

**United States Committee
on Irrigation & Drainage
2023 Conference**



USCID

***Managing Limited Groundwater and
Surface Water Supplies to
Meet Irrigation Demands—
Challenges, Opportunities & Solutions***

**October 17-20, 2023
Hilton Fort Collins
Fort Collins, Colorado**

2023 USCID CONFERENCE SCHEDULE AT A GLANCE

TUESDAY, OCTOBER 17

8:00am-11:30am

FIELD TOUR (separate registration required)

Dr. Chris Thornton (CSU Civil & Environmental Engineering) leads this tour of Colorado State University's Hydraulics Lab, part of CSU's Engineering Research Center at the Foothills Research Campus. This facility is unique with its proximity and water supply from Horsetooth Reservoir, which is part of the Colorado Big Thompson Project. Next, tour attendees will make their way to the Bellvue Hydraulic Irrigation Lab, built in the 1920s near the Cache la Poudre River, for a tour led by Dr. Tom Trout (USDA ARS—retired). This outdoor lab allowed Dr. Ralph Parshall to develop the first accurate measuring flume.

12noon-1:15pm

LUNCH WITH SPEAKER Canal Modernization Panel

*Moderated by Dan Howes and Stuart Styles, Cal Poly Irrigation Training & Research Center
Panel Participants: Robert Norman, Grand Valley Water Users Association; Travis P. Teegarden, Bureau of Indian Affairs (invited)*

1:30pm-3:00pm

OPENING SESSION: WATER MANAGEMENT

Moderated by Kevin Yao, Palmdale Water District; Jose Chavez, Colorado State University

Exploration of Quantification Methods for Agricultural Water Savings in the Lower Colorado River Basin *Tom Ley, Natural Resources Consulting Engineers*

Analysis of Economic Sustainability in Irrigation Projects Throughout the Western U.S. *Dan Howes, Cal Poly Irrigation Training and Research Center*

Managed Aquifer Recharge *Sam Schaefer, GEI Consultants*

3:00pm-3:30pm

BREAK

3:30pm-4:30pm

OPENING SESSION: DISTRICT MODERNIZATION

Moderated by Amy Johnson, HDR

Gray Lodge Wildlife Area Water Supply Project *Randy Hopkins, Provost & Pritchard Engineering*

A Case Study: Humboldt River Basin Updates *Therese Ure Stix, Schroeder Law Office*

The Yakima Basin Integrated Plan and Kittitas Reclamation District: A Case Study on Collaboration and Project Implementation Success *Urban Eberhart, Kittitas Reclamation District*

4:30pm-5:00pm

USCID UPDATE/USCID ANNUAL MEETING *Brian Wahlin, West Consultants, USCID President*

5:00pm-5:30pm

MEET THE EXHIBITORS

5:30pm-7:30pm

NETWORKING RECEPTION, EXHIBITION, AND POSTER SESSION

Posters (New Mexico State University):

“Using Ratio Feedback Control to Manage an Acequia in New Mexico” Charlie Mahady

“Using Feedback Control to Manage Run of River Irrigation Diversions in New Mexico” Nazmul Sagor

WEDNESDAY, OCTOBER 18

7:30am-8:00am

CONTINENTAL BREAKFAST WITH EXHIBITS

8:00am-9:30am

SESSION A: WATER MODELS

Moderated by Brian Wahlin, West Consultants; Darion Mayhorn, US Bureau of Reclamation; W. Martin Roche, Consultant

Application of HEC-RAS Model to Analyze Dynamic Sediment Transport Impact Pre- and Post-Construction of Fall Structures At Lower Nara Canal Off-Taking from Upper Nara Canal, Sukkur Barrage, Indue River, Sindh, Pakistan *Sajid Ali Bhutto, Sindh Barrages Improvement Project Irrigation Department*

Evaluating Reflectance-Based Maize Evapotranspiration Modeling Under Different Irrigation Systems *Edson Costa-Filho, Colorado State University Water Management & Systems Research Unit*

A Dry Artificial Reference Surface for Water Stress Detection in Maize *Allan A. Andales, Colorado State University*

2023 USCID CONFERENCE SCHEDULE AT A GLANCE (PAGE 2)

WEDNESDAY, OCTOBER 18 (continued)

9:30am-10:30am **BREAK WITH EXHIBITS**

10:30am-12noon **SESSION B: GROUNDWATER MANAGEMENT**

Moderated by Stacy Pandey, Lower Colorado River Authority; Tony Wahl, Bureau of Reclamation TSC; Stuart Styles, Cal Poly Irrigation Training & Research Center

Groundwater Recharge Methodologies and A Case Study Describing the Dunnigan Area Groundwater Recharge Demonstration and Pilot Project *Ryan Fulton, Larry Walker Associates*

Sustainable Evapotranspiration for Groundwater Sustainability *Dan Howes, Cal Poly Irrigation Training and Research Center*

Nanobubble Technology as a Tool to Mobilize Soil Salts—A Case Study in California’s Central Valley *Warren Russel, Moleaer*

12noon-1:15pm **LUNCH WITH SPEAKER**

Goshen Irrigation District Tunnel Rehab Project *Marcus Krall, HDR, Inc. and Kevin Strecker, Goshen Irrigation District*

1:30pm-3:00pm **SESSION C: WATER INNOVATION**

Moderated by Danny Kerns, and Randy Hopkins, Provost & Pritchard Engineering; David Bradshaw, Metropolitan Water District of Southern California

Subsurface Drip Irrigation as an Effective Water Conservation Tool in the California Low Desert Cropping Systems *Ali Montazar, University of California*

Improving Irrigation Water Productivity in Cotton Using Mobile Drip Irrigation Technology *Susan O’Shaughnessy, USDA-ARS, Conservation and Production Research Laboratory*

Ancient Climate Change *Kenneth Wright, Water Wright Engineers*

The Irrigation Innovation Consortium: A 5-Year Retrospective *Allan Andales, Soil & Crops Sciences Department, Colorado State University*

3:00pm-3:30pm **BREAK**

3:30pm-5:30pm **SESSION D: WATER MEASUREMENT**

Moderated by Blair Stringam, New Mexico State University; Michael Davidson, Moleaer; Therese Ure Stix, Schroeder Law Office

Testing Remote Sensing-Based Evapotranspiration Models in the Midwest *Jessica Nascimento, University of Nebraska Lincoln, Daugherty Water for Food Global Institute*

Using Canopy Cover and Temperature to Inform Crop Coefficient Based Irrigation Scheduling Under Deficit Irrigation *Kendall DeJonge, USDA-ARS*

Exploring the Contribution of Crop Water Use to the Ability to Remotely Estimate Soil Salinity in Irrigated Agriculture *Jose L. Chavez, Colorado State University*

Irrigation Management Using Cloud-Based Computing *Peter Moller, Rubicon Water*

6:30pm-7:00pm **RECEPTION WITH EXHIBITORS**

7:00pm-9:30pm **DINNER WITH SPEAKER**

Irrigation, Ag Experiment Station Research *Dr. Gene Kelly, Colorado State University*

The Battle Over the Hetch Hetchy and Its Uses *Dr. Michael Childers, Colorado State University*

THURSDAY, OCTOBER 19

7:30am-8:00am **CONTINENTAL BREAKFAST WITH EXHIBITS**

2023 USCID CONFERENCE SCHEDULE AT A GLANCE (PAGE 3)

THURSDAY, OCTOBER 19 (continued)

8:00am-9:30am

SESSION A: PRODUCT INNOVATION

Moderated by Jerry Gibbens, Northern Colorado Water Conservancy District; Stacy Pandey, Lower Colorado River Authority

Liquid Natural Clay (LNC) to Combat Desertification: Effects of LNC on Soil Water Retention and Crop Yield *Shaddy Allshraah, Desert Control Americas, Inc.*

Using Concrete Canvas Type II GCCM/B's to ASTM D8364 to Effectively Eliminate Seepage in Canals *Simon Lester, Concrete Canvas*

Uplift Pressure and Flow Through Joints and Cracks in Concrete-Lined Chutes *Tony Wahl, USBR*

9:30am-10:30am

BREAK WITH EXHIBITS

10:30am-12noon

SESSION B: RETROFIT AND MODERNIZATION

Moderated by Therese Ure Stix, Schroeder Law Office; Jason Smesrud, CWRE/Jacobs

Basin-Scale Irrigation Rehabilitation, Betterment and Modernization on the Flathead Indian Irrigation Project: An Integral Component of the Confederated Salish and Kootenai Tribes Water Rights Settlement *Seth MakePeace, CSKT Natural Resources Department*

California Irrigation Districts Role in Electric Power *W. Martin Roche, Consulting Engineer*

Metropolitan Water District Pump Impeller *Stuart Styles, Cal Poly Irrigation Training & Research Center*

12noon-1:15pm

LUNCH WITH SPEAKER

Colorado River Panel: A Colorado Agricultural Perspective *Dale Trowbridge, New Cache la Poudre Irrigation Company; Mark Harris, SGM, Inc.; Dr. Neil Grigg, Colorado State University*

1:30pm-3:00pm

SESSION C: WATER MEASUREMENT AND CONTROL

Moderated by Jose Chavez, Colorado State University; David Bradshaw, Metropolitan Water District of Southern California; Jerry Gibbens, Northern Colorado Water Conservancy District

Implementation of Non-Contact Radar Canal Flow Meters for Canals *Stuart Styles, Cal Poly Irrigation Training & Research Center*

A Comparison of Overshot and Slide Gates for Accomplishing Upstream Water Level Control Using Ratio and Proportional Control Routines *Blair Stringam, Dept. of PES, New Mexico State University Hydraulic Investigations & Laboratory Services, Technical Service Center, USBR*

Using Machine Learning to Optimize Soil Moisture Sensor Depth *Kendall DeJonge, USDA-ARS; Melissa Clutter, Fort Lewis College*

3:00pm-3:30pm

BREAK

3:30pm-5:30pm

SESSION D: WATER MEASUREMENT

Moderated by Amy Johnson, HDR; Tony Wahl, US Bureau of Reclamation TSC

Verifying Conservation Estimates for On-Farm Agricultural Water Conservation Programs *Stacy Pandey, Lower Colorado River Authority*

Consumptive Use Comparison of Furrow and Subsurface Drip Irrigation for Onions *Chad Withers, Civil and Environmental Engineering Dept, Utah State University*

Monitoring the Water Status of Almond Orchards in a Water-Scarce Area in Southeast Spain: A Multi-Approach Analysis *Dr. Francisco Montoya, Instituto Técnico Agronómico Provincial de Albacete (ITAP), Parque Empresarial Campollano, Albacete, Spain*

2023 USCID CONFERENCE SCHEDULE AT A GLANCE (PAGE 4)

FRIDAY, OCTOBER 20

8:00am-2:00pm

FIELD TOUR (separate registration required)

*Founded in 1937, Northern Water was created to jointly operate and maintain the federally-owned Colorado-Big Thompson Project with the U.S. Bureau of Reclamation. This full day tour will highlight several components of the C-BT Project including distribution operations, reservoirs, hydropower and more. Tour attendees will also learn about the proposed Northern Integrated Supply Project, anticipated to begin construction in 2025 near Fort Collins, as well as current construction of the Chimney Hollow Reservoir Project in Larimer County. **PLEASE NOTE TOUR PARTICIPANTS HAVE THE OPTION OF BEING DROPPED AT THE DENVER AIRPORT OR AT THE HOTEL AT THE CONCLUSION OF THE TOUR.***

USCID CONFERENCE

For 2023 conference information, schedule, hotel information, online registration, sponsorship and exhibitor opportunities, visit www.uscid.org/events

USCID has been hosting conferences on the latest irrigation and drainage research and technologies since 1996 in cities throughout the United States and internationally. For a list of conferences, and conference proceedings, visit: www.uscid.org/pastconferences.

HOTEL INFORMATION & RESERVATIONS

The 2023 USCID Conference will be held at the Hilton Fort Collins, Fort Collins, Colorado. Discounted room rates are available through our dedicated link below using code NN83. Deadline for rooms at the conference rate is September 17.

Book a room using the link below or call 970-482-2626 and mention group code NN83.

<https://www.hilton.com/en/book/reservation/flexibledates/?ctyhocn=FNLCO&arrivalDate=2023-10-17&departureDate=2023-10-18&groupCode=NN83&roomI NumAdults=1>

CONFERENCE DEADLINES

- The Hilton Fort Collins room reservation deadline is September 17, 2023 OR until our room block fills.
- Conference pre-registration deadline is September 25. Register early for discounted registration fees.

EXHIBITOR AND SPONSORSHIP INFORMATION

A limited number of exhibit booths and sponsorship opportunities are available. Please refer to the Exhibitor and Sponsorship Opportunities Flyer for more information.

ABOUT USCID

The mission of USCID is to promote progressive and sustainable irrigation, drainage and flood control practices in support of food and fiber production and public safety, recognizing that sustainability embodies economic, social and environmental goals. USCID is a non-profit professional society whose members share an interest in the planning, design, construction, operation and maintenance of irrigation, drainage and flood control works, agricultural economics, water law, and environmental and social issues affecting irrigated agriculture.

USCID is a member of the International Commission on Irrigation and Drainage (ICID), an association of more than 70 countries. Founded in 1950, ICID is a non-governmental organization dedicated to the sound and responsible management of water resources.

USCID publishes the USCID newsletter, proceedings of USCID meetings and special reports, organizes and sponsors periodic technical meetings and conferences, and distributes ICID publications.

For more information on USCID and their activities, and membership information, visit the website: www.uscid.org or contact:

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