

The background of the cover is a light gray gradient with numerous water droplets of various sizes. The droplets are rendered with soft shadows and highlights, giving them a three-dimensional appearance. A solid green horizontal bar is at the top, and a wavy green shape is at the bottom, both separated from the central area by thin blue lines.

Annual Report

2018–2019

ABOUT US

The Office of Water Programs (OWP) publishes the industry standard in drinking water and wastewater training materials and provides valuable, science-based applied research services for water management in California and elsewhere.

Our team of nearly 50 professionals, trained in a variety of academic disciplines, collaborates to produce high-caliber work that furthers OWP's mission and values. These two pages highlight the local, national, and international universities, colleges, and degree programs from which OWP staff made their start.

California State University, Sacramento

- MS, Civil Engineering (3)
- MS, Civil & Environmental Engineering
- MS, Environmental Engineering
- BS, Civil Engineering (2)
- BS, Geology
- BA, Mathematics
- BA, Communication Studies
- BS, Graphic Design (2)
- BA, Economics

University of California, Davis

- PhD, Civil & Environmental Engineering (2)
- BS, Civil & Environmental Engineering (2)
- MS, Civil & Environmental Engineering
- MS, Hydrologic Sciences
- BS, Environmental Biology and Management
- BS, Geology

University of California, Berkeley

- PhD, Civil & Environmental Engineering
- MS, Civil & Environmental Engineering
- Professional Technical Editing Certificate

University of California, Santa Cruz

- BA, Biology

California State University, San Francisco

- BS, Computer Information Systems

Stanford University

- MS, Environmental Engineering (2)
- MS, Civil & Environmental Engineering
- BS, Civil Engineering with Honors (2)
- BA, Human Biology

Humboldt State University

- MS, Environmental Resources Engineering

California State University, Chico

- BS, Civil Engineering

California Polytechnic State University, San Luis Obispo

- BS, Animal Science

California State Polytechnic University, Pomona

- BS, Civil Engineering (Environmental Focus)

University of California, Los Angeles

- BS, Political Science

University of Tennessee, Memphis

PhD, Biological Sciences
MS, Biological Sciences
BS, Biology Sciences

Utah State University

PhD, Environmental Engineering
MS, Mathematics
MS, Environmental Engineering

University of Wisconsin, Madison

BS, Civil & Environmental Engineering

California State University, Fresno

BA, Mass Communication & Journalism

Queen Mary University of London

PhD, Water Quality Management

Imperial College London

MS, Engineering Hydrology

University of Surrey

BS, Chemical Engineering

St. John's College

BA, Liberal Arts

George Mason University

MPP, Science & Technology Public Policy

University of Oregon

BS, Journalism

Oregon State University

MS, Civil & Environmental Engineering

Colorado Technical University

PhD, Environmental Sustainability

Colorado State University

BS, Business Management

Capella University

PhD, Biological Sciences

**University of Maryland,
College Park**

MS, Environmental Management

Washington State University

MS, Geology

University of Georgia

PhD, Water Resources & Remote Sensing

University of Leeds

MS, Engineering Geology

American University of Beirut

BS, Geology

University of Baghdad

BS, Civil Engineering (Structures Division)

El Camino College

AS, Zoology

Spokane Community College

AA, Legal Secretarial Science

Folsom Lake College

AS, General Studies

Sierra College

AA, Liberal Arts
AA, Humanities

Yuba College

AA, Accounting



TRAINING SERVICES

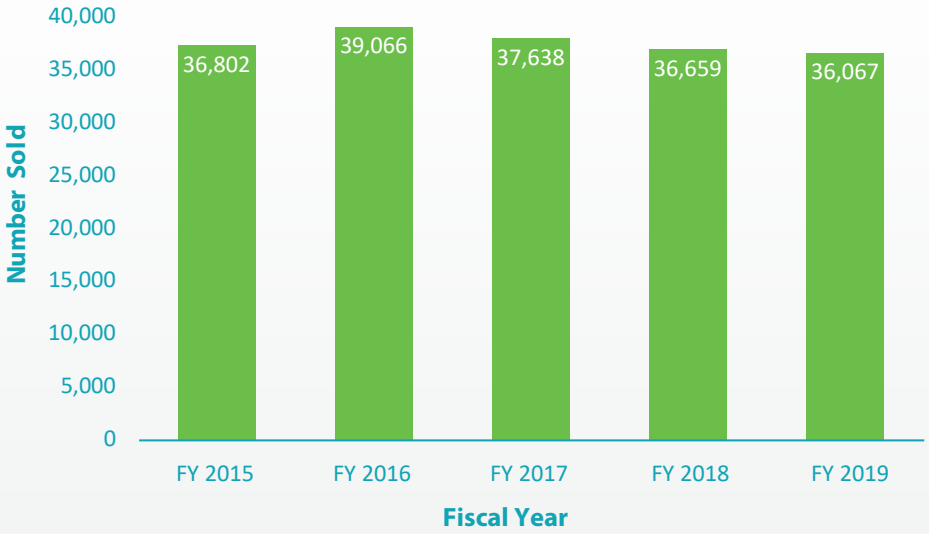
Offering nearly 50 print, online, and video courses for water and wastewater industry professionals, OWP delivers affordable training materials that help operators, managers, and inspectors do their jobs better.

2018–2019 Highlights

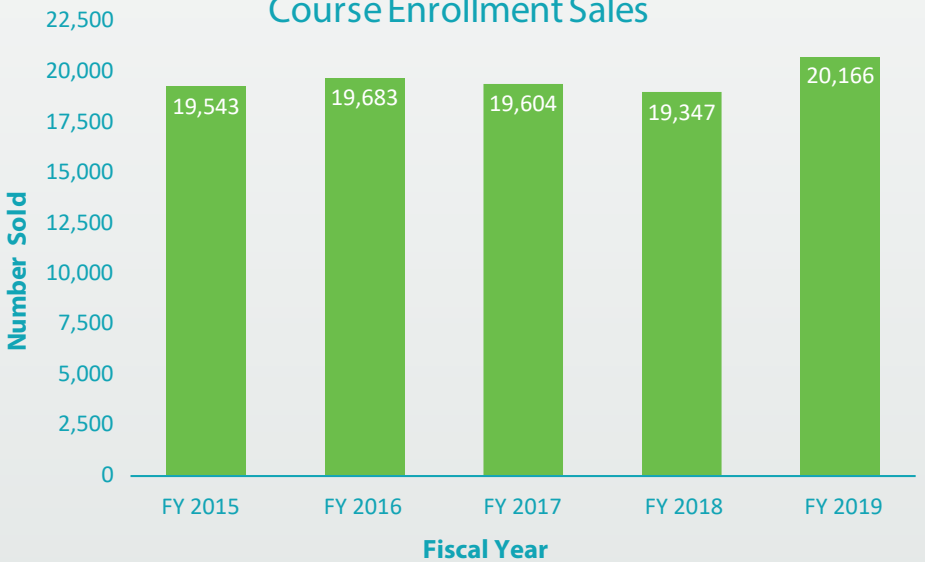
- Sold nearly **36,000** training manuals, with **83%** of sales **outside of California**
- **Enrolled** almost **20,000** adult learners in courses for continuing education units, contact hours, or academic credit
- With **71%** of our US students residing **outside of California**, OWP continues to be a leading national training provider
- Training materials and courses **sold internationally** in the UK, Canada, Cayman Islands, Belize, and Jamaica, among others, represent **9%** of sales



Training Manual Sales



Course Enrollment Sales





POPULAR TRAINING TITLES

Sample Content from New Edition

38 Chapter 2 Water Storage Facilities
Purpose of Storage Facilities Section 2.1 39

2.1 Purpose of Storage Facilities

A water storage facility provides a sufficient amount of water to average or equalize the daily demands on the water supply system. The storage facility should be able to provide water for average and peak demands. Also, the storage facility helps maintain adequate pressures throughout the entire system.

Other purposes of water storage include meeting the needs for fire protection, industrial uses, and reserve storage. During a fire or other type of emergency, sufficient storage should be available to meet fire demands, as well as other demands, and also maintain system pressures. In some areas, the water supply system may serve some type of industry. Storage requirements will depend on the type of industry and the flow and pressure demands of the industrial activities of each industrial facility served by the water supply system. Reserve storage requirements depend on standby requirements and alternate sources of water supply. Reserve requirements may be specified by fire insurance regulations. Reserve storage capacity may be provided to meet future growth and development demands of the area being served.

Reservoirs are storage facilities and may be of several different types. We often think of a reservoir as an open body of water contained by an earthen dam or a concrete dam. This chapter, however, will discuss various types of steel and concrete tanks that are covered distribution system reservoirs to store treated water and are commonly used in most water systems, especially small water systems (Figures 2.11 and 2.12).

The requirements for a specific storage facility will depend upon a system's individual needs. To select a suitable type of storage facility, the answers to the following questions must be known:

- What is the maximum-day use?
- What is the maximum-hourly use?
- What type of pressure will the facility be required to provide and maintain throughout the system?
- What size will be necessary to fulfill the requirements for emergencies such as fire flow?

Water storage facilities are used to store water from wells or water treatment facilities at times when demands for water are low and to distribute the water during periods of high demand. Water storage facilities are found at one or more locations in areas closest to the ultimate users, where higher pressures are needed, and where land is available. The benefits of storing water in a distribution system include:

- Demands on the source of water, the pumping facilities, and the transmission and distribution mains are more evenly equalized and also the capacities of the tanks and other treatment facilities in the system need not be as large.
- System flows and pressures are improved and stabilized, providing better service to customers in the area.
- Reserve water supplies are provided in the distribution system for emergencies such as firefighting and power outages.

Figure 2.11 Typical storage facilities.

Figure 2.12 Elevated tank (cross-sectional view).

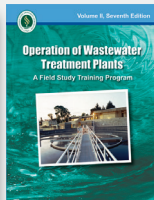
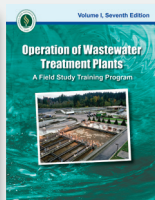
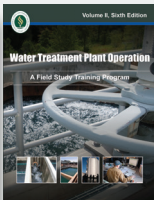
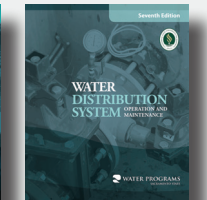
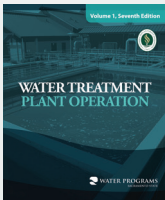
Figure 2.13 Elevated tank (cross-sectional view).

average demand
The total demand for water during a period of time divided by the number of days in that time period. Also called average daily demand.

peak demand
The maximum momentary load placed on a water treatment plant during operation or distribution system. The demand is usually the maximum average load in one hour or less, but may be specified as the instantaneous load or the load during some other short time period.

For additional information on storage facilities, see *Water Treatment Plant Operation*, Volume 1, Chapter 2, "Source Water, Reservoir Management, and Intake Structures," in this series of training manuals. www.cwip.ca/edu.

Top-Selling Titles



- Water Treatment Plant Operation, **Volume 1**
- Water Distribution System Operation and Maintenance
- Water Treatment Plant Operation, **Volume 2**
- Operation of Wastewater Treatment Plants, **Volume 1**
- Operation of Wastewater Treatment Plants, **Volume 2**

Training Materials

Advanced Waste Treatment (training manual, course enrollment)

Basic Small Water System Operations (training manual)

Collection Systems: Methods for Evaluating and Improving Performance (training manual, course enrollment)

Industrial Waste Treatment, 2 volumes (training manual, course enrollment)

Manage for Success (training manual, course enrollment)

Membrane Bioreactors (training manual, course enrollment)

Operation and Maintenance of Wastewater Collection Systems, 2 volumes (training manual, DVD, course enrollment)

Operation of Wastewater Treatment Plants, 2 volumes (training manual, CD, course enrollment, online)

Pretreatment Facility Inspection (training manual, DVD, course enrollment)

Small Wastewater System Operation and Maintenance, 2 volumes (training manual, course enrollment)

Small Water System Operation and Maintenance (training manual, DVD, course enrollment, online)

Treatment of Metal Wastestreams (training manual, course enrollment)

Utility Management (training manual, course enrollment)

Water Distribution System Operation and Maintenance (training manual, course enrollment, online)

Water Systems Operation and Maintenance Video Training Series (training manual, DVD, course enrollment)

Water Treatment Plant Operation, 2 volumes (training manual, course enrollment)

Partnerships Create Opportunities for Students and Employers

As part of OWP's strategic initiative to address the industry-wide need for well-trained entry and mid-level workers in drinking water and wastewater treatment, OWP is partnering with professional and educational organizations to create standardized educational programs for water industry workforce development. College of the Canyons (COC) collaborated with OWP to provide articulated credit for water and wastewater courses, allowing students who have completed coursework through OWP to apply for college credit in the COC Water Systems Technology AS degree. Also, School for Integrated Academics and Technologies (SIATech) Charter Schools, California Rural Water Association (CRWA), and OWP are collaborating to develop and deliver a pre-apprenticeship program that trains students in the operation and maintenance of water treatment and distribution systems through a pilot program at SIATech's Sacramento campus. SIATech, a nonprofit network of 16 public charter school sites focused on re-engaging disconnected students aged 16–24, plans to offer the program throughout California. These and other promising workforce development projects that leverage OWP's nationally recognized training programs help create a pipeline of qualified operators with documented skills so that employers can find the work-ready employees they need to protect public health and the environment.



For more information on the COC Water Systems Technology AS degree, visit <https://www.canyons.edu/academics/water/program>

For more information on SIATech Charter Schools, visit <http://www.siatech.org>

Applied Math Courses Provide Operators Real-World Skills

To give drinking water and wastewater operators focused instruction in and practice with the math that they use on the job every day, OWP developed a series of online math courses that present applied math concepts in a rigorous, affordable format. The courses help students develop a clear understanding of how to perform everyday water and wastewater operator math calculations using detailed explanations of common

math concepts, step-by-step example problems in both US customary and metric units with interactive features, review questions for self-assessment, and access from anywhere with an internet connection. Students can choose to take Math Applications in Collection Systems, Math Applications in Water Treatment, and Math Applications in Water Distribution for continuing education credits (CEUs) or for enrichment (no CEUs). The fourth course in the series, Math Applications in Wastewater Treatment, will be available in late 2019.

Seminars Connect Water to People, Climate, and Policy

In its fifth year, the Water Seminar Series continues to attract water management experts interested in sharing their knowledge with the campus community, and collaborating with others in the field. The most recent presentation topics have included:

- Thirsty for Justice: The Struggle for the Human Right to Water in California and Beyond
- Responding to Climate Change with Multi-Benefit Projects
- 2019–2020 Priorities: A State Water Board Member's Perspective



Information about upcoming and past seminars is available at www.owp.csus.edu/water-seminars



TECHNICAL TOOLS AND SERVICES

Numerical modeling, permit compliance, and stormwater design software tools are among those developed by OWP's research engineers to provide robust, science-based, and customizable resources for stormwater practitioners focused on research, design, and planning.

American River Basin Stormwater Resource Plan— Web Map

This web-based GIS map assists users in identifying and evaluating stormwater capture and use project opportunities for the American River Basin Stormwater Resource Plan. The interactive map provides multiple layers of surface, subsurface, environmental, and community characteristics for eastern Sacramento County, western Placer County, and surrounding regions. OWP developed the tool with funding awarded from the California State Water Resources Control Board (State Water Board) Proposition 1 Storm Water Planning Grant Program.

Basin Sizer

Assisting stormwater practitioners in sizing stormwater basins anywhere in California, Basin Sizer is a software tool that calculates water quality volumes and water quality flows using various methods and data obtained from rainfall stations throughout the state. Users can easily select project locations using the interactive map.

California Phase II Low Impact Development Sizing Tool

The LID Sizing Tool assists stormwater practitioners with selecting and sizing LID best management practices that meet sizing requirements in California's National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from small municipal separate storm sewer systems. OWP developed the tool with funding awarded from the State Water Board's Proposition 84 Stormwater Grant Program.



For more information about software tools, visit us online at
www.owp.csus.edu/research/software-tools.php

Hydrologic Analysis Tool

Originally developed to prepare hydrographs for stormwater-related studies conducted by OWP, the Hydrologic Analysis Tool (HAT) standardizes complex calculations required for event-based stormwater monitoring. HAT is made freely available to the public for NPDES permit monitoring and stormwater studies.

The California Groundwater Risk Index

The California Groundwater Risk Index (GRID) is an interactive map that shows disadvantaged communities at risk of exposure to contaminated groundwater. Developed to support grant-funded groundwater remediation projects, GRID combines and maps multiple data sources, including California's Groundwater Ambient Monitoring and Assessment (GAMA) Program data and the CalEnviroScreen tool, to identify disadvantaged and severely disadvantaged communities.

Stormwater Practitioner Training and Exam Administration

In partnership with the California Stormwater Quality Association and the State Water Board, OWP developed and continues to coordinate training and exam administration programs for Construction and Industrial Permit compliance. The program has certified over 10,000 Qualified Stormwater Developers, Qualified Stormwater Practitioners, and Qualified Industrial Stormwater Practitioners since its inception in 2011.

Struvite Tool

The Struvite Tool makes struvite control planning easier by calculating the struvite precipitation potential for a facility based on user-input water quality parameters. The user can vary input parameters to examine "what-if" scenarios when conditions are changed to control struvite precipitation.

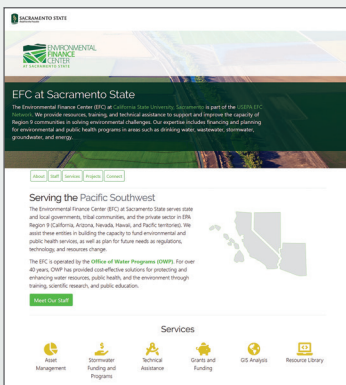
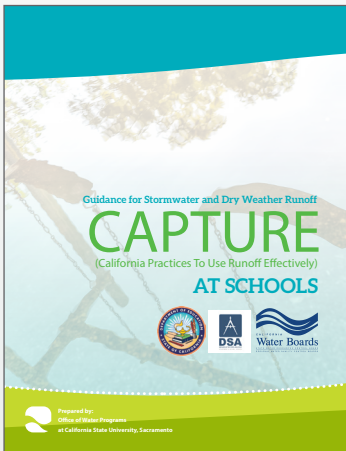
Water Quality Planning Tool

This tool provides planners with an easy-to-use website that makes available the watershed information required to create and comply with stormwater permits. A feature of the website enables the user to find a watershed through interactive maps or by entering the postmile number of a project location.

Our experienced and well-trained staff of research engineers and scientists provide technical expertise and project consulting on data analysis, cost assessment, watershed planning, modeling, and water policy issues to public- and private-sector clients and partners. Water quality, management, and reuse are the focus of these sought-after services. Our staff also provides technical, managerial, and financial assistance to disadvantaged communities.

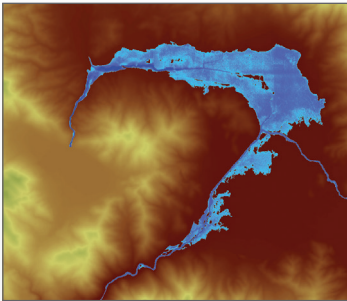
2018–2019 Highlights

Completed a \$150K project with the State Water Board, CA Department of Education, and CA Division of the State Architect to develop stormwater and dry weather capture guidance for public schools. The guidance was developed to inform school administrators, facility managers, and their consultants about how stormwater can be used as a resource to achieve multiple benefits associated with improving water quality, supplementing water supply, supporting flood control, enhancing communities, and protecting ecosystems.



Created multiple resources at the Environmental Finance Center (EFC) to support financial planning for municipal stormwater programs, including contents for the California Stormwater Quality Association's (CASQA's) stormwater funding portal and an asset management and rate development toolkit now available on the EFC website. The EFC also co-hosted a stormwater asset management forum with EPA Region 9 and the State Water Board.

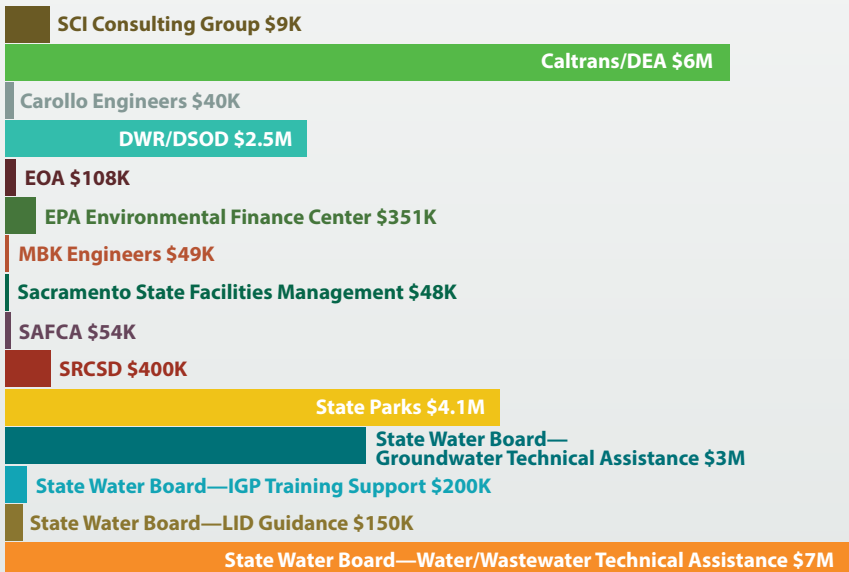
Provided technical assistance to help over 25 disadvantaged communities in California achieve drinking water standards through planning and design services for infrastructure such as treatment plants and groundwater wells and assistance in consolidating adjacent water systems.



Developed dam failure inundation models for seven high hazard California dams and prepared inundation maps and technical memos for the dam owners to meet newly adopted dam safety regulations. Also reviewed 31 inundation maps and technical memos submitted by dam owners to Division of Safety of Dams (DSOD) by preparing an independent flood inundation model and comparing the model results to the submitted maps.

Funded Grants & Contracts

\$24M in multi-year grants and contracts





Funded Grants & Contracts

Stormwater Program Technical Assistance

The California Department of Parks and Recreation (State Parks) contracted \$4,092,888 with OWP (05/01/18–05/01/21) to provide technical assistance for its stormwater program.

LID Guidance for Public Schools

The State Water Board contracted \$150,000 with OWP (05/22/18–03/31/19) to develop guidance for public schools in the implementation of low impact development (LID)/green infrastructure stormwater and dry weather runoff capture best management practices.

Stormwater Program Technical Assistance

The California Department of Transportation (Caltrans), Division of Environmental Analysis (DEA) contracted \$6,000,000 with OWP (09/01/16–11/30/19) to provide technical assistance with stormwater research focusing on discharge characterization, source identification and control, and treatment control studies.

Division of Safety of Dams Mapping Project

The California Department of Water Resources (DWR) contracted \$2,500,000 with OWP (01/01/13–06/30/22) to assist the DSOD with dam break flood analysis and emergency action plan development.

Environmental Compliance Support

Sacramento State Facilities Management contracted \$48,500 with OWP to assist with stormwater pollution prevention plan (SWPPP) development, trash assessments, and other related tasks.

Levee Scour Hole and Vegetative Wind/Wave Buffer Research

Sacramento Area Flood Control Agency (SAFCA) contracted \$54,500 with OWP (10/03/16–12/31/21) to research and provide recommendations on levee scour holes and vegetative wind/wave buffers.

BASMAA Pollutant of Concern Monitoring for Source Identification and Management Action Effectiveness Project

EOA, Inc. contracted \$108,197 with OWP (02/02/17–03/31/19) to assist with study design for source identification and best management practice effectiveness.

Wastewater Technical Expertise

The Sacramento Regional County Sanitation District (SRCSD) contracted \$400,000 with OWP (06/11/03–12/31/20) to provide technical assistance, with a focus on wastewater characterization and treatment.

Wastewater Generation Rates Study

Carollo Engineers contracted \$40,181 with OWP (05/15/18–06/30/20) to assist with a project designed to determine wastewater generation rates from different sources.

Qualified SWPPP Developer and Qualified SWPPP Practitioner Testing and Certification

CASQA contracted with OWP (executed on 01/21/11) to develop and implement an online training delivery system to administer and grade tests and issue certifications for Qualified SWPPP Developers and Qualified SWPPP Practitioners.

Qualified Industrial Stormwater Practitioners Training and Testing

CASQA contracted with OWP (executed on 05/23/16) to develop and implement an online system to train and test Qualified Industrial Stormwater Practitioner certificate candidates.



Environmental Finance Center (Region 9)

US Environmental Protection Agency (EPA) contracted \$351,000 with OWP (10/16–09/19) to develop, operate, and maintain an Environmental Finance Center for Region 9.

California Industrial General Permit Training Program Support

The State Water Board contracted \$200,000 with OWP (02/28/18–03/31/20) to assist with enhancing the Industrial General Permit training program.

Yuba County Water Agency Project Priority Optimization

MBK Engineers contracted \$48,971 with OWP (executed on 12/11/17) to assist with developing a project prioritization methodology for the Yuba County Water Agency. Jonathan Kaplan (Sacramento State Economics professor) is performing the majority of the work.

Drinking Water and Wastewater Technical Assistance and Outreach

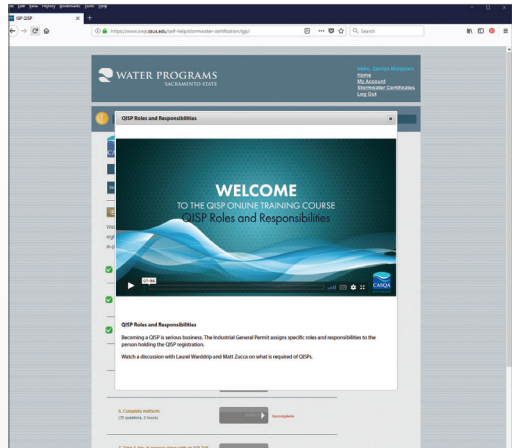
The State Water Board, under a Proposition 1 grant, contracted \$7,000,000 with OWP (09/01/16–08/31/19) to provide water and wastewater technical assistance to disadvantaged communities in California.

Groundwater Technical Assistance and Outreach

The State Water Board, under a Proposition 1 grant, contracted \$3,000,000 with OWP (09/01/16–08/31/19) to provide groundwater technical assistance to disadvantaged communities in California.

Stormwater Funding Resource Portal

SCI Consulting Group, Inc. contracted \$9,000 with OWP (9/1/18–3/31/19) to assist with the development of the CASQA Stormwater Funding Resource Portal.



PROFESSIONAL ACTIVITIES

Conferences

July 2018

State Water Board Strategy to Optimize Resource Management of Stormwater Workshop, Sacramento, CA ([multiple presenters](#))

August 2018

2018 California Water Data Symposium, Los Angeles, CA ([presenter](#))

Mid-Year Transportation Research Board AFB 65 Stormwater Committee Meeting, Columbus, OH ([participant](#))

US Biochar Initiative Biochar 2018, Wilmington, DE ([participant](#))

September 2018

WEFTEC Conference, New Orleans, LA ([participant](#))

Tri-State Seminar, Las Vegas, NV ([multiple presenters and exhibitor](#))

Water Environment Federation Conference, New Orleans, LA ([participant](#))

Placer County Water Agency Career and Technical Education Day, Auburn, CA ([exhibitor](#))

Sacramento Region Builder's Exchange Trades Day, Sacramento, CA ([exhibitor](#))

October 2018

California Stormwater Quality Association 2018 Conference, Riverside, CA ([multiple presenters and multiple abstract reviewers](#))

California Stormwater Quality Association 2018 Conference Workshop, Riverside, CA ([instructor](#))

California State University Facilities Management Conference, Monterey, CA ([presenter](#))

California Lake Management Society Conference, Incline Village, NV ([participant](#))

American Water Works Association Cal-Nevada Annual Fall Conference, Rancho Mirage, CA ([participant](#))

SIATech Open House, Sacramento, CA ([exhibitor](#))

November 2018

Society of Environmental Toxicology and Chemistry Conference, Sacramento, CA ([participant](#))

Las Positas College Veteran's Career Fair, Livermore, CA ([exhibitor](#))



PROFESSIONAL ACTIVITIES

December 2018

Association for Career and Technical Education Conference, San Antonio, TX ([presenter](#))

January 2019

California Stormwater Quality Association Phase II Traditional Subcommittee Conference Call ([presenter](#))

California Stormwater Quality Association Phase II Non-Traditional Subcommittee Conference Call ([presenter](#))

Transportation Research Board Annual Conference, Washington, DC ([participant](#))

Associated Boards of Certification Conference, Savannah, GA
([multiple presenters and exhibitor](#))

Sacramento County Office of Education Career and Resource Day, Mather, CA ([exhibitor](#))

February 2019

2019 International Erosion Control Association Annual Conference and Expo, Denver, CO ([participant](#))

P3S Conference, Monterey, CA ([presenter](#))

Laney College Career Fair, Oakland, CA ([exhibitor](#))

March 2019

Asset Management Training Webinar for State Water Resources Control Board
([instructor](#))

Pacific Gas and Electric's Water Conservation Showcase, San Francisco, CA ([presenter](#))

State Water Board Stormwater Roundtable, Sacramento, CA ([presenter](#))

Small Water Systems Asset Management Training, El Centro, CA ([training support](#))

11th National Water Quality Monitoring Council Conference, Denver, CO ([presenter](#))

Rural Community Assistance Corporation Meeting, Napa, CA ([presenter and exhibitor](#))

California Career Pathways Consortium Conference, Sacramento, CA ([presenter](#))

Galt High School College and Career Fair, Galt, CA ([exhibitor](#))

William Daylor High School Career Fair, Elk Grove United School District,
Sacramento, CA ([presenter and exhibitor](#))

Chabot Space and Science Center, Science Resource Fair, Oakland, CA ([exhibitor](#))

Lincoln High School College and Career Fair, Lincoln, CA ([exhibitor](#))

Highlands High School Career Fair, North Highlands, CA ([exhibitor](#))

April 2019

57th Annual Water Workshop, Operator Training Committee of Ohio, Inc., Columbus, OH ([presenter](#))

Los Angeles Regional Water Board Stormwater Roundtable, Culver City, CA ([presenter](#))

Water Resources and Policy Initiatives Annual Conference, Chico, CA
([multiple presenters](#))

UC Berkeley, Department of Landscape Architecture and Environmental Planning
Graduate Colloquium, Berkeley, CA ([invited lecture](#))

Access to Sanitation for People Experiencing Homelessness Workshop, State Water
Board, Sacramento, CA ([participant](#))

American Water Works Association Cal-Nevada Conference, Palm Springs, CA
([presenter](#))

California Rural Water Association Meeting, Lake Tahoe, CA
([multiple presenters and exhibitor](#))

Florida Industrial Pretreatment Conference, St. Augustine, FL ([presenter and exhibitor](#))

California Water Environment Annual Conference, Palm Springs, CA ([exhibitor](#))

May 2019

Water Resources and Policy Initiatives Workshop on Water Resources and Underserved
Communities, Northridge, CA ([presenter](#))

Western Chapter International Erosion Control Association Erosion Control Workshop,
Fairfield, CA ([participant](#))

June 2019

National Rural Water Association In Service Training, Fort Lauderdale, FL ([presenter](#))

Stormwater Asset Management Forum, Sacramento, CA ([organizer and presenter](#))

Environmental Finance Center Network Workshop for EPA, Washington, DC ([multiple
participants](#))

American Water Works Association Annual Conference, Denver, CO ([participant](#))

Rural Community Assistance Program Conference, Claremont, CA
([presenter and exhibitor](#))



PROFESSIONAL ACTIVITIES

Committees and Meetings

Associated Boards of Certification Conference Planning Committee

Align Capital Region, Sacramento Region Water Works (Chair)

American Basin Council of Watersheds

American River Basin Integrated Regional Water Management Committee

American Water Works Association, California/Nevada Section

- Advanced Water Treatment Committee
- Veterans Liaison Committee
- Veterans Workforce Committee
- Workforce Strategies Committee
- Water Loss Committee

Association for Career and Technical Education

Baywork Regional Training Work Group Candidate Development Committee

California Water Environment Association

- CAWaterJobs Steering Committee
- P3S Committee
- Regional Board of Directors

California Stormwater Quality Association

- Board of Directors
- BMP Subcommittee
- Training Subcommittee (Co-Chair)
- Conference Planning Subcommittee
- Construction Subcommittee
- Effectiveness Assessment Subcommittee
- Impaired Watershed Subcommittee

- Industrial Subcommittee
- Monitoring Subcommittee
- Phase II Non-Traditional Subcommittee
- Phase II Subcommittee
- Policy and Permitting Subcommittee

Folsom Lake College Water/Wastewater Advisory Board

Small Systems Inter-Agency Outreach Committee

State Water Resources Control Board (State Water Board)

- Construction General Permit Training Team and Testing and Evaluation Subcommittee
- Drinking Water Operator Advisory Committee
- Industrial General Permit Training Team and Evaluation and Examination Subcommittee
- Northern CA Water Quality Monitoring Group
- Southern CA Beach Water Quality Work Group
- Wastewater Advisory Committee

Transportation Research Board, Stormwater Committee

Washington State TAPE External Board of Reviewers

Water Environment Federation, Stormwater Committee

- National Collection Systems Committee
- Stormwater Committee

Woodland Community College Agricultural and Natural Resources Advisory Board



PROFESSIONAL ACTIVITIES

Presentations and Publications

Porse, Erik, and Maureen Kerner. 2019. "Cost Resources for Stormwater Programs in California." Presentation to the Los Angeles Regional Water Quality Control Board. Culver City, CA. April 11, 2019.

Porse, Erik. 2019. "Energy Use Effects of Water Conservation and Local Supply in Los Angeles." Invited Lecture at UC Berkeley, Department of Landscape Architecture and Environmental Planning Graduate Colloquium. Berkeley, CA. April 10, 2019.

Porse, Erik. 2018. "Merging network governance and systems analysis for urban water management." *Civil Engineering and Environmental Systems* 35.1-4:22-40.

Porse, Erik, and Stephanie Pincetl. 2019. "Effects of stormwater capture and use on urban streamflows." *Water Resources Management* 33.2:713-723.

Pincetl, Stephanie, Erik Porse, Kathryn B. Mika, Elizaveta Litvak, Kimberly F. Manago, Terri S. Hogue, Thomas Gillespie, Diane E. Pataki, and Mark Gold. 2019. "Adapting Urban Water Systems to Manage Scarcity in the 21st Century: The Case of Los Angeles." *Environmental Management* 63, no. 3:293-308.

Pincetl, Stephanie, Thomas W. Gillespie, Diane E. Pataki, Erik Porse, Shen Yue Jia, Erika Kidera, Nick Nobles, Janet Rodriguez, and Dong-ah Choi. 2019. "Evaluating the Effects of Turf-replacement Programs in Los Angeles." *Landscape and Urban Planning* 185:210-221.

Rowe, John. 2018. "The Mitigation of Fats, Oils, & Grease in Collection Systems." Presentation to pretreatment inspectors. Las Vegas, NV. September 10, 2018.

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