

**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 5, 2025
9:00 AM**

COMMISSIONERS PRESENT

Susana Arredondo — *Los Angeles Regional Water Quality Control Board*
Eric Lindberg — *Santa Ana Regional Water Quality Control Board*
Dave Gibson — *San Diego Regional Water Quality Control Board*
Jim Marchese — *City of Los Angeles*
Robert Ferrante — *Los Angeles County Sanitation Districts*
Rob Thompson — *Orange County Sanitation District*
Kris McFadden — *City of San Diego*
Jolene Guerrero — *Los Angeles County Flood Control District*
Amanda Carr — *County of Orange*
Christine Tolchin — *County of San Diego*
Rachel Le — *U.S. Environmental Protection Agency, Region 9*
Phillip Crader — *State Water Resources Control Board*
Jenn Eckerle — *California Ocean Protection Council*

OTHER COMMISSIONERS PRESENT

Brian Covellone — *Santa Ana Regional Water Quality Control Board*
Lan Wiborg — *Orange County Sanitation District*
Martha Tremblay — *Los Angeles County Sanitation Districts*
Grant Sharp — *Orange County Public Works*

STAFF PRESENT

Stephen Weisberg — *Executive Director*
Bryan Nece — *Administrative Officer*
Ken Schiff — *Deputy Director*
Jessica Lienau — *Legal Counsel*
Elizabeth Fassman-Beck — *Department Head*
John Griffith — *Department Head*
Alvina Mehinto — *Department Head*
Charles Wong — *Department Head*
Eric Stein — *Department Head*
Martha Sutula — *Department Head*
Scott Martindale — *Communications Director*
Susanna Theroux — *Principal Scientist*
Jill Tupitza — *Scientist*
Lara Jansen — *Scientist*
Ariane Jong-Levinger — *Engineer*

Emily Lau — *Communications Specialist*

OTHERS PRESENT

Lauren Briggs — *Santa Ana Regional Water Quality Control Board*

Ryan Kempster — *City of San Diego Public Utilities Department*

Danny Tang — *Orange County Sanitation District*

Samuel Choi — *Orange County Sanitation District*

Josh Westfall — *Los Angeles County Sanitation Districts*

Jared Voskuhl — *California Association of Sanitation Agencies*

The meeting was broadcast on Zoom for audience members. Remote audience members were invited to address the Commission by making a request via the Zoom Q&A box.

Commission Chair McFadden called the meeting to order at 9:00 AM.

CONSENT AGENDA

1. Minutes of Meetings Held September 5, 2025

2. Quarterly Financial Statement for the Period Ended September 30, 2025

3. Quarterly Statement of Investments on September 30, 2025

4. Minutes of CTAG Meetings Held November 6, 2025

Commissioner Carr motioned to approve Consent Items 1-4, and Commissioner Arredondo seconded the motion. The Commission approved the motion unanimously.

REGULAR AGENDA

5. Personnel and Finance Committee Report

Commissioner Marchese, Chair of the Personnel and Finance Committee, reported that the Committee is overseeing development of a five-year strategic plan for SCCWRP. The strategic plan will be adopted every five years, about a year before initiating the renewal process for SCCWRP's Joint Powers Agreement (JPA), which is also renewed every five years. The first Strategic Plan will likely be completed out of sequence with the next JPA renewal cycle.

Marchese said that SCCWRP is on track to have its next JPA signed by all signatories by the end of June 2026, which will extend the agency's existence for an additional five years.

Marchese also reported SCCWRP remains on a strong financial footing, despite contract clawbacks and disruptions to state and federal funding sources.

Marchese said the Committee reviewed SCCWRP's annual financial audit and recommended the Commission approve the audit (Agenda Item 6).

6. Financial Audit

Executive Director Weisberg introduced this item by congratulating SCCWRP's administrative staff on passing the organization's annual financial audit with no exceptions.

Commissioner Ferrante motioned to receive the 2025 Financial Audit, and Commissioner Gibson seconded the motion. The Commission unanimously approved the motion.

7. Executive Director's Report

Executive Director Weisberg welcomed Rachel Le, who serves as the Alternate CTAG Representative for U.S. Environmental Protection Agency, Region 9, as a one-time replacement for Commissioner Kozelka. Weisberg announced that Legal Counsel Lienau would be participating remotely due to a family emergency. Weisberg introduced Shelby Marhoefer Jess, SCCWRP's new Senior Research Technician in the Microbiology Department, who previously worked at Scripps Institution of Oceanography.

Weisberg reported that SCCWRP and the CTAG ROMS-BEC modeling subcommittee have been meeting monthly to develop a quality assurance project plan (QAPP) consisting of two parts: 1) Enhanced documentation of the modeling tools to enhance transparency and understanding of how the tools are being used, and 2) a case study demonstrating how to quantify uncertainty in the modeling tools' predictions. The CTAG subcommittee has also begun focusing on adapting and expanding the modeling tools to improve forecasting of harmful algal blooms (HABs).

Weisberg said SCCWRP has formed a model scenarios committee with members of the wastewater, regulatory, and NGO community to discuss what type of management scenarios to model. The goals of the committee are to increase transparency across all sectors about the management scenarios being run, design modeling scenarios that all committee members agree are managerially meaningful, and leverage funding for scenarios where there is mutual interest. The committee is a discussion body, not an approval body, and the CTAG modeling subcommittee will be available to provide technical support. Weisberg provided an overview of potential types of scenario discussions and the range of considerations that are part of these discussions; the scenarios include nutrient input reduction, carbon dioxide removal, and alteration in global stressors.

Asked by Commissioner Thompson about specimens collected during the Bight '18 Ocean Acidification study that were originally thought to be pteropods but turned out to be a different gastropod species, Weisberg said Bight '23 is in the middle of working through this, with more work needed to determine if pteropods are not being measured in Bight waters because they are not present or because a different sampling method is needed to detect them. Commissioner Thompson stressed the importance of managers having access to high-quality OA biology data in order to track OA's effects on aquatic life. Commission Chair McFadden requested that SCCWRP provide semiannual updates on this work.

Weisberg continued his report, noting that SCCWRP has been actively engaging with CTAG on multiple projects. SCCWRP and CTAG have formed a subcommittee to pursue a new joint study that will develop a framework for prioritizing contaminants of emerging

concern. Weisberg said CTAG has also formed a subcommittee for SCCWRP's pilot project exploring how artificial intelligence and eDNA can serve as alternatives to trawls (Agenda Item 11).

Lastly, Weisberg highlighted several upcoming meetings that exemplify SCCWRP's ability to bring together experts and stakeholders to work toward consensus: 1) a planning workshop for a coordinated statewide effort to build comprehensive DNA barcoding libraries for intertidal species, 2) a workshop on identifying potential solutions for mitigating the effects of harmful algal blooms (HABs) in coastal waters that will be held at the Orange County Sanitation District, 3) a workshop hosted by Los Angeles County Flood Control District on operations and maintenance for stormwater BMPs (best management practices), and 4) a workshop co-hosted by the Southern California Stormwater Monitoring Coalition (SMC) and California Association of Sanitation Agencies (CASA) to identify paths forward for investigating exfiltration from public sewers systems.

8. CTAG Report

CTAG Chair Lauren Briggs reported that the CTAG subcommittee that has been tasked with developing a process for CTAG to assess the readiness of SCCWRP's work for management uses has come up with a new approach that will be previewed during Agenda Item 13.

Briggs said the CTAG modeling subcommittee that is overseeing SCCWRP's ROMS-BEC modeling work is functioning well and continues to meet monthly to review the quality assurance elements of this work. The CTAG subcommittee is also supporting the model scenarios committee.

Briggs said CTAG reviewed and approved an updated version of SCCWRP's Eutrophication thematic research plan (i.e., 20-pager), following a CTAG all-day Eutrophication research planning intersessional meeting. The next CTAG intersessional planning workshop on SCCWRP's Stormwater BMP research theme will be held on February 17, 2026.

Briggs said CTAG has been working on two fact sheets (climate solutions and cell bioassays) and recommends the Commission approve climate solutions for publication. CTAG and SCCWRP are still working on the cell bioassays draft fact sheet. Briggs said the Commission will discuss the frequency of fact sheet production during Agenda Item 15.

Briggs said CTAG recommends approval of the SCCWRP contract requiring Commission approval (Contract #1, Agenda Item 9).

Briggs said CTAG will hear presentations on the following topics at their future meetings on: 1) a report-out from the CTAG subcommittee providing technical oversight as SCCWRP implements the recommendations from the ROMS-BEC modeling independent review panel, 2) a report-out from the CTAG subcommittee developing a process for CTAG to assess the readiness of SCCWRP's work for management use, 3) the recently launched SCCWRP project to develop a statewide intertidal DNA reference library, 4) an update on the development of a data dashboard supporting the recently completed joint CTAG-SCCWRP study quantifying the cost of environmental monitoring across Southern

California, and 5) a project using low-cost field sensors to automate detection of illicit pollutant discharges in storm drain systems in north Orange County.

9. Contract Review

Executive Director Weisberg reminded the Commission that SCCWRP redesigned the contract memo for projects that require Commission approval to more clearly communicate how the work advances SCCWRP's long-term research priorities and connects to management issues. He also reminded the Commission that SCCWRP will make a presentation about any new contract that CTAG has agreed the Commission should hear. At its November 2025 meeting, CTAG recommended that the Commission hear a presentation on Contract #1, which Principal Scientist Susanna Theroux then delivered. Theroux explained that one of the biggest challenges in adopting environmental DNA (eDNA)-based methods for routine management applications is the lack of DNA reference libraries. Theroux said this contract will help develop comprehensive DNA reference libraries for intertidal habitats in California. SCCWRP will be partnering with taxonomic experts from across the state to close data gaps and help California work toward broadscale adoption of eDNA-based tools and assessments.

Asked by Commissioner Wiborg about the project's geographic coverage, Theroux said the project will also focus only on habitats that can be sampled onshore. Asked by Commissioner Carr about the funding source for this contract, Commissioner Eckerle said the funding comes directly from the State Legislature and is a research priority for the State. Asked by Commissioner Tolchin about how the \$9 million contract would affect SCCWRP's annual budget, Weisberg said SCCWRP is working with other partners and all but about \$400,000 per year will be passed through to these partners. Asked by Commissioner Covellone about the accessibility of the tools developed from this study, Theroux said these resources will be made publicly available. Commissioner Thompson thanked SCCWRP for expanding the contract memos to improve transparency and clarity for the Commission.

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 asked for approval of the following contracts.

- 1) Ocean Protection Council (\$9,000,000)
California Intertidal Biodiversity DNA Barcode

Commissioner Thompson motioned to approve the contract, and Commissioner Lindberg seconded the motion. The Commission approved the motion unanimously with Commissioner Le abstaining.

Weisberg presented the remaining eight contracts, valued at \$250,000 or less and thus not requiring Commission approval. The contracts were presented to ensure consistency of the agency's directions with the Commission's intentions:

- 2) Stanford University (\$50,000)
Kelp Modeling

Asked by Commissioner Thompson to elaborate on Contract #2, Department Head Sutula said the contract will provide funding to expand ongoing kelp modeling efforts to include natural kelp, instead of farmed kelp only.
- 3) County of San Diego (through San Diego Regional Board SEP Fund) (\$44,100)
SMC Regional Watershed Monitoring Program
- 4) U.S. EPA (through Ecosystem Planning & Restoration, LLC) (\$23,707)
Streamflow Duration Assessment Training
- 5) San Bernardino Valley Municipal Water District (\$17,700)
eDNA Analysis
- 6) Ocean Protection Council (\$67,430)
Coastal HAB Control Workshop
- 7) Orange County Water District (\$119,970)
Prado Basin Ecoflow Study
- 8) California Department of Fish and Wildlife (through UC Santa Cruz) (\$165,300)
Developing an eDNA-based Stream Condition Index and eDNA Biodiversity Survey Platform
- 9) USC Sea Grant (Through CSU Fullerton) (\$50,000)
Using Advanced Statistical Analysis to Improve Coastal Water Quality Planning by Updating the Accuracy of Stormwater Pollutant Concentrations

The Commission did not raise any concerns with these contracts.

10. HABS Modeling

Department Head Sutula began the presentation by explaining that harmful algal blooms (HABs) have been increasing in frequency and severity in Southern California coastal waters, and that modeling can help managers better understand the timing and intensity of HAB events, including the toxins they produce. Southern California has experienced multiple large-scale marine mammal stranding events caused by domoic acid (DA), a toxin produced by a ubiquitous type of HAB known as *Pseudo-nitzschia*. The most recent bloom event in 2025 was the largest on record and affected more than 1,500 marine mammals, including sea lions, dolphins, and whales. SCCWRP is exploring how to adapt existing ROMS-BEC (Regional Ocean Modeling System-Biogeochemical Elemental Cycling) modeling tools to examine the influence of natural variability vs. local land-based nutrient inputs in driving and exacerbating HABs. Initial key findings of the modeling work indicate that natural ocean conditions are the dominant driver of domoic acid-producing HABs events, but that land-based nutrients are increasing the risk of HAB events by a nontrivial amount.

Although researchers have made great progress with the modeling work, refinements are still needed to better understand how the model is making its predictions, and to increase confidence in the model results.

Asked by Commission Chair McFadden about why land-based nutrients have different degrees of effects on DA risk from year to year, Sutula said that during high DA risk years, nutrients are putting the foot on the gas pedal of a car that is already moving due to natural ocean conditions, whereas during low DA risk years, land-based nutrient sources aren't enough by itself to create risk. Asked by Commissioner Ferrante if nutrient reductions could inadvertently reduce kelp resilience during marine heatwaves during the fall, Sutula said more modeling work is needed to explore that possibility. Asked by Commissioner Marchese about what it would take to achieve nutrient reductions that would make a meaningful difference, Sutula said we are too early in our HAB modeling work to answer that question with certainty. Commissioner Thompson noted that achieving nutrient reductions from sources such as rivers depends on the season, with the Orange County Sanitation District able to treat most dry-weather flows but not wet-weather flows.

11. Artificial Intelligence for Fish Identification

Executive Director Weisberg began the presentation by explaining that trawling is an imperfect monitoring tool because of its high cost, destructive nature, and inability to capture every organism (i.e., trawling is poorly quantitative). SCCWRP has been working on a pilot study using artificial intelligence (AI) to review underwater video to identify fish observed in a water body as a potential complement or substitute for traditional trawls. Using images and footage from the Crystal Cove Conservancy, SCCWRP has developed a preliminary AI model using garibaldi as the pilot species. SCCWRP asked five experts from the Crystal Cove Conservancy to manually identify garibaldi in more than 800 images as a gold standard for validating the AI model's accuracy. On average, the five experts achieved 94.7% agreement among themselves in identifying garibaldi, while there was 95.3% agreement between SCCWRP's AI model and the five experts in identifying garibaldi. SCCWRP was assessing how factors such as fish orientation, monitoring box size, and water clarity affected the AI model's performance. SCCWRP is continuing to work with the Crystal Cove Conservancy to expand the image library and the AI model to analyze other species. Weisberg said CTAG has formed a subcommittee to explore how AI and environmental DNA (eDNA)-based methods might support or potentially replace traditional trawling methods. Weisberg said SCCWRP was previously asked by the Commission to assess potential negative consequences of using AI and found that the environmental cost of the computing power for this application was equivalent to driving a car for three miles.

Commissioners expressed support for continuing to explore using AI to identify fish and encouraged the CTAG subcommittee to examine the technology as a potential alternative to fish trawls. Asked by Commissioner Crader if the results from the Crystal Cove Conservancy experts were used to train the AI model, Weisberg said no, the AI model was calibrated by SCCWRP. Asked by Commissioner Ferrante whether the AI model can be used in deeper depths where ambient light is limited, Weisberg said that is a topic that the trawl subcommittee can explore. Commissioner Covellone suggested that alternatives, such as infrared or sonar, could be explored for use at greater depths. Asked by Commissioner

Lindberg about whether the models used are developed in-house, Weisberg said SCCWRP is using a combination of in-house and cloud-based tools.

12. Bight Update

Deputy Director Schiff began the presentation by explaining that regional monitoring in the Southern California Bight has become the national model for coordinated, integrated regional monitoring. The Southern California Bight Regional Monitoring Program started in 1994 and has continued in five-year cycles. The latest 2023 cycle is the largest and most complex in the Bight Program's 30-year history, with more than 150 participating agencies across eight study elements. Schiff said CTAG consistently ranks Regional Monitoring as its highest research priority. The Bight Regional Monitoring Program has helped member agencies put their local monitoring data into context. For example, the Sediment Quality study element helps researchers understand the extent, magnitude, and trends of sediment quality impacts across Southern California. The Bight Program also helps managers address emerging issues and evaluate the success of management actions. For example, the Trash study element, which has been quantifying levels of trash in Southern California watersheds, found that plastic bags in particular have decreased over time following the implementation of two bans targeting single-use plastic bags. Schiff said the Bight Program is also an excellent vehicle for testing and onboarding new technology. Schiff reported that the Trash and Microplastics assessment report is expected to be published in mid-2026, followed by assessment reports for Sediment Chemistry and Shellfish Bioaccumulation.

Commissioner Ferrante said the next cycle of the Bight Program could be a perfect opportunity to pilot SCCWRP's artificial intelligence work for fish identification. Asked by Commission Chair McFadden about how source control actions have influenced levels of other types of trash found in waterways (i.e., other than plastic bags), Schiff said the picture is less clear.

13. Readiness Assessment

CTAG Past Chair Kempster began the presentation by explaining that, following its strategic planning meeting in October 2023, the Commission tasked CTAG with developing a process to assess the readiness of SCCWRP's work for management use. In response, CTAG formed a subcommittee to assess how CTAG can provide appropriate technical perspectives to help tee up management and policy-focused discussions at Commission meetings. At the December 2024 Commission meeting, CTAG presented the first iteration of a readiness scale that used a numerical rating system for different indicators, which CTAG ultimately found to be too complicated for long-term use. CTAG then presented a simplified version of the readiness scale at the May 2025 meeting, focusing on a specific question about management readiness for the science. The Commission raised concerns about the appropriateness and relevance of the question, and agreed to partner with CTAG to explore refining the readiness assessment process. After meeting with Commissioners, the subcommittee landed on a new approach to readiness assessment that focuses on providing a qualitative summary of SCCWRP's work readiness for management use. Kempster said CTAG trialed this new approach with SCCWRP's artificial intelligence project to produce a one-paragraph summary capturing CTAG's collective readiness assessment of

the project. If the Commission approves of this approach, Kempster said CTAG will continue to trial it during CTAG's February 2026 meeting.

Commissioners expressed strong support for the latest iteration of the readiness scale and encouraged CTAG to continue testing it with other SCCWRP projects. Commissioner Ferrante, who served as one of the Commissioners who worked on developing the latest readiness scale with CTAG, said this version of the scale accomplishes the principal goal of providing Commissioners with clear technical context, but without overcomplicating the process; the approach also gives CTAG the ability to readily capture a range of different CTAG viewpoints. Asked by Commission Chair McFadden how projects would be selected for assessment of management readiness, Kempster said the CTAG leadership team will identify any projects that are good candidates as they put together the agenda prior to the CTAG meeting. McFadden said the Commission can also identify projects during Commission meetings. Commissioner Wiborg suggested developing a glossary of terms to ensure consistent terminology across readiness assessments.

14. CTAG Operating Guidelines

Executive Director Weisberg reminded the Commission that at the September 2025 Commission meeting, Commissioners began discussing whether CTAG's voting structure for research planning should mirror the Commission's voting, with stormwater agencies receiving only a one-quarter vote each instead of a full vote. The Commission follows this voting arrangement, as set out in SCCWRP's Joint Powers Agreement (JPA). Historically, however, CTAG has followed a one-person, one-vote structure. CTAG recently weighed in on this issue and expressed unanimous support for continuing its existing voting arrangement. At the Commission's September 2025 meeting, the Commission directed Legal Counsel Lienau to provide a legal perspective on the voting issue.

Lienau reported that CTAG, as an advisory committee to the Commission, is required to follow any rules established by the Commission, but that SCCWRP's JPA does not automatically impose any particular voting rules on CTAG. Lienau said the Commission can either formalize new voting rules for CTAG or allow CTAG to continue voting as it has been.

Asked by Commissioner Crader if CTAG's voting rules need to be memorialized in the upcoming JPA, Lienau said no. CTAG Chair Briggs, who was present at the meeting, confirmed that CTAG had unanimously expressed a preference to retain the existing voting approach. Commissioner Ferrante expressed support for keeping the CTAG voting rules, noting that CTAG voting serves only as a nonbinding recommendation to the Commission. Commissioner Thompson said he understood the sentiment but noted that the existing voting structure at the Commission level reflects the lower financial obligations of stormwater member agencies compared to wastewater member agencies. Commissioner Carr pointed out that regulatory member agencies also receive full votes rather than partial votes, even though they do not pay dues. Thompson said he supports regulatory agencies continuing to receive a full vote; he also said he would not be making a motion to change the CTAG voting rules.

In the absence of Commission action, the Commission agreed that CTAG will retain its current voting structure, with each member having a full vote.

15. Fact Sheets

Communications Director Martindale reminded the Commission that SCCWRP is producing a series of two-page education fact sheets that are intended for Commissioners to be able to hand to their board members, executive management and similar audiences. Since 2022, SCCWRP has published 11 fact sheets based on topics prioritized by the Commission. Martindale introduced the next draft fact sheet on climate solutions, which originally started as a fact sheet on climate resiliency, and explained that CTAG has reviewed and recommended approval. He said the Commission agreed to revisit a previous discussion from the September 2025 meeting about the future of the fact sheet series. Martindale said CTAG suggested reducing production frequency to on-demand.

Commissioners expressed support for moving fact sheet production to an on-demand basis. Commissioner Gibson said while the fact sheets have been valuable informational resources, the effort required to produce them outweighs their benefits. Gibson also suggested future fact sheets should be more focused on SCCWRP's direct work. Commissioner Ferrante agreed and added that SCCWRP's quarterly Director's Reports are already effective at providing updates on SCCWRP research.

Commissioners then discussed whether to proceed with completing the cell bioassays fact sheet and the list of remaining fact sheet topics. Asked by Commissioner Carr about whether the cell bioassays fact sheet was close enough to completion to justify finishing it, CTAG Chair Briggs said it would take at least one more quarter of work. The Commission agreed to finish both the climate solutions and cell bioassays fact sheets, with the expectation that the latter would be completed after one more quarter. The Commission also agreed to stop adhering to the list of remaining topics before moving to an on-demand production schedule.

Commissioner Carr requested a revision to the climate solutions fact sheet to clarify the mention of physical habitat restoration as a potential solution for alleviating the effects of stream flow alterations. The Commission agreed to send the climate solutions fact sheet back to CTAG and have it brought back to the Commission in March 2026.

16. Other Business and Communications

Commission Chair McFadden said the City of San Diego has unanimously approved SCCWRP's Joint Powers Agreement (JPA) and is expected to finalize signatures next week.

Commissioner Carr said Orange County Public Works celebrated the 25th anniversary of its OC Watersheds Program in December 2025 and highlighted the success of its partnerships with agencies like SCCWRP.

17. Public Comments

None

18. Future Meeting Agenda Items

Executive Director Weisberg said the Commission agreed to hear updates on shell dissolution monitoring for the Bight Regional Monitoring Program and a study using low-cost field sensors to automate detection of illicit discharges in storm drain systems in Orange County. Commission Chair McFadden suggested that the Commission hear a report on the outcomes of the SMC and CASA exfiltration workshop. Asked by Commission Chair McFadden for an update on the manuscript and dashboard from the joint CTAG-SCCWRP project on the cost of monitoring across Southern California, Weisberg said SCCWRP will bring it to the Commission at a future meeting.

19. Adjournment

Commission Chair McFadden adjourned the meeting at 1:43 PM until the next Commission meeting on March 6, 2026 at 9:00 AM.

Attest:

Bryan Nece
Secretary