

**CENTRAL COAST LONG-TERM ENVIRONMENTAL ASSESSMENT
NETWORK (CCLEAN) Steering Committee
Meeting Minutes**

June 24th, 2026, 2:00 pm
Via Teleconference Zoom Webinar

The meeting was called to order on June 24th, 2026, at approximately 2:03 pm by Jennie Munster. Roll call was taken of the voting committee members signed on to Zoom. The meeting began with introductions followed by the scheduled ROMS-BEC presentation by Dr. Martha Sutula.

Participants - Voting Members: Present:

Jennie Munster, Laboratory Manager and Environmental Compliance Manager: City of Santa Cruz
Patrick Treanor, District Engineer: CAWD
Mohammed Serageldin, Laboratory Manager: CAWD
Connie Machuca, Laboratory Manager: City of Watsonville
Jeremy Long, Wastewater Division Manager: City of Scotts Valley
Olivia Woolery, Laboratory Supervisor: Monterey One Water (M1W)
Matt Thompson, Director of Engineering: Monterey One Water
Alison Imamura, Principal Engineer: Monterey One Water

Voting Members: Absent:

Anne Hogan, Wastewater System Manager: City of Santa Cruz
Dave Martin, Environmental Compliance Inspector: City of Santa Cruz
Mike Crane, Water Quality Chemist: City of Watsonville
Jose Guzman, Operations Manager: Monterey One Water
Sarah Stevens, Environmental and Regulatory Compliance Supervisor: Monterey One Water
Laura Dale, EH&S Manager: Vistra Corp (Moss Landing Power Plant)

A quorum was present. Later in the meeting, after several participants left, the Committee confirmed that a quorum remained for approval of the prior meeting minutes.

Participants - Non-Voting Members and Guests: Present

Aroon Melwani, Senior Scientist, Central Coast Managing Principal Partner: Applied Marine Sciences (AMS)
Sarah Bragg-Flavan, Water Resource Control Engineer: Central Coast Water Board (left early)
Dr. Martha Sutula, Head of Biogeochemistry Department: Southern California Coastal Water Research Project (SCCWRP)

Non-Voting Members: Absent

Dane Hardin, Senior Marine Scientist, Principal: Applied Marine Sciences

Mary Hamilton, Environmental Program Manager: Central Coast Water Board
Cameron Kostigen Mumper, Associate Manager - Water Resources: Soquel Creek Water District

Virtual Public Attendees: None

1. APPEARANCES / PUBLIC COMMENTS

No public appearances or public comments were made.

2. AGENDA CHANGES

No formal agenda changes were requested. The Committee proceeded with Dr. Martha Sutula's presentation early in the meeting as scheduled on the agenda, and the remaining agenda items were handled in an abbreviated manner due to time constraints after the presentation.

3. AGENDA ITEMS

A. Introductions

Discussion:

The Committee conducted roll call and introductions.

Decision:

None.

Action Item:

None.

B. Dr. Martha Sutula's presentation on ROMS-BEC

Discussion:

Dr. Sutula presented on the ROMS-BEC modeling work being used to evaluate water quality impacts of human nutrient sources on the California coast. She explained that the modeling effort began after a 2014 expert panel recommended that West Coast states invest in ocean numerical modeling to understand the influence of human nutrient sources on ocean acidification, hypoxia, harmful algal blooms, and related climate-change pressures.

Dr. Sutula explained that ROMS-BEC is a coupled physical and biogeochemical model implemented coastwide with nested resolution down to approximately 300 meters in the Southern California Bight and the San Francisco/Monterey coast region. She emphasized that the Southern California work is more mature and has generated more intense management discussions, while the San Francisco and Monterey coast work is still in a development phase. For CCLEAN, she described this as an opportunity to help improve the science before major management decisions are made.

The primary request to CCLEAN agencies was to help ensure that model nutrient loads are accurate. Dr. Sutula asked agencies to provide the CCLEAN curated ocean outfall dataset through 2025, respond to the CASA/HDR facility-specific data request, meet with Southern California Coastal Water Research Project (SCCWRP) and HDR where needed to explain complicated wastewater, recycling, and water-resource-management operations, review the compiled model

input dataset, and provide additional data sources not routinely available through standard databases, such as alkalinity.

Dr. Sutula summarized Southern California findings showing that land-based nutrient inputs can have non-trivial effects on ocean acidification, hypoxia, and harmful algal bloom risk, and that Southern California POTW ocean outfalls dominate human inorganic nitrogen sources in that region. She contrasted that with the San Francisco/Monterey coast, where early pathway attribution indicates San Francisco Bay exchange and the Salinas River are major contributors, while Central Coast POTW discharges are non-trivial but not the dominant source. She noted that prior Salinas River loading assumptions need improvement, and Phase 2 work will use improved modeling of Lower Salinas and Pajaro River flows and loads.

The presentation identified key model input constituents, including flow, temperature, conductivity, inorganic nutrients such as nitrate, ammonium, phosphate, and silicate, dissolved oxygen, pH/alkalinity, and organic matter or BOD-based estimates. Dr. Sutula noted that existing CCLEAN data are strong for flow, temperature, and inorganic nutrients, but additional data such as alkalinity would be useful.

During discussion, Patrick Treanor asked whether Carmel Bay is included in the modeling domain; Dr. Sutula confirmed that it is included, although it was not shown in the focal map. Patrick also asked about temperature thresholds and red tide observations; Dr. Sutula explained that Pseudo-nitzschia species have different temperature optima and that the HAB science is still evolving, so model outputs should be understood as risk predictions rather than direct causal determinations. Patrick also asked about the relative role of atmospheric CO₂ versus nutrient effects in ocean acidification; Dr. Sutula explained that upwelling, anthropogenic CO₂ absorption, and local nutrient processes interact, and that additional model outputs should help communicate those relationships in the next 6 to 9 months.

Aroon Melwani asked whether SCCWRP needs only POTW outfall data or all CCLEAN nutrient data. Dr. Sutula said outfall data are essential, but river and ocean data would also be useful, even at lower frequency. POTW and river data are used as model inputs, while ocean monitoring data are useful for model-data comparisons. Aroon indicated that AMS can work on providing the curated dataset. Sarah Bragg-Flavan asked about the timeline, and Dr. Sutula stated that new simulations are targeted for next spring, with current model simulations through 2017 and contextual reporting through 2025. Alison Imamura noted that Monterey One Water recycling efforts have accelerated significantly since 2020, and Dr. Sutula acknowledged the importance of contextualizing model outputs using current and future nutrient-management conditions.

Decision:

No formal action was taken on this item.

Action Item:

AMS will work on providing a curated CCLEAN dataset, including outfall and other relevant nutrient data, through 2025. CCLEAN agencies should respond to the CASA/HDR facility-specific data request and identify additional data sources, such as alkalinity, that are not readily available through CIWQS or EPA ECHO. Agencies with complicated water recycling or water-resource-management operations may meet with SCCWRP/HDR to help avoid double-counting and improve load estimates. The Committee may invite Dr. Sutula back for follow-up discussion after members have had time to review and digest the information.

C. Chair's Report, by Santa Cruz Representative

Discussion:

No separate Chair's Report was provided beyond coordination of Dr. Sutula's presentation and the discussion of how to complete the remaining agenda within the available time.

Decision:

None.

Action Item:

None.

D. Review of Prior Meeting Minutes, Report by CAWD

Discussion:

Patrick Treanor reviewed the May 27, 2026 meeting minutes.

Decision:

Jennie Munster moved to approve the May 27, 2026 meeting minutes. Patrick Treanor seconded the motion. The motion passed without opposition.

Action Item:

None.

E. Lead Agency Remarks, Report by CAWD

Discussion:

Patrick Treanor reported that the AMS Program Year 2026-2027 contract approved by the Committee at the prior meeting would go to the CAWD Board the following day for approval under CAWD purchasing requirements. After Board approval, CAWD would be able to finalize the contract for the next program year.

Decision:

None.

Action Item:

CAWD will take the AMS contract to the CAWD Board for approval and proceed with finalizing the contract after Board authorization.

F. Discuss Addition of Soquel Creek Water District as Member of CCLEAN

Discussion:

The Committee briefly noted that the potential addition of Soquel Creek Water District as a member, or as a Steering Committee member, remains unresolved and was not discussed substantively due to time constraints.

Decision:

This item was tabled.

Action Item:

The item will remain on a future agenda.

G. CCLEAN Membership MOA Revisions**Discussion:**

The Committee noted that MOA revisions are related to the unresolved Soquel Creek membership question. The item was not discussed substantively due to time constraints.

Decision:

This item was tabled.

Action Item:

The item will remain on a future agenda with the Soquel Creek membership discussion.

H. Program Director's Report, Report by Applied Marine Sciences**Discussion:**

Aroon Melwani reported that AMS prepared a short memo on the wet-season side-by-side analyses comparing PHYSIS and WEC methods. He stated that the results largely support the direction of switching to WEC. Although PHYSIS has lower reporting limits, the PHYSIS samples were largely non-detect while WEC samples were detected, which AMS believes supports concerns about volatilization during GC-based analyses and underestimation of actual concentrations. Aroon noted that the comparison dataset from another group was not as clear, but CCLEAN's dataset showed a clearer pattern. AMS included a recommendation for additional work in the next program year to help close out the remaining open questions, and Aroon suggested the Committee discuss the memo at the next meeting after members have reviewed it. Aroon also reported that AMS sent the revised monitoring plan to Sarah Bragg-Flavan at the Central Coast Water Board and is awaiting feedback. He expects the monitoring plan should move forward, but confirmation from the Water Board is pending.

Decision:

No formal action was taken.

Action Item:

AMS will distribute the PHYSIS/WEC side-by-side comparison memo. Committee members should review the memo before the next meeting. AMS will continue coordinating with Water Board staff on the monitoring plan.

I. CCLEAN Topics or Questions for Water Board Staff**Discussion:**

Sarah Bragg-Flavan had to leave the meeting early. Jennie Munster intended to inform Sarah that Santa Cruz had started diverting flow for the headworks project that day, but Sarah had already left the meeting before that discussion could occur.

Decision:

None.

Action Item:

Santa Cruz may follow up with Sarah Bragg-Flavan separately regarding the headworks diversion and related calculations.

J. Water Board's Report, Report by Central Coast Water Board

Discussion:

Before leaving the meeting, Sarah Bragg-Flavan stated that she had no urgent items to report.

Decision:

None.

Action Item:

None.

K. General Announcements

Discussion:

Discussion followed regarding potential Ocean Plan changes, the possibility that statewide Ocean Plan revisions could affect small Central Coast dischargers even if driven by Southern California issues, and potential nutrient-removal technologies. Matt Thompson, Allison Imamura, Jennie Munster and Patrick Treanor discussed planning considerations and challenges of retrofitting existing facilities for nutrient reduction.

Decision:

None.

Action Item:

None.

L. Financial Report, Report by CAWD

Discussion:

Patrick Treanor reviewed the financials near the end of Program Year 2025-2026. He noted that AMS likely still has billings remaining, including analytical costs and possibly one more invoice. The account showed approximately \$216,000 remaining at the time of the meeting. Patrick estimated that approximately \$500,000 had been disbursed against the \$635,000 budget, leaving approximately \$135,000, including contingency and the lead agency fee. Jennie Munster noted

that some side-by-side analytical costs and wet-weather analytical data costs may not yet have been billed. Patrick stated that the program should have enough funds to pay remaining bills and that the year-end status can be reviewed again after closing the program year.

Decision:

None.

Action Item:

CAWD will continue tracking invoices and review final program-year financials after remaining AMS and laboratory costs are received.

4. ADJOURNMENT / NEXT MEETING DATE

The next Regular CCLEAN Committee Meeting will be held on July 22nd, 2026, via Zoom.

ADJOURNMENT: The meeting was adjourned at approximately 3:24 pm.