

# **Irrigated Agriculture Responds to Water Use Challenges — Strategies for Success**

*USCID Water Management Conference*



**USCID**

*The U.S. society for irrigation and drainage professionals*

**April 3-6, 2012  
Austin, Texas**

## Program

### Tuesday, April 3

7:00 a.m. - 5:30 p.m. **Registration**

8:00 a.m. - 11:30 a.m. **Field Tour**

The tour will feature a visit to the Lower Colorado River Authority Redbud Operations Center and ET weather station.

12:00 noon - 1:15 p.m. **Lunch with Speaker**

Moderator — **Jerrold D. Gregg**, USCID President, and Bureau of Reclamation, Boise, ID

Speaker — **Rebecca S. Motal**, General Manager, Lower Colorado River Authority, Austin, TX

1:30 p.m. - 5:00 p.m. **Opening Plenary Session**

Moderator — **Gerald A. Gibbens**, Conference Chairman, MWH, Fort Collins, CO

*Keynote Address — The Future of Irrigation in Texas*

**Robert E. Mace**, Deputy Executive Administrator, Water Science and Conservation, Texas Water Development Board, Austin, TX

*Impacts of Climate Change on Water Resources Development*

**Ronnie M. Lemons**, Freese and Nichols, Inc., Fort Worth, TX

*Relating International Irrigation Developments to the U.S. Experience*

**Mark Svendsen**, Consultant, Philomath, OR

3:00 p.m. - 3:30 p.m. **Break**

*Implementation of an Integrated Program for Modernization of Irrigation Districts — The Texas Experience*

**Askarali Karimov** and **Guy Fipps**, Texas A&M University, College Station, TX

*Low Head Hydro*

**Joe E. Blankenship**, Natel Energy, Inc., Scottsdale, AZ

*Strength and Weaknesses of Representative SCADA Projects in Texas*

**Askarali Karimov** and **Guy Fipps**, Texas A&M University, College Station, TX

5:00 p.m. - 5:30 p.m. **Meet the Exhibitors**

5:30 p.m. - 7:30 p.m. **Networking Reception and Exhibition**

### Wednesday, April 4

7:00 a.m. - 5:30 p.m. **Registration**

7:00 a.m. - 8:00 a.m. **Continental Breakfast in Exhibit Hall**

8:00 a.m. - 10:00 a.m. **Plenary Session 1 — SCADA and Automation**

Moderators — **Dustin Mortensen**, Freese and Nichols, Inc., Austin, TX; and **Kristoph-Dietrich Kinzli**, Florida Gulf Coast University, Fort Myers, FL

*District Wide Use of Low Cost Automatic Sluice Gates*

**A. W. Blair**, AWBlair Engineering, Austin, TX; and **Tom McLemore**, Harlingen Irrigation District, Harlingen, TX

*Point to Multi-Point Radio SCADA Networks: Basic Radio SCADA System Design Requirements*

**Dan Steele**, FreeWave Technologies, Boulder, CO

*Water Conservation and Irrigation Efficiency: A Case Study of Turlock Irrigation District's Data Management System for Irrigation Operations, Environmental Monitoring, and Energy Production*

**Noah Walker** and **Stan Malinky**, KISTERS North America, Citrus Heights, CA; and **Wes Monier** and **Jason Carkeet**, Turlock Irrigation District, Turlock, CA

*Real Time Optimization for Smart Automation of Surface Irrigation*

**Rod Smith**, **Malcolm Gillies** and **Richard Koech**, University of Southern Queensland, Queensland, Australia

10:00 a.m. - 10:30 a.m. **Break in Exhibit Hall**

10:30 a.m. - 12:00 noon **Plenary Session 1 — SCADA and Automation (continued)**

*Supervisory Control and Data Acquisition Meets Public Policy — A Glenn-Colusa Irrigation District Case Study*

**Pat Kennedy** and **Thaddeus Bettner**, Glenn-Colusa Irrigation District, Willows, CA

*SCADA in the Cloud*

**Remy Halm** and **David Sobey**, Rubicon Water, Fort Collins, CO

*Information Systems in Water Sector of Central Asia: Challenges and Perspectives*

**Iskandar Abdullaev** and **Shavkat Rakhmatullaev**, Transboundary Water Management Project, German International Cooperation, Tashkent, Uzbekistan

12:00 noon - 1:15 p.m. **Buffet Lunch in Exhibit Hall**

1:30 p.m. - 3:00 p.m. **Plenary Session 2 —  
Drought Management**

Moderators — **Stacy Pandey**, Lower Colorado River Authority, Austin, TX; and **Joe E. Blankenship**, Natel Energy, Inc., Scottsdale, AZ

*Use of an Irrigation Management System to Grow 200 Bushels of Corn on Twelve Inches of Irrigation Water Demonstration Project*

**Steven D. Walthour**, North Plains Groundwater Conservation District, Dumas, TX; and **Leon New**, Conservation Systems Engineer, Amarillo, TX

*Climate and ET: Do Plant Water Requirements Increase During A. Drought?*

**Charles Swanson**, **David Smith** and **Guy Fipps**, Texas A&M University, College Station, TX

*Searching for Predictive Climate Signals for River Flows in the Lower Colorado River Basin of Texas*

**Ronald Anderson** and **Bob Rose**, Lower Colorado River Authority, Austin, TX

3:00 p.m. - 3:30 p.m. **Break in Exhibit Hall**

3:30 p.m. - 5:30 p.m. **Plenary Session 2 —  
Drought Management** (continued)

*Rainwater Harvesting*

TBA, Texas A&M University, College Station TX

*Water Reuse in Droughts and Deserts*

**Ed Gerak**, Buckeye Water Conservation and Drainage District, Buckeye, AZ; and **Joe Blankenship**, Natel Energy, Inc., Scottsdale, AZ

*Impact of Errors in Flow Measurement on Rio Grande Compact Delivery Obligations During Drought*

**Phil King**, New Mexico State University, Las Cruces, NM; and **A. W. Blair**, AWBlair Engineering, Austin, TX

*Strategies to Meet Long-Term Agricultural Water Needs in the Lower Colorado River Basin of Texas*

**John McLeod** and **Tom Hegemier**, Lower Colorado River Authority, Austin, TX

6:30 p.m. - 7:00 p.m. **Reception**

7:00 p.m. - 9:30 p.m. **Dinner with Speaker**

Moderator — **Jerrold D. Gregg**

*Irrigation Systems of the Spanish Missions: "Espada Acequia" and Current Efforts to Restore These Systems*

**James Oliver**, National Park Service, San Antonio, TX

**Thursday, April 5**

7:00 a.m. - 5:00 p.m. **Registration**

7:00 a.m. - 8:00 a.m. **Continental Breakfast and  
Poster Session**

*Socio-Technical Aspects of Water Management: Emerging Trends in Central Asia*

**Iskandar Abdullaev** and **Peter P. Mollinga**, Transboundary Water Management Project, German International Cooperation, Tashkent, Uzbekistan

*Development of Irrigation Scheduling at the Whole Farm Level*

**Mukhammadzakhrab Ismanov** and **Leo Espinoza**, University of Arkansas, Little Rock, AR

*Simulating Water Table and Soil Water Responses to Fluctuations in Canal Stage in Farmlands East of Canal-111 in Southern Florida*

**Isaya Kisekka**, **Kati Migliaccio**, **R. Muñoz-Carpena**, **B Schaffer**, **Y. Li** and **T. Boyer**, University of Florida, Homestead, FL

*Effect of Applying Different Stress Levels at Different Timings on Drip Irrigated Native Spearmint in the Pacific Northwest*

**Prossie Nakawuka** and **Troy Peters**, Washington State University, Prosser, WA

8:00 a.m. - 10:00 a.m. **Concurrent Session 3A —  
Applications of SCADA and Technology**

Moderators — **Michael Clough**, Progressive Earth Engineering, Inc., Austin, TX; and **John I. Sweigard**, Merced Irrigation District, Merced, CA

*Effects of SCADA Innovation at the Riviera Berica District in Northern Italy*

**Gabriele Bonaiti**, Texas A&M University, College Station, TX; **Gianfranco Battistello**, Irrigation and Drainage District Alta Pianura Veneta, Sossano, Italy; and **Guy Fipps**, Texas A&M University, College Station, TX

*SCADA Applications by the Harlingen Irrigation District*

**Tom McLemore**, Harlingen Irrigation District, Harlingen, TX

*Design of Upstream Water-Level Controllers with the IDZ Model*

**Albert J. Clemmens**, WEST Consultants, Inc., Tempe, AZ; **P.J. van Overloop**, Delft University of Technology, Delft, The Netherlands; and **X. Litrico**, Lyonnaise des Eaux Recherche, Bordeaux, France

*Remote Sensing of Evapotranspiration for Water Resources Management*

**Bryce A. Contor**, Rocky Mountain Environmental Associates, Iona, ID

8:00 a.m. - 10:00 a.m. **Concurrent Session 3B — Conservation**

Moderators — **Comer Tuck**, Texas Water Development Board, Austin, TX; and **Guy Fipps**, Texas A&M University, College Station, TX

*Irrigation District Facilities and Policies Required to Support On-Farm Water Conservation in the Lower Rio Grande Valley Texas*

**A. W. Blair**, AWBlair Engineering, Austin, TX; and **Wayne Halbert**, Harlingen Irrigation District, Harlingen, TX

*Home Consumer Perceptions about Landscape Water Conservation and Relationships with Historical Usage*

**Whitney Milberger-Laird**, City of Cedar Park, Cedar Park, TX

*Advancing Agricultural Water Conservation in Colorado*

**Reagan Waskom**, **Troy Bauder**, **Faith Sternlieb** and **Julie Kallenberger**, Colorado State University, Fort Collins, CO

*Verifying Conservation Estimates for On-Farm Agricultural Water Conservation Programs*

**Ana Ramirez** and **Stacy Pandey**, Lower Colorado River Authority, Austin, TX; and **David Eaton**, University of Texas at Austin, Austin, TX

10:00 a.m. - 10:30 a.m. **Break with Poster Papers**

10:30 a.m. - 12:00 noon **Concurrent Session 3A — Applications of SCADA and Technology (continued)**

*Automation and Control of Irrigation in the Monti Berici Hills in Northern Italy*

**Gabriele Bonaiti**, Texas A&M University, College Station, TX; **Mascia Gaino**, Irrigation and Drainage District Alta Pianura Veneta, Sossano, Italy; **Marco Gamba**, Venice River Basin Authority, Venezia, Italy; and **Guy Fipps**, Texas A&M University, College Station, TX

*Development of SCADA and Decision Support Systems for the Middle Rio Grande Conservancy District*

**Luis Garcia**, **Nathi Manana** and **Ramchand Oad**, Colorado State University, Fort Collins, CO; and **Kristoph-Dietrich Kinzli**, Florida Gulf Coast University, Fort Meyers, FL

*Affordable Web-Based Mobile Applications for Remote Data Viewing*

**Chuck Davis**, **Brian T. Wahlin** and **Albert J. Clemmens**, WEST Consultants, Inc., Tempe, AZ

10:30 a.m. - 12:00 noon **Concurrent Session 3B Conservation (continued)**

*Equipment and Water Supply Changes Produce Increased Efficiency and Nut Yields*

**Herbert W. Greydanus**, Pioneer Ranch Partnership LLC, Sacramento, CA

*Red Bridge Water Reuse Project*

**Chad Brown**, Franson Civil Engineers, American Fork, UT; and **Jamison Thornton**, Strawberry High Line Canal Company, Payson, UT

*Rice Evapotranspiration Estimates and Crop Coefficients in Glenn-Colusa Irrigation District, Sacramento Valley, California*

**Deepak Lal** and **Byron Clark**, SEBAL North American, Inc., Davis, CA; **Thad Bettner**, Glenn-Colusa Irrigation District, Willows, CA; **Bryan Thoreson**, SEBAL North American, Inc., Davis, CA; and **Richard Snyder**, University of California, Davis, Davis, CA

12:00 noon - 1:15 p.m. **Lunch with Speaker**

Moderator — **Jerrold D. Gregg**

Speaker — **Mark Treviño**, Oklahoma-Texas Area Manager, Great Plains Region, Bureau of Reclamation, Austin, TX

1:30 p.m. - 3:00 p.m. **Concurrent Session 4A — Technology**

Moderator — **Khaled Bali**, University of California, Cooperative Extension, Holtville, CA; and **Albert J. Clemmens**, WEST Consultants, Inc., Tempe, AZ

*Implementing Total Channel Control® Technology at Oakdale Irrigation District — Case Study*

**Steve Knell** and **John Davids**, Oakdale Irrigation District, Oakdale, CA

*Improved Water Resource Management Using an Acoustic Pulsed Doppler Sensor in a Shallow Open Channel*

**Mike Cook** and **Craig Huhta**, SonTek/YSI Inc., San Diego, CA

*Light Weight Pre-Fabricated On-Farm Turnouts with Remote Reporting of Flow*

**A. W. Blair** and **Ben Hansen**, AWBlair Engineering, Austin, TX

1:30 p.m. - 3:00 p.m. **Concurrent Session 4B — District Operations**

Moderator — **Mike Cook**, SonTek/YSI Inc., San Diego, CA; and **Brian T. Wahlin**, WEST Consultants, Inc., Tempe, AZ

*Methodologies for Canal Lining Evaluation*

**Gabriele Bonaiti** and **Guy Fipps**, Texas A&M University, College Station, TX

*South Platte Water Conservation Project — A Municipal-Agriculture Partnership*

**Carl Brouwer**, Northern Colorado Water Conservation District, Berthoud, CO

*Water Resources Planning to Water Transfers to Modernization of an Irrigation District: Oakdale Irrigation District Case Study*

**Steve R. Knell**, Oakdale Irrigation District, Oakdale, CA; and **Gregory W. Eldridge**, CH2M Hill, Inc., Sacramento, CA

3:00 p.m. - 3:30 p.m. **Break with Poster Papers**

3:30 p.m. - 5:30 p.m. **Concurrent Session 4A — Technology** (continued)

*Gate Automation and Centralized Control in a South Central Texas Irrigation District*

**Stacy Pandey** and **Brad Funk**, Lower Colorado River Authority, Austin, TX

*Automated Irrigation of Florida Citrus Using Capacitance Probes*

**Lawrence R. Parsons** and **Wije Bandaranayake**, University of Florida/IFAS, Lake Alfred, FL; and **James Holeton** and **David Lankford**, Earthtec Solutions, Vineland, NJ

*A Comparison of Laboratory and Field Calibration of the ECH20 EC-20 Soil Moisture Probe for Soils in the Middle Rio Grande Valley*

**Kristoph-Dietrich Kinzli**, Florida Gulf Coast University, Fort Meyers, FL; and **Nkosinathi Manana** and **Ramchand Oad**, Colorado State University, Fort Collins, CO

*Performance Assessment of Krishna Western Delta Using Remote Sensing — A Case Study*

**P.R.K. Prasad**, Agricultural College, Bapatla, Andhra Pradesh, India; **C. Jacobs**, Alterra-ILRI, Wageningen, The Netherlands; **G. Subba Rao** and **D. Srinivas**, RARS, Marteru, Andhra Pradesh, India; **A.V Suresh Babu**, National Remote Sensing Center, Balanagar, Hyderabad, India; **J. Boonstra**, ILRI, Wageningen, The Netherlands; and **T.V. Satyanarayana**, ANGR Agricultural University, Rajendranagar, Hyderabad, India

3:30 p.m. - 5:30 p.m. **Concurrent Session 4B — District Operations** (continued)

*Progress in Developing a Web-Based Management System for Irrigation Districts*

**Gabriele Bonaiti** and **Guy Fipps**, Texas A&M University, College Station, TX

*Water Resources Planning — Are You Ready?*

**Steve Knell**, Oakdale Irrigation District, Oakdale, CA

*El Paso Case Study*

**A. W. Blair**, AWBlair Engineering, Austin, TX

*Methodologies for Analyzing Impact of Urbanization on Irrigation Districts*

**Gabriele Bonaiti** and **Guy Fipps**, Texas A&M University, College Station, TX

**Friday, April 6**

8:00 a.m. - 5:00 p.m. **Field Tour**

This day-long tour will feature a visit to the Lower Colorado River Authority's Smithville Rail Fleet Maintenance Facility; LCRA maintains more than 2,000 railcars that transport Western coal from Wyoming mines to the Fayette Power Project. The steel fabrication team at Smithville supports projects for other LCRA energy and water operations as well, including fabrication of new floodgates for a recent modernization project on the Highland Lakes dams and a canal check gate automation and rehabilitation project in the Gulf Coast Irrigation Division. The visit will continue to LCRA's Lakeside Irrigation Division in Eagle Lake, showcasing a laser-leveled field in Eagle Lake and lunch at the Lakeside Pumping Plant. Visits to LCRA's nearby Garwood Irrigation Division will highlight a project to install standardized water delivery structures throughout the canal system, enabling volumetric measurement and billing of water use.

(Updated March 19, 2012)