

the whole

AUB PLANTING

from CONCEPT to COMPLETION Acsons Boorneo

March 3 - 4, 2022 Albuquerque, New Mexico

With gratitude we honor the land itself and the original peoples of New Mexico – Pueblo, Navajo, and Apache, who have been and remain stewards of this land throughout generations.

Our efforts to continue bringing you this Summit are supported by a diverse group of contributors including:

Watershed Sponsor:

Bernalillo County

Meal Sponsor:

PNM in partnership with Avangrid

Reservoir Sponsors:

AMAFCA • Bohannan Huston • SSCAFCA

River Sponsor:

City of Santa Fe River and Watershed Section

Stream Sponsors:

Baker Creative • City of Santa Fe Water Conservation • Dreamstyle Remodeling Groundwork Studio • MRWM Landscape Architects • Santa Fe County • UNM CRP • Valencia SWCD

Arroyo Sponsor:

Edgewood SWCD

Special thanks to:

Ex Novo Brewing Company

... for donating 10% of sales of "The Most Interesting Lager in the World" – their house Mexican Lager, to L&WS from March 2 through March 4

Reunity Resources

... for collecting and composting all the waste generated at our Santa Fe Field Trip

Richard Chapman and Laura Ferrary of Smart Use

...for hosting the Speaker & Sponsor Frito Pie Party

We are gratified by this diverse and generous community support for water conservation and thank the life-long learners with strong commitments to their professions and to their communities attending this conference, both speakers and audience, who recognize that agua es vida, water is life.





Welcome to the 2022 Land and Water Summit From Concept to Completion: Lessons Learned

Welcome to the 2022 Land & Water Summit! Our annual two-day conference has offered insights into Green Stormwater Infrastructure (GSI) and Low Impact Development (LID), especially in semi-arid environments, for well over 30 years. In 2020, due to COVID-19, we offered a virtual-only version, but this year we're back with a hybrid, in-person/virtual conference. We're masked and ready with our 27th Land & Water Summit, entitled **"From Concept to Completion: Lessons Learned."** Bringing together planners and policy makers, engineers, landscape architects and designers, construction professionals and others, the summit will address GSI and LID concepts and best practices. Presenters will share their more "memorable" enterprises – and how experience, smart planning and effective collaboration helped implement successful ventures.

We are thrilled to offer a keynote video from Congresswoman Melanie Stansbury, a long-time advocate for water issues in New Mexico and co-sponsor of the crucial New Mexico Water Data Act. Born and raised in New Mexico, Congresswoman Melanie Stansbury leads with determination and compassion. She is a champion of efforts to address hunger, food, and water insecurity, conservation and climate change, and economic development and recovery — representing New Mexico in the Legislature and now in Congress for New Mexico's 1st Congressional District. Ms. Stansbury worked in communities across the state as a STEM educator, researcher on land and water issues, and served as a former staffer in the U.S. Senate Committee on Energy and Natural Resources and the White House Office of Management and Budget. It's an honor to offer her words for us.

We also welcome again our esteemed moderator John Fleck, who will host speakers' panels each day of the Summit. A former science journalist, John Fleck is focused on the problems of the Colorado River, an imperiled water source on which 40 million people in the United States and Mexico depend. As a Professor of Practice in Water Policy and Governance in the University of New Mexico Department of Economics and director of the University's Water Resources Program, he co-teaches classes in contemporary water policy issues, modeling, and technical communication for water managers. He first wrote about water in the 1980s as a beat reporter covering the Metropolitan Water District of Southern California.

Speakers from public, private and academic sectors will explore green stormwater infrastructure (GSI) and low impact development (LID) projects at various stages of development from conceiving workable ideas, to planning and design, to implementation, and finally, to the public acceptance and maintenance elements involved in ensuring project sustainability. Take advantage of this great opportunity to learn from others' experiences and hear about advances being made in GSI and LID design, construction and maintenance.

We have had a tremendous outpouring of support this year- from the countless hours of volunteer labor put in by members of our planning committee, to the essential financial support from our sponsors. Please thank them all for putting on a great show despite a number of obstacles this year (computer hacks and ransomware, vandalism, and of course COVID, are just a few stumbling blocks they encountered)!

CEUs for Landscape Architects will be available through New Mexico chapter of the American Society of Landscape Architects (ASLA), and there are also options for self-reporting in other disciplines.

For those of you who were lucky enough to snag a seat on the Field Trip bus, we hope you enjoyed our limited-attendance all-day field trip to Santa Fe and had a great time visiting the GSI/LID projects we offered.



Day 1: March 3, 2022

Time	Title	Presenter(s)	Minutes	
8:00 - 8:15	Opening Remarks	George Radnovich	15	
8:15 - 8:30	Welcome	U.S. Representative Melanie Stansbury, NM District 1	15	
8:30 - 9:15	Aridification & climate change impacts on the Colorado River Basin	John Fleck	45	
PROJECT PHASE: IDEATION				
9:15-10:00	Challenges facing watershed management on indigenous lands	Lani Tsinnajinnie (virtual)	45	
10:00 - 10:15	– BREAK –		15	
10:15 - 10:45	Generating Social Landscapes for a Resilient Tomorrow	Jeff Roberts	30	
10:45 - 11:30	Tree Equity Score project	lan Leahy (virtual)	45	
11:30 - 11:45	TNC Tree Canopy Analysis	Steven Bassett (virtual)	15	
11:45 - 1:15	— LUNCH — PNM Land & Water Resources Stewardship by Maureen Gannon, Chief Environmental Officer, PNM		90	
PROJECT PHASE: PLANNING/DESIGN				
1:15 - 2:00	Curridabat, Costa Rica, a case study in sustainable urban development practices	Eduardo Castillo (virtual)	45	
2:00 - 2:30	Public Art, Recreation, and Stormwater Mitigation: A Mixed-Use Hybrid	Matt Barton (virtual)	30	
2:30 - 3:00	Bernalillo County GSI/LID Standards	Kali Bronson, Sarah Ganley	30	
3:00 - 3:15	– BREAK –		15	
3:15 - 3:45	San Antonio River Authority projects	Michelle Garza	30	
3:45 - 4:15	Sustainability at CNM - Integrating GSI/LID, Cam- pus as a Living Lab & Citizen Science	Molly Blumhoefer	30	
4:15 - 5:00	Ideation and Planning Panel Discussion	Moderator: John Fleck	45	
5:00	Closing Remarks	George Radnovich		

Day 2: March 4, 2022

Time	Title	Presenter(s)	Minutes	
8:00 - 8:15	Welcome	George Radnovich	15	
PROJECT PHASE: PLANNING/DESIGN (CONTINUED)				
8:15 - 8:45	Community Acceptance of Smart Stormwater Systems	Joan Iverson Nassauer (virtual)	30	
8:45 - 9:30	The Memory of Water	Christy Ten Eyck	45	
PROJECT PHASE: CONTRACTING/CONSTRUCTION				
9:30 - 10:00	Hiccups and Pitfalls in Translating a Great Design into a Functional Reality	Jim Brooks	30	
10:00 - 10:15	– BREAK –		15	
10:15 - 11:00	Rehydrating and Re-enlivening Our Communities with Rain-Watered Neighborhood Native Food Forrestry	Brad Lancaster	45	
11:00 - 11:30	From Concrete to the River: Disconnecting Impervious Areas	Dave Gatterman, Sarah Hurteau	30	
11:30 - 11:45	ABCWUA Updates	Carlos Bustos	15	
11:45 - 1:15	– LUNCH –		90	
PROJECT PHASE: MAINTENANCE/PERFORMANCE				
1:15 - 2:00	Integrating Green Assets into a Traditional Gray Asset Management Framework	Heather Himmelberger Hayley Hajic	45	
2:00 - 2:30	Arid LID Coalition GSI/LID Maintenance Training Workshops	Mario Nuño-Whelan	30	
2:30 - 3:00	Tucson GSI/LID BMP Maintenance	Blue Baldwin	30	
3:00 - 3:15	- BREAK -		15	
3:15 - 3:45	Community Maintenance of the Española Healing Foods Oasis	Beatta Tsosie-Peña (virtual)	30	
3:45 - 4:30	Panel Discussion: Contracting and Maintenance	Moderator: John Fleck	45	
4:30	Closing Remarks	George Radnovich		

3

Thursday, March 3

Keynote Welcome Video



Representative Melanie Stansbury U.S. Representative District 1

Born and raised in New Mexico, Congresswoman Melanie Stansbury leads with determination and compassion. She has dedicated her

career to finding solutions to water issues, poverty, and climate change — representing New Mexico in the Legislature and now in Congress. She is a champion of efforts to address hunger, food, and water insecurity, conservation and climate change, and economic development and recovery. Stansbury worked in communities across the state as a STEM educator, researcher on land and water issues, and served as a former staffer in the U.S. Senate Committee on Energy and Natural Resources and the White House Office of Management and Budget. As the Congresswoman from New Mexico's 1st Congressional District, she is working hard to lift up the voices of our communities and tackle our biggest challenges—from economic development, to food and water security, to climate change.



Aridification & climate change impacts on the Colorado River Basin



John Fleck Director,

Water Resources, UNM

A former science journalist, John Fleck is focused on the problems of the Colorado River, an imperiled water source on which 40 million people in the United States and Mexico depend. As a Professor of Practice in Water

Policy and Governance in the University of New Mexico Department of Economics and director of the University's Water Resources Program, he co-teaches classes in contemporary water policy issues, modeling, and technical communication for water managers. He first wrote about water in the 1980s as a beat reporter covering the Metropolitan Water District of Southern California. He is the author of the books Water is for Fighting Over and Other Myths About Water in the West, an exploration of solutions to the Colorado River Basin's water problems, and co-author of Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River.

Abstract

With warming temperatures shrinking the flow of the Colorado River, a new term is emerging - "aridification" is replacing "drought", suggesting a permanent long term trend toward a drier river. This poses critical challenges for the 40 million people in the United States and Mexico who depend on the Colorado.



Challenges facing watershed management on indigenous lands



Lani Tsinnajinnie Assistant Professor, UNM School of Architecture + Planning

Lani Tsinnajinnie is an Assistant Professor in Community and Regional Planning. Lani is Diné and Filipino

and was born and raised in New Mexico. Her home community of Na'Neelzhiin lies in the eastern-most area (also known as "Checkerboard area") of the Navajo Nation.

Lani received a B.S. in Environmental Science, a B.A. in Native American Studies, and a Master of Water Resources degree from the University of New Mexico. Following her studies at UNM, she went south to Socorro to receive a PhD in Earth and Environmental Science with a dissertation in Hydrology from New Mexico Tech.

Lani's expertise is on mountain and watershed hydrology. Her doctoral research focuses on groundwater and surface water interactions in semiarid mountainous watersheds and impacts of climate change on mountainous watersheds. She collaborated with the Navajo Nation Water Management Branch for her Master's and doctoral research. Her doctoral research was primarily funded through a U.S. EPA STAR Fellowship. She also published an article based on her Master's research on snowpack variability on the Navajo Nation in the Journal of Contemporary Water Research and Education. She's had previous experience collaborating with other tribes and communities in New Mexico in the various environmental work she has done and hopes to further collaborate with more Indigenous communities and New Mexican communities.

Abstract

Dr. Tsinnajinnie will address challenges and successes of watershed and water resources management of Indigenous communities within the context of climate change and water rights settlements with a particular focus on the Navajo Nation.



Regenerating the Social Landscape for a Resilient Tomorrow



Jeff Roberts, AIA, AICAE, LEED AP BD+C Principal, SERA Architects

Jeff Roberts AIA, AICAE, LEED AP is a Senior Architecture Designer/Principal at SERA Architects. Jeff's work is grounded in "place-based" design solutions that embrace ecological principals with a goal to create a more sustainable future

for all stakeholders. He is passionate about regenerative design challenges that balance social issues and environmental ecosystems with economics.

His portfolio of work is diverse, which includes interpretive centers, hospitality, housing, workplace and master planning for institutional and corporate clients including Google, LinkedIn, Discovery Children's Museum, Stanford University, Hyatt, and Marriott. He is particularly proud of his work with the National Park Service, US Forest Service, US Fish and Wildlife Service, California State Parks, Southern Nevada Water Authority, Las Vegas Valley Water District, and specifically the LEED Platinum Certified, Desert Living Center at the Springs Preserve. Jeff has served as AIA Las Vegas Chapter President and as an adjunct professor at UNLV for numerous years. Currently he is an Advisory Board Member to the AIA+2030 Professional Series with an expertise in water conservation. He is alsos serving as a keystone member for Biomimicry Oregon.

Abstract

In an rapid and ever changing world full of a diverse array of challenges, see how regenerative design is leading the way for development in urban, suburban and rural environments by reconnecting to the value of Land and Water. Leveraging "livingsystems" thinking with innovative techniques in Permaculture, Biophilia, Biomimicry, and Restorative Design participate in a survey of projects and practices that show the strength in collaboration between the fields of planning, urban design, architecture, community development, landscape architecture and art. This will chart emerging environments of repair and regeneration that engage the physical, social and economic scenarios simultaneously.

2022 Land & Water Summit



Tree Equity Tools for Climate & Public Health



Ian Leahy Vice President of Urban Forestry, American Forests

lan is the vice president of urban forestry at American Forests. Since 2014, he has led the development of the organization's award-winning urban

forestry program, Community ReLeaf, which has helped more than 20 cities build long-term urban forest management capacity and expand their tree canopy. At the core of the program is a uniquely comprehensive change model, as well as a focus on addressing Tree Equity in lower-income communities. Ian has overseen the development of free national movement building resources, such as Vibrant Cities Lab, a tree care industry career pathways toolkit for low-income people of color, as well as tools to elevate urban forestry in addressing climate change and public health. He has also helped develop innovative finance mechanisms, such as City Forest Credits and urban wood utilization. Prior to American Forests, Ian served as the urban and community forestry coordinator for the District of Columbia, built and ran a successful landscape design business in Michigan, and studied natural resources policy and management at Cornell University.

Abstract

This session will explore a suite of tools and guides American Forests has developed to help any sized municipality set goals, attract funding to areas of highest socioeconomic need and optimize their urban forest for climate change and public health outcomes.

TNC Tree Canopy Analysis



Steven Bassett Dir. Planning and Spatial Analysis, The Nature Conservancy

Steve's interest in solving problems at the interface between social and natural systems began at the University of Oregon, where he studied Geography

and Geographic Information Science. Prior to joining TNC's New Mexico program, Steve worked for the NPS in Yellowstone, conducting analysis to support the science-driven management of the Park.

PNM Land & Water Resources Stewardship



Maureen Gannon Chief Environmental Officer, PNM

Maureen Gannon is Chief Environmental Officer for PNM, a vertically-integrated electric utility, headquartered in Albuquerque, New Mexico, that serves

about 800,000 customers in New Mexico and Texas. She is responsible for developing and implementing PNM's sustainable business strategy and the overall management of PNM's environmental commitments. Maureen manages corporate environmental policy and implementation and environmental compliance of air, waste and water emissions at electric generation facilities and transmission/distribution facilities. She also oversees PNM's Environmental Management System performance. Maureen serves as PNM's primary environmental contact with federal, regional, state, and local agencies, as well as other utilities, business organizations and environmental and other stakeholders and represents the company on environmental policy boards and forums.

Maureen has 26 years of electric utility experience. She is currently PNM Resources' representative on the Edison Electric Institute's Environmental Excellence Advisory Committee and serves on the Electric Power Research Institute's Energy and Environment Executive Committee and Advisory Council. Maureen is also a board member of the ARCA Foundation. She holds an M.B.A. from the University of Phoenix and a B.S. in Chemical Engineering from New Mexico State University.





Curridabat, Costa Rica, a case study in sustainable urban development practices



Eduardo Castillo Principal, Castillo Arquitectos & Urbanistas

Eduardo Castillo-Cortés is a Guatemalan architect and urban designer. He holds a master's degree in Architecture from

the Savannah College of Art & Design (SCAD, 2003). After collaborating with several urban design firms in the U.S. he founded Castillo Arquitectos, an architecture and urban design firm in Guatemala City, his hometown.

He has participated as a designer, consultant or design director in over 60 urban design and master planning projects in the U.S., Central and South America, the Caribbean, Asia and Europe.

Both his architecture and urban design work have been recognized by prestigious institutions, including two Charter Awards from the Congress for the New Urbanism (CNU) in the U.S., the CEMEX built work award in Costa Rica, and the Prix Versailles from UNESCO in Paris, France. He is currently involved in several high-profile urban development projects in his native Guatemala, as well as in Costa Rica and El Salvador. He has been recognized by Forbes magazine as one of the top creatives in the Central American region for the last two years in a row.

Abstract

Curridabat, a small city in the metropolitan area of San Jose, Costa Rica, has been at the forefront of innovative urban development strategies and community programs for several years. One of the city's first initiatives was to develop a visioning plan for thei central urban area, with considerable input from the local community, that later served as a basis for Central America's first form-based urban development code. Both the plan and the code deal with topics such as urban form, land use, public space and mobility in ways that were very innovative for a small central american city. The plan and code were implemented in 2014 and designed in 2011. After 10 years since the orginal planning effort, our speaker, who was the principal consultant of the plan for the city, will revisit the strategies implemented and review how these affected the growth of the city.



Public Art, Recreation, and Stormwater Mitigation: A Mixed-Use Hybrid



Matt Barton

Professor, University of Colorado -Colorado Springs

Matt Barton's artistic practice spans a broad range, including immersive multimedia installations, sound and

video works, kinetic sculpture, absurdist performances, and outdoor projects that merge sculpture, architecture, and landscape design, often instigating socially activated experience through the creation of novel spaces and environments. He earned a Master of Fine Art Studio degree in 2006 from Carnegie Mellon University, an interdisciplinary program devoted to contextual and socially engaged art practices. His work has been exhibited internationally including the New Museum of Contemporary Art, New York; The Andy Warhol Museum, Pittsburgh; The Museum of Contemporary Art, Denver; Reykjavik International Film Festival, Iceland; Art Museum of Nanjing, China; Center for Contemporary Art, Santa Fe; and CU – Boulder Art Museum, CO, and he recently completed the first "Arts in Mitigation Fund" public art project funded by FEMA (U.S. Federal Emergency Management Agency).

2022 Land & Water Summit

11

Bernalillo County GSI/LID Standards



Kali Bronson Stormwater Program Compliance Manager, Bernalillo County

Kali Bronson is the Stormwater Program Compliance Manager for Bernalillo County. Ms. Bronson is a hydrologist with over 20 years of experience in water resources,

watershed planning, stormwater management, green stormwater infrastructure (GSI), water quality monitoring, and environmental investigations, monitoring, and restoration. Ms. Bronson is an ardent supporter of GSI, aspiring to normalize its use throughout the Middle Rio Grande watershed, and is certified through the National Green Infrastructure Certification Program (NGICP). She currently manages the MS4 stormwater program for Bernalillo County. Outside of work she is an avid hiker, amateur mycophagist, and yoga enthusiast (and one day hopes to be as flexible as her cat).



Sarah Ganley Vice President, Surface Water, Bohannan Huston

Sarah Ganley, PE, ENV SP, is Bohannan Huston's Stormwater Quality and Regional NPDES expert. She provides

comprehensive NPDES Municipal Separate Storm Sewer System (MS4) stormwater compliance support to clients throughout New Mexico. Sarah is a surface water quality expert bringing technical experience with hydrology and hydraulics as well as expertise in Green Stormwater Infrastructure (GSI) and Low Impact Development (LID) planning, policy support, Best Management Practice (BMP) implementation, surface water quality analysis, and stormwater quality compliance. Outside of work she is enjoys playing volleyball, hiking, & reading.

Abstract

Green Stormwater Infrastructure (GSI) and Low-Impact Development (LID) are approaches to stormwater management that mimic natural processes to improve water quality and mitigate environmental impacts, among other benefits. The Green Stormwater Infrastructure/ Low Impact Development Standards identify GSI/LID best management practices (BMPs) that are arid-appropriate and support Bernalillo County's Stormwater Quality Ordinance. Direct benefits of GSI/LID include peak flow attenuation, reducing erosion, and improving water quality. GSI/LID also reduces urban heat island effects, increases tree canopy and improves air quality, creates urban wildlife habitat, promotes water conservation, and provides other benefits.

The Green Stormwater Infrastructure/Low Impact Development Standards describe regulatory requirements and provides GSI/ LID technical guidance and drawings, as well as guidance for GSI treatment trains, GSI/LID selection criteria and best practices for design and construction, maintenance, use of mulch, and plant selection guidance for native and drought tolerant plants. The fundamental goal is to reduce the amount of stormwater runoff and pollution reaching surface waters that adversely impact the watershed.

12

Michelle E. Garza Stormwater Analyst II

Ms. Garza has 10 years of experience in the environmental science and sustainable energy fields and 13 years in business management. She has a Bachelor of Science degree from the University of Texas at San Antonio (UTSA)

where she focused on geology and worked for the Texas Sustainable Energy Research Institute. Previously she worked in regulatory compliance and remediation with DAI Environmental. Ms. Garza has been part of the Sustainable Infrastructure Unit at the San Antonio River Authority for more than six years, where she works to educate the community on sustainable stormwater solutions to improve water quality and provide additional multi-benefits. Ms. Garza is currently the River Authority's project manager working with the Texas Commission on Environmental Quality (TCEQ) on the Upper San Antonio River (SAR) Watershed Protection Plan (WPP) Green Stormwater Infrastructure (GSI) Master Plan 319 Grant and before that as the representative on contractual matters for the Texas Commission on Environmental Quality on the Upper SAR WPP Implementation - Stormwater Retrofit Best Management Practices (BMPs) 319 Grant. She is actively involved in the community as a member of the University of Texas at San Antonio Urban Planning Student Association, a SARA Watershed Wise Warrior, Texas Master Naturalist, and Texas Waters Specialist. Ms. Garza works with the SA 2020, SA Tomorrow, SA Regional Center Plans, SA Climate Ready Plan, SA 2030 District, and Global Cool Cities Alliance. She is also working toward her M.S. in Urban and Regional Planning at the UTSA where she hopes to learn strategies for implementing low impact development/GSI into planning for the River Authorities four county jurisdiction.

Abstract

This session will focus on a public art project in Denver, Colorado, funded by FEMA's Arts in Mitigation Fund. Community Forms merges public art, water mitigation, and recreation. The sculptural installation features concrete forms that create a social gathering space and invites creative, non-prescriptive exploration. The concrete forms also deliver storm water through the site to an adjacent bioswale before entering the South Platte River. The project serves as a gestural example for potential hybrid models that combine public art, public space, recreation, and water mitigation.

Sustainability at CNM - Integrating GSI/LID, Campus as a Living Lab & Citizen Science

Molly Blumhoefer Project Manager, Campus as a Living Lab and Sustainability, CNM

At Central New Mexico Community College, Molly develops and manages sustainability projects in the areas of

energy, water, transportation, waste and recycling. In her sustainability role, she also coordinates Campus as a Living Lab projects with instructors, manages educational outreach programs, and is instrumental in generating sustainability policies and procedures for the college.

Abstract

This talk will give a general overview of the sustainability efforts at Central New Mexico Community College (CNM) and the related Campus Living Lab (CLL) program. It will describe how a current CLL project has enabled CNM students, and the surrounding community, to analyze Low Impact Development/Green Stormwater Infrastructure features on CNM campuses for their overall effectiveness.

PANEL DISCUSSION: IDEATION, PLANNING & DESIGN

JOIN MODERATOR John Fleck and panelists as they delve a little deeper into the concepting process and how ideas become plans and ultimately executable designs.

Friday, March 4

Community Acceptance of Smart Stormwater Systems

Joan Iverson Nassauer

Professor, Landscape Architecture, University of Michigan

Joan Iverson Nassauer, FCELA, FASLA, uses a design-in-science approach to build knowledge about how landscape design and planning affect human

well-being, aesthetic experience, and the cultural sustainability of environmental benefits. The author of more than 100 papers and books, she employs socio-environmental science to address the design and planning of metropolitan and agricultural landscapes – ranging

from continental scale implications of agricultural practices to neighborhood scale implications of green stormwater infrastructure.

Abstract

The appearance of urban landscapes managed by green stormwater infrastructure (GSI) systems will change and be noticeably dynamic. At times the local community struggles to accept changes in:

- 1) The apparent care, order, naturalness, or safety of the places they know, and
- 2) Aesthetic experiences and related well-being benefits.

This presentation will discuss design, planning, and management tactics that can encourage public acceptance of GSI systems.

2022 Land & Water Summit

15

The Memory of Water

Christine Ten Eyck President, Ten Eyck Landscape Architects, Inc.

Christine received her Bachelor of Landscape Architecture from Texas Tech University. She became a Fellow of the American Society of Landscape Architects (ASLA) in 2003 and is a

registered landscape architect in Arizona, Oklahoma, New Mexico and Texas. She is also an appointed advisor on the State Department's and U.S. General Services Administration's National Register of Peer Professionals.

Awards recognizing Christine's contributions to landscape architecture as an advocate for sustainability and landscape authenticity include the United States Senate Congressional Commendation for Historic Preservation, National Trust for Historic Preservation Landscape Architecture Award, Cities Alive Green Roof & Wall Award of Excellence, Arizona Forward Environmental Excellence Awards, and the U.S. Army Corps of Engineers Chief of Engineers Award of Excellence, in addition to numerous national and state chapter awards from the American Society of Landscape Architects. The 2009 ASLA Professional Awards jury described the Arizona State University Biodesign Institute "an authentic example of sustainability. The vernacular planting palette and reuse of water is raised to a more poetic level."

Christine's design approach, aesthetic, and innovation in the realm of sustainability have received attention in the published world. Selected books featuring her studio's work include The Sustainable Sites Handbook (2012),Private Paradise (2011), Tomorrow's Garden (2011), Design for a Vulnerable Planet (2011), The Desert Home (2002), Healing Gardens (1999), and Designing for the Future (1996). Selected publications include Landscape Architecture Magazine, Martha Stewart Living, Mountain Living, Vogue, Sunset Magazine, Texas Architect, The New York Times, and the Wall Street Journal.

Abstract

This session will explore the role of ephemeral water as inspiration in projects in the southwest.

Hiccups and Pitfalls in Translating a Great Design into a Functional Reality

Jim Brooks Adaptive Terrain Systems

Jim Brooks has been designing and installing stormwater and erosion control systems in the high desert since 1988. Trained as a permaculture designer and instructor, Jim later founded Soilutions, a local composting company in 1996.

He is currently president of Adaptive Terrain Systems LLC, a design and consultation business specializing in Green Stormwater Infrastructure, watershed health and erosion control, and is a member of the Tijeras Creek Watershed Collaborative. Jim is the designer and project manager for the Tijeras Creek Remediation Project (TCRP), a 12+ acre Bernalillo County parcel located in the upper Tijeras watershed. The project demonstrates the healing power of stormwater in improving habitat, reducing erosion, and restoring floodplains.

Abstract

Even the most elegant GSI design must eventually be translated into reality on the ground, and doing so typically involves encountering unanticipated obstacles requiring on-the-fly adjustments. This presentation will discuss, based on the presenter's professional experience, the many adaptations and work-arounds that are frequently necessary to translate a great GSI design into a functional installation. Topics may include site and weather conditions, subcontractor selection and oversight, materials availability, project funding adequacy, and public misperceptions.

Rehydrating and Re-enlivening Our Communities with Rain-Watered Neighborhood Native Food Forrestry

Brad Lancaster Adaptive Terrain Systems

Brad runs a successful permaculture consulting, design, and education business in Tucson, Arizona. He is focused on integrated and regenerative approaches to landscape design, planning, and living. Growing up in a

dryland environment, water harvesting has long been one of his specialties and a true passion.

He is the author of the bible for water harvesting: "Rainwater Harvesting for Drylands and Beyond Volumes I & II" and he has just released new full-color revised and expanded editions of both, which are available at deep discount direct from Brad at www. HarvestingRainwater.com.

Additionally, Brad is the co-founder and organizer of the DunbarSpringNeighborhoodForesters.org, which trains and supports both contractors and citizen foresters to plant, steward, harvest, and grow neighborhood native food forests freely irrigated by passively harvested rain and stormwater. In Brad's urban neighborhood these efforts have resulted in neighbors planting over 1,600 native food trees and thousands of multi-use understory plants freely irrigated by one million gallons of stormwater annually harvested in associated rain gardens. The effort is open to all, thus many from other neighborhoods and communities have been trained and our initiating similar efforts in their neighborhoods.

Abstract

This presentation is about neighborhood food forestry efforts empowering citizens, and contractors, to effectively plant the rain and native food-bearing vegetation to grow vibrant and resilient abundance where they live, work, and play. Then train them up and support them with the education, guidance, collaborations, and policy that enable them to better steward the plantings for decades to come. Dramatic results include cooler neighborhoods, healthier eating, a revitalization of indigenous cuisine, deeper connections with people and place, reduced flooding, skill building, greater soil fertility, climate resilience, and more beauty and joy. The strategies and practices are accessible to all and most are free or cost no more than the price of a shovel.

Adding Water to the Bosque: a Collaborative Effort

Dave Gatterman Executive Engineer, SSCAFCA

Recently named SSCAFCA's executive engineer, Dave previously served as Facilities Operations Director for tie organization. Dave managed the inspection and maintenance of SSCAFCA's

flood control facilities, manages compliance with the USEPA NPDES MS4 permit for the agency, oversees SSCAFCA's development review and manages several capital outlay projects for the construction of new facilities within the agency's jurisdiction.

Sarah Hurteau Climate Change Program Director,

The Nature Conservancy NM

Sarah Hurteau is The Nature Conservancy in New Mexico's firstever climate change program director, expanding a conservation program that

will help advance renewable energy placement and electric vehicle use to reduce emissions that trap heat and cause health issues. The program is developing and implementing nature-based solutions, such as planting trees in wildfire-scarred land and using vegetation to secure and clean water. Additionally, Hurteau will help translate and synthesize scientific resources to make them more accessible to local leaders while helping advance climate policy to achieve the guidelines set out by the state's ambitious climate goals.

Sarah previously served as the chapter's urban conservation director, which primarily focused on using trees to cool temps, clean air and improve quality of life, particularly in under-resourced neighborhoods. She is one of eleven tree experts who released the first-ever climateready tree list for Albuquerque. These trees were selected for their ability to survive, even thrive, in the face of a warming climate. Sarah earned a bachelor's degree in Wildlife, Fish and Conservation Biology and a master's degree in Environmental Science and Policy.

Abstract

This session is a presentation on the Harvey Jones Outlet reconfiguration project. This project was a collaborative effort between SSCAFCA, the Nature Conservancy, MRGCD, City of Rio Rancho, and the Village of Corrales. The project included the removal of invasive species, lowering the ground surface elevation to provide for complete drainage of the Harvey Jones Channel, and addition of water to the system to create a wetlands environment in the Corrales bosque.

19

From the Ground Up: Albuquerque Apartment Saves with Irrigation Upgrades

Carlos Bustos Water Conservation Manager, ABCWUA

Carlos has been working in water Carlos has been working in water conservation in New Mexico since 2005 and joined the Authority in 2016 and has been working to update the conservation program to

achieve the goals of the 100-year water plan (Water2120) including the 2037 goal to reduce the per capita usage to 110 gpd. Carlos has shifted the focus from enforcement to education and over the last four years this effort is paying off! Major accomplishments include: 1) Reducing follow-up enforcement to < 10% of water waste cases; freeing staff time to develop additional customer outreach programs; 2) Working with the Parks Department to return irrigation surcharges for use on water efficiency projects, resulting in improved collaboration and

a 200 MG/yr water savings; 3) Developing a water management/leak detection tool to allow customers to leverage their AMI data. Carlos has also served as the president of the NM Water Conservation Alliance and launched a WaterSmart Academy to train landscape professionals. The proof is in the pudding; the Authority is on its way to achieving it 2037 goal since water use is already down to 121 gpcd.

Abstract

We will be covering a quick overview of our CPR conservation program and the success of the program with the La Paloma multi-family property here in Albuquerque. La Paloma was selected by the EPA as a conservation case study.

Integrating Green Assets into a Traditional Gray Asset Management Framework

Heather Himmelberger Director, SW Environmental Finance Center

Heather Himmelberger, P.E. is a registered professional engineer with over 35 years of experience working with water and wastewater utilities all across the U.S. She has a BS in Environmental Engineering

from Penn State University and an MS from Johns Hopkins University. She is currently pursuing a PhD in Civil Engineering at the University of New Mexico. Heather has served as Director of the SW EFC since 1996, and as such, Heather has been a staunch advocate and promoter of asset management practice for over 18 years. She has provided hundreds of asset management trainings and assisted systems of all sizes and types with understanding and implementing asset management. She was part of the team that developed an integrated asset management framework that includes green and natural assets along with gray assets.

Hayley Hajic SW Environmental Finance Center

Hayley Hajic joined the Southwest EFC in 2018. She holds a B.A. in Biology from Grinnell College and a M.S. in Geography and Environmental Studies from the University of New Mexico. She has over

four years of experience working with water and water systems. Her experiences include collaborating with federal, state and local officials as well as teaching college students. She has developed curriculum for and taught 6 University-level courses which focused on maximizing students' mastery of biosphere and geosphere curriculum and applying course material to real-life scenarios. She has designed curriculum to reach diverse audiences including adult learners and learners from nonscientific backgrounds. At the Southwest EFC, Hayley is working on water affordability metrics and curriculum design and development. She also provides regionalization and asset management technical assistance and training to small communities in the United States.

Abstract

We recognize gray assets - tanks, pumps, pipes, wells, manholes, valves, treatment plants - need to be managed in a systematic way. This approach has been asset management, which was introduced in its current construct in the late 1990s, early 2000s. As this practice increases, it has become very important to imbed green assets (which includes natural assets) into the same framework so that these approaches can be considered along with gray alternatives. Additionally, it is important to remember that green assets have important functions to keep source waters healthy, and reduce stormwater quality and quantity. As such, it is extremely important to manage the green and natural components as "assets." The SW EFC has been working on a framework to bring green and gray assets together in a traditional asset management framework. This talk will describe the need to include green assets in management and the unique characteristics of green assets that need to be considered during the management of these assets. It will also introduce the framework and what it includes, which can be used by anyone who wishes to manage any type of assets - whether green, gray, or mixed.

Arid LID Coalition GSI/LID Maintenance Training Workshops

Mario Nuño-Whelan Landscape Designer Sites Southwest

Mario grew up in Albuquerque and works as a landscape designer at Sites Southwest. Prior to earning a Master of Landscape Architecture from the University of Arizona in the spring of 2020,

he worked on landscape crews for two years, conducting maintenance and installing residential landscapes for design-build companies in Albuquerque. He has a BA in political science and studio art from Kenyon College and before turning to the built environment, he was a community organizer for The Wilderness Society of New Mexico. He's passionate about stormwater harvesting and access to nearby nature.

Abstract

The Arid Low Impact Development (LID) Coalition is a multidisciplinary group in the Rio Grande Watershed. Representing an array of perspectives, skills, and organizations, the group shares a common vision to foster public awareness of stormwater as an asset instead of a liability and to increase literacy around effective, arid-adapted Green Stormwater Infrastructure (GSI) and Low Impact development (LID) strategies.

The Coalition works together to provide technical resources and education specific to designing GSI and LID interventions in our high desert environment, facilitate communication and collaboration, and support high-quality demonstration and research projects.

In 2021, the Arid LID Coalition's Maintenance & Contractor Coordination working group developed a GSI Maintenance Manual and has begun work on a series of training videos for GSI Maintenance. This presentation will discuss the content of the maintenance manual as well as the successes, challenges, and lessons-learned in its development.

Building a GSI Maintenance Program for Tucson

Blue Baldwin

Manager, Green Stormwater Infrastructure Program Tucson Water, City of Tucson

Blue joined the City of Tucson in January '21 to help build Tucson's Green Stormwater Infrastructure Program from the ground up. Prior to that, she ran a school garden

and ecology program with Arizona's second largest school district in partnership with the University of Arizona, which is a model for garden and ecology curriculum integration for schools across the country as well as internationally. Blue has experience in various roles across the field of sustainability, from water harvesting workshop leader, to rooftop gardener in Manhattan, but considers her time as a server during grad school as among the most valuable for building the skills she uses every day. Blue attended Colorado College and the University of Arizona, where she earned a Master's degree in Public Health. Blue lives and plays in her hometown of Tucson with her husband and 8 year old daughter.

Abstract

The nascent GSI Program in the City of Tucson has two primary goals: 1) build new GSI throughout the City, and 2) maintain existing GSI. In this talk, Blue will share the process for developing a GSI Maintenance Protocol and Program for the City of Tucson, including working across City departments, engaging stakeholders, training City staff, and distilling best practices for GSI maintenance into a handy, user-friendly pocket guide.

23

Beata Tsosie-Peña Organizational Director Breath of My Heart Birthplace Española Healing Foods Oasis

Beata Tsosie-Peña is from Santa Clara Pueblo and El Rito, NM. She is certified as an Infant Massage Instructor, as a Developmental Specialist I-Advanced, an

Educator(B.A. and A.A), a full spectrum Doula and Lactation Counselor, and in Indigenous Sustainable Design (permaculture). She is a Pueblo representative for the New Mexico Governor's Task Force on Missing and Murdered Indigenous Women and Relatives serving a second term and serves on two local community boards. She was also a founding board member of Breath of My Heart Birthplace. The realities of living next to a nuclear weapons complex called her into environmental health and reproductive justice work and advocacy for over a decade. She does this work in honor of her roles as a Tewa mother, partner, aunty, seedkeeper, artist, farmer, and relative to all beings. She recently managed the creation of the Española Healing Foods Oasis demonstration garden project.

Abstract

Beata will talk about her role in founding and sustaining The (EHFO) project, which broke ground in 2016. The project invited community members to transform a barren slope in downtown Española into an edible food garden utilizing traditional dry-land farming techniques and permaculture principles.

PANEL DISCUSSION: Contracting & Maintenance

JOIN MODERATOR John Fleck and panelists as they delve a little deeper into the contracting, construction, maintenance and performance project phases.

The garden, accessible to Española residents as well as the surrounding tri-cultural communities of the northern Río Grande Valley, provides seasonal food, Native medicinal herbs and plants, accessible pathways, and aesthetic beauty while harvesting precious rainwater.

"Rainwater harvesting barrels at Mountain View Community Center" Photo courtesy of The Nature Conservancy

"Rainwater harvesting project at Westside Community Center" Photo courtesy of The Nature Conservancy

Bernalillo County supports resource conservation and green stormwater infrastructure/low impact development **(GSI/LID)** by:

Providing education and resources for water conservation and stormwater quality

Promoting and assisting in responsible development in the County

Incorporating water efficiency and GSI/LID into county projects

Bernalillo County Water Conservation & Stormwater Quality Programs

ARE PROUD TO SPONSOR The 2022 Land & Water Summit

"GSI/LID installation along Second Street" Photo courtesy of Bernalillo County Natural Resource Services

For more information, please visit: www.bernco.gov/water

WE HAVE ONE WORLD. AND COUNTLESS WAYS TO PRESERVE IT.

PNM, in support with AVANGRID, is a proud sponsor of the Land and Water Summit.

The Land and Water Summit is dedicated to finding lasting ways to preserve our world through climate change solutions. We are proud to support your efforts and do our part. Learn about our environmental commitments at PNM.com/environment.

Together for New Mexico.

Bohannan 🖊 Huston

We know water.

- Low Impact Development
- Green Stormwater Infrastructure Concepts & Design
- Stormwater Quality Solutions
- MS4 Compliance Support
- Watershed Management
- Drainage Management Planning
- River Restoration
- Flood Control
- Reservoirs, Dams, Levees

CONTACT US

Learn more at: bhinc.com

Sarah Ganley, PE, ENV-SP sganley@bhinc.com Vince Steiner, PE, CFM vsteiner@bhinc.com

the City of Santa Fe is a proud sponsor of the 2022 Land and Water Summit

Albuquerque Metropolitan Arroyo Flood Control Authority

Maintain over 75 miles of stormwater diversion channels and arroyos.

Remove thousands of cubic yards of sediments, trash, and debris from stormwater each year.

Work with local agencies to facilitate the design and construction of flood control and stormwater quality facilities across the Albuquerque metro area.

FD04

Protecting Life and Property since 1963

2600 Prospect Ave. NE, Albuquerque, NM 87107 amafca.org • (505) 884-2215

SSCAFCA Flood Control and Recreational Facilities

Dams • Ponds • Drainage Ways • Open Space Water Quality Features • Multi-Use Facilities Sports Fields • Public Parks • Playgrounds More than 100 miles of Linear Parkway

Arroyos and Parks

Montoyas with tributaries: Panta de Leon and Lomitas Negras Venada Watershed Park Calabacillas Watershed Park La Barranca Watershed Park Black Watershed Park

Supporting Community with Multi-use Flood Control

www.sscafca.com

Creating resilient, functional, beautiful places for more than 60 years

Architecture in Progress

dpsdesign.org

PROUD SPONSOR OF THE 2022 LAND & WATER SUMMIT

MARKETING & ADVERTISING MATERIALS

EVENT PLANNING

CREATIVE

bakercreativenm.com 505,480,4928

SOCIETAL TRANSFORMATION

https://crp.unm.edu

Ranked No.1 Full Service Remodeler based on sales by Remodeling Magazine, May 2018, 2019, 2020

- 125,000+ CUSTOMERS SINCE 1989 -

Call to schedule your consultation 505-225-1143 Visit our beautiful showroom at 1460 N Renaissance Blvd (across from Sam's Club)

Next Generation Water SummitVirtual ConferenceMAY 19 & 20

Scheduled sessions include:

- Water Data: A 21st Century Approach to Managing Water by Stacy Timmons, Associate Director of Hydrogeology at the New Mexico Bureau of Geology and Mineral Resources
- Potable Rainwater Design Requirements by David Crawford, CEO of Rainwater Management Systems
- The Human Drivers of Efficient Urban Landscape Water Use by Rolston St. Hilaire, Professor and Department Head of the Department of Plant and Environmental Sciences at New Mexico State University
- Transforming Thirty Landscapes: Innovative Policy Approaches
 Throughout the West by Lindsay Rogers, Policy Analyst with
 the Western Resource Advocates
- The State of Graywater in the West by Laura Allen, author and co-founder of Greywater Action and Doug Pushard, Executive Director of Kuelwater and founder of HarvestH2o

NextGenerationWaterSummit.com

Bohannan 🛦 Huston

groundworkstudío

save water

SANTA FE

Thanks for Your Support!

Land and Water Planning Committee:

Steve Glass, Chair • Ciudad Soil and Water Conservation District Kali Bronson, Vice Chair • Bernalillo County Astrid Hueglin, Treasurer • Ciudad Soil and Water Conservation District **Erin Blaz** • Ciudad Soil and Water Conservation District **Patrick Chavez** • Albuquerque Metropolitan Arroyo Flood Control Authority Sarah Ganley • Bohannan Huston, Inc. **Dave Gatterman** • Southern Sandoval County Arroyo Flood Control Authority Zoe R. Issaacson • City of Santa Fe Melissa McDonald, RLA • City of Santa Fe **Megan Marsee** • Bernalillo County **Richard Perce** • Albuquerque Bernalillo County Water Utility Authority **George Radnovich** • Sites Southwest Erika Robers • Groundwork Studio **Phyllis Baker, Consultant •** Baker Creative