

Agenda

Using Stormwater Management to Build Flood and Drought Resilience

P. Brue

- What is resilience?
- Changes in California hydrology
- Evolution of flood management in California
- California droughts and stormwater management
- Building drought and flood resilience through stormwater management
 - Agricultural stormwater BMPs
 - The role of education
 - Stormwater management and equity
 - Native plants in BMPs
 - Stormwater and wildfire resilience

Bio-Retention Design and Performance

L. Parra-Rosales

- Bio-filtration vs bio-retention: french drain, impermeable liners
- Characteristics of adequate soil conditions
- CASQA recommendations and San Diego County BMP Manual recommendations
- Filter layer, gravel layer, and additional orifice(s) and slots for flood control
- Understanding groundwater, surface water, and the complex hydrologic behavior of bioretention facilities
- Design for water quality conditions
- Design for larger storm events: flood control
- Design for continuous simulation conditions: hydromodification

Field Compliance Planning for Construction General Permit Implementation

E. Horn

- Culture of compliance
- Planning and budgeting
- Personnel training
- Best management practices

Designing Climate-Resilient Stormwater Biofilters in California

S. Mohanty

- Why is stormwater critical for water sustainability in the arid west?
- Potential impacts of climate change on water quality and quantity
- Role of stormwater green infrastructures to alleviate negative impacts of climate change
- Do stormwater treatment systems remain functional under extreme climates?
- Design concepts of infiltration-based green infrastructures to increase climate resilience
 - Roadside biofilters under compaction
 - Treatment of runoff from wildfire-affected areas
 - Enhanced removal of PFAS

Applying Lessons from Case Studies in Design, Construction and Operations

R. Keish

- The latest stormwater permit and handbook
- Sound engineering principles and understanding of site-specific constraints
- Design challenges such as contaminated soil and elevated groundwater
- Construction issues such as accounting for field changes and associated ripple effects
- Operational issues such as operations/maintenance access and flooding
- Lessons learned and applying them to your projects

Current Issues in California Stormwater Management

Live, Interactive Webinar - Wednesday, May 24, 2023

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Learning Objectives

You'll be able to:

Use stormwater management to build flood resistance.

Explore groundwater, surface water, and the complex hydrologic behavior of bioretention facilities.

Discuss field compliance planning for construction general permit implementation.

Design climate-resilient stormwater biofilters.

Employ sound engineering principles along with a thorough understanding of site-specific constraints.

Review the results of stormwater management case studies.



HalfMoon Education Live Webinars

Current Issues in California Stormwater Management

Live, Interactive Webinar - Wednesday, May 24, 2023



Discuss changes in California hydrology

Build drought and flood resilience through stormwater management

Explore bioretention design and performance

Do field compliance planning for construction general permit implementation

Treat runoff from wildfire-affected areas and explore enhanced removal of PFAS

Meet design challenges such as contaminated soil and elevated groundwater

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*will not satisfy CA accessibility or net-zero carbon training requirements

Landscape Architects

6.0 HSW CE Hours

6.0 LA CES HSW PDHs

International Code Council

.6 CEUs (Sitework)

Floodplain Managers

6.0 ASFPM CECs



Faculty

Paige Brue, PE, CFM, is a water resources engineer for Watershed Progressive and serves as the Ocean Friendly Gardens Program Director for the North Orange County Chapter of the Surfrider Foundation. She has been working in the field of stormwater management and drainage engineering since 2012. Her expertise lies at the intersection of the built environment and the natural world. Ms. Brue has been involved in a variety of projects throughout her career including highway drainage projects, hydraulic modeling for dams and spillways, stream stabilization, floodplain mapping, fluvial studies, environmental compliance, stormwater best management practice (BMP) design, and watershed planning. She holds a Master of Science (M.S.) degree in Biological and Agricultural Engineering from North Carolina State University and a Bachelor of Science (B.S.) degree in Environmental and Natural Resources Engineering from Purdue University with a Minor in Soil Science. In her free time, Ms Brue enjoys running, surfing, hiking, reading, gardening, and traveling.

Luis A. Parra-Rosales, PhD, PE, CFM, D.WRE., is Director of Water Resources for REC Consultants Inc. He has over 30 years of experience in hydrology and hydraulic design. Mr. Parra-Rosales graduated with a degree in civil engineering from Universidad Catolica (UCAB) in Caracas, Venezuela, where he also served as professor of fluid mechanics. He went on to earn a Masters degree in hydraulic engineering at Universidad Central de Venezuela in Caracas and a PhD degree in water resources at Texas A&M University. For the past 20 years, Mr. Parra-Rosales has been based in San Diego where he also taught courses in hydrology and hydraulics at San Diego State University. His work has included studies on continuous simulation, flooding, complex outlet structure design, review of spillways, and other areas. He has participated in the Technical Advisory Committees in San Diego on hydromodification, critical coarse sediments, and drainage and hydrology manuals, among others. In addition, he has presented at conferences for organizations such as CASQA, StormCon, IECA, and FMA.

Erika Horn, QSD/P, ToR is the CEO of Reign Source, which specializes in stormwater management and compliance programs for land development and construction activities. With 20 years of experience, Ms. Horn and her team develop and coordinate programs that are tailored to clients' specific needs, are feasible for field implementation and compliant with CA CGP requirements. Her programs have an excellent compliance record with local, state and federal agencies. In addition, Ms. Horn coordinates and provides specialized stormwater trainings for land development personnel, construction superintendents and sub-contractors. She is a Qualified SWPPP Developer (QSD), Qualified SWPPP Practitioner (QSP), a Trainer of Record (ToR), a Certified Erosion Sediment and Storm Water Inspector (CESSWI) and a Certified Professional of Erosion and Sediment Control (CPESC). She has a Bachelor of Arts, summa cum laude, from Southern Illinois University.

Sanjay Mohanty, PhD, is an assistant professor at the Department of Civil and Environmental Engineering at the University of California Los Angeles. He has over 15 years of experience working on understanding the fate, transport, and removal of pollutants in natural and engineering systems subjected to climate or anthropogenic stress. His research group at UCLA works to engineer the subsurface systems for stormwater treatment, remediation, and protection of groundwater in changing climates.

Rachael Keish, PE, QSP/D, CGP & IGP ToR, ENV SP, ISI Verifier, has over 20 years of experience in environmental engineering, specializing in stormwater and construction mitigation compliance. Ms. Keish is a California Stormwater Quality Association (CASQA) qualified trainer of record under the construction and industrial stormwater permits, as well as a qualified SWPPP practitioner/developer (QSP/D) and qualified industrial stormwater practitioner (QISP). She has also conducted state-wide stormwater trainings on visual trash assessment for full trash capture equivalence. Her project experience includes work as seconded staff on a Phase II MS4 program, as well as in design and construction on large infrastructure projects. She is also an Envision sustainability professional (ENV SP), and an ISI verifier and trainer. Ms. Keish is currently serving as National ASCE Sustainability Liaison Committee Chair and WTS Women's Leadership Program chair.

Webinar Information

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