000)
Safe Clean Water Program (SCWP) Scientific Studies Proposal Review Coordination

The Commission did not raise any objections to the contracts.

10. COVID

Executive Director Weisberg offered introductory remarks to the next three presentations, explaining that they are all centered around projects currently underway as part of SCCWRP's Microbial Water Quality research theme. Weisberg said the first project being discussed is part of a national project to build a wastewater surveillance system for monitoring COVID-19 community infections – a system that has the potential to offer an advantage over traditional COVID-19 testing, which captures infection rates among only a self-selecting subset of the population.

Department Head Griffith said that the concept of using wastewater to monitor pathogens in communities is not new and that SCCWRP's POTW member agencies are among about 50 treatment plants participating in a national study coordinated through Stanford University. SCCWRP's focus is on rapidly building capacity for managers to conduct routine monitoring of SARS-CoV2 virus concentrations in wastewater influent. There are multiple different, non-standardized methods being used to measure the virus in wastewater that can result in differences of two orders of magnitude in the measured concentrations. Hence, SCCWRP is working to identify these sources of variability through multiple controlled experiments. Among the many discrete variables that researchers are examining is looking at whether the type of samples being collected (influent vs. settled solids) affects results, how often sampling must be conducted to reliably track changing virus levels, and the methods being used for processing steps, from inactivating the virus to extraction and purification. Researchers also are examining differences among the primers used to target the part of the virus genome that ultimately enables researchers to quantify the virus concentrations, as well as the method used to amplify the target gene. Thus far, key takeaways that researchers have learned include: (1) Sampling needs to be done more than once a week, albeit more than once a day appears to be unnecessary. (2) Freezing the fragile coronavirus appears to lead to a reduction in the measurable virus, and heating has an even bigger impact. (3) The two most common viral genes used to quantify the virus – N1 and N2 – appear to both provide comparable results.

Asked by Commissioner Ferrante how quickly the virus can be quantified after sampling wastewater influent, Griffith said it can be done within the same day. Ferrante added that his agency is inactivating the virus as a safety measure, even though inactivation appears to reduce the measurable virus in a sample. Griffith said that initial consensus among researchers is that detergents and soaps in wastewater influent are likely preventing the virus from remaining viable, although research is ongoing. He added that the insensitivity added by various means of inactivation are unimportant with the high concentrations encountered now, and that switching methods to add sensitivity would lessen the value of the time series, so he would not change methods until the concentrations fell to low levels or if there was interest in moving upstream to look at smaller parts of the sewershed.

Asked by Commission Chair Snyder about how the rollout of vaccines will impact this work, Griffith said the virus measurement data will be overlaid on top of vaccination rates in a community to look for a tapering off of infections.

Commissioner Gold said that it will be critical to get sewershed-specific COVID-19 infection rate data from public health agencies; these data are not currently being released at the sewershed level. Commissioner Mogus commented that public health officials are not necessarily tracking where infected individuals live, so it may not be possible to make sewershed-specific infection data available. Ferrante said that he hopes the wastewater surveillance system could be used as an early-warning indicator of future resurgences in COVID-19 infections in a community.

11. Newport Bay Shellfish

Executive Director Weisberg introduced this presentation by explaining that California's SHEL water-quality standard is intended to protect health of people who consume locally harvested shellfish and is so stringent that many reference areas in the State don't meet it. Moreover, the threshold was established long ago without a strong scientific foundation. Newport Bay is the first location in the State where the standard has led to a TMDL, which is due in 2022, and a broad array of the community, including the Regional Board, the local cities, and the local NGO community jointly requested that SCCWRP undertake a study to assess whether there is a good relationship between the standard and beneficial uses.

Scientist Zimmer-Faust explained that stakeholders collaborated on a study to examine shellfish tissue water quality in Newport Bay. Native Pacific oysters were deployed in cages at multiple sites across the Bay during dry weather. Water quality was measured at these sites, and the shellfish tissue were analyzed for fecal indicator bacteria and human viruses. Initial results showed that there appear to be a disconnect between California's existing shellfish standard and pathogen levels measured in shellfish tissue. Zimmer-Faust indicated that the study so far has only been conducted in dry weather and with one species; the intent is to repeat it in other seasons, particularly under wet weather, and with a second species, before reaching conclusions.

Commissioner Gold commented that pathogens in water are a concern for aquaculture and asked what pathogens were detected. Zimmer-Faust said that they measured norovirus, adenovirus, and coliphage. Commissioner Reeder said there is little chance of aquaculture being established in Newport Bay, but that the shellfish water-quality standard is designed to extend to protections for recreational harvesting. Commissioner Carr commented that the study is expensive and since the results are applicable to many other areas in the State, it would be helpful to find additional study partners to help fund the study and to extend it to other geographies in the state. Asked by Weisberg if consideration of the SHEL standard is a priority in the State Water Board's most recent Triennial Review of the Ocean Plan, Commissioner Mogus said the SHEL standard has been identified as a priority, but that it is unknown when the State will move forward in this area due to staffing issues. Regarding the fast-approaching 2022 Newport Bay bacterial TMDL deadline, Mogus said her office should begin discussions with stakeholders to explore options. Reeder added that regulators are exploring the possibility of separating commercial beneficial uses and recreational uses. Commissioner Blake said she would be happy to facilitate getting the USEPA involved in these discussions.

12. Exfiltration

Executive Director Weisberg introduced this presentation by explaining that SCCWRP has played a pivotal role in transitioning the HF183 human fecal marker into widespread management use, and that the next step is to pinpoint the specific sources where fecal contamination is originating.

Scientist Steele explained that SCCWRP is investigating three main potential sources of wet-weather human fecal contamination: public sewer systems, private sewer systems, and direct deposition into waterways due to illicit discharges and/or illegal dumping. The

HF183 marker cannot inform which of these three potential sources is the culprit for widespread fecal contamination in waterways. Steele said SCCWRP's initial focus is on investigating potential exfiltration from public sewer systems. SCCWRP is exploring whether the microbial community that lives on the insides of sewer pipes and storm drain pipes – known as biofilm – is unique to the respective type of pipe it grows in, which would enable biofilm to serve as a tracer. The DNA of biofilm is being sequenced, and then researchers are looking at overall patterns in the sequencing data. Preliminary analyses indicate that the biofilm sequencing profile of sewer pipes is different from storm drain pipes. Steele said SCCWRP also is investigating how to measure potential exfiltration from underground sewer pipes volumetrically. Researchers are temporarily plugging sewer lines and then pumping water through a specific section, enabling them to measure if any water is being lost as it travels through the pipe. Initial results indicate that this method is repeatable and sensitive enough to detect small amounts of exfiltration loss.

Commissioner Herberg asked how SCCWRP is interacting with engineers; Steele said engineers from the County and City of San Diego are involved. Commissioner Dojiri commented that this is an exciting study and said that sites like Inner Cabrillo Beach – where managers have struggled to identify the origins of a persistent fecal signal – could benefit from these new methods. Commissioner Snyder encouraged SCCWRP to examine whether exfiltration is occurring in sewer pipes with laterals; Steele said SCCWRP will examine pipes with laterals during a later phase of the study.

13. Other Business and Communications

None

14. Future Meeting Agenda Items

Executive Director Weisberg said that CTAG recommends that the March 2021 Commission meeting focus on ocean acidification and hypoxia (OAH) research. Weisberg indicated that staff could brief the Commission on how the OAH model is being updated to include more recent nutrient loading data sets and some of the model runs that are planned once the model update is completed. SCCWRP can also provide an update on the outcomes of recent expert scientific workshops to develop OAH biological thresholds, and also potentially preview the Bight '18 Ocean Acidification study element that will begin in summer 2021. CTAG also recommended that the June 2021 Commission meeting be focused on SCCWRP's study to standardize microplastics measurement methods and its workshop to determine what levels of microplastics correspond to biological effects. Commission members acknowledged these would be good topic areas around which to focus the next two meetings.

Weisberg said he heard the Commission express interest in hearing presentations about *Vibrio* bacteria and aquaculture at future meetings, although he said his preference would be to not have the *Vibrio* presentation until the September 2021 meeting.

Commissioner Gold suggested focusing a future Commission meeting on stormwater monitoring and impacts. He also suggested scheduling an update on the COVID-19 wastewater surveillance system every quarter until the project is completed;

Commissioner Mogus said she could provide a COVID surveillance update from the State Water Board's perspective as well.

15. Public Comments

None

16. Adjournment

Commission Chair Todd Snyder adjourned the meeting at 11:39 AM until the next Commission meeting on March 5, 2021 at 9:00 AM.

Attest:

Bryan Nece
Secretary