Annual Report

2020-21

WATER PROGRAMS
Sacramento State

Contents

About Us

The Office of Water Programs (OWP) at California State University, Sacramento (Sacramento State) 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. The next three 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 (2)
BS, Graphic Design (2)
BA, Economics

University of California, Davis

PhD, Civil & Environmental Engineering (2)
MS, Civil & Environmental Engineering
MS, Hydrologic Sciences
MA, Creative Writing
BS, Civil & Environmental Engineering (2)
BS, Environmental Biology and Management
BS, Geology
BS, Computer Science
BA, English Language and Literature

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

California State University, Fresno

BA, Mass Communication & Journalism

Folsom Lake College, CA

AS, General Studies

Sierra College, CA

AA, Liberal Arts
AA, Humanities

Yuba College, CA

AA, Accounting

El Camino College, CA

AS, Zoology

Monterey Peninsula College, CA

AA, General Education

Washington State University

MS, Geology

Spokane Community College

AA, Legal Secretarial Science

Utah State University

PhD, Environmental Engineering
MS, Mathematics
MS, Environmental Engineering

University of Wisconsin, Madison

BS, Civil & Environmental Engineering

University of Maryland, College Park

MS, Environmental Management

New York University, NY

MS, Integrated Marketing

St. John's College

BA, Liberal Arts

George Mason University

MPP, Science & Technology Public Policy

University of Oregon

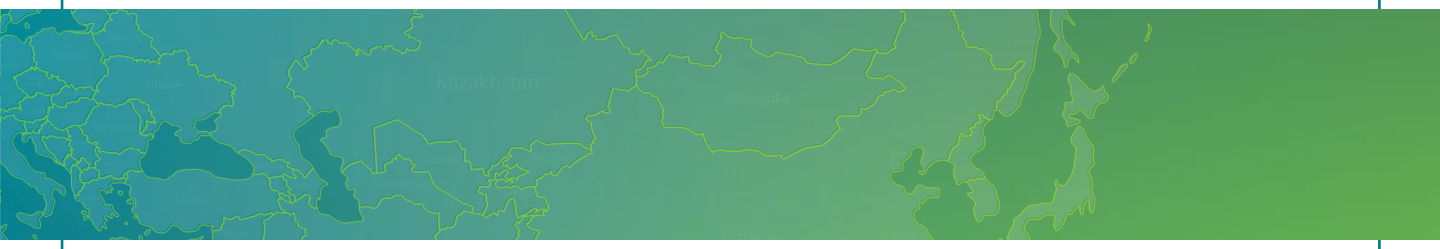
BS, Journalism

Oregon State University

MS, Civil & Environmental Engineering

University of Arizona

MS, Chemical Engineering



Colorado Technical University

PhD, Environmental Sustainability

Colorado State University

BS, Business Management

University of Georgia

PhD, Water Resources & Remote Sensing

University of Tennessee, Memphis

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

Capella University

PhD, Biological Sciences

Harvard University

MA, History

Brandeis University

BA, English and History

Tufts University

BS, Chemical Engineering

American University of Beirut

BS, Geology

University of Baghdad

BS, Civil Engineering (Structures Division)

Queen Mary University of London

PhD, Water Quality Management

Imperial College London

MS, Engineering Hydrology

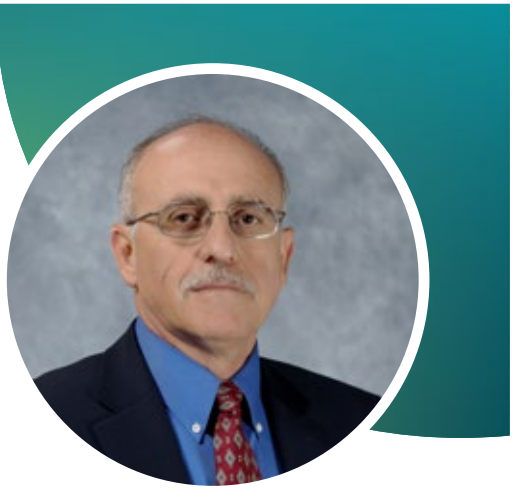
University of Surrey

BS, Chemical Engineering

University of Leeds

MS, Engineering Geology

Professionals from around the globe...



Ramzi Mahmood From my desk:

Dear faculty, staff, and team,

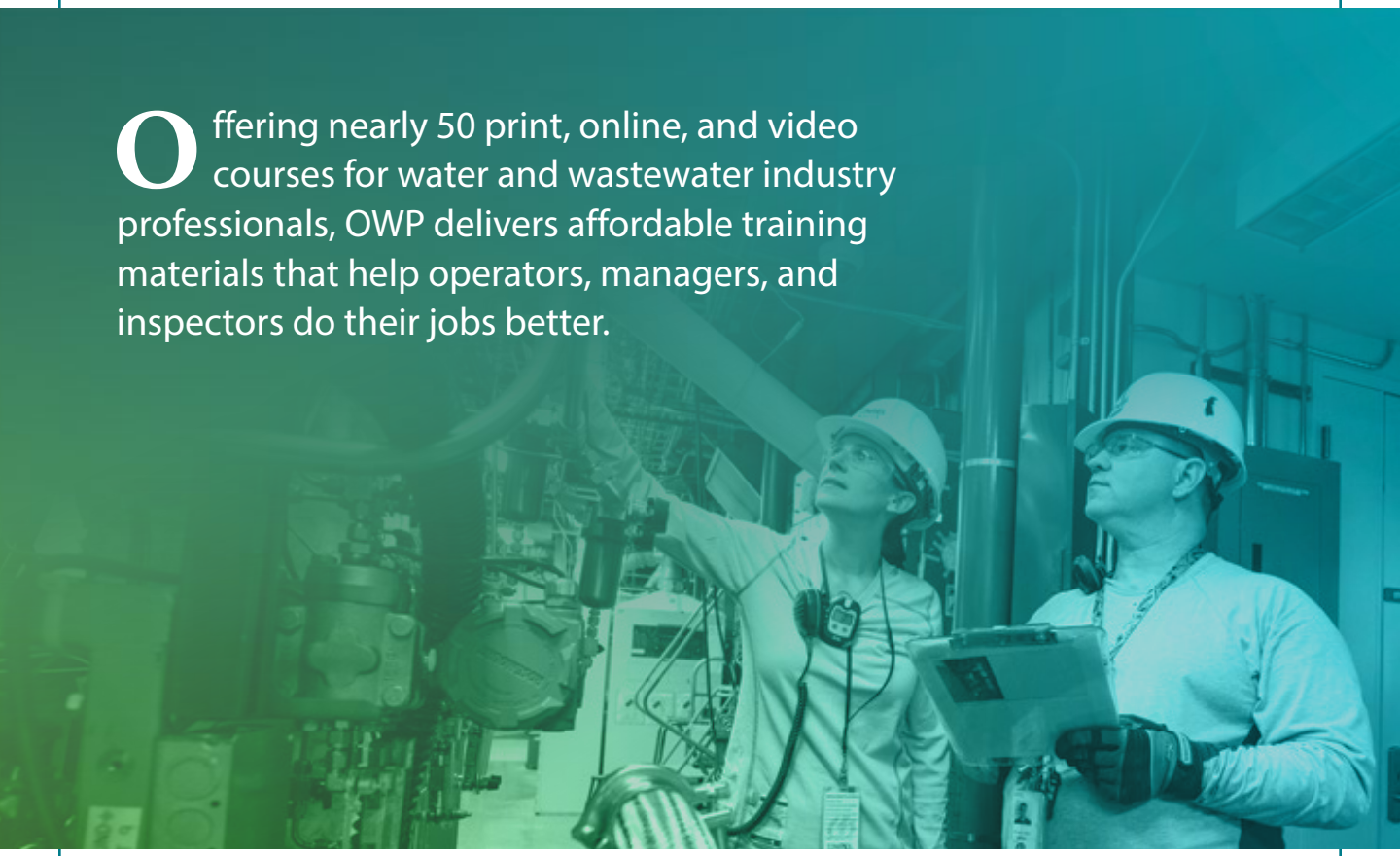
The year 2020-21 continued to be challenging, as it was last year. However, there is a sense of optimism as we gradually transitioned to work in the office again. It turns out that transitioning back was not as easy transitioning into working remotely for a variety of factors, among them the continuing pandemic. We are taking the necessary steps to continue our journey into evolving as a sustainable organization. Key to this continued evolution are two interrelated organizational values—people first and education. These values speak to our belief that OWP's potential is driven by our employees, our respect for each other, and our commitment to providing the best service and products in the water sector and our support for lifelong learning for our employees, our clients, our students, and our community.

These values guide our organization as a learning and mentoring organization that focuses on working with, guiding, and developing the skills and capabilities of student interns and newly hired staff members through the projects that we run. This also allows and encourages experienced staff members to learn new skills and ways of thinking as they grow with the scope of our work to address new challenges in the water sector or address old topics in new ways. Our projects include updating our training manuals and executing our externally funded projects. All these projects are designed with a single purpose—to serve communities that span our organization, the University, the region, the state, and beyond.

This annual report shows that our growth and evolution support our success in providing updated training manuals, developing tools, providing technical assistance to more than 100 disadvantaged communities, and supporting workforce development for pre-apprenticeship in the water sector. The details of these projects are covered in the body of this report. Here, I will highlight the successes of just two of our programs over the last fiscal year. Our training group was able to complete new and revised content for editions of *Pretreatment Facility Inspection* (PFI), *Operation and Maintenance of Wastewater Collection Systems, Volume 2* (COLL 2), *Utility Management* (UM), and *Treatment of Metal Wastestreams* (TMW). Our Environmental Finance Center (EFC) hosted a funding and financing webinar series for Nevada water systems, conducted training webinars for using GIS and asset management for water systems, assisted California's Clean Water State Revolving Fund (CWSRF) program, and assisted the Hawaii (HI) Safe Drinking Water Branch. To complete these and our other projects as we and our collaborators faced obstacles presented by the pandemic required dedication, cooperation, and creativity.

I hope you enjoy this annual report. OWP has come a long way since its founding in 1972 and has transformed into an organization that supports regional and state challenges in the water area by building in-house expertise, collaborating with Sacramento State faculty and other universities, and most importantly, mentoring students.

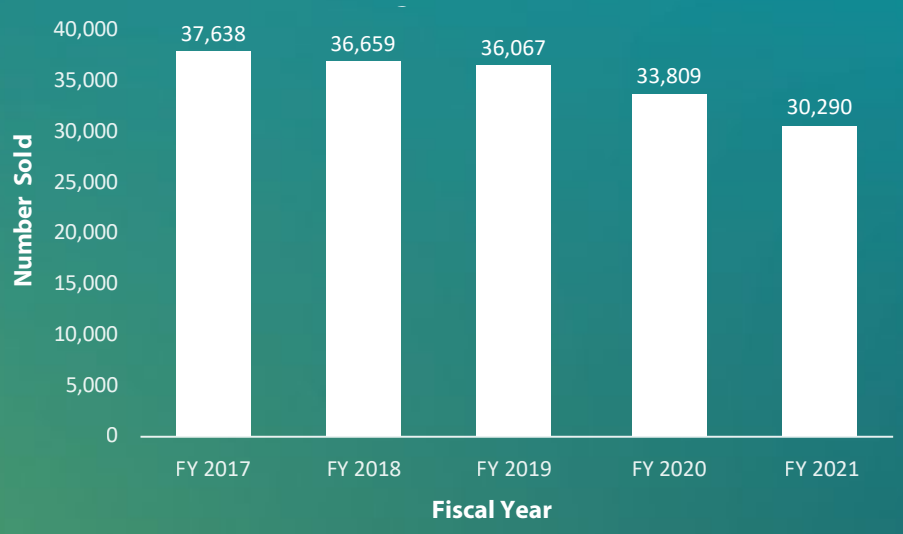
Training Services
2020-21 Highlights



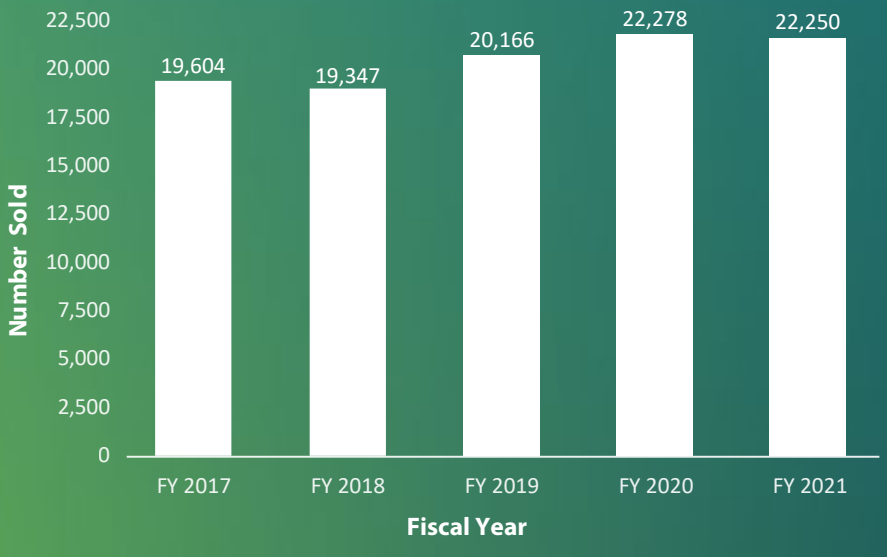
Offering nearly 50 print, online, and video courses for water and wastewater industry professionals, OWP delivers affordable training materials that help operators, managers, and inspectors do their jobs better.

- **Training manual orders reached over 30,290**, with 83% of orders placed outside California.
- **More than 22,250 adult learners** were enrolled in our courses for continuing education units, contact hours, or academic credit.
- With **more than half** of our US students residing outside of California, OWP continues to be a leading national training provider.
- Training materials and courses ordered internationally in the UK, Canada, Cayman Islands, Belize, Jamaica, and others **represent 10% of our orders** this year.

Training Manual Sales



Course Enrollment Sales



Spotlight:

Helping Disadvantaged Communities Through State Funding

OWP has received about 100 requests to help disadvantaged communities throughout California to improve drinking water, wastewater, and groundwater systems in disadvantaged communities.

OWP manages these vital projects, which arrive through Technical Assistance (TA) Requests from the California State Water Resources Control Board (State Water Board), Division of Financial Assistance (DFA). The projects are funded through our Proposition 1 and Safe and Affordable Funding for Equity and Resilience (SAFER) contracts with the DFA.

One of our highest-profile projects is in Paradise, California. The November 2018 Camp Fire rendered water operations unsustainable, so we are helping Paradise rebuild its water system. This project will have an enormous impact, helping to make the city habitable again and bringing people back to Paradise. Many of our projects relate to fire reconstruction because fire typically devastates a community's water supply: similar projects exist in fire-affected areas in Santa Rosa and around Clear Lake. Other projects include helping small communities with failing water systems connect to neighboring cities' larger and more efficient systems; constructing new wells; implementing new water treatment plants; and improving failing infrastructure. Drinking water comprises about 95 percent of our projects, and wastewater 5 percent.

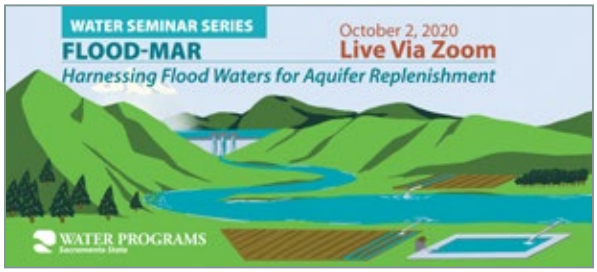
OWP works with cities, counties, schools, Indian tribes, mobile home communities, and private water systems. Before OWP provides assistance, the community or entity in need makes a request to DFA; once approved, it is sent to OWP. Our team then works to resolve the problem. OWP creates the work plan, provides project managers, oversees funds, and hires environmental engineers and scientists to plan and design the solution. Since OWP's funding is specific to planning and design, our role ends there—the community or entity works with the State Water Board to receive funding for the project construction.

Due to the influx of requests, OWP has increased the number of project managers assigned to this program from 1 to 5 over the last 3 years. Currently, 50 projects are active, 30 completed, and 20 are in development.

WATER SEMINAR SERIES

Exploring Water Use, Management, and Protection in California

OWP's Water Seminar Series brings together expert speakers, water sector professionals, the Sacramento State community, and the public to explore key California water issues. To comply with pandemic health guidelines, the seminars were presented in a virtual format. The most recent presentation topics included:



October 2020: Kamyar Guivetchi, Civil Engineer with the California Department of Water Resources, discussed Flood-MAR, an emerging water management strategy.

November 2020: Ellen Wehr, General Counsel for the Grassland Water District, examined the water policy of managed wetlands in the Central Valley.

March 2021: Jerry Brown, Executive Director of the Sites Reservoir Project, discussed the project's recent shift to become more affordable and buildable, its unique governance, and its Prop 1 evaluation.

April 2021: State Water Board speakers Emma Blankenship and Michelle Frederick addressed technical, financial, and infrastructure challenges in drinking water.

Popular Training Materials

Wastewater Courses

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

Advanced Waste Treatment (training manual, course enrollment)

Membrane Bioreactors (training manual, course enrollment)

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

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

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

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

Treatment of Metal Wastestreams (training manual, course enrollment)

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

Drinking Water Courses

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

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

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

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

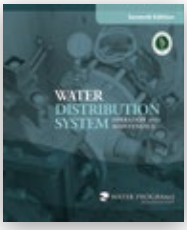
Basic Small Water System Operations (training manual)

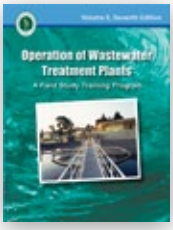
Management Courses

Manage for Success (training manual, course enrollment)

Utility Management (training manual, course enrollment)

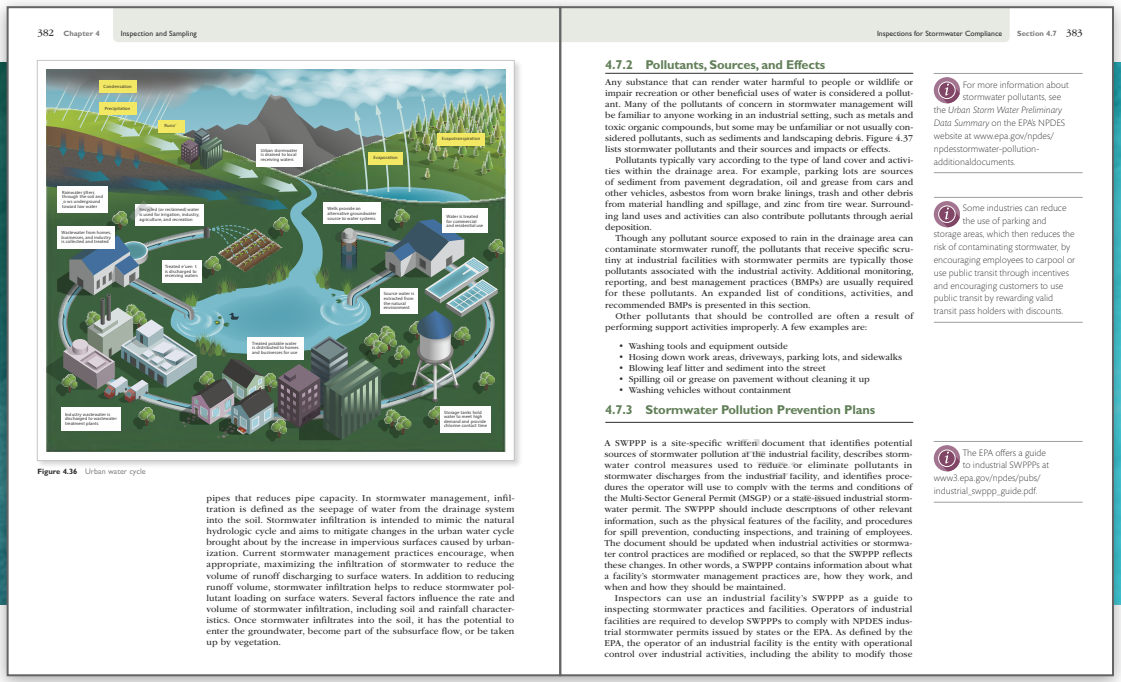
Most Popular





- 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

From Our Newest Edition!



382 Chapter 4 Inspection and Sampling

Figure 4.36 Urban water cycle

pipes that reduces pipe capacity. In stormwater management, infiltration is defined as the seepage of water from the drainage system into the soil. Stormwater infiltration is intended to mimic the natural hydrologic cycle and aims to mitigate changes in the urban water cycle brought about by the increase in impervious surfaces caused by urbanization. Current stormwater management practices encourage, when appropriate, maximizing the infiltration of stormwater to reduce the volume of runoff discharging to surface waters. In addition to reducing runoff volume, stormwater infiltration helps to reduce stormwater pollutant loading on surface waters. Several factors influence the rate and volume of stormwater infiltration, including soil and rainfall characteristics. Once stormwater infiltrates into the soil, it has the potential to enter the groundwater, become part of the subsurface flow, or be taken up by vegetation.

Inspections for Stormwater Compliance Section 4.7 383

4.7.2 Pollutants, Sources, and Effects

Any substance that can render water harmful to people or wildlife or impair recreation or other beneficial uses of water is considered a pollutant. Many of the pollutants of concern in stormwater management will be familiar to anyone working in an industrial setting, such as metals and toxic organic compounds, but some may be unfamiliar or not usually considered pollutants, such as sediments and landscaping debris. Figure 4.37 lists stormwater pollutants and their sources and impacts or effects.

Pollutants typically vary according to the type of land cover and activities within the drainage area. For example, parking lots are sources of sediment from pavement degradation, oil and grease from cars and other vehicles, asbestos from worn brake linings, trash and other debris from material handling and spillage, and zinc from tire wear. Surrounding land uses and activities can also contribute pollutants through aerial deposition.

Though any pollutant source exposed to rain in the drainage area can contaminate stormwater runoff, the pollutants that receive specific scrutiny at industrial facilities with stormwater permits are typically those pollutants associated with the industrial activity. Additional monitoring, reporting, and best management practices (BMPs) are usually required for these pollutants. An expanded list of conditions, activities, and recommended BMPs is presented in this section.

Other pollutants that should be controlled are often a result of performing support activities improperly. A few examples are:

- Washing tools and equipment outside
- Hosing down work areas, driveways, parking lots, and sidewalks
- Blowing leaf litter and sediment into the street
- Spilling oil or grease on pavement without cleaning it up
- Washing vehicles without containment

For more information about stormwater pollutants, see the *Urban Storm Water Preliminary Data Summary* on the EPA's NPDES website at www.epa.gov/npdes/npdesstormwater-pollution-additionaldocuments.

Some industries can reduce the use of parking and storage areas, which then reduces the risk of contaminating stormwater, by encouraging employees to carpool or use public transit through incentives and encouraging customers to use public transit by rewarding valid transit pass holders with discounts.

4.7.3 Stormwater Pollution Prevention Plans

A SWPPP is a site-specific written document that identifies potential sources of stormwater pollution at the industrial facility, describes stormwater control measures used to reduce or eliminate pollutants in stormwater discharges from the industrial facility, and identifies procedures the operator will use to comply with the terms and conditions of the Multi-Sector General Permit (MSGP) or a state-issued industrial stormwater permit. The SWPPP should include descriptions of other relevant information, such as the physical features of the facility, and procedures for spill prevention, conducting inspections, and training of employees. The document should be updated when industrial activities or stormwater control practices are modified or replaced, so that the SWPPP reflects these changes. In other words, a SWPPP contains information about what a facility's stormwater management practices are, how they work, and when and how they should be maintained.

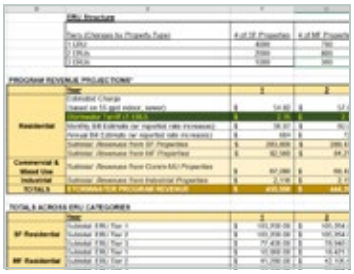
Inspectors can use an industrial facility's SWPPP as a guide to inspecting stormwater practices and facilities. Operators of industrial facilities are required to develop SWPPPs to comply with NPDES industrial stormwater permits issued by states or the EPA. As defined by the EPA, the operator of an industrial facility is the entity with operational control over industrial activities, including the ability to modify those

The EPA offers a guide to industrial SWPPPs at www3.epa.gov/npdes/pubs/industrial_swppp_guide.pdf.

Pretreatment Facility Inspection, Fourth Edition

Technical Tools & Services

Our robust, science-based, and customizable resources for water industry professionals focused on research, design, and planning include numerical modeling, permit compliance, and stormwater design software tools developed and maintained by OWP's research engineers.

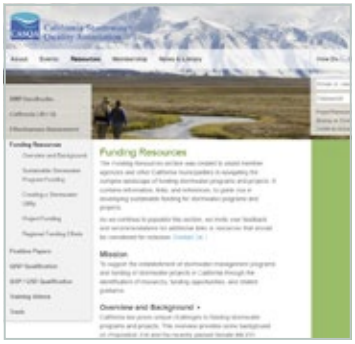


Toolkit for Stormwater Asset Management and Funding

OWP's EFC developed a free toolkit to assist municipal stormwater practitioners in implementing asset management. The toolkit includes a guidance report and worksheets that help record data on system assets, from pipes to gutters to green infrastructure. The toolkit also helps prioritize maintenance needs, estimate long-term costs, and evaluate revenues from various rate scenarios.

California Stormwater Quality Association Stormwater Funding Resources Webpages

OWP's EFC collaborated with SCI Consulting and Larry Walker Associates to develop stormwater funding resources webpages for the California Stormwater Quality Association (CASQA) to provide municipal stormwater practitioners with comprehensive resources to explore opportunities for and obtain program and project funding. Program funding topics include stormwater utility fees, realignment of services, local development impact fees, and special taxes. Project funding topics include ways to achieve multiple benefits, resources for estimating costs, and opportunities for grants and loans.

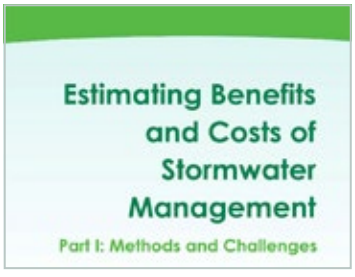


Artes: A Model of Water Resources Management in Los Angeles

Artes is an integrated model of urban water resources in metropolitan Los Angeles that analyzes the potential for enhanced local water supplies. The model is a product of the California Center for Sustainable Communities at UCLA, where OWP's Erik Porse is a visiting assistant researcher. In 2019-20, the model was used to support several published research articles, including an assessment of energy use for urban water management and an assessment of the effects of stormwater capture and use on urban stream flows.

Data Tables and Analysis for Costs of California Stormwater Programs

OWP's EFC accumulated, standardized, and analyzed costs for stormwater management across California municipalities. Reported spending activities and the data used in the analysis are available as executable files. The database serves as the basis for statewide assessments of municipal permit compliance costs by the California State Water Resources Control Board (State Water Board).



The Stormwater Funding Storyboard

The EFC developed an interactive storyboard with tools and information that stormwater utilities can use to create effective and sustainable stormwater programs, including resources for early-stage stormwater utility planning and rate development systems.

Caltrans Stormwater Tools and Utilities

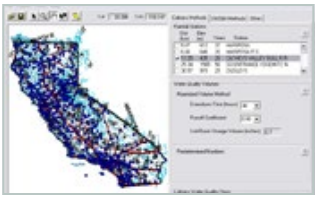
OWP develops and maintains multiple stormwater analysis and data management tools for Caltrans. Many of these tools are developed to meet specific requirements for the collection, management, and analysis of data for various regulatory monitoring and compliance tasks. Other tools assist designers with meeting stormwater design requirements and documentation.

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 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

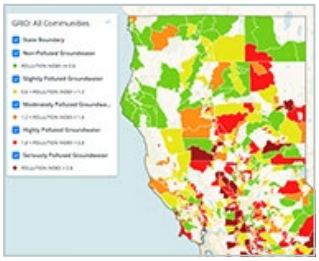
The LID Sizing Tool assists stormwater practitioners with selecting and sizing LID best management practices that meet sizing requirements in California's National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from small municipal separate storm sewer systems. OWP developed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

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 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.

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

Applied Research
2020-21 Highlights

OWP is leading research to evaluate the environmental and economic effects of urban water use efficiency regulations in California based on statewide legislation passed in 2017 (AB 1668 and SB 606).

Point Lobos State Natural Reserve under close study for climate change impacts on stormwater management.

OWP, in partnership with the California Child Care Resource and Referral Network and the CRWA, is actively working to help licensed child care centers test for lead in drinking water and replace contaminated fixtures. So far, 1,719 centers statewide have signed up for free lead testing.

The team is developing tools and models for urban water demand forecasting, wastewater operations, and urban landscape management based on massive data integration. The project is a collaboration among experts at Sacramento State, the University of California, Los Angeles, the University of California, Davis, and Humboldt State University.

OWP's Environmental Finance Center (EFC) hosted a funding and financing webinar series for Nevada water systems. They also conducted training webinars for using GIS and asset management for water systems, assisted California's Clean Water State Revolving Fund (CWSRF) program in evaluating grant and loan application and funding disbursement processes, and assisted the Hawaii (HI) Safe Drinking Water Branch in identifying HI drinking water system needs and developing asset management support.

Conducted a second investigation into climate change impacts on stormwater management at state parks. The second investigation analyzed adaptation costs for designing new stormwater infrastructure to mitigate expected increases in the depth of precipitation events from climate change across 21 case study parks spanning the California coast.

Formed a technical advisory committee and started a literature review to determine best practices for the environmentally safe use of chemicals that enhance erosion and sediment controls at construction and industrial sites. Funding is provided by the State Water Board.

Developed a database that allows 1,500 licensed child care centers that serve very young children to sign up for free lead testing of their drinking water. The effort is supported by a $4.9 million grant from the State Water Board. Centers with a high concentration of lead are also eligible for reimbursement of the cost to replace contaminated fixtures. OWP is partnering with the California Child Care Resource and Referral Network and the California Rural Water Association (CRWA).

Applied Research

Funded Grants & Contracts

Impacts of Water Conservation Project

The State Water Board contracted $2,000,000 with OWP (10/11/19–1/31/22) to support analyzing the environmental and economic impacts of proposed water conservation regulations.

Lead in Drinking Water Project

The State Water Board contracted $4,900,000 with OWP (10/1/19–1/31/23) to provide technical assistance to Licensed Child Care Centers to collect and analyze drinking water samples and, subsequently, remediate lead contamination that exceeds thresholds.

Asset Management Technical Assistance Project

2NDnature, LLC, contracted $10,000 with OWP (6/10/20) to provide technical assistance for a plan to implement stormwater infrastructure asset management for the City of Salinas.

Santa Monica Basin Groundwater Sustainability Project

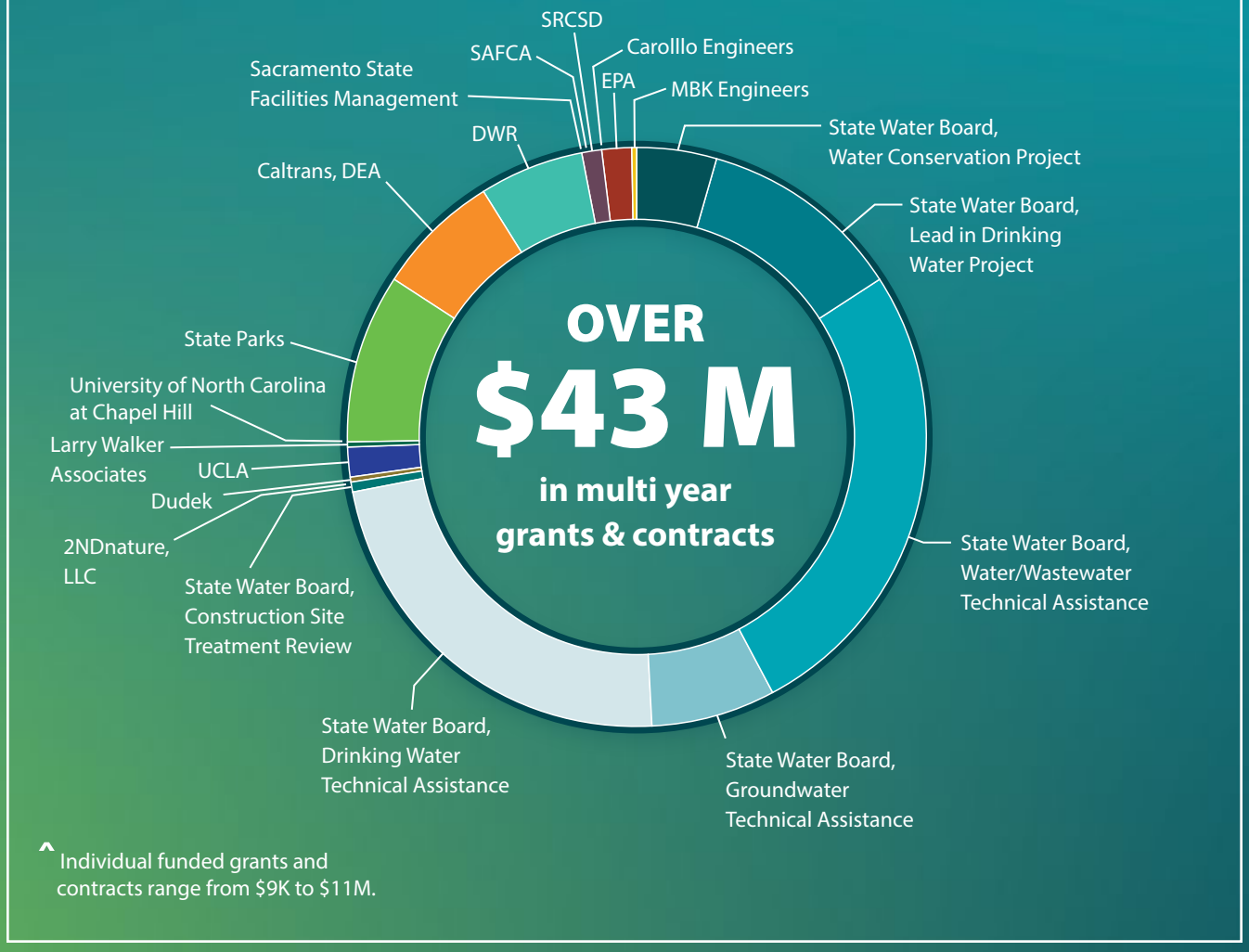
Dudek Engineering and Environmental contracted $148,400 with OWP (starting 9/3/19) to assist the City of Santa Monica and the Santa Monica Basin Groundwater Sustainability Agency achieve their goals of long-term sustainability and water independence by analyzing potential projects and basin management strategies.

Drinking Water Needs Analysis Project

UCLA contracted $675,067 with OWP (9/1/19–3/31/21) to assist with a needs analysis on the state of drinking water in California.

Stormwater Technical Assistance Project

Larry Walker Associates contracted $87,500 with OWP (12/20/19–12/31/21) to assist with regulatory and monitoring services for the Sacramento Stormwater Quality Partnership.



^ Individual funded grants and contracts range from $9K to $11M.

Geographic Information Systems Training for Disadvantaged Communities

University of North Carolina at Chapel Hill contracted with OWP (9/1/18) to provide comprehensive training on and technical assistance for geographic information systems (GIS) to disadvantaged communities.

Affordability of Drinking Water Project

University of North Carolina at Chapel Hill contracted $13,500 with OWP (1/1/20–10/31/20) to assist with better understanding the affordability of drinking water.

Stormwater Program Technical Assistance

The California Department of Parks and Recreation (State Parks) contracted $4,092,888 with OWP (05/1/18–05/1/21) to provide technical assistance for its stormwater program.

Stormwater Research Technical Assistance

The California Department of Transportation, Division of Environmental Analysis (DEA) contracted $3,002,000 with OWP (12/1/19–11/30/22) 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 (1/1/13–6/30/22) to assist the DSOD with dam break flood analysis and emergency action plan development.

Environmental Compliance Support

Sacramento State Facilities Management contracted $20,896 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.

Wastewater Technical Expertise

The Sacramento Regional County Sanitation District (SRCSD) contracted $400,000 with OWP (6/11/03–12/31/20) to provide technical assistance, with a focus on wastewater characterization and treatment.

Wastewater Generation Rates Study

Carollo Engineers contracted $40,181 with OWP starting 5/15/18 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 1/21/11) 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 $749,430 with OWP (10/16–09/21) to develop, operate, and maintain an Environmental Finance Center for Region 9.

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 $11,500,000 with OWP (9/1/16–2/28/22) to provide water and wastewater technical assistance to disadvantaged communities in California.

Drinking Water Technical Assistance and Outreach

The State Water Board, under the Safe and Affordable Funding for Equity and Resilience (SAFER) grant, contracted $10,000,000 with OWP (3/9/20–2/28/22) to provide drinking water 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 (9/1/16–2/28/22) to provide groundwater technical assistance to disadvantaged communities in California.

Construction Site Passive Dosing Chemical Treatment Literature Review and Study Plan

The State Water Board contracted $196,630 with OWP (6/30/20–1/30/22) to study the benefits and potential adverse effects on the environment of water treatment chemicals used at construction sites, including whether the use of Best Management Practices (BMPs) for water treatment chemicals are protective of water quality.

Trash Rapid Assessment Data Exchange (TRADE)

OWP is assisting Dr. Julian Fulton (Sacramento State Environmental Studies) with an EPA contract for the TRADE project. OWP is acting as the liaison to the State Water Board and stormwater permittees for the duration (10/1/20–9/30/23) of the project.

Professional Activities

Conferences, Forums, & Webinars

August 2020

Strategy to Optimize Resource Management of Stormwater (STORMS), webinar (presenter)

Environmental Finance Center Network (EFCN) Public Webinar Series 2020, webinar (presenter)

September 2020

California Stormwater Quality Association (CASQA) 2020 Conference, webinar (presenter)

October 2020

Water Talk Podcast, podcast (presenter)

November 2020

Safe and Affordable Funding for Equity and Resilience (SAFER) Needs Assessment Public Webinar Series 2020, webinar (presenter)

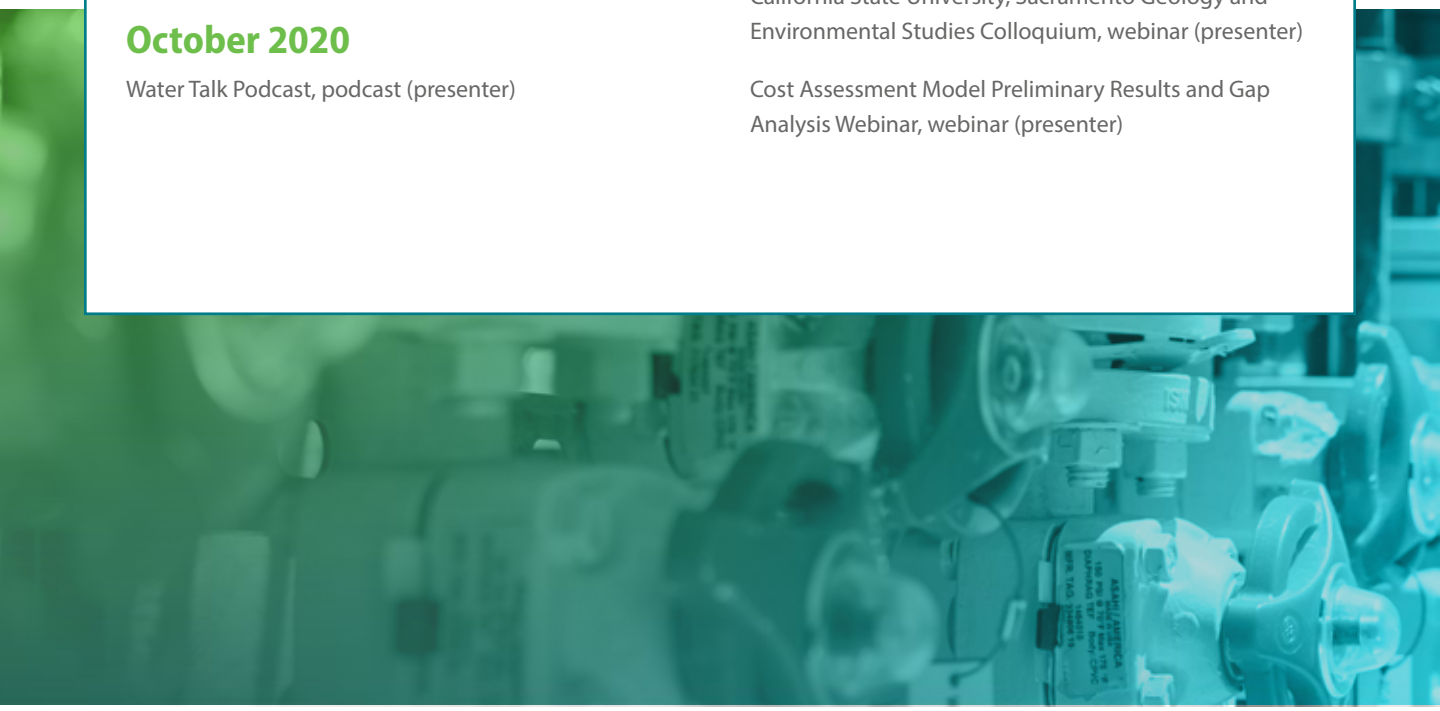
December 2020

National Biochar Week, webinar (presenter)

February 2021

California State University, Sacramento Geology and Environmental Studies Colloquium, webinar (presenter)

Cost Assessment Model Preliminary Results and Gap Analysis Webinar, webinar (presenter)



April 2021

Water Resources and Policy Initiatives (WRPI) Conference, webinar (presenter)

May 2021

Environmental Finance Center Network (EFCN) Support for Small Water Systems Webinar, webinar (presenter)

Nevada Water Funding Seminars, webinar (Host for all 4 days)

Environmental Protection Agency (EPA) Climate Resilience Evaluation and Awareness Tool (CREAT) Training, webinar (instructor/presenter)

June 2021

National Aeronuatics and Space Administration (NASA) Green Team Webinar, webinar (presenter)

Professional Activities

Committees & Meetings

American River Basin Integrated Water Management Committee

American Water Works Association, California–Nevada Section

Veterans Liaison Committee

Veterans Workforce Initiative

Workforce Strategies Committee

Bay Area Water/Wastewater Workforce Reliability

Regional Training Work Group Candidate Development Committee

Women in Trades Committee (chair)

California Association of Career and Technical Education Energy and Utilities (chair)

California Water Environment Association

P3S Committee

Regional Board of Directors

Education Strategies Committee

California Stormwater Quality Association Board of Directors (Member)

Vision Committee

Events Committee

BMP Subcommittee (co-chair)

BMP Effectiveness Subcommittee

BMP Handbook Subcommittee

True Source Control Subcommittee

Conference Planning Subcommittee

Construction Subcommittee

Effectiveness Assessment Subcommittee

Stormwater Financing Subcommittee

Impaired Watershed Subcommittee

Industrial Subcommittee

Phase II Non-Traditional Subcommittee

Phase II Subcommittee

Policy and Permitting Subcommittee

Folsom Cordova Unified School District CTE District Advisory Committee

Innovative Pathways to Public Service Committee

State Water Resources Control Board (State Water Board)

Construction General Permit Training Team

Industrial General Permit Training Team

Northern CA Water Quality Monitoring Group

Southern CA Beach Water Quality Work Group

Safe to Swim Network Water Quality Work Group

Transportation Research Board Hydraulics, Hydrology, and Stormwater Committee

Washington State TAPE External Board of Reviewers

Water Environment Federation

National Collection Systems Committee

Stormwater Committee

Industrial Subcommittee

2021 Delta Science Program Annual Grants: Proposal review board member

Editorial Board member: *Frontiers in Water* (peer-reviewed journal)

Editorial Board member: *Civil Engineering and Environmental Systems* (peer-reviewed journal)

Calleguas Creek Watershed TMDL Stakeholder Group

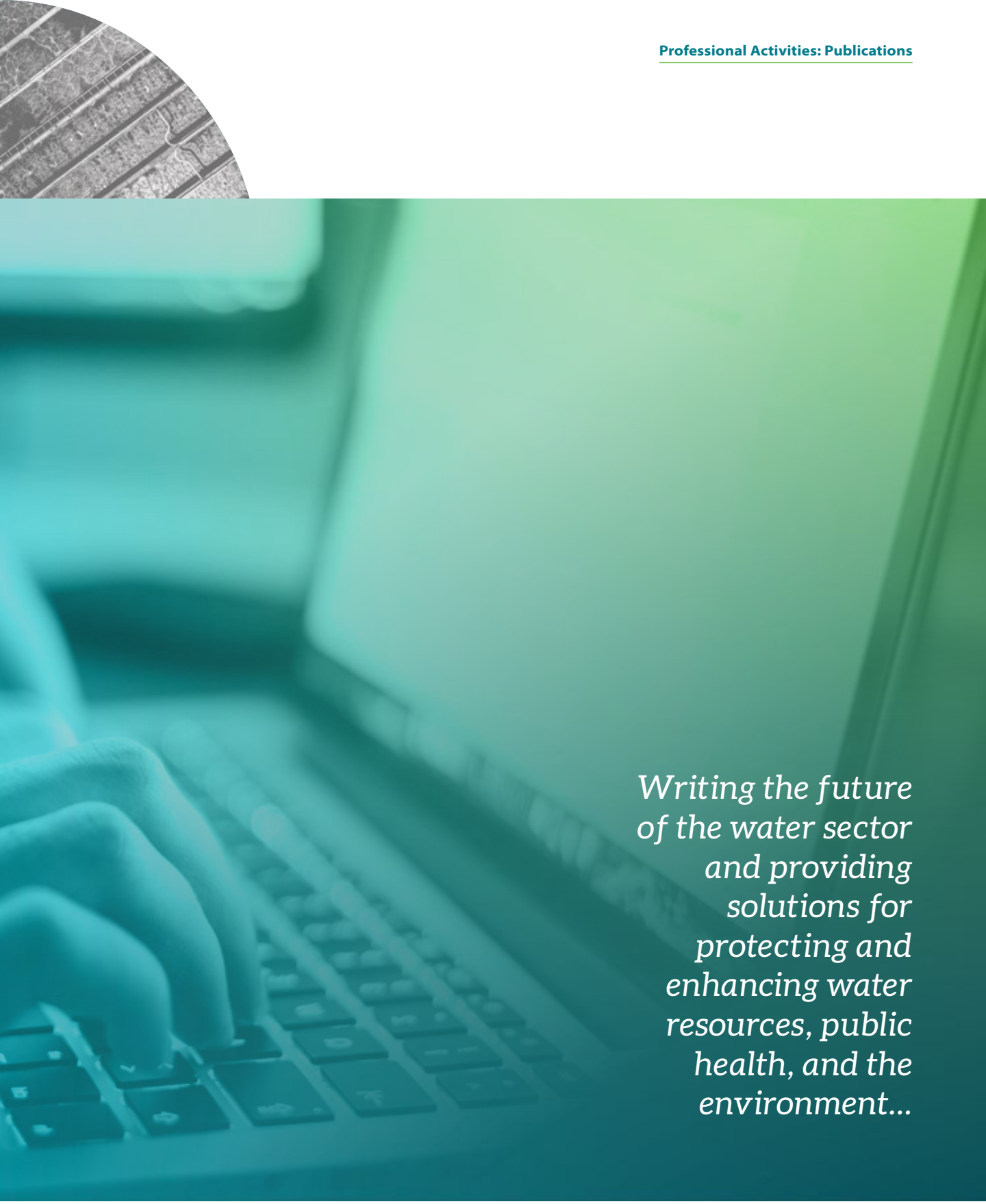
Middle Santa Ana River TMDL Stakeholder Group

Professional Activities

Publications

Currier, B. 2020. "History of Regulation of Stormwater Runoff from Transportation." *TR News*. Issue 328. Transportation Research Board. National Academy of Sciences.

Li, Dongyue, Ruth A. Engel, Xiaoyu Ma, Erik Porse, Jonathan D. Kaplan, Steven A. Margulis, and Dennis P. Lettenmaier. "Stay-at-Home Orders during the COVID-19 Pandemic Reduced Urban Water Use." *Environmental Science & Technology Letters 8*, no. 5 (2021): 431-436.



Writing the future of the water sector and providing solutions for protecting and enhancing water resources, public health, and the environment...

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