California Water and Environment Modeling Forum
Promoting Excellence and Consensus in Water and Environment Modeling
P.O. Box 5051, Vacaville, CA 95696-5051 website: www.cwemf.org **email:** cwemf@cwemf.org

Technical Workshop

CE-QUAL-W2 Hydrodynamic and Water Quality Model V5

Hands-on Training Workshop – June 3-5, 2025 (2.5 Days)

June 3 & 4 (8:30 am – 4:30 pm)
June 5 (8:30 am - 12:00 pm)
Woodard and Curran, Inc. Office
801 T Street, Sacramento, CA 95811

This workshop is open to CWEMF members only.
Workshop Fee: $300 ($50 for student)
Refreshments included all three days, lunch not included.

Registration/Payment can be made online at www.cwemf.org. Payment can also be made via check sent to: CWEMF, P.O. Box 5051, Vacaville, CA 95696-5051. As part of the registration process, please email cwemf@cwemf.org to reserve your seat and include "CE-QUAL-W2 Workshop" in the subject line. Go to www.cwemf.org for information on renewing your CWEMF membership or becoming a CWEMF member.

CE-QUAL-W2 (W2) is a two-dimensional, laterally averaged hydrodynamic and water quality model with over 30 years of development. It simulates hydrodynamics, water temperature, and various water quality constituents in water bodies. The W2 model is capable of simulating a broad range of constituents, including inorganic solids, bacteria, dissolved gases, metals (Fe, Mn) mercury (Hg), nutrient cycles, and processes contributing to eutrophication. Users can define any number of groups like generic constituents, suspended solids, BOD, algae, epiphyton, macrophytes, and zooplankton. W2 also includes zero-order and first-order bed sediment processes, as well as sediment diagenesis model to quantify sediment oxygen demand (SOD) and nutrient fluxes across sediment-water interfaces. The W2 model provides detailed outputs for velocities, water temperature and all constituents across longitudinal, vertical, and temporal dimensions. This model has been successfully applied in California, across the U.S., and internationally in rivers, lakes, and reservoirs. Its applications include assessing impacts of stressors, conducting thermal and water quality studies, updating reservoir operation manuals, and developing environmental impact statements.

This workshop will provide an overview of CE-QUAL-W2 V5's features and highlight major enhancements. The workshop will cover the model input requirements, model development, calibration, and result analysis through lectures and hands-on exercises. By the end of the workshop, attendees will know how to set up and run W2 hydrodynamic and water quality simulations, visualize results, and perform alternative scenario analyses.

Workshop materials will be provided in advance. Participants should bring a laptop pre-loaded with CE-QUAL-W2, a text editor (e.g., TextPad or Notepad++), Microsoft Excel, and permission to run Excel macros.

Lead Instructor: Zhonglong Zhang, PhD, PE, PH, Research Professor, Portland State University