

### **December 3, 2025**

### 8:30 Welcome

Governor Kevin Stitt (video) Thomas Gorman, Chairman, Oklahoma Water Resources Board (OWRB)

Teaching Old Pipes New Tricks: Putting Al to Work in Water Branko Kerkez, Arthur F. Thurnau Professor of Civil & Environmental Engineering, University of Michigan

### Insights from Oklahoma Legislators

Senator Chuck Hall Senator Grant Green Senator Darcy Jech Representative Mike Dobrinski Representative Dell Kerbs Representative Carl Newton

### 10:00 Break

### 10:30 Concurrent Sessions

### Oklahoma Comprehensive Water Plan (OCWP) Overview

Key Technical Findings John Rehring, Vice President, Carollo Engineers

Stakeholder Engagement Amber Wooten, Associate Vice President, Carollo Engineers

Statewide & Regional Water Policy & Funding Priorities Julie Cunningham, Executive Director, OWRB

### **Lightning Sessions**

Mamata Pandey, Graduate Student, Oklahoma State University (OSU) Joy Brato Shil, Graduate Student, OSU

Abinaya Yeshwanth Kalayambakam Janardhan, Graduate Student, OSU

Jacob Kettner, Graduate Student, OSU Alok Pandit, Graduate Student, OSU Digyijay Mohite, Graduate Student, OSU

Navdeep Saasan, Graduate Student, OSU

Aaron Long, Graduate Student, OSU

Andrew Fleet, Water Conservation Educator, Oklahoma Cooperative Extension Service, OSU

Megan Ryan, Graduate Student, OSU Saikumar Payyavula, Graduate Student, OSU Charles Liu, Undergraduate Student, OSU

### 12:00 Luncheon

Energy & Environment Update Jeff Starling, Oklahoma Secretary of Energy & Environment

### Oklahoma Water Pioneer Awards

Gary Sherrer **Grant Victor** 

### Messages from Oklahoma's Congressional Delegation

### 1:30 Concurrent Sessions

### OCWP Water Policy & Management Recommendations

Modernizing Oklahoma's Water Rights Administration Chris Neel, Division Chief, Water Rights Administration, OWRB

Regional Water Planning: A Decade of Insights Jeremy Rice, Hydrologist, Freese & Nichols

Pioneering Regional Planning in South Delaware County Jered Davidson, Attorney, The Public Finance Law Group

### Water Quality Challenges & Innovations

Jason Masoner, Research Hydrologist, US Geological Survey Jeri Fleming, Environmental Education & Outreach, Grand River Dam Authority Jeff Sadler, Assistant Professor/Water Resources Extension Specialist, OSU Afsaneh Kaghazchi, Graduate Student, OSU

Brandon Brown, Fisheries Supervisor, Oklahoma Department of Wildlife Conservation

Jessica Beyer, Research Assistant Professor, University of Oklahoma (OU)

### 3:15 Plenary Session

### **OCWP Water Data & Information Recommendations**

Introductions

Kevin Wagner, Director, Oklahoma Water Resources Center (OWRC)

Oklahoma Hydronet: Statewide Integrated Water Monitoring Tyson Ochsner, Professor, Plant & Soil Sciences, OSU

Data that Drives Accurate Weather & Climate Forecasting Joel Lisonbee, Regional Drought Information Coordinator Southern Plains Drought Early Warning System

Controlling Invasive Species Spread & Other Targeted Monitoring Programs Trey Lam, Executive Director, Oklahoma Conservation Commission

**Student Poster Contest** 

### **December 4, 2025**

### 8:30 Welcome

Student Poster Contest Winners Kevin Wagner, Director, OWRC Agriculture Update

Blayne Arthur, Oklahoma Secretary of Agriculture

### Water for 2060 Excellence Awards

Mark Del eon City of Guymon

### **OCWP Water Supply & Storage Recommendations**

Yohanes Sugeng, Division Chief, Engineering & Planning, OWRB

Creating Alternative Water Supplies Through Innovation & Collaboration Bruno Pigott, Executive Director, WateReuse Association

### 10:15 Break

### 10:30 Concurrent Sessions

### OCWP Water Infrastructure & Workforce Recommendations

Water for Texas: Statewide Infrastructure Funding Bryan McMath, Executive Director, Texas Water Development Board

Providing Technical Assistance for Water System Sustainability Ahndria Ablett, Director of Water Resources, Choctaw Nation

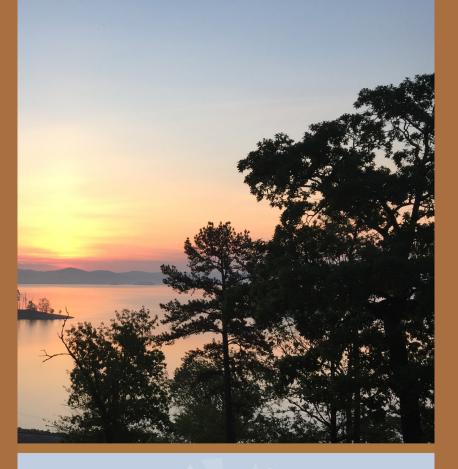
Improving the Resilience of Oklahoma's Small Water & Wastewater Systems Brandon Bowman, State Programs Director, Oklahoma Rural Water Association

Oklahoma's Water Workforce Issues & Solutions Cole Niblett, Oklahoma Water Team Leader, Garver

### **Water Sustainability**

Bryony Puxley, Graduate Student, OU Zachary Tomlinson, Water Resources Geologist, OWRB Lara Joy, Water Resources Geologist, OWRB Yanhua Xie, Assistant Professor, Oll Shadi Fathollahifard, Graduate Student, OU Tucker McCoy, Water Resources Geologist, OWRB

### 12:00 Adjourn





November 19-20, 2024

RESEARCH SYMPOSIUM

### WATER MEANS BUSINESS

Hosted by the

Oklahoma Water Resources Board & Oklahoma Water Resources Center

### November 19, 2024

7:30 am Registration, Exhibits, & Breakfast Bar 8:30 am Welcome (Oklahoma Ballroom F-J)

Jennifer Castillo, Oklahoma Water Resources Board

Governor Kevin Stitt (video)

**Keynote: Value of Water Campaign** 

Christy Harowski, US Water Alliance
Oklahoma Agriculture Update

Blayne Arthur, Secretary of Agriculture, Food and Forestry

**Perspectives from Oklahoma Legislators** 

Senator David Bullard

Senator Brent Howard

Senator Casey Murdock

Representative Trey Caldwell

Representative Dell Kerbs

Representative Dick Lowe

Representative Carl Newton

10:00 am Break & Exhibits

10:30 am Concurrent Sessions

Regional Water Management Solutions (Oklahoma Ballroom E)

Carlos Rubinstein, RSAH2O, LLC

Amy Kremen, Colorado State University

Adam Foster, Texas Alliance of Groundwater Districts

Chuck Butchee, Jackson County Water Company

Water Quality Studies (University Ballroom C)

Jason Vogel, University of Oklahoma

Andrew Pawlisz, Trihydro Corporation

Grant Graves, US Geological Survey

Karen McGuire-Diemer, Oklahoma State University

Robert Knox, University of Oklahoma

Nicholas Materer, Oklahoma State University

12:00 pm Lunch (Oklahoma Ballroom F-J)

Ken McQueen, Secretary of Energy & Environment

**Oklahoma Water Pioneer Awards** 

Dean Couch

Arvil Morgan

Richard Sevenoaks

### 1:45 pm Concurrent Sessions

Innovation Showcase (Oklahoma Ballroom E)

Jay Hoffman, Esri

Brandon Claborn, Meshek & Associates

Tyson Ochsner, Oklahoma State University

Alex Schellhorn & Jordan Furnans, LRE Water

### **Upper Red River Studies (University Ballroom C)**

Anna Hoag, US Bureau of Reclamation

Derrick Wagner, Oklahoma Water Resources Board

Adam Trevisan, US Geological Survey

Muhammad Umar Akbar, Oklahoma State University

Saeedeh Abezadeh, Oklahoma State University

Kasra Khodkar, Oklahoma State University

3:15 pm Break & Exhibits

3:30 pm Concurrent Sessions

### Flood Resiliency in Oklahoma (Oklahoma Ballroom E)

Tony Robinson, FEMA Region 6

Annie Vest, Oklahoma Emergency Management Jonathan Phillips, Oklahoma Water Resources Board

Jonathan Philips, Okianoma Water Resources Bo Jeremy Rice, Freese and Nichols

Carrie Evenson, Midwest City Public Works

4:30 pm Reception & Poster Presentations (University Ballroom

Water Research Lightning Talks (University Ballroom C)

A-B

### November 20, 2024

7:30 am Registration, Exhibits, & Breakfast Buffet 8:30 am Welcome (Oklahoma Ballroom F-J)

> Jennifer Castillo, Oklahoma Water Resources Board Kevin Wagner, Oklahoma Water Resources Center Julie Cunningham, Oklahoma Water Resources Board

Water for 2060 Excellence Awards

City of Oklahoma City

Lake of the Arbuckles Watershed Association

LeFlore County Rural Water District 17

Meek Development

Sardis Lake Water Authority

Oklahoma Drought Update

Gary McManus, Oklahoma Climatological Survey

**Emergency Drought Funding** 

Trey Lam, Oklahoma Conservation Commission

10:00 am Break & Exhibits

10:15 am Oklahoma Comprehensive Water Plan Investment

**Priorities** 

(Oklahoma Ballroom E)

Julie Cunningham, Oklahoma Water Resources Board

John Rehring, Carollo Engineers Mindy Bridges, US Water Alliance

Samantha Villegas, Raftelis

11:30 am Cole Bedford, Colorado Water Conservation Board
1:00 pm Investment Priorities Workshop/Working Lunch

Adjournment

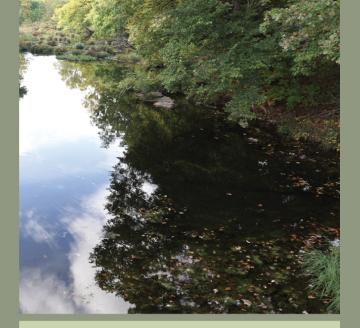


The Oklahoma Governor's Water Conference and Research Symposium is held annually to bring together experts in Oklahoma water policy and science from local, state, and federal agencies and organizations, as well as

non-governmental organizations, industry leaders, researchers, and students.

The event is hosted by the Oklahoma Water Resources Board (OWRB) and Oklahoma Water Resources Center (OWRC).

Visit oklahoma.gov/owrb/news-and-events/ oklahoma-governors-water-conference.html for more information and links to sponsors, award winners, and presentations.





RESEARCH SYMPOSIUM

November 29-30, 2023

### WATER MEANS BUSINESS

Hosted by the

Oklahoma Water Resources Board & Oklahoma Water Resources Center

### November 29

### 7:30 Registration, Exhibits, & Breakfast Buffet

### 8:30 Welcome (Oklahoma Ballroom E-F)

Jennifer Castillo, Chairman, Oklahoma Water Resources Board Governor Kevin Stitt (video)

Senator James Lankford (video)

### Oklahoma Agriculture Update

Blayne Arthur, Secretary of Agriculture

### Perspectives from Oklahoma Legislators

Senator Darcy Jech

Representative Dell Kerbs

Representative Carl Newton

Representative John Pfeiffer

Representative Kevin Wallace

### Keynote: Optimizing the Adoption of Water Reuse &

Stormwater Management

Shannon Spurlock, Pacific Institute

### 10:00 Break & Exhibits

### 10:20 Concurrent Sessions

### Understanding & Improving Climate Resiliency (University Ballroom A)

Renee McPherson, University of Oklahoma

Katherine Welch, Oklahoma State University Brad Rogers, Oklahoma Conservation Commission

Robert Nairn, University of Oklahoma

Kiranmayi Mangalgiri, Oklahoma State University

### Collaborative Water Supply Planning Across Sectors

### (University Ballroom B-C)

John Rehring, Carollo Engineers

Dani Quissell, North Dakota Water Users Association

Eric Lee, City of Tulsa

Shellie Chard, Oklahoma Department of Environmental Quality Will Archer. Mountain Park Master Conservancy District

### 12:00 Lunch (Oklahoma Ballroom E-F)

### Addressing the World's Water Crisis

Matt Hangen, Water4

### Oklahoma Water Pioneer Awards

Drew Kershen

Mike Paque

Duane Smith

### 1:45 Concurrent Sessions

### Student Water Research Lightning Talks (University Ballroom A)

(University Ballroom A)

### Flood Mitigation Planning

### (University Ballroom B-C)

Senator Markwayne Mullin (video)

Representative Lonnie Sims

Bobby Howard, Muscogee (Creek) Nation

Marty Chester, FEMA Region 6

Paul Streets, City of Midwest City

### 3:15 Break & Exhibits

### 3:30 Plenary Session: Advancing Groundwater Solutions Today (Oklahoma Ballroom E-F)

Kevin Wagner, Oklahoma Water Resources Center

Congressman Frank Lucas (video)

Jerod McDaniel, Panhandle Ag Producer

Mike Shannon, City of Guymon

Daran Rudnick, Kansas State University

Dean Edson, Nebraska Association of Resources Districts
5:00 Reception & Poster Presentations (Oklahoma Ballroom G-J)

### November 30

### 7:30 Registration, Exhibits, & Breakfast Buffet

### 8:30 Welcome (Oklahoma Ballroom E-F)

Julie Cunningham, Oklahoma Water Resources Board Congressman Tom Cole (video) Ken McQueen, Secretary of Energy & Environment

### Water for 2060 Excellence Awards

Master Irrigator Program, OSU Extension:

Advanced training program for ag producers on irrigation scheduling and crop management.

Johnston Seed Company:

Promotion of cover crops as a conservation tool and contributions to sustainable agriculture.

City of Edmond:

Conversion of system equipment to recycle water and increase efficiency.

Okmulgee County Rural Water District #1:

Implementing multiple strategies to maximize efficiency and sustainability.

### Perspectives from Business & Industry Organization Leaders

Rodd Moesel, Oklahoma Farm Bureau

Bud Ground, Environmental Federation of Oklahoma

Dalton Miller, The State Chamber

Steve Nikolai, Grand River Dam Authority

### 10:00 Break & Exhibits

### 10:30 Concurrent Sessions

### Groundwater Assessment & Outreach (University Ballroom A)

Zachary Tomlinson, Oklahoma Water Resources Board

Colin Baciocco, U.S. Geological Survey Lara Fly, Oklahoma Water Resources Board

Jon Fields, U.S. Environmental Protection Agency

Caitlin Barnes, Oklahoma State University

Paul Weckler, Oklahoma State University

### Making the Case for Investment in Water Resources (University Ballroom B-C)

Congresswoman Stephanie Bice (video)

Jeff Walker, Texas Water Development Board

Trey Lam, Oklahoma Conservation Commission

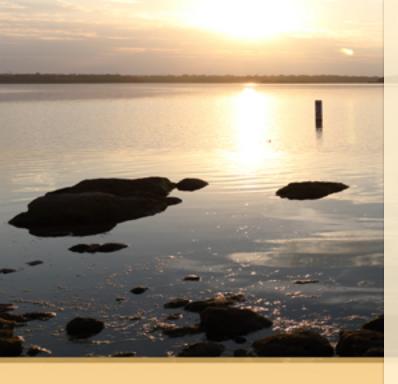
Dani Quissell, North Dakota Water Users Association

Tony Clyde, U.S. Army Corps of Engineers

### 12:00 Adjournment



THANK YOU FOR JOINING US.
HAVE A HAPPY AND SAFE HOLIDAY SEASON!





RESEARCH SYMPOSIUM

December 7-8, 2022

### WATER MEANS BUSINESS

Hosted by the

Oklahoma Water Resources Board & Oklahoma Water Resources Center

### December 7

### 7:30 Registration

### 8:30 Welcome (second floor)

Matt Muller, Chairman, Oklahoma Water Resources Board Governor Kevin Stitt (video) Matt Dukes, Mayor of Midwest City

Oklahoma Emergency Drought Cost-Share Program Blayne Arthur, Secretary of Agriculture, Food & Forestry

Oklahoma Drought: Past, Present, & Future Gary McManus, Oklahoma State Climatologist Kevin Kloesel, Oklahoma Climatological Survey

### 10:00 Break, Exhibits, & Student Posters (second floor)

### 10:30 Innovations in Crop Irrigation (first floor) Matt Sanderson, Kansas State University

mait sanderson, Karisas State University Bill Golden, Kansas State University Weston McCary, Kansas Water Office Jason Warren, Oklahoma State University

### 12:00 Lunch (second floor)

Oklahoma Water Pioneer Awards

The Honorable Mary Fallin Charlette Hearne U.S. Senator James Inhofe (video)

### 2:00 Concurrent Sessions (first floor)

# Governor's Water Conference Research Symposium

### Oklahoma State Flood Plan

Congressman Frank Lucas (video)
Col. Timothy Hudson, Tulsa District Commander, USACE
Jeff Walker, Texas Water Development Board
Mark Gower, Oklahoma Office of Emergency Management
Paul Zachary, City of Tulsa

### Agriculture Water Availability & Management

Maryam Samimi, Oklahoma State University Rio Bonham, Oklahoma State University Kasra Khodkar, Oklahoma State University Navdeep Saasan, Oklahoma State University Aseem Singh, Oklahoma State University

### 3:30 Break, Exhibits, & Student Posters (second floor)

### 4:00 Keynote (second floor)

Peter Johnson, Great Lakes St. Lawrence Governors & Premiers

4:45 Reception & Poster Session (second floor)

### December 8

### 7:30 Registration

### 8:30 Welcome (second floor)

Julie Cunningham, Oklahoma Water Resources Board U.S. Senator James Lankford (video) Ken McQueen, Secretary of Energy & Environment

### Water for 2060 Excellence Awards

City of Norman Gary O'Neill City of Edmond Oklahoma Strategic Alliance

Remarks From the Office of Lt. Governor Matt Pinnell Kirby Smith, Chief of Staff

### Oklahoma Legislative Perspectives

Senator Roger Thompson Senator Dave Rader Senator Casey Murdock Senator Darcy Jech Representative Lonnie Sims

### 10:00 Break & Exhibits (second floor)

### 10:30 Concurrent Sessions (first floor)

Workforce Development
Markwayne Mullin, U.S. Senator-elect (video)
Don Morris, Oklahoma Works
Robert Keyes, Well Driller & Pump Installer Advisory Council
Sandra Stevenson, Oklahoma Rural Water Association
Paul Streets, Midwest City Public Works
Jessica Brumley & Robin Roberson, East Central University

### Water Quality

Melissa Reed, Oklahoma State University Austin Phillippe, Oklahoma State University Grant Graves, University of Oklahoma Dustin Browning, Grand River Dam Authority Jason Vogel, University of Oklahoma

### 12:00 Lunch (second floor)

Congressman Tom Cole (video) Keynote: John Tracy, Colorado Water Resources Center

### 1:30 Concurrent Sessions (first floor)

### Source Water Protection

Mike Paque, Groundwater Protection Council Shanon Phillips, Oklahoma Conservation Commission Lindsay Roland, Oklahoma Rural Water Association Charlene Westmoland, Oklahoma Rural Water Association Tara Bussing, Oklahoma Department of Environmental Quality

### Water Infrastructure & Reuse

Robert Nairn, University of Oklahoma Braden Tanner, University of Oklahoma Timothy Gualandri, Greeley & Hansen, LLC Sherry Hunt, USDA-Agricultural Research Service

### 3:00 Break/Governor's Water Conference Adjourns OWRB Monthly Meeting (first floor atrium)

### 3:15 Groundwater Sustainability

Jon Sanford, Oklahoma Water Resources Board Adam Trevisan, U.S. Geological Survey Mukesh Mehata, Oklahoma State University Jacob Kettner, Oklahoma State University Muhammad Umar Akbar, Oklahoma State University

### 4:45 Research Symposium Adjourns



# 41st Oklahoma Governor's Water Conference & Research Symposium

Livestreaming from the Oklahoma State Capitol, Room 100

### **GWC.live**

December 1-2, 2021

Hosted by the Oklahoma Water Resources Board and Oklahoma Water Resources Center at Oklahoma State University





OKLAHOMA WATER RESOURCES CENTER

### December 1, 2021

### 10:00 Welcome

Matt Muller, Chairman, Oklahoma Water Resources Board

Video Message from Governor Kevin Stitt Julie Cunningham, Executive Director, Oklahoma Water Resources Board

The One Water Approach: Thinking Bigger About Water Scott Berry, Director of Policy & Government Affairs, U.S. Water Alliance

### Water Coalition Building in North Dakota

Mike Dwyer, North Dakota State Senate/Former Executive Vice President of the North Dakota Water Users Association

## 2025 Oklahoma Comprehensive Water Plan: Water Means Business

Owen Mills, Director of Planning, Oklahoma Water Resources Board John Rehring, Vice President, Carollo Engineers

### Flood Preparedness: An Overview of State-Level Resilience Plans

Sarah Edwards, Senior Associate, The PEW Charitable Trusts' Flood-Prepared Communities Team

### Federal Emergency Management Agency Mitigation Brief

Charles Cook, Floodplain Management & Insurance Branch Chief, Federal Emergency Management Agency Region 6

### 12:00 Break for Lunch

### 12:30 Weather & Climate Extremes: Impacts on Water Availability in Oklahoma

Jeffrey Basara, Associate Professor, University of Oklahoma School of Meteorology

### 1:00 Oklahoma Water Pioneer Awards

Ronnie Graves Ken Komiske Linda Lambert

### Champions of Oklahoma Water Policy & Legislative Initiatives

Representative Kevin Wallace Senator Darcy Jech Senator Susan Paddack Representative Carl Newton Representative Paul Roan Representative Lonnie Sims

### Video Message from Congressman Tom Cole

### **Keynote: Self-driving Water Systems**

Branko Kerkez, Arthur F. Thurnau Associate Professor of Civil & Environmental Engineering, University of Michigan

### 3:30 Adjourn

### December 2, 2021

### 10:00 Video Message from Senator James Lankford

### Welcome & Presentation of Oklahoma Water for 2060 Excellence Awards

Ken Wagner, Oklahoma Secretary of Energy & Environment Julie Cunningham, Executive Director, Oklahoma Water Resources Board

### **Bartlesville Indirect Potable Reuse Project**

Mike Bailey, City Manager, & Terry Lauritsen, Engineering & Water Utilities Director, City of Bartlesville

# Innovations in Conservation & Efficiency for Panhandle Ag Producers

Darren Buck, Buck Farms

### **Choctaw Nation Sustainable Water Planning**

Ethan Schuth, Water Resource Manager, Choctaw Nation of Oklahoma

# Sustainability and Oklahoma's Small Water & Wastewater Systems

Brandon Bowman, Programs Manager, Oklahoma Rural Water Association

### 12:00 Break for Lunch

### 12:30 Video Message from Senator James Inhofe

McClellan-Kerr Arkansas River Navigation System 50th Anniversary & Update from the Tulsa District U.S. Army Corps of Engineers

Col. Scott Preston, Commander & Tulsa District Engineer, U.S. Army Corps of Engineers

### 1:00 Video Message from Congressman Frank Lucas

# Student Water Poster Competition Winners & Master Irrigator Program Update

Kevin Wagner, Director, Oklahoma Water Resources Center

### National Water Reuse Action Plan: Building the Technical, Financial, & Institutional Capacity for Communities to Pursue Water Reuse

Sharon Nappier, National Program Leader for Water Reuse, Office of Water, U.S. Environmental Protection Agency

# National Trends in Water Reuse: Policy, Technology, & Innovation

Pat Sinicropi, Executive Director, WateReuse Association

### Water Reuse in Norman, Oklahoma

Chris Mattingly, Utilities Director, City of Norman

# Effects to Ag Runoff from Effluent Irrigation & Contributions to Surface Water from Multiple Reuse Waters

Jason Masoner, Research Hydrologist, U.S. Geological Survey

# Sustainable Water as a Wicked Problem in Oklahoma: The S<sup>3</sup>OK Project

Hank Jenkins-Smith, George Lynn Cross Research Professor, Department of Political Science, University of Oklahoma

### 3:30 Adjourn

40th Annual Oklahoma Governor's Water Conference & Research Symposium

# Water Means Business

**DECEMBER 4-5, 2019** 

Reed Conference Center Midwest City, OK



www.gwc.live

Hosted by the Oklahoma Water Resources Board & Oklahoma Water Resources Center

### December 4, 2019

7:30 a.m.—Registration (1st Floor)

### 8:30—Opening Session (2nd Floor, Reed Ballroom)

Robert L. Stallings, Jr., Chairman

Oklahoma Water Resources Board

Kirby Smith, Field Director

Office of Oklahoma Lieutenant Governor Matt Pinnell

Dean Amhaus, President & CEO

The Water Council

### 9:45—Break & Exhibits

### 10:00—Concurrent Sessions (1st Floor)

Water Conference: The Business Case for Building Resilient

**Public Water Supply** 

Cindy Hubbell, District Manager

City of Oklahoma City

Research Symposium: Poster Session\*

### 11:30—Luncheon (2nd Floor, Reed Ballroom)

### The Honorable Kevin Stitt, Governor of Oklahoma

### **Oklahoma Water Pioneer Awards**

Tom Buchanan, Ann Keeley, & Arnold Miller

**Legislative Update** 

### 1:15—Concurrent Sessions (1st Floor)

### Water Conference: Fueling Industry & Energy Production

### **Research Symposium: Water Monitoring & Treatment**

Bonheur Tumurere, Civil Engineering & Environmental Sciences, OU

### 2:45—Break & Exhibits

### 3:00—General Session (2nd Floor, Reed Ballroom): Innovating Oklahoma Agriculture Production

Dr. Kevin Wagner, Director

Oklahoma Water Resources Center

### Blayne Arthur, Oklahoma Secretary of Agriculture, Food & Forestry Russ Jackson

2018 Leopold Conservation Award Recipient

Dr. Jason Warren, Plant & Soil Sciences

Oklahoma State University

Dr. Meagan Schipanski, Soil & Crop Sciences

Colorado State University

### 4:30—Reception (2nd Floor)

### December 5, 2019

7:30 a.m.—Registration (1st Floor)

8:30—General Session (2nd Floor, Reed Ballroom):

Water Planning for a Sustainable Future

Oklahoma Comprehensive Water Plan Update & Water for 2060 Excellence Award Presentations

Julie Cunningham, Executive Director

Oklahoma Water Resources Board

Kenneth Wagner, Oklahoma Secretary of Energy & Environment

### Colorado River Basin Drought Contingency Plans

Kevin Moran, Senior Director, Colorado River Program **Environmental Defense Fund** 

### 10:00-Break & Exhibits

### 10:30—Concurrent Sessions (1st Floor)

### Water Conference: Partners in a Water Secure Future

Colonel Scott Preston, Commander & Tulsa District Engineer

US Army Corps of Engineers

### **Research Symposium: Climate & Land Surface Processes**

### 12:00-Luncheon (2nd Floor, Reed Ballroom)

Dr. Thomas Coon, Dean of Agriculture

Oklahoma State University

Dr. Joan Rose, Homer Nowlin Chair in Water Research

Michigan State University

### 1:30—Concurrent Sessions (1st Floor)

### Water Conference: Disrupting the Economic Impacts of Flooding

Water Science & Conservation, Texas Water Development Board

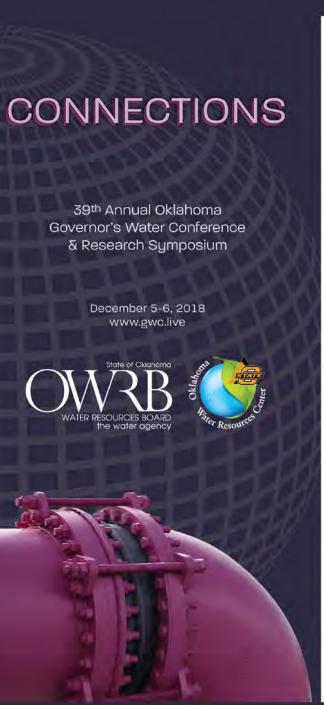
### Research Symposium: Education, Outreach & Protecting Our Lakes

### 3:00—Adjourn Water Conference/Research Symposium Break

### 3:15—Research Symposium: Water Availability & Use

### 3:30—OWRB Monthly Meeting (Reed Ballroom D)

5:00—Adjourn Research Symposium



### December 5, 2018

### 7:30 Registration (First Floor)

### 8:30 General Session (Second Floor, Reed Ballroom)

Welcome: Jason Hitch, Chairman, Oklahoma Water Resources Board (OWRB)

The Honorable Mary Fallin, Governor of Oklahoma

### Oklahoma Water for 2060 Excellence Award Presentations

Michael Teague, Oklahoma Secretary of Energy & Environment Jim Reese, Oklahoma Secretary of Agriculture, Food & Forestry

Fred Morgan, President & CEO, Oklahoma State Chamber Senator James Lankford (video welcome)

### 10:00 Break and Exhibits

### 10:30 Concurrent Sessions (First Floor)

### Water Conference: Opportunities in Marginal Quality Water Use

Mike Nickolaus, Groundwater Protection Council

Jason Vogel, Oklahoma Water Survey

Andrea Croskrey, Texas Water Development Board

Mary Elizabeth Mach, Garver

### Research Symposium: Poster Presentations\*

### 12:00 Luncheon (Second Floor, Reed Ballroom)

Oklahoma Water Pioneer Awards

State Legislative Update

Congressional Update: Senator James Inhofe (video)

### 1:30 Concurrent Sessions (First Floor)

### Water Conference: Innovations in Agriculture Water Use

Congressman Frank Lucas (video welcome)

Tom Cannon, Farmer, Blackwell, OK

Amy Hays, Noble Research Institute

Jason Warren, Oklahoma State University

son warren, Okianoma state omversity

### Research Symposium: Drought Monitoring & Management

Jad Ziolkowska, Associate Professor, University of Oklahoma Jeffrey Basara, Associate Professor, University of Oklahoma Jordan Christian, Graduate Student, University of Oklahoma Ryann Wakefield, Graduate Student, University of Oklahoma Ali Ajaz, Graduate Student, Oklahoma State University Ali Mirchi, Assistant Professor, Oklahoma State University

### 3:00 Break and Exhibits

### 3:30 General Session (Second Floor, Reed Ballroom)

Grand River Dam Authority Video Presentation: Our Borrowed Water Congressman Tom Cole (video welcome)

From Sole Source to Diversified: Challenges and Successes

Darren Thompson, San Antonio Water System

Poster Awards: Kevin Wagner, Oklahoma Water Resources Center

### 5:00 Reception (Second Floor)

\*Poster presenters/titles and symposium presentation titles and abstracts are listed on the Oklahoma Water Resources Center website at water.okstate.edu.

### December 6, 2018

### 8:30 General Session (Second Floor, Reed Ballroom)

Welcome: Julie Cunningham, Executive Director, OWRB

Use of Temperature Sensing Via Infrared Camera to Identify Groundwater Interactions With Streams

Shana Mashburn, US Geological Survey

### From Filing Cabinets to Tablets: Migrating Digital Workflows

Monigue Nava & Chad Holton, Trinity River Authority

The Big Data Revolution: Autonomous Systems & Simulation in Environmental Science
Jamey Jacob, Oklahoma State University

### 9:45 Break and Exhibits

### 10:00 Concurrent Sessions (First Floor)

### Water Conference: Maximizing Water Storage Capacity

Jimmy Bramblett, Natural Resources Conservation Service

Dave Taylor, Waurika Lake Master Conservancy District

Shanon Phillips, Oklahoma Conservation Commission

### Research Symposium: Irrigation Management & Soil Moisture Monitoring

Briana Wyatt, Graduate Student, Oklahoma State University

Mukesh Mehata, Graduate Student, Oklahoma State University

Sumon Datta, Graduate Student, Oklahoma State University

Karthik Ramaswamy, Graduate Student, Oklahoma State University

Christopher Reid, Graduate Student, Oklahoma State University

Lizbeth Pena-Zuniga, Graduate Student, Oklahoma State University

### 11:30 Luncheon (Second Floor, Reed Ballroom)

Chad Pregracke, Living Lands & Waters

### 1:00 Concurrent Sessions (First Floor)

### Water Conference: Leveraging Partnerships for Water Solutions

Mike Brown, Walton Foundation

Collins Balcombe, US Bureau of Reclamation

Susan Paddack, Oka' Institute

### Research Symposium: Groundwater Availability

Jon Sanford, OWRB

John Ellis, US Geological Survey

Chris Neel, OWRB

Byron Waltman, OWRB

Guy Sewell, Oka' Institute/East Central University

Alexander Hess, Graduate Student, University of Tulsa

### 2:15 Break

### 2:45 Research Symposium (First Floor)/OWRB Meeting (Second Floor, Joyner)

### Research Symposium: Water Use & Management

Robert Nairn, University of Oklahoma

Sean Hussey, Graduate Student, University of Oklahoma

Kyle Murray, Oklahoma Geological Survey

Ronald Miller, Oklahoma State University

Thomas Neeson, Geography & Environmental Sustainability at OU Chris Eck & Kevin Wagner, Oklahoma Water Resources Center

### 4:15 Adjourn



### October 31, 2017

### 7:30 Registration

### 8:30 General Session (Oklahoma Ballroom E-F)

### Welcome and Introductions:

Ford Drummond, Chairman, Oklahoma Water Resources Board (OWRB)
The Honorable Mary Fallin, Governor of Oklahoma
Video Welcome from Senator James Lankford

Keynote: Seth M. Siegel, Author, Let There Be Water: Israel's Solution for a Water-Starved World

### 10:00 Break and Exhibits (University Ballroom)

### 10:30 Concurrent Sessions

### Water Conference: Energy Panel (Oklahoma Ballroom G-J)

Michael Teague, Oklahoma Secretary of Energy & Environment Michael Dunkel, CH2M, Facilitator of the Produced Water Working Group Nicki Fuller, Executive Director, Southwestern Power Resources Association Usha-Maria Turner, Director, Environmental Affairs & Federal Public Policy, OGE Energy Corp

### Research Symposium: Poster Presentations (see pg. 4)

### 12:00 Luncheon (Oklahoma Ballroom E-F)

### Oklahoma Water Pioneer Awards

### OWRB 60th Anniversary Celebration:

Julie Cunningham, Executive Director, OWRB

Dr. Bob Blackburn, Executive Director, Oklahoma Historical Society

Video Welcome from Senator James Inhofe

### 2:00 Concurrent Sessions

### Water Conference: Nonconsumptive Use Panel (Oklahoma Ballroom G-J)

Video Welcome from Congressman Tom Cole

Scott Robinson, Director, Port of Muskogee

Roy Williams, CCE, President & CEO, Greater Oklahoma City Chamber Dr. Dian Jordan, Sociologist

Research Symposium: Irrigation Water Use Efficiency (see pg. 5)

### 3:00 Break and Exhibits (University Ballroom)

### 3:30 General Session (Oklahoma Ballroom E-F)

Gary McManus, Oklahoma State Climatologist

Col. Christopher Hussin, Tulsa District Commander, USACE

Kenneth Wagner, Senior Advisor for Regional & State Affairs, US EPA

Poster Awards (Provided by the USGS via the Water Resources Research Act):
Dr. Kevin Wagner, Director, Oklahoma Water Resources Center (OWRC)

### 5:00 Reception (University Ballroom)

# THIRTY-EIGHTH ANNUAL OKLAHOMA GOVERNOR'S WATER CONFERENCE AND RESEARCH SYMPOSIUM

# THE VALUE OF WATER INVESTMENT IN OKLAHOMA

OCT 31-NOV 1, 2017 EMBASSY SUITES, NORMAN



November 1, 2017

### 7:30 Registration

**Governor Mary Fallin** 

### 8:30 General Session (Oklahoma Ballroom E-F)

Welcome: Ford Drummond, Chairman, OWRB

Keynote: Layne Carter, Systems Engineer, NASA Marshall Space Flight Center Water for 2060 Excellence Awards:

Julie Cunningham, Executive Director, OWRB

Jim Reese, Oklahoma Secretary of Agriculture
Michael Teague, Oklahoma Secretary of Energy & Environment

### 10:00 Break and Exhibits (University Ballroom)

### 10:30 Concurrent Sessions

Water Conference: Municipal & Industrial Panel (Oklahoma Ballroom G-J)
Matt Newman, Tulsa Regional Water Policy Task Force
Robert Moore, Manager, Marshall County Water Corporation
Kim Peterson, Mayor, Guymon, OK
Marc Hoss, Plant Manager, Koch Fertilizer, Enid, OK

Research Symposium: Role of University Water Centers & Institutes/ Federal & State Programs to Support Water Management (see pg. 6)

Oklahoma Bar Association CLE (Sooner Room)

### 12:00 Luncheon (Oklahoma Ballroom E-F)

Welcome: Kevin Wagner, Director, OWRC

Keynote: Dr. Todd Halihan, Professor of Hydrogeophysics, OSU 4H Speech Contest Winner

an speech contest winner

### 2:00 Concurrent Sessions

### Water Conference: Agriculture Panel (Oklahoma Ballroom G-J)

Video Welcome from Congressman Frank Lucas

Trey Lam, Executive Director, Oklahoma Conservation Commission Tracy Streeter, Director, Kansas Water Office

Jimmy Emmons, President, Oklahoma Association of Conservation Districts Dr. Dan Sebert, Executive Director, National Watershed Coalition

Research Symposium: Surface Water Assessment & Management (see pg. 6)

### 3:00 Break/Adjourn Water Conference

3:30 Research Symposium: Groundwater Hydrologic Investigations (see pg. 7)



Seth M. Siegel, Author

Seth M. Siegel is the author of Let There Be Water: Israel's Solution for a Water-Starved World. He is a businessman, activist, and writer. His essays on business, political, and cultural issues have appeared in the New York Times, the Wall Street Journal, the Los Angeles Times, and other publications around the world. Siegel has often appeared on television and has been widely quoted in major print media. He is a member of the Council on Foreign Relations.

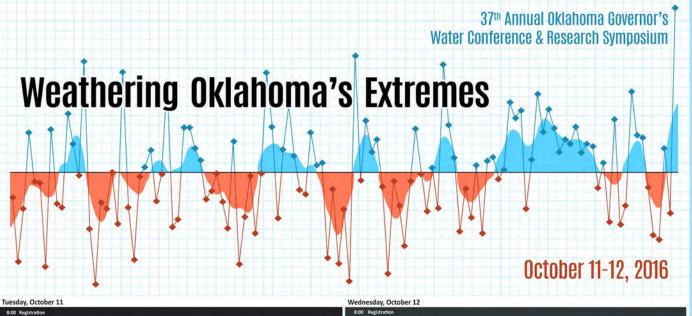


Layne Carter, NASA

Layne Carter is a Systems Engineer at NASA's Marshall Space Flight Center. During his 29 years at NASA, he has worked on the development, design, delivery, and operation of the International Space Station (ISS) Water Recovery System, which includes the Water Processor Assembly and Urine Processor Assembly. In addition, he is the co-lead for NASA's Advanced Exploration Systems Wastewater Processing and Water Management team, which is responsible for developing the technologies to be used for NASA's future manned missions.

### OKLAHOMA WATER PIONEERS

Glen Cheatham Jim Townsend Pete White



### 8:30 Opening Session State of Oklahoma, Choctaw Nation of Oklahoma, Chickasaw Nation, City of Oklahoma City Water Settlement nor Mary Fallin, State of Oklahoma Chief Gary Batton, Choctaw Nation Water Settlement Roundtable Michael Burrage, Attorney for the Choctaw & Chickasaw Nations and former Federal District Court Judge tephen Greetham, General Counsel to the Chickasaw Nation Department of Commerc Glenn Coffee, Special Counsel to Governor Mary Fallin and former Secretary of State Mike Hunter, First Assistant Attorney General, State of Oklahoma J.D. Strong, Executive Director, Oklahoma Water Resources Board 10:15 Regional Water Planning Roundtable 10:15 Café Style Poster Session David Berrong, Mayor-Elect, Clinton, OK Moderator: Dr. Garey Fox, Director, Oklahoma Water Resources Center Foss Reservoir Master Conservancy District Beatriz Gallucci Mazziero Sonisa Sharma Riley Jones lad Winters Water Tack Force Couchain **Curt Dikes** Southwest Water Supply Action Plan Melissa Reed Charles Fontanies Nelly Ruiz Holly Enlow Karthik Ramaswamy Manabendra Saharia Alan Riffel, City Manager, Woodward, OK Kathryn Wenge Russell Doughty Northwest Oklahoma Water Action Plan Joanna Quiah Andrew Baird Shuhao Yu Cody Holcomb, City Manager, Ada, OK Alex McLemore Chen Xu Lexi Freeman Arbuckle-Simpson Drought Contingency Plan Visit GWC live to view poster titles Legislative and Executive Update Michael Teague, Oklahoma Secretary of Energy and Environment Bryce Marlatt, Oklahoma State Senate Congressman Tom Cole Oklahoma Water Pioneer Awards Robert Henry, President, Oklahoma City University Frank Keating, Governor of Oklahoma, 1995-2002 2:00 Water for 2060 Magazine 2:00 Climate Variability and Drought

Moderator: Phil Alderman, Oklahoma State University (OSU) Rainfall Timing Extremes, Albert Sutherland, Oklahoma Mesonet/OSU Estimating Drought-Influenced Streamflow Exceedance Curves in Oklahoma Ronald Miller, OSU

Forests Bring Water to Oklahoma, Holden Zhang, The University of Tulsa Current State of Climate Education in the United States: Are Graduate Students

Being Adequately Prepared to Address Climate Issues? Emma Kuster, Oklahoma EPSCoR/OSU

2:30 OWRB Monthly Meeting

Application of the 3D model ELCOM-CAEDYM to estimate phosphorus load reduction needs for Lake Wister, Oklahoma, Thad Scott, Baylor University

Relationship Between Landsat Spectral Reflectance and Water Quality at Different Depths in Grand Lake

Numerical modeling of sedimentation in Fort Cobb Reservoir, Lucie Guertault, OSU

### 3:30 Irrigation, Recharge, and Reuse

Algal Wastewater Remediation, Nurhan Dunford, OSU Regional Transfer vs. Water Reuse A Comparison of Cost, Energy, and GHG Emissions.

Jim F. Chamberlain, OU Western OK Irrigation Water and Energy Audits: Findings, Recommendations and Educational Materials-Preliminary Results, Robert Frazier, OSU

Groundwater Flow Modeling, Michael Keester, LBG-Guyton Associates

### **Keynote Speakers**



Robert Glennon is one of the nation's preeminent experts on water policy and law. The recipient of two National Science Foundation grants, Glennon serves as an advisor to governments, corporations, think tanks, law firms, and NGOs looking to solve serious challenges around water sustainability

Glennon is the author of Unquenchable: America's Water Crisis and What To Do About It which has become a go-to resource for environmental policy stakeholders nationwide. Unquenchable received a Rachel Carson Book Award for Reporting on the Environment from the Society of Environmental Journalists. He is also the author of Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters.

In 2014, Glennon and two co-authors collaborated with the Hamilton Project at the Brookings Institution to explore solutions to broken federal and state laws that are contributing to worsening water shortages in California and other Western states. Their groundbreaking report, "Shopping for Water: How the Market Can Mitigate Water Shortages in the American West," received widespread national attention and is viewed by many as a game-changer for water policy moving forward.



In addition to leading KOCO's weather team, Damon Lane has served as a guest meteorologist for ABC's Good Morning America and is a frequently featured speaker at weather conferences around the country, where he shares his experience forecasting one of the nation's most active weather regions.

In 2016, Lane was featured in the nationally televised ABC 20/20 primetime special "In An Instant" about the 2013 tornado outbreak that impacted Moore, Oklahoma. He shared his personal experiences covering the 2013 tornado outbreak that mpacted his home town of Moore. The massive tornado stuck his own neighborhood as he covered it live on-air. His wife rode out the storm in their shelter with the family dogs while many

nearby homes were damaged or destroyed. Lane has been active in community recovery efforts ever since. His coverage of the Tornado Outbreak was nominated for an Emmy award

Previously, Lane served as Chief Meteorologist at KTXS-TV in Abilene, TX, forecasting severe weather on the southern edge of "Tornado Alley." Lane was born and raised in Northern Virginia and was drawn to science and weather from a young age. Lane eared two bachelor rees in college. After graduating in less than four years in Communications/Mass Media from Old Dominion University, Lane earned his Bachelor of Science in Atmospheric Sciences/Meteorology from The University of North Carolina, Asheville

### **Water Pioneers**



Robert Henry has long been involved with water issues in our state. While a member of the Oklahoma state legislature (from 1976 to 1986), he worked on water law under the mentorship of well-known Oklahoma Water Law expert and OU Law Professor

Henry was elected Attorney General of Oklahoma in 1986 and served until 1991. He led efforts to create the Environmental Awareness Council, which met regularly to monitor matters of environmental concern and to educate both the public and awmakers about the importance of environmental issues in

As Attorney General, Henry officially led the fight to preserve our state's scenic rivers from degradation. The City of Fayetteville had created a ten-mile canal that would be used to discharge its treated effluent, which would eventually end up in the Illinois River in Oklahoma. The battle led to a victory in the Tenth Circuit Court of Appeals but ended up in a divided decision at the U.S. Supreme Court. While the divided Supreme Court ultimately allowed Favetteville to discharge its wastewater into the Illinois River watershed. the decision also established the precedent that upstream states must meet downstream states' water quality standards – a critically important factor in protecting water quality on interstate streams across the nation



Frank Keating was sworn in as Governor of Oklahoma in 1995 and served two terms. In 1997, Keating formed the "Animal Waste and Water Quality Protection Task Force" -- a special task force he appointed that ultimately led to legislation to impose regulations on the state's growing commercial animal feeding operations in an effort to protect water quality. The resulting laws and regulations were recognized as the most stringent in the country at the time.

In 2000, Keating created the Tar Creek Superfund Task Force in order to gather facts and find solutions to the enormous environmental threats posed by the nation's most hazardous. Superfund Site - the Tar Creek Superfund Site in northern Ottawa County. The task force's final report ultimately

recommended relocation of the most impacted residents, as well as the use of constructed wetlands to expedite water quality improvement in Tar Creek and other tributaries of Grand Lake - a remediation effort that is still underway today.

In 2001, it was brought to the attention of Keating and other state leaders that the Illinois River's status as a Scenic River was seriously threatened by excess nutrients. Without intervention, the Illinois River's exceptional ecological and recreational significance was in jeopardy. In response, the Oklahoma Water Resources Board (OWRB) adopted in its Water Quality Standards a total phosphorus criterion of .037 mg/L for Scenic Rivers, which was consequently approved by Gov. Keating despite some controversy. Fifteen years later, this cutting-edge standard is being implemented, and water quality improvements have been measured in the Illinois River watershed

8:30 Opening Session

### mon Lane, Chief Meteorologist, KOCO 5 First Alert Weather State and National Outlook

Linda Lambert, Chairman, Oklahoma Water Resources Board

Keynote: Why We Don't Understand Drought Gary McManus, State Climatologist

**Climate Monitoring and Prediction Tools** 

Dr. Derek Arndt, NOAA/NCEI Climate Monitoring Chief

### 10:15 Partners in Drought and Flood

Col. Christopher Hussin **USACE Tulsa District** 

EPA Region 6 Water Division Director USBR Supervisory Program Coordinato

No Adverse Impact: The State of the Art in Stormwater Management, Ronald Flanagan, Flanagan & Associates, LLC Evaluation of aged, fly ash amended filter media to remove phosphorous from stormwater

Glenn Brown, OSU

Non-contact remote sensing of streamflow. Jonathan Gourley, NOAA/National Severe Storms Laboratory

### Groundw

10:15 Stormwater and Streamflow

Moderator: Lucie Guertault, OSU

Moderator: Ron Miller, OSU

Petroleum Release Assessment and Impacts of Weather Extremes, James Weaver, USEPA Office of Research and Development Carbonate mineral dissolution drives hexavalent chromium occurrence in the Central Oklahoma Aquifer

Andrew Elwood Madden, University of Oklahoma (OU)

Groundwater and Soil Moisture: Indicators and Predictors of Long-Term Drought in Oklahoma, Jad Ziolkowska, OU

Oklahoma Water Resources Center Undates and Announcements Screening of "Thirsty Land" and Q&A with Producer/Director Conrad Weaver

Moderator: Deidre Smith. Oklahoma Department of Transportation

ssessing and mitigation source water cyanotoxin vulnerability, Steven D. Patterson, Bio x Design

Oklahoma, Abubakarr Mansaray, OSU

Moderator: Dave Lampert, OSU

Application of Soil-Water-Balance Code to Estimate Aquifer Recharge in Truckee Meadows, Nevada for

On-Farm Evaluation of Water Dynamics around Subsurface Drip Irrigation, Jason Warren, OSL

ID Strong OWRB

Michael Dunkel, CH2M

Showcase of Other Initiative

Poster Contest Winners

4-H Speech Contest Winner

Produced Water Working Group Update

Keynote: Our Future in a Water-Stressed World

Dr. Robert Glennon, University of Arizona

# **36th Annual Oklahoma Governor's Water Conference** and Research Symposium



# **December 1-2, 2015**

**Embassy Suites Hotel & Conference Center** Norman, Oklahoma

### Tuesday, December 1

7:30 Registration

### 8:30 Joint Session

Linda Lambert, OWRB Chairman

Dr. Peter Gleick, President and Co-Founder of the Pacific Institute Water for 2060 Overview

J.D. Strong, OWRB Executive Director



10:30 Café Style Poster Session

issues. In 1987 he co-founded the Pacific Institute, a global water think tank that provides sciencebased thought leadership with active outreach to influence local, national, and international efforts in

Dr. Peter Gleick is a world renowned expert,

innovator, and communicator on water and climate

developing sustainable water policies.

Moderator: Dr. Garey Fox, Director, Oklahoma Water Resources Center

### 10:15 Break 10:30 Regional Water Planning

Northwest Oklahoma Water Action Plan Brent Kisling, Executive Director, Enid Regional Development Alliance Southwest Oklahoma Water Supply Action Plan

Brian Bush, President and CEO, Altus Chamber of Commerce

South Delaware County Regional Water Authority Jay Updike, President, Holloway, Updike and Bellen, Inc. Gore & Sequoyah County Rural Water District #5

Advancing Conservation Goals: the San Antonio Example

Innovative Conservation Approaches in Southern Nevada

Horace Lindley, Public Works Administrator, City of Gore

### 12:00 Luncheon

Legislative Update Mike Schulz, Majority Floor Leader Oklahoma State Senate Oklahoma Water Pioneer Awards Richard C. Seybolt

1:30 Conservation in Other States

Honorary Oklahoma Water Pioneer Awards Bob Chipman and Trudy Rigney, In Memoriam

Vision for the Future of Water in Kansas





Moderator: Al Sutherland, Mesonet Agricultural Coordinator,

New Insights into Drought Evolution and Recovery in the Great Plains

Go to www.owrb.ok.gov/GWC/mobile/posters.html to view poster titles.

Drought-Influenced Low-Flow Non-Exceedance Plots for Selected US Geological Survey

Hydrogeology and Simulated Effects of Future Water Use and Drought for the North Fork Red River Alluvial Aguifer, Southwest Oklahoma

Threats to the Lugert-Altus Irrigation District: Untangling the Effects of Drought, Land Use Change, and Groundwater Development

Projecting Hydrologic Impacts on the Canadian River Ecosystem under Future Climate

### 3:00 Break

### 3:15 Joint Session

Gubernatorial Welcome and Address **Governor Mary Fallin** 

Education and Outreach Campaigns for Water Conservation and Reuse Ken Komiske, Utilities Department Director, City of Norman Melissa Meeker, Executive Director, WateReuse Association Justin Moss, Associate Professor, Oklahoma State University Bret Weingart, Assistant Director, Oklahoma City Utilities

Poster Contest Winners Dr. Garey Fox, Director, Oklahoma Water Resources Center



Oklahoma elected Mary Fallin as its first female governor in 2010. She was reelected in 2014 to her second term by a 15-point margin, carrying 71 out of 77 Oklahoma counties. Prior to her election, she served two terms in the U.S. House of Representatives. She also served two terms as an Oklahoma state representative before her election in 1995 as Oklahoma's first Republican and first female lieutenant governor.

### Wednesday, December 2

### 8:00 Registration

### 8:30 Joint Session

Michael Teague, Oklahoma Secretary of Energy and Environment Federal Partnerships

Col. Richard Pratt, Tulsa District Engineer, U.S. Army Corps of Engineers Ron Curry, Region 6 Administrator, U.S. Environmental Protection Agency

Drought Report and Forecast Courtney Black, National Integrated Drought Information System (NIDIS) Gary McManus, Oklahoma State Climatologist







### 10:15 Break

### 10:30 Drought-Proofing Gazette

Water Loss Audits and Leak Detection Brandon Bowman, Oklahoma Department of Environmental Quality Richard Deshazo, Oklahoma Rural Water Association

Fort Sill Nonpotable Reuse Project

Energy Water Initiative Report: Recycling Flowback and Produced Water

### 10:30 Water Availability, Demand, and Us

Moderator: Dr. Saleh Taghyaeian, OSU

Is the demand for recreation at Grand Lake affected by swim warnings and do visitors value

Water Reservoir Data Visualization Tool

Hydrologic Investigation and Numerical Groundwater-Flow Model of the Canadian River

Proximity of Private Domestic Wells and Underground Storage Tank Sites in Oklahoma

Using Public Data to Quantify Oil and Gas Impact to Oklahoma's Water Resources

### 12:00 Luncheon

4-H Speech Contest Winners Bayli Hyde and Tyler Zwink

Assessing the Future of the High Plains Aquifer James Butler, Jr., Kansas Geological Survey

Wichita's Equus Beds ASR Experience

A Texas Regulator's Perspective

ASR Challenges in Oklahoma

A National Perspective on ASR

Moderator: Dr. Garey Fox, OWRC

Bureau of Reclamation (USBOR) Research Funding and Partnerships Opportunities

Oklahoma Water Resources Board (OWRB) Research Needs

EPA's Safe & Sustainable Water Resources Research Program

USGS 104b and 104g Funding Opportunities

Moderator: Dr. Garey Fox, OWRC

The Influence of Crop Row Configuration on Yield using Subsurface Drip Irrigation

### 3:00 Break

### 3:30 OWRB Regular Monthly Meeting (Sooner Meeting Room)

### 3:30 Featured Session on NSF EPSCoR Proje Moderator: Emma Kuster, Program Coordinator, OK EPSCoR

Integrating Socio-Cultural Community-Level Research into Water and Climate Research in Oklahoma's 2013-18 NSF EPSCoR Research

Groundwater Shortage as a Result of Drought in Oklahoma and Potential Socio-Economic

Water Policy and Governance Networks in OK: A Pathway to Enhance Resilience to Climate

Demand for Water-based Recreation: The Impact of Water Levels and Climate Variation in Oklahoma

5:00 Reception

Hosted by the Oklahoma Rural Water Association and sponsored by Bank of America/Merrill Lynch and Mustang Brewing Company

### 1:30 Research Funding and Partnership Opportunities

USGS Research Needs in Oklahoma

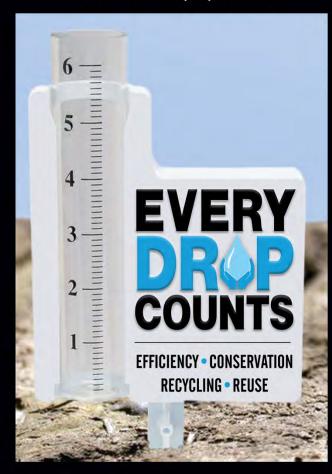
Maximizing the Value of Remaining Groundwater

Dynamic Maps of Open Surface Water Bodies in Oklahoma at 30-m Spatial Resolution during

35th Annual

# Oklahoma

Governor's Water Conference & Research Symposium



October 22-23, 2014

Cox Convention Center, Oklahoma City

### October 22, 2014

### 7:30 Registration

### 8:30 Plenary Session Great Hall C

### Welcome and Introductions

Rudy Herrmann, Chairman, Oklahoma Water Resources Board Oklahoma Lieutenant Governor Todd Lamb

### Keynote: The Las Vegas Story: Adapting to a New Normal

Pat Mulroy, Senior Fellow, Climate Adaptation & Environmental Policy, Brookings Mountain West; Maki Distinguished Faculty Associate, Desert Research Institute

J.D. Strong, Executive Director, Oklahoma Water Resources Board

### 10:00 Break and Exhibits Great Hall D & E



Oklahoma Lieutenant Governor Todd Lamb was elected to office in November of 2010. Prior to his election, he served for six years in the Oklahoma Senate, and in 2009 hecame the state's first Republican Majority Floor Leader In addition to serving as Chairman of the state's Tourism and Recreation Commission, he serves as Past Chairman of the National Lieutenant Governor's Association Executive Committee, Vice Chair of the Republican Lieutenant Governor's Association (RLGA), and Vice Chair of the Aerospace States Association.

Pat Mulroy served as general manager of the Las Vegas Valley Water District from 1989 until retirement in 2014. From 1993 until retirement she also served as general manager of the Southern Nevada Water Authority (SNWA), where she was responsible for acquiring, treating, and delivering water to the region. Mulrov was a principal architect of the Authority, which allowed Southern Nevada not only to weather the stresses of growth, but also to thrive during one of the worst droughts of record in the Colorado River basin

### 10:30 Regional/Local Planning for Future Droughts M

### Kim Meek, City Manager, City of Guymon

Ken Komiske, Director of Utilities, City of Norman

Will Archer, Manager, Mountain Park Master Conservancy District

Robert Moore, General Manager, Marshall County Water Corporation Brent Kisling, Executive Director, Enid Regional Development Alliance

### 12:00 Lunch

### Oklahoma Water Pioneer Awards

Jack W. Keeley Mike Thralls

### **U.S. Congressional Update**

Rep. James Lankford

Rep. Frank D. Lucas Rep. Markwayne Mullin





### 1:30 Oklahoma Drought Update

Gary McManus, Oklahoma State Climatologist

Kevin Kloesel, Director, Oklahoma Climatological Survey

### 2:15 Meeting Water Reuse Challenge

### Developing an Effective PR Campaign

Patricia Tennyson, Katz & Associates

Legal and Regulatory Hurdles for Wichita Falls, TX

Brad Castleberry, Lloyd Gosselink

### 3:00 Break and Exhibits Great Hall D &

David Sabatini, Director

OU Water Technologies for Emerging Regions (WaTER) Center

Ken Surritte, President WATERISLIEF

Richard Greenly, Board Chair

### October 23, 2014

### 7:30 Registration

### 8:30 Plenary Session Great Hall

### **Welcome and Introductions**

Rudy Herrmann, Chairman, Oklahoma Water Resources Board Michael Teague, Oklahoma Secretary of Energy & Environment

### Keynote: Governor Mary Fallin

### Federal Updates

James Allard, Deputy Area Manager

United States Bureau of Reclamation, Oklahoma-Texas Area Office Colonel Richard Pratt, Commander & District Engineer

United States Army Corps of Engineers, Tulsa District

Sam Coleman, Deputy Regional Administrator United States Environmental Protection Agency, Region 6

### 10:00 Break and Exhibits Great Hall D & E



Oklahoma elected Mary Fallin as its first female terms in the U.S. House of Representatives. She also served two terms as an Oklahoma state representative before her election in 1995 as Oklahoma's first Republican and first female lieutenant governor.

Governor Fallin demonstrated her dedication to the stewardship of Oklahoma's invaluable water resources by signing the Water for 2060 Act into law and more recently by pledging \$1.5 million in drought grants for projects highlighting responsible use of water.





### 10:30 Water Fuels Oklahoma's Economy M

Larry Parman, Oklahoma Secretary of Commerce

Michael Teague, Oklahoma Secretary of Energy & Environment

Blavne Arthur, Deputy Commissioner

Oklahoma Department of Agriculture, Food & Forestry

Scott Robinson, Port Director, Port of Muskogee

Kris Marek, State Parks Director

Oklahoma Tourism and Recreation Department

Ken Cunningham, Assistant Chief of Fisheries

Oklahoma Department of Wildlife Conservation

### 4-H Speech Contest Winners

Hadley Griffith, Pottawatomie County Bayli Hyde, Alfalfa County

### Poster Contest Winners

### High frequency water quality data: is this really necessary?

Dr. François Birgand, Associate Professor, North Carolina State University

### 1:30 Water Rights Administration in Oklahoma: Broken or Just Right?

### Dean A. Couch, Esq., GableGotwals

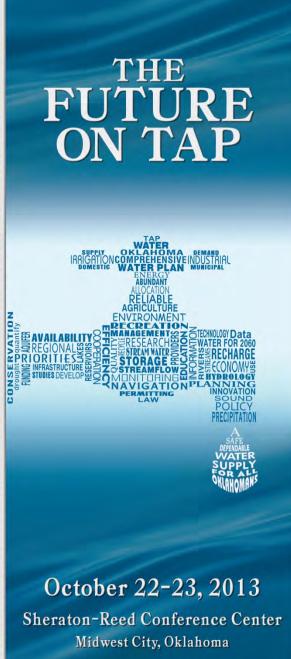
James R. Barnett, Esq., Doerner, Saunders, Daniel & Anderson Mike Fuhr, State Director, The Nature Conservancy, Oklahoma Chapter

Mike Mathis, Regulatory Affairs Adviser, Continental Resources Will Archer, Manager, Mountain Park Master Conservancy District

### 2:45 Conference Wrap-Up //

Rudy Herrmann, Chairman, Oklahoma Water Resources Board

3:30 Monthly OWRB Meeting Meeting Rooms 14-15



### **Keynote Speaker:** Steven Solomon

In Water: The Epic Struggle for Wealth Power, and Civilization, Steven Solomon offers the first-ever narrative portrait of the power

struggles, personalities and breakthroughs that have shaped humanity from antiquity's earliest civilizations, the Roman Empire, medieval China,

and Islam's golden age to Europe's rise, the steamto Solomon, freshwater scarcity is one of the twenty-first century's decisive, looming challenges and is driving the new political

### 2013 Oklahoma Water Pioneers

economic, and environmental realities across the globe

Each year, the Oklahoma Water Pioneer Award is presented to those men and women who have made significant lifetime contributions to the planning. development, management, and conservation of Oklahoma's water resources. This year's recipients are Bob Blazs and Patty Eaton.



Bob Blazs served for two decades as Data Chief and Assistant District Chief of the U.S. Geological Survey's Oklahoma District. In 2010, he was appointed by the President as Federal Commissioner to the Canadian River Compact. He retired from the USGS in 2010 after more than 43 years of service.



Patty Eaton was Oklahoma's first Secretary of Environment, serving jointly as Executive Director of the Oklahoma Water Resources Board (1990-95). She is a long-time board member of the Tulsa Metropolitan Utility Authority, and served six years as the Tulsa Water and Sewer Commissioner.

### Water for 2060

With passage of the "Water For 2060 Act" in 2012, Oklahoma established a goal of consuming no more fresh water in 2060 than is consumed today, reflecting a fundamental Oklahoma Comprehensive Water Plan (OCWP) recommendation. For more information, please visit www.owrb.ok.gov/2060.



STEVEN SOLOMON

WATER

WEALTH, POWER, A CIVILIZATION

7:30	Registration & Oklahoma Water Resources Center Poster View	wing	
8:30	PLENARY SESSION		
Reed Ballroom D-E-F Second Floor	Welcome Rudy Herrmann, Chairman, Oklahoma Water Resources Board Lt Governor Todd Lamb Water Issues in Region Six Ron Curry, Administrator, EPA Region Six Keynots: Water: The Epic Struggle for Wealth, Power, and C Steve Solomon, Author		ion
10:00	Break, Book Signing, & OWRC Poster Viewing		
10:30	WATER FOR 2060: PREPARING FOR THE NEXT DROUGHT	10:30	SYMPOSIUM SESSION 1: UPDATES AND NEW DEVELOPMENTS
Reed Ballroom D-E-F Second Floor	Drought Impacts and Outdook Veva Chebra. National Integrated Drought Information System Drought Militation Tools Collins Balcombe, Bureau of Reclamation Minimizing Drought Impacts through the Water Plan J.D. Strong, CWHB Executive Director	Reed Ballroom C Second Floor	Session Chair: Derek Smithee, OWRB Strategies for Compiliance with Disinfectants & Byproducts Rule in WT Dr. Bran Write. Professional Engineering Consultants How the Corporation Commission Can Help RWD and Town Water System Patricis Blingleip. Cleshforan Corporation Commission Patricis Blingleip. Cleshforan Corporation Commission William Commission Commission Commission Kmill Section Commission Commission Kmill Section Commission Commission Water Research Issues in Hydraulic Fracturing: The Economist Perspect Dr. Larry Sanders, OSU
12:00	LUNCHEON		
Exhibit Hall First Floor	Luncheon Address Michael Teague, Oklahorna Secretary of Energy & Environmen Col. Richard A. Pratt, Tulsa District Engineer, U.S. Army Corps Oklahorna Water Pioneer Awards		neers
1:30	OKLAHOMA WATER MAGAZINE		
		1:30	SYMPOSIUM SESSION 2: AQUATIC SPECIES
Reed Ballroom D-E-F Second Floor	Navigation in Oklahoma Bob Portas, Tilas Port of Carosia Bob Portas, Tilas Port of Carosia Water Provider Issues & Stata Question 784 Water Provider Issues & Stata Question 784 Water for Recreation & Tourism John Refning, Carolio Engineers, Inc. Groundwater Monitoring Assessment Program Derek Smithee, OV/RB	Reed Ballroom C Second Floor	Session Chair: Dr. Jim Long, US Fish & Wildlife Service/OSU Effects of Water Quantity on Fish Communities in the Upper Cimarron Ri Dr. Jim Long, US Fish & Wildlife Service/OSU Mercuty Exposure from Fish Consumption Among Fishers in Grand Le Dr. Robert Lynch, OU Health Sciences College
Second Floor	Navigation in Oktahoma Bib Portes Tulia Port of Caloosa Water Provider Issues & State Question 764 Bill Smm, Okhahoma Rural Water Association Water for Recreation & Tourism Cene Gilliano, Chahoma Obpariment of Wildlife Conservation John Fehring Carolic Engeneers, Inc. John Fehring Carolic Engeneers, Inc. Coroundwater Monitoring Assessment Program	o	Session Chair: Dr. Jim Long, US Fish & Wildlife ServiceOSU Effects of Water Quantity on Fish Communities in the Upper Cimarron Ril Mercury Exposure from Fish Communities in the Upper Cimarron Ril Mercury Exposure from Fish Communities Among Fishers in Grand La Dr. Robert Lyrch, OU Health Sciences College Freshwater Mussich and Environmental Flows in Southeastern Oklaho Dr. Carry Vasighn, Oklahoma Biological Survey/OU Meter Quantity and Quality Impacts to an Economically Important Fishery
3:00	Navigation in Oktahoma  Bos Portex Nation Port of Calcone Bos Portex Nation Port of Calcone Bos Portex Nation Port of Calcone Water Provider issues & State Question 754 Bill Smm. Oklahoma Paral Water Association Water for Recreation & Tourism Gene Gilliand, Oklahoma Department of Vilidife Conservation CVWP Instream Flow Workgroup John Refring, Carolic Engineers, Inc. Groundwater Monitoring Assessment Program Derek Smithee, OVRB	o	Session Chair: Dr. Jim Long, US Fish & Wildlife ServiceOSU Effects of Water Quantity on Fish Communities in the Upper Cimarron Ril Mercury Exposure from Fish Communities in the Upper Cimarron Ril Mercury Exposure from Fish Communities Among Fishers in Grand La Dr. Robert Lyrch, OU Health Sciences College Freshwater Mussich and Environmental Flows in Southeastern Oklaho Dr. Carry Vasighn, Oklahoma Biological Survey/OU Meter Quantity and Quality Impacts to an Economically Important Fishery
	Navigation in Oktahoma Bib Portes Tulia Port of Calcosa Water Provider Issues & State Question 764 Bill Sms, Okhaloma Rural Water Association Water for Recreation & Tourism Govern Offlands, Cataloma Opportunent of Wildlife Conservation John Reining, Carolic Engineers, Inc. John Reining, Carolic Engineers, Inc. Groundwater Monitoring Assessment Program Derek Smithee, OWRB	Reed Ballroom C Second Floor	Session Chair: Dr. Jim Long, US Fish & Wildlife ServiceOSU Effects of Water Quantity on Fish Communities in the Upper Cimarron Ril Dr. Jim Long, US Fish & Wildlife ServiceOSU Mercury Exposure from Fish Consumption Among Fishers in Grand La Dr. Robert Jycric, OU Health Sceness College Testiwater Muses and Environment Flows in Southeastern Oklaho Testiwater Muses and Environment Flows in Southeastern Oklaho Water Quantity and Quality Impacts to an Economically Important Fishery Jim Burroughs, ODWC

10:30 Michael C. Wofford: Confluence of Water Quality & Water Supply Issues in Oklahoma Matt Caves: Stormwater vs. Storm water
Dean Couch: Update on the Tarrant County and Supreme Court Decision 1:30 Janet Stewart: Oklahoma's Flood Control Structures Brooks Trammel: Wetlands in Oklahoma

7:30	Registration		
8:30	PLENARY SESSION		
Reed Ballroom D-E-F Second Floor	Welcome Rudy Herrmann, CWRB Chairman Legal Update Scott Pruitt, Oklahoma Altorney General Legislative Developments See. Brian Birgman, President Pro Tempore Developing Sustainable Water Systems Shariene Leunic, Ceres		
10:00	Break		
10:30	WATER FOR 2060: BREAKTHROUGHS IN WATER SUSTAINABILITY	10:30	SYMPOSIUM SESSION 4: WATER AND SOIL CONSERVATION
Reed Ballroom D-E-F Second Floor	Partnerships in Conservation Jon Radite, Coca-Cola North America Conservation as a Water Supply Solution Greg Fisher, Denver Water Oil & Gas Production Water Recycling John Triters, Sabree & Tinters	Reed Ballroom C Second Floor	Session Chair: Shanon Phillips, Oklahoma Conservation Commission Sediment and P. Loads from Streambath Erosion in the Illinois Watershee Dr. Garey Fox, OSU Water Use in Ada, Oklahoma During 2011 and 2012 Dr. Jm Weaver, EPA International Control of Contr
12:00	LUNCHEON		
xhibit Hall First Floor	Luncheon Address: The End of Abundance Dr. David Zetland, Author OWRC Poster Contest Winners 4H Speech Contest Winners		

Bayli Hyde and Blair People

### ROUNDTABLE DISCUSSION: OUT-OF-BASIN WATER TRAF

Moderator: J.D. Strong Jeff Converse, Canton Lake Association John Collison, Oklahoma Farm Bureau David Taylor, Waurika Lake Master Conservancy District

OWRB October Monthly Board Meeting

### 1:30 SYMPOSIUM SESSION 5: WATER REUSE

Quantifying the First Flush in Rooftop Rainwater Harvesting Water Reuse: A Regulatory Overview Challenges and Advancements in Produced Water Reuse and Matt Mantell, Chesapeake Energy

Advancing Indirect Potable Reuse in Oklahoma: Strategies for Reducing Biochemically-Active Pollutant Loads in Drinking Water Supplies

Session Chair: Dr. Bob Puls, Oklahoma Water Survey

### 3:30 SYMPOSIUM SESSION 6: WEATHER AND CLIMATE Session Chair: Gary McManus, Oklahoma Climatological Survey

New Weather Analysis Tools

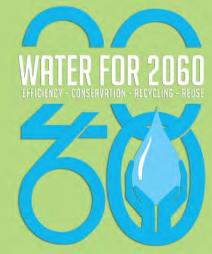
OKC Outdoor Water Conservation Education Program Sorghum and Corn Production on Limited Water Supply in the Panhandle

Taking the Long View: Adapting to the Risk of Increasing Frequency and Severity of Drought in Oklahoma

# 33RD ANNUAL GOVERNOR'S WATER CONFERENCE 10TH ANNUAL OWRRI WATER RESEARCH SYMPOSIUM

# **NOVEMBER 13-14, 2012**

TULSA MARRIOT SOUTHERN HILLS





DAYTON DUNCAN Keynote Speaker

Dayton Duncan is an awardwinning writer and documentary filmmaker. He served as principal writer for THE DUST BOWL, a

two-part series airing November 18 and 19 on PBS. The series chronicles the worst man-made ecological disaster in American history, in which the frenzied wheat boom of the "Great Plow-Up," followed by a decade-long drought during the 1930s nearly swept away the breadbasket of the nation. Vivid interviews with twenty-six survivors of those hard times, combined with dramatic photographs and seldom seen movie footage, bring to life stories of

times, combined with dramatic photographs and seldom seen movie footage, bring to life stories of incredible human suffering and equally incredible human perseverance. It is also a morality tale about our relationship to the land that sustains us—a lesson we ignore at our peril.

### 2012 OKLAHOMA WATER PIONEERS

The Oklahoma Water Pioneer Award was initiated in 1985 to honor the individuals who have made significant contributions in the planning, development, management, and conservation of Oklahoma's water resources.







Phil Pichard

5:00 Reception & OWRRI Poster Viewing

Luncheon (Seguoja Room)

12:00

1:30

CONTINUING LEGAL EDUCATION (CLE) SESSIONS, OBA ENVIRONMENTAL LAW SECTION

Current Issues from the Perspective: Oklahoma Municipalities. Ken Williams

Section 401 Water Quality Certification, Mark Derschwiler and Jeri Fleming In-Stream Flows and Non-Consumptive Uses of Water in Oklahoma, Dean Couch

10:30 Cool Water: Texas, Tribes, and Comprehensive Plans--Implications of Three Current Water Disputes, Drew Kershen

Section 404 of the Clean Water Act, Permitting Requirements and Authority, Shane Charleston and Jeri Fleming

	Tuesda	ay, No	ovember 13	
8:00	Registration & OWRRI Poster Viewing			
8:30	PLENARY SESSION			
Salon A-E First Floor	Welcome Ford Drummond, OWRB Chairman & Dewey Bartlett, Jr., Mayor Keynote: The Dust Bowl, Lessons from the Land Dayton Duncan, Writer/Producet/Filmmaker Water for 2006 & Beyond J.D. Strong, OWRB Executive Director	or of Tul	55	
10:00	Break & OWRRI Poster Viewing			
10:20	INNOVATIONS IN WATER CONSERVATION, EFFICIENCY, & REUSE	10:20	SESSION 1: UPDATES AND NEW DEVELOPMENTS	
Salon B-D First Floor	The San Antonio Example Karen Guz, Diector of Conservation. San Antonio Water System Water Supply and Uses: The Reality in 2012 Karl Slüddey, P.E., Guernsey Engineering Kevin Alexander, P.E., Sparation Processes, Inc. Conserving Water at a Dairy Farm Anita Van der Laan, Frederick, OK	Silver Oak Room Second Floor	Session Chair: Derek Smithee, OWRB Mitigated Creek Tumpike Wetlands: Twenty Years Later; Success or Succession Hal Reed, ORU Riparian Songbirds as Indicators of Watershed Condition Timothy O'Connell, OSU Hydrologic Investigation of the Rush Springs Aquifer Chris Neel, OWRB Introducing the New South Central Climate Science Center Kim Winfon, USGS-SCCSC	
Noon	LUNCHEON			
Second Floor	State & Federal Partnerships for a Shared Water Future Bill Werkneiser, Associate Director for Vylater, US Geological St Oklahoma Water Pioneer Awards Presented by Ford Drummond & J.D, Strong	irvey		
1:30	INNOVATIONS IN WATER CONSERVATION, EFFICIENCY, & REUSE	1:30	SESSION 2: EFFECTS OF RED CEDAR ENCROACHMENT ON WATER QUANT	
Salon B-D First Floor	Water as Crop Ken Klaveness, Executive Director, Trinity Waters Energy Water Conservation & Recycling Richard Luedecke, Devon Energy Conserving Water through No-Till Farming Jay Franklin, Vinita, OK	Silver Oak Room Second Floor	Session Chair: Mike Fuhr, The Nature Conservancy Introduction and Throughfall, Interception, and Stemflow Results Don Turton, Osloud, Soil Water Dynamics, and Stream Flow Chrisz Zou, OSU Water Use of Individual Red Cedar Trees Rodney Will, Osloud Cedar Trees Rodney Will, Osloud Cedar Trees Rodney Will, Osloud Cedar Management, Options & Consequence Larry Sanders, OSU	
3:00	Break, Rainfall Simulator Demonstration (Greg Scott, NRCS), & OW	RRI Pos	ster Viewing	
		3:20	SESSION 3: THE 2010-2012 OKLAHOMA DROUGHT	
3:20	ROUNDTABLE DISCUSSION: REGIONAL WATER PLANNING	3.20		

Dave Shideler OSU



5:00 Adjourn

# OKLAHOMA COMPREHENSIVE WATER PLAN: THE FOUND ATION FOR OKLAHOMA'S OKLAHOMA COMPREHENSIVE WATER PLAN:

OCTOBER 18-19, 2011

# 32nd Annual Governor's Water Conference & 9th Annual OWRRI Water Research Symposium

EMBASSY SUITES HOTEL AND CONFERENCE CENTER · NORMAN, OKLAHOMA



8:00 AM	OKLAHOMA BALLROOM		
	WELCOME: Keynote Linda Lambert, OW/RB Chairman Charles Todd Lamb, Oklahoma Lieutenant Governor	Fishman, Author, The Big Thirst J.D. Strong, C	f the Oklahoma Comprehensive Water Plan WRB Executive Director WRB Director of Planning
9:30	BREAK		
10:00	UNIVERSITY BALLROOM	ROOM G-H	
	OCWP Panel 1: THE VALUE OF WATER Agriculture: Mark Nichols Public Supply: Bill Sims, ORWA Energy Production: Pathicia Horn, OG&E Navigation: Bo Portiss, Port of Catoosa Fish & Wildlife: Richard Hatcher, ODWC	Water Research Symposium Session 1: UPDATES AND NEW DEVELOPMENTS Welcome: Bot Whitson, OSU Session Chair: Caryn Yaughn, OU The Oklahoma Water Survey: Paul Risser, OU The Oklahoma Water Survey: Paul Risser, OU Future Changes in Oklahoma: David Hambright, OU Mosquitoes as Bioindicators of Inefficient Wastewater I	
11:30	OKLAHOMA BALLROOM		
	LUNCHEON Oklahoma Water Pioneer Awards R. Thomas Lay & Rick A. Smith	Water Outlook from Washington DC: Congressman James Lankford	
1:00	BREAK		A second
1:30	UNIVERSITY BALLROOM	ROOM G-H	ROOM I-J
	OCWP Panel 2: WATER SUPPLY LIMITATIONS, OPTIONS, & SOLUTIONS OCWP Water Demand-Hot Spots: Jessica Fritsche, CDM OCWP Water Supply Cotions: Dan Raisinger, CDM Regional Water Supply: Karl Stickley, C H Guernsey Maximizing Existing Storage: Robert Toole, OCC	Water Research Symposium Session 2: EFFECTS OF DROUGHT IN OKLAHOMA Session Chair: Stan Paxton, USGS Incorporating Climate Change Science into Wal Supply Planning: Tim Cox, Cho Drought Effects on Mussels in SE Oklahoma Rivers: Caryn Yaughn, OU Drought Montodrig: A System for Tracking Plant Available Valater Based on the Oklahoma Mesonet Al Sutherland, OSU Measuring Drought Impacts: Dave Shideler, OSU Measuring Drought Impacts: Dave Shideler, OSU	Hydrologic Studies & Tools 1  ABRFC, COCORAHS, and You: James Paul, Alkansa-Red Basin River Forecast Center  Groundwater Levels in Oklahoma: Chr. Neel, OWRB  Futuro OWRB Hydrologic Investigation Chris Neel, OWRB  Rush Springs Aquiller in Caddo County. Mark Becker, USGS
3:00	BREAK		The same of the sa
3:30	UNIVERSITY BALLROOM	ROOM G-H	ROOM I-J
	OCWP Panel 3: INNOVATION, RECYCLING, & REUSE OCWP Conservation Assessment: Jessica Fritsche, CDM Agricultural Water Efficiency: Jason Hitch, Hitch Enterprises Energy Water Conservation: Richard Luedecke, Devon Marginal Quality Water Use: Mike Irlbeck, Abengoa Water Municipal Water Reuse: Phill Spitzer, Alan Plummer Associates.	Water Research Symposium Session 3: APPLICATIONS IN ENVIRONMENTAL ENGINEERING Session Chair. Jason Vogel, OSU A Fluviai Geomorphic and Sediment Transport Study the Little Pierre Tussell Dutnell. OU Gernett Regional Detention Facility: Balencing Development. Flood Mitigation and Environmental Restoration: Brandon Clabom. Netwishe & Associates Passive Flow Regulated Chemical Injection System in Sediment Removal from Rundt Kan Gabrecht, OSU The Use of Stero Distributions to Determine the Origi Focal Contamination: Coralle Blacke, OU	Shaha Mashburn, USGS, & Chris Neel OWRB

	WELCOME: Joint Lagislative Water Committee: Federal Update: Linda Lambert, OWRB Chairman Kris Steele, House Speaker Cal, Michael Teague, Gary Shetter: Brian Bingman, Senate President Pro Tempore Tulsa District Engineer, USACE Oklahoma Scoretary of Environment					
9:30	BREAK					
10:00	UNIVERSITY BALLROOM	ROOM G-H	ROOM I-J			
	OCWP Panel 4:  REGIONAL PLANNING EXPERIENCES IN OTHER STATES  Toxas Regional Water Planning Groups: Carolyn Brittin, Texas Water Development Board  Kanasa Basin Advisory Committees: Ticoy Streetur, Kanasa Water Office Colorado Basin Roundtables & Georgia Regional Water  Planning Councilis: Rick Brown, CDM	Water Research Symposium Session 4: SOCIAL & ECONOMIC STUDIES OF WATER RESOURCES Session Chair: Guy Sewell, ECU Building Pattnerships for a Coordinated Flood Vulnerability Assessment and Readiness Plan: William Smittle, USACE Household Perceptions of Prices and Non-price Water Conservation Tools: Tracy Boyer, CSU A Water Rights Companison of AR, TX, OK, NM, GA, AL, & EL: Rebecca Hajlo & Jain Fleming, OSU Beyond OCWP 2012: Future Allocation Strategies for (Nathonna's Water Resources: Guy Sewell, ECU	Oktahoma Association of Reclamation Projects Meeting			
11:30	OKLAHOMA BALLROOM	The same of the sa				
	LUNCHEON Poster Contest Winners	4-H Speech Contest Winners Maddi Shires, Calera Jenna Murray, Fletcher	Ancient Israeli Water Systems: Dr. Dan Warner			
1:00	BREAK	-				
1:30	UNIVERSITY BALLROOM	ROOM G-H	ROOM I-J			
	OCWP Panel 5: INSTREAM:ENVIRONMENTAL FLOWS OKLAHOMA: Derek Smithee, OWRB TEXAS: Mark Wentzel, Texas Water Development Board NEBRASKA: Rick Eades, Nebraska Game and Parks Commission KANSAS: Tracy Streeter, Kansas Water Office	OWRRI Water Research Symposium Session 5: WATER QUALITY MANAGEMENT SUCCESS STORIES Session Chair: Philip Moershel, OWRB Nutrient TMDLs for Sensitive Water Supply Lakes: Andrew Fang, ODEO Passive Treatment Opportunities in a Drastically Disturbed Wetershee Robert Nam, OU Solving Water Quality Problems through Voluntary Programs Shanon Philips, OCC	OCWP Panel 6: WATER PROJECT & INFRASTRUCTURE FUNDING Amber Wooten, CDM Anne Burger, FirstSouthwest Chris Gochran, BOSC, Inc. Joe Freeman, OWRB			
3:00	BREAK					
3:30	UNIVERSITY BALLROOM	ROOM G-H				
	Joint Legislative Water Committee Open Meeting Senator Brian Crain & Representative Phil Richardson	OWRRI Water Research Symposium Session 6: STREAM WATER-GROUNDWATER INTERACTION Session Chair: Kim Winton, USGS One Water: Chris Harich, USGS The Importance Of Understanding Groundwater - Surface Water Interaction for Integrated Wate Management in Nebroska-James Cannia, USGS NE Water Science Center GWSW Interaction in the Arbuckle-Simpson Aquifler: Noel Osborn, USGS Quantification & Neterogeneity of Phosphorus Leaching in Ozark Floodplains: Derek Heeren, OSU				

2011 Oklahoma Water Pioneers R. Thomas Lay Rick A. Smith

# 31st Annual Oklahoma Governor's Water Conference and 8th Annual OWRRI Water Research Symposium

### 8:00 AM October 26

### 10:00 AM OCWP Municipal/Public Water Supply Panel

### 11:30 AM Luncheon Program

### 1:30 PM OCWP Agriculture Panel

### 3:30 PM OCWP Tribal Panel

Moderator: Bill Anoatubby. Chickasaw Nation Governor

### 5:00 Adjourn to Reception

### 8:00 AM October 27

### 10:00 AM OCWP Environment Panel

### 11:30 AM Luncheon Program

### 1:30 PM OCWP Commerce and Industry Panel

### 3:30 PM OCWP Energy Panel

5:00 PM Adjourn

### 2010 Oklahoma Water Pioneers





### October 26-27, 2010

**Embassy Suites Hotel and Conference Center** Norman, Oklahoma



A Shared Responsibility

A Shared Resource,



### **Governor's Water Conference**

### Tuesday, November 3

7:45 Registration

- 8:15 Welcome & Introductions Rudy Herrmann, OWRB Chairman Lt. Gov. Jari Askins
- 8:45 America's Water Crisis Robert Glennon, Law Professor, Author
- 10:00 Break/Book Signing (Robert Glennon)
- 10:30 Oklahoma's Water Resources: Past, Present, and Future Duane Smith, OWRB Executive Director
- 10:50 National Water Policy Steve Stockton, Director of Civil Works, USACE
- 11:10 Regional Water Issues Col. Anthony Funkhouser, Tulsa District Engineer, USACE
- 11:30 Reclamation Activities Mike Ryan, Regional Director, Bureau of Reclamation

Noon Luncheon Oklahoma Water Pioneer Awards Rudy Herrmann

Duane Smith Water Outlook from Washington DC Congresswoman Mary Fallin

Rural Development Stimulus Funding Ryan McMullen, State Director, USDA Rural Development

- Drew Edmondson, OK Attorney General
- 2:20 Planning for Oklahoma's Water Quality Derek Smithee, Chief, OWRB Water Quality Division
- 2:40 ODEQ/OWRB Stimulus Funding Steve Thompson, ODEQ Executive Director
- 3:30 Legislative Water Perspective Susan Paddack, OK State Senate
- 3:50 Arbuckle-Simpson Hydrology Study
- 4:10 Garber-Wellington Aquifer Study Scott Christenson, USGS
- 4:30 OCWP Tribal Issues Lindsay Robertson, Professor, OU College of Law
- 4:50 Adjourn to Reception (5:00-7:00 p.m., Joyner Room)

### Wednesday, November 4

- 7:45 Registration & Poster Viewing
- 8:15 Welcome & Introductions **Duane Smith**
- 8:30 Panel: OK Comprehensive Water Plan OCWP Overview & Update Kyle Arthur, OWRB Director of Planning **OCWP Technical Studies Update** John Rehring, Engineer, CDM OCWP Public Participation Process Update Will Focht, OWRRI Director
- 10:00 Break
- 10:30 Oklahoma Water: Leading the Way Glenn Coffee, President ProTempore, OK State Senate Chris Benge, Speaker, OK House of Representatives
- 11:00 GRDA Water Planning Kevin Easley, CEO, Grand River Dam Authority
- 11:20 Interstate Stream Compacts
- Chuck Dumars, Attorney, Law & Resource Planning Associates 11:40 OCS Water Planning Research
- Renee McPherson, Acting Director, OK Climatological Survey
- - J.D. Strong, Secretary of the Environment 4-H Club Speech Contest Winners

### **OWRRI Water Research Symposium**

### Wednesday, November 4

- 1:00 Poster Viewing Poster Session Chair: Michael Holmes, Assistant Professor, OSU
- 1:30 Session 1: Updates and New Developments Chair: Glenn Brown, Professor, OSU
  - Development of a Model for Evaluating Future Supply Needs of Rural Water Districts and Small Communities, Arthur Stoecker, Agricultural
  - · Arkansas River Low Water Dams, Gaylon Pinc, Program Mgmt. Group · Bioretention Cells/LID Project in Grove, OK, Glenn Brown
  - · Using Geologic Data and GIS to Make Base of Treatable Water Maps that
  - Protect Fresh Water Aquifers, Charles Lord, OK Corporation Commission 3-D Booth Introduction. Tim Sickbert. Boone Pickens School of Geology.
- 3:05 Break & Poster Viewing
- 3:30 Session 2: Garber-Wellington Aquifer in Central Oklahoma Chair: Noel Osborn, Geologist, OWRB
  - Using Outcrops to Describe Aquifer Properties: A Garber-Wellington Example, Stan Paxton, USGS
  - · Water Levels in the Garber-Wellington (Central Oklahoma) Aquifer, 1986-87 to 2009, Shana Mashburn, USGS
  - Removing Arsenic from the Garber-Wellington Aquifer with Granular Ferric Oxide, Mary Elizabeth Mach, Garver Engineers
  - · Potential for Arsenic Remediation by Well Modification, Norman, Oklahoma, 2003-2006, Jerrod Smith, USGS
- 5:00 Adjourn/Poster Viewing

### Thursday, November 5

- 7:45 Registration & Poster Viewing
- 8:15 Welcome & Introductions
- 8:30 Session 3: Surface Water Chair: Kim Winton, District Chief, USGS
  - · Volunteers and Their Data: What We Know About Blue Thumb Streams,
  - Jean Lemmon, OK Conservation Commission
  - Assessment of Environmental Flows in Oklahoma, Don Turton, NREM, OSU Changes in Selected Metals Concentrations from the Mid-1980s to the
  - Mid-2000s in a Stream Draining the Picher Mining District of Oklahoma, William Andrews, USGS · Concentrations of Selected Metals in Bottom Sediments from Grand Lake
  - o' the Cherokees, Oklahoma, Mark Becker, USGS
- 10:00 Break & Poster Viewing
- 10:30 Session 4: Evaporation, ET, and Soil Water
  - Chair: Dave Engle, Water Reseach & Education Center, OSU · Quantifying Evapotranspiration Across Varying Seasonal and Within-Season Climatic Signals Across Oklahoma, Jeffrey Basara, OK
  - Climatological Survey · Oklahoma's White Water, Tyson Ochsner, Plant & Soil Sciences, OSU
  - · Remote Sensing of Evapotranspiration, Yang Hong/Baxter Vieux, Civil Engineering & Environmental Science, OU
  - Soil Water in Oklahoma No-Till, Jason Warren, Plant & Soil Sciences, OSU

The Nabataeans: An Ancient Hydraulic Society Dr. Mac McKee, Univ. of Utah Announcement of Poster Contest Winner

- 1:30 Session 5: Field Techniques in Water Research
  - Chair: Baxter Vieux, Professor, OU
  - Using Helicopter Electro-Magnetic Survey Maps and Cross-Sections and Aerial Photos to Locate and Differentiate Salinity Pollution Sources. Patricia Billingsley, OK Corporation Commission
  - Three-Dimensional Electrical Resistivity Imaging in the El Reno Well Field, Canadian County, Oklahoma, John Harrington, Association of Central OK
  - Implementation Monitoring: Use of Automated Samplers to Effectively
  - Document Water Quality Improvements. Brooks Tramell, OK Conservation Commission
  - · Climate Impacts on Sediment Production at Fort Cobb Reservoir, Jurgen Garbrecht, USDA
- 3:30 Session 6: Monitoring and Modeling Nutrient Transport Processes Chair: Mike Smolen, Biosystems & Agricultural Engineering, OSU
  - · Distributing Phosphorus Load for a TMDL, Mike Smolen
  - · Estimates of Nutrient Concentrations in the Eucha-Spavinaw Basin Using
  - Real-Time Continuous Water Quality Monitoring, Rachel Esralew, USGS · Subsurface Transport of Phosphorus in Alluvial Floodplains, Garey Fox,
  - Biosystems & Agricultural Engineering, OSU
  - Demonstrating Success: Oklahoma's Beaty Creek Watershed Implementation Project, Greg Kloxin, OK Conservation Commission

# **Understanding** Oklahoma Water

November 3-5, 2009

Sheraton-Reed Conference Center Midwest City, Oklahoma



### 2009 Oklahoma Water Pioneers



**JAMES BARNETT** 



STEVEN MOORE



### 29th Annual **Governor's Water Conference**

6th Annual **OWRRI Water Research Symposium** 

**Sheraton-Reed Conference Center** Midwest City, OK

October 28-30, 2008



Oklahoma Comprehensive Water Plan

# Water Solutions for Oklahoma

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oci	DEL 20
GOVE	ERNOR'S WATER CONFERENCE AGENDA
7:45	Registration
3:15	Welcome
	Mark Nichols, Chairman, OWRB
	J.D. Strong, Oklahoma Secretary of the Environment
3:30	Comprehensive Water Planning in Oklahoma: Duane Smith, OWRB
	Executive Director
9:15	The Corps of Engineers' Water Planning Role: Steve Stockton, Directo
	Civil Works, Corps of Engineers
9:30	The Corps' Tulsa District - Working with Oklahoma: Col. Anthony
	Funkhouser, Tulsa District Engineer
9:45	Break
10:15	OCWP Public Participation: Will Focht, Director, OWRRI
10:35	Panel: OCWP Technical Studies
	Overview: John Rehring, Camp Dresser & McKee Inc.
	Statewide Water Supply/Demand Analysis: Kelly DiNatale, Senior
	Water Resources Engineer, CDM
	Public Water Provider/Infrastructure Survey: Bryan Mitchell, Deput
	Project Manager for the OCWP, CDM
11:40	Break
Noon	Conference Luncheon
	Oklahoma Water Pioneer Awards
	Chairman Nichols, Duane Smith
	Legislative Water Perspective
	Senator Glenn Coffee, Co-President Pro Tempore
	Representative Dale DeWitt
	Water Outlook from Washington DC
	Representative Mary Fallin
	Representative Tom Cole
1:40	Break
2:00	Interior Update
	Kris Polly, Dep Asst Sec for Water and Science, Dept of Interior
2:20	The New State/Federal Water Planning Model
	Fred Caver, President, Caver & Associates Inc.
2:40	The Great Lakes Compact
	Cameron Davis, President, Alliance for the Great Lakes
3:00	Water Supply Management in a Variable Climate
	Ken Crawford, Director, Oklahoma Climatological Survey
3:20	Arbuckle-Simpson Study Proposed Management Options
	Noel Osborn, Water Resources Geologist, OWRB
	Scott Christenson, Hydrologist, U.S. Geological Survey
1:20	Adjourn to Reception
Octo	ber 29
7:45	Registration and Poster Viewing
3:15	Welcome
	Duane Smith, OWRB Executive Director

J	The Energy/Water Nexus
	Tom Price, Jr., Senior VP-Corporate Development, Chesa
)	The Tribal Role in Water Plan Development
	Governor Bill Anoatubby, Chickasaw Nation
)	Nexus Between Water Supply Planning & Environmental Flow
	Texas Experience
	Bill Mullican, Water Science & Cons, Texas Water Dev Bo
1	Partnerships in Oklahoma Water Quality

Steve Thompson, Executive Director, ODEQ

В	reak	& P	oster	Vie	wina

Panel: Protecting Oklahoma's Water Interests
Michael Fuhr, Director, Nature Conservancy of Oklahoma
Jeff Todd, Attorney, Oklahoma Farm Bureau Legal Foundation
Diane Pedicord, General Counsel, Oklahoma Municipal League
Bob Portiss, Director, Tulsa Port of Catoosa

### 11:20 Panel: Regional Water Solutions for Oklahoma

Rob Johnson, CEO, National Rural Water Association Steve Lewis, Manager, City of Norman Kelly Hurt, Engineer, Chickasaw Enterprises

### **Conference Luncheon**

4-H Speech Contest Winners

From Wall Street to Main Street: The Financial Crisis & Its Impact on Water Infrastructure: Chris Cochran, Capital West Securities Inc. Rick Smith, Municipal Finance Services Inc.

### October 29

### OWRRI WATER RESEARCH SYMPOSIUM AGENDA

1:30	Session 1: Updates and New Developments
	Chair: Ed Rossman, Adjunct Professor, Environmental Science, O
3:00	Break & Poster Viewing
3:30	Session 2: Trends in Water Use
	Chair: Stan Paxton, USGS Oklahoma Water Science Center - Chi
	Study Section
5:00	Adjourn to Reception & Poster Viewing

### October 30

7:45	Registration and Poster Viewing
8:15	Welcome & Introductions: Glenn Brown, Symposium Chair, an
	Professor, Biosystems and Agricultural Engineering, OSU
	Burns Hargis, System CEO & President, OSU
0.00	

### Session 3: Climate Change and Water Planning in Oklahoma Chair: Jurgen Garbrecht, Research Hydraulic Engineer, ARS USDA

### **Break & Poster Viewing** Session 4: Information/Data Flow Through Federal Agencies Chair: Kim Winton, District Chief, USGS **Symposium Luncheon**

Announcement of Poster Contest Winners Presentation: Transbasin Water Supply in the Kingdom of Urartu: Jurgen Garbrecht, ARS USDA

### Session 5: Water Research by Tribes in Oklahoma Chair: Talee Redcorn, Minerals Council, Osage Nation

3:00

Session 6: Water Budgets as a Basis for Water Resource Management Co-Chairs: Noel Osborn, OWRB, and Jeanne Schneider. Meteorologist, ARS USDA

Adjourn

### 2008 Water Pioneers







Garner Garrison

Mason Mungle

Robbie Robbins

28th Annual Governor's Water Conference & 5th Annual OWRRI Water Research Symposium

Cox Convention Center Oklahoma City, OK

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October 23-25, 2007

### Tuesday, October 23

### 8:00 Registration

### 8:30 Welcome

Dr. Glenn Brown, Biosystems & Agricultural Engineering, Oklahoma State University 8:45 Session 1A: The Arbuckle-Simpson Hydrology Study—Hydrology of the Arbuckle-

### Session Chair: Noel Osborn, Water Resources Geologist, Oklahoma Water Resources Board

Overview of the Arbuckle-Simpson Hydrology Study

Geologic Framework of the Arbuckle-Simpson Aquifer

Dr. Todd Halihan, Assistant Professor, School of Geology, OSU

Groundwater Hydrology of the Arbuckle-Simpson Aquifer

Scott Christenson, Hydrologist, New Mexico Water Science Center, U.S. Geological Survey

Stream Hydrology and Water Balance of the Arbuckle-Simpson Aquifer Dr. Baxter Vieux, Director, Center for Natural Hazards & Disaster Research, Oklahoma Univ.

### 10:00 Break/Student Poster Competition Viewing

### 10:30 Session 1B: The Arbuckle-Simpson Hydrology Study—Putting the Pieces Together

Session Chair: Noel Osborn, OWRB

The Role of Science in Evaluating Management Options for the Arbuckle-Simpson Aquifer Noel Osborn, OWRB

Modeling Surface Water Rights

Benjamin Harding, Principal Engineer, Hydrosphere Resource Consultants

Modeling Fish Habitat in Streams Draining the Arbuckle-Simpson Aquifer Dr. Bill Fisher, Research Ecologist, Oklahoma Cooperative Fish & Wildlife Research Unit, OSU Simulations of Groundwater Flow in the Arbuckle-Simpson Aquifer

ARS Water Resources Research in Oklahoma: From Floods to Droughts & Everything in Jurgen Garbrecht, Agricultural Research Service, U.S. Department of Agriculture

### 1:30 Session 2: Updates & New Developments

Session Chair: Dr. Glenn Brown, OSU

Issues with Setting Water Quality Based Endpoints for a Quantitative P Index Dr. Dan Storm, Biosystems & Agricultural Engineering, OSU

Harmful Algal Bloom Management Policy for Corps of Engineers Tulsa District Reservoirs Dr. Gerard A. Clyde, U.S. Army Corps of Engineers, Tulsa District

Research & Evolving Tools on Earthen Embankment Breach Failure Processes & Erodibility Dr. Greg Hanson, USDA-ARS

### 3:00 Break/Student Poster Competition Viewing

### 3:30 Session 3: The Grand Lake Watershed Interstate Public/Private Plan

Session Chair: Dr. Michael Smolen, OSU

Introduction to Cooperative Programming in the Four States & the Four-State Alliance Partnership Dr. Michael Smolen, OSU

Grand Lake-It's a Big Watershed

Carl Metcalf, Grand Lake Watershed Alliance Foundation

Grand Lake Watershed Implementation (Oklahoma) & Four State Planning Efforts Dr. Kevin Gustavson, Oklahoma Conservation Commission

Watershed Education Programs & Stakeholder Groups in the Shoal Creek & Elk River Watershed of Missouri

Drew Holt, University of Missouri Extension

Watershed Education Programs & Stakeholder Groups in the Neosho River Watershed of

Jim Triplett, Pittsburgh State University

### 5:00 Adjournment to Reception

### Wednesday, October 24

### 8:00 Registration

### 8:15 Welcome & Introductions

Dr. Marlene Strathe, Interim President, OSU

8:30 Oklahoma's Water Future

Dr. John F. Luthy, President, The Futures Corporation

### 9:15 Session 4: Defining Water Sustainability

Session Chair: Dr. Kim Winton, Director, Oklahoma Water Science Center, USGS Assessment of Water Availability in Regional Aquifer Systems Using Modflow's Farm Process Randall T. Hanson, Research Hydrologist, USGS

Precipitation Variability & Sustainability of Water Supply & Demand

Dr. Jurgen Garbrecht, USDA-ARS

An Introduction to Ecological Flows

Rachel Esralew, Stream Ecologist, USGS Oklahoma Water Science Center Ellen Tejen, The Nature Conservancy

10:45 Break

### 11:00 Session 5: Science and Policy

Session Chair: Ed Rossman, Assistant Chief, Planning & Environmental Division, Corps of Engineers, Tulsa District

The Division of Agricultural Sciences & Natural Resources' Initiative in Water Resources Dr. Robert Whitson, Vice President, Dean and Director for Agricultural Programs, OSU

Shared Vision Planning Applied to Regulatory Decisions

Hal Cardwell, Corps of Engineers, Institute for Water Resources Bill Werick, Corps of Engineers, Institute for Water Resources (retired)

Gene Lilly, Corps of Engineers, Tulsa District

Assembly & Use of a Decision Support System in an Efficient Drinking Water Distribution Planning of Public Rural Water Supply Systems in Northeastern Oklahoma Anna Childers, OSU

Tribal Water Quality: A Cherokee Nation Perspective Cara Cowan Watts, Cherokee Nation Tribal Council

### 12:30 Luncheon

Mark Nichols, OWRB Chairman

**OWRRI Student Poster Competition Winner Announcement** 

**EPA Pisces Award Presentation** 

Oklahoma Water Pioneer Awards

Water Planning at the Federal Level

John Paul Woodley, Jr., Assistant Secretary of the Army, Civil Works, Corps of Engineers

### 2:00 Oklahoma Legal Briefs

Attorney General Drew Edmondson

### 2:20 Conservation as a Planning Tool

Gary Mast, Deputy Undersecretary for Natural Resources & the Environment, USDA

### 2:40 Water Plan Update

Overview of the Oklahoma Comprehensive Water Plan

Duane Smith, OWRB Executive Director

**OCWP Public Participation** 

Dr. Will Focht, Director, Oklahoma Water Resources Research Institute

Private Sector Partnering

John Rehring, Vice President, Camp Dresser & McKee, Inc.

### 3:25 Break

### 3:40 Kansas Water Plan

Tracy Streeter, Director, Kansas Water Office

### 4:00 OCWP Forum

Oklahoma Water: Envisioning the Next 50 Years. Moderator: Dr. John Luthy Terry Peach, Oklahoma Secretary of Agriculture

Ron Stahl, Discover Oklahoma, Oklahoma Tourism & Recreation Dept. Zach Taylor, Executive Director, Association of Central Oklahoma Governments

Howard (Bud) Ground, Manager, State Governmental & Environmental Affairs, Public Service Company of OK

Tom Buchanan, General Manager, Lugert-Altus Irrigation District

### 5:30 Adjourn to Reception

6:30 "Celebration of Oklahoma Water" Banquet

### Thursday, October 25 (Rooms A & B)

### 8:00 Registration

### 8:15 Welcome & Remarks

Duane Smith, OWRB Executive Director

8:30 Sustainable Water Planning

Miles Tolbert, Oklahoma Secretary of the Environment

Robert W. Johnson, Commissioner, Bureau of Reclamation

### 9:10 Responding to Climate Change

Dealing with Climate Change in Oklahoma Ken Crawford, State Climatologist, Oklahoma Climatological Survey

The National Water Program Strategy

James R. Brown, Chief, Planning and Analysis Branch, U.S. Environmental Protection Agency, Region 6

### 10:00 Break

### 10:15 A View from the State Legislature

Senator Glenn Coffee, Co-President Pro Tempore

Senator Jay Paul Gumm, Co-Chairman, Energy & Environment Committee Representative Guy Liebmann, Chairman, General Government & Transportation

Representative Skye McNiel, Vice-Chair, Natural Resources Committee

### 11:00 Water Outlook from Washington DC

Oklahoma's Congressional Delegation

### 2007 Oklahoma Water Pioneers





### MONDAY, NOVEMBER 13, 2006

### 1:00 REGISTRATION

**1:30 Welcome and Overview** *Duane A. Smith, Executive Director, OWRB* 

Rep. Guy Liebmann

1:50 Comprehensive Water Planning in New Mexico John D'Antonio, New Mexico State Engineer

2:10 Panel-Oklahoma's Water Planning Process

OCWP Study Organization and Management Mike Mathis, OWRB Water Plan Coordinator

**Stakeholder Involvement and Participation**Dr. Will Focht, Director
Oklahoma Water Resources Research Institute

Water Infrastructure Inventory Trish Weedn, Executive Director Oklahoma Association of Regional Councils

Federal Planning Assistance Sue Haslett, Planning and Environmental Division Chief, U.S. Army Corps of Engineers Tulsa District

**3:10** Partnerships in Regional Water Planning Representative of U.S. Bureau of Reclamation

3:25 Break

**3:40 Future Water Policy Considerations** Rudy Herrmann, OWRB Chairman

**3:55 Planning for Environmental Protection**Steve Thompson, Executive Director
Oklahoma Dept. of Environmental Quality

**4:10** Banking on Bristow's Water Future Kel Kelly, President, Spirit Bank

4:25 Panel-Incorporating Water User Concerns Municipal Interests

Danny George, Executive Director Oklahoma Municipal League

**Agricultural Interests**Terry Peach, Secretary of Agriculture

Industrial/Navigation Interests Ronn Cupp, Senior Vice President Government Affairs, The State Chamber

**5:10** Watershed Planning in Oklahoma
Clay Pope, Executive Director
Oklahoma Association of Conservation Districts

5:25 Summary & Adjournment to Reception

### TUESDAY, NOVEMBER 14, 2006

8:00 REGISTRATION

**8:30** Welcome and Introductions Rudy Herrmann, OWRB Chairman

**8:45 Keynote: The Worst Hard Time** *Timothy Egan, Author* 

9:30 The Oklahoma Drought
Ken Crawford, Director
Oklahoma Climatological Survey

9:50 Coffee Break/Exhibits

10:10 Update of the Oklahoma Comprehensive Water Plan Duane Smith, OWRB Executive Director

**10:30 State of the State's Environment** *Miles Tolbert, Secretary of Environment* 

10:50 Legal Considerations in Oklahoma Water Planning Gary D. Allison, Professor of Law

University of Tulsa

11:10 Oklahoma's Future: Strategies for Our 2nd Century

Larry Rice, Executive Assistant to the President University of Tulsa

11:30 Oklahoma Legal Briefs
Attorney General Drew Edm

Attorney General Drew Edmondson

Noon LUNCHEON PROGRAM

**Gubernatorial Address** 

**Oklahoma Water Pioneer Awards** 

Water Outlook from Washington D.C.

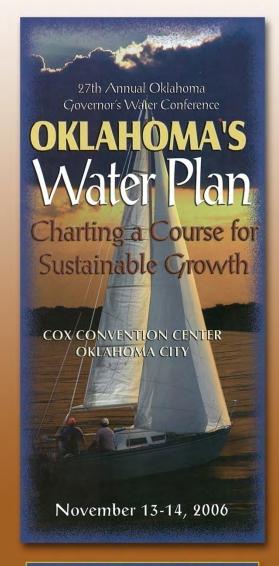
Michele Nellenbach, Senior Professional Staff Member, U.S. Senate Committee on Environment & Public Works

**State Legislative Water Perspective** 

Rep. Lance Cargill, House Speaker Designate Rep. Don Armes

Sen. Charlie Laster

2:30 Adjournment



# 2006 OKLAHOMA WATER PIONEERS

W. C. Austin Ervin Mitchell It's Time for Action!

### Oklahoma Groundwater Symposium

### **TUESDAY, NOVEMBER 1**

- 1:00 Registration
- 1:30 Welcome and Overview
  Duane A. Smith, Executive Director, OWRB
  Rep. Curt Roggow
- 1:40 Keynote Address--Water Follies: Ground Water Pumping and the Fate of America's Fresh Waters Robert Glennon, Professor, Univ. of Arizona College of Law
- 2:25 Oklahoma Groundwater Law Dean Couch, General Counsel, OWRB
- 2:40 Oklahoma's Dependence on Groundwater Kim Winton, Director, OK Water Science Center, USGS
- 2:55 Pitfalls in Groundwater Planning
  Todd Halihan, Professor of Geology, OSU
- 3:10 Break
- 3:25 Unconstitutional Takings of Water Interests
  James H. Davenport, Esq., Chief
  Water Division, Colorado River Commission of Nevada
- 3:45 Groundwater Quality Standards & Implementation Derek Smithee, Water Quality Division Chief, OWRB
- 4:00 Groundwater Panel

The Water Well Drilling Industry: Protecting Our Groundwater Cheryl Cohenour, Cherokee America Drilling (CRC&Associates)

Developments in USGS Groundwater Research: Age-Dating Groundwater

Scott Christenson, Hydrologist, USGS

Arsenic in Our Groundwater: A Municipal Approach Brad Gambill, City Manager, Norman, Oklahoma

Arbuckle-Simpson Hydrology Study Update Noel Osborn, Geologist, OWRB

5:00 Adjourn to Reception

### WEDNESDAY, NOVEMBER 2

- 8:00 Registration
- 8:30 Welcome and Introductions
  Rudy Herrmann, OWRB Chairman
  Pete White, Chairman, Oklahoma City Water Utilities Trust
- 8:50 State of the State's Water Duane A. Smith. OWRB
- 9:10 Water for the Environment
  Miles Tolbert, Secretary of Environment
- 9:30 Water for Agriculture
  Terry Peach, Secretary of Agriculture
- 9:50 Helping Oklahoma's Small Communities Steve Thompson, Executive Director Oklahoma Department of Environmental Quality
- 10:10 Break/Exhibits
- 10:25 Federal Water Resources Development & Planning Panel

U.S. Army Corps of Engineers Activities Colonel Miroslav Kurka, Tulsa District Engineer

Bureau of Reclamation Activities
Mike Ryan, Great Plains Regional Director

Natural Resources Conservation Service Activities
Larry Caldwell, National Policy Coordinator
Watershed Rehabilitation

11:25 Protecting the Nation's Waters
Susan Branning, Assistance Branch Chief, EPA Region 6

11:45 Illinois River Update

Drew Edmondson, OK Attorney General

Noon Luncheon Program

Luncheon Address

Lt. Governor Mary Fallin

Oklahoma Water Pioneer Awards

Water Outlook from Washington D.C.
Oklahoma's Congressional Delegation
Blu Hulsey, Majority Counsel, U.S. Senate Committee
on Environment & Public Works

Oklahoma State Legislative Update

Sen. Richard Lerblance, Rep. Susan Winchester, Sen. Kenneth Corn, Rep. Don Armes, Sen. Jeff Rabon

3:00 Adjournment





Jay Galt, 1943-2005 Julian Fite, 1945-2005

# OKLAHOMA WATER, A QUALITY OF LIFE

25th Annual Governor's Water Conference

October 19-20, 2004

### <u>Tuesday, October 19</u> A Symposium on Tribal Claims and Water

1:30 Registration
1:30 Welcome & Overview
Duane A. Smith
OWRB Executive Director

Justice Yvonne Kauger Oklahoma Supreme Court

1:50 Land of Many Cultures: American Indians in Oklahoma Bob Blackburn. Director Oklahoma Historical Society

2:10 Coordination of State/Tribal
Water Quality Administration
Miles Tolbert
Oklahoma Secretary of the Environment

2:30 Negotiating Indian Water Rights Claims
Susan Cottingham. Director
Montana Reserved Water Rights Compact Commission

2:50 EPA Perspective on Tribal Water Claims Chuck Sheehan. Regional Counsel U.S. Environmental Protection Agency

3:10 Break

3:25 Congressional Viewpoint

Ryan Jackson. Counsel

Sonate Environment and Public Works Committee

3:45 Town of Taos & Abeyta Water Right Adjudication Tomas Benavidez, Town Attorney Taos, New Mexico

4:05 Tribal Perspectives
Chad Smith. Principal Chief
Cherokee Nation
John Berrey. Chairman
Quayaw Tribe

Bill Anoatubby. Governor Chickasaw Nation

5:05 Resolution of Tribal Water Claims Lindsay Robertson. Associate Professor OU College of Law

5:25 Adjournment to Reception

Coordinated by The Oklahoma Water Resources Board Duane A. Smith, Executive Director

Registration Coordinator: Mary Nell Brueggen

Conference Coordinators: Mike Melton, Mary Schooley, Brian Vance, Darla Whitley, and Barry Fogerty

### Wednesday, October 20 Governor's Water Conference Program

8:00 Registration

8:30 Welcome and Introductions
Ervin Mitchell, OWRB Chairman

8:35 Video - "Oklahoma Water: A Quality of Life"

9:05 Keynote Address

Lt. Governor Mary Fallin

9:20 Congressional Senate Candidate Forum Representative Brad Carson Dr. Tom Coburn

9:50 Water Development Infrastructure Financing Scott Meacham. Director Oklahoma Office of State Finance

10:05 Planning for the Future of the Grand River Basin Kevin Easley. General Manager Grand River Dam Authority

10:20 Break / Exhibits

o:35 Infrastructure Financing Panel
Moderator: Joe Freeman. OWRB

Ted Lockin. Mayor of Bartlesville Dennis Krueger. General Manager Kiwash Electric Cooperative Dr. Joe Taron. Chairman. Pottawatomic Co. Dev. Authority

Dr. Joe Taron. Chairman. Pottawatomie Co. Dev. Authority Chris Cochran. Senior Vice President. Capital West

1:30 Water Magazine Oklahoma River Development Project

Jim Hasenbeck. Studio Architecture. Oklahoma City

Arkansas River Vision Plan Kevin Conner. Carter & Burgess. San Antonio, TX

Navigation Update
Scott Robinson, Director, Port of Muskogee

Scott Robinson, Director, Port of M Interstate Compact News

Dick Seybolt, Chairman

<u>Arkansas-Okla</u>homa Arkansas River Compact Commission

12:15 Luncheon Program

Adjournment

Oklahoma Water Pioneer Awards

State of the State's Water

Duane Smith. OWRB Executive Director Miles Tolbert. Oklahoma Secretary of the Environment

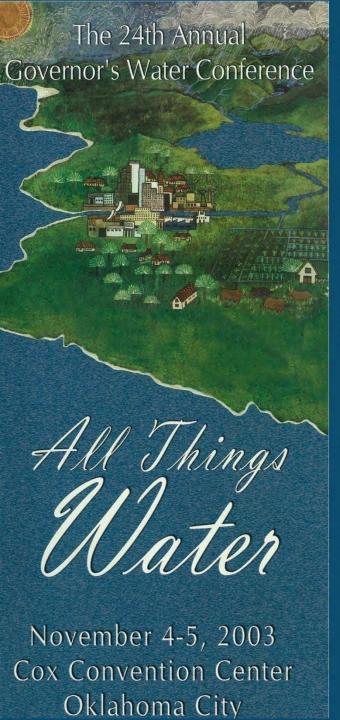
Water Outlook from Washington D.C.
Oklahoma's Congressional Delegation (invited)

Oklahoma State Legislative Water Perspective

House Speaker-Elect Jari Askins Representative David Braddock Senator Johnnie Crutchfield Senator Jay Paul Gumm SONTANOR'S WATER CONTANTANT ON THE CONTANTANT OF THE CONTANTANT OF THE CONTANTANT OF THE CONTANT OF THE CONTANT

2004 Oklahoma Water Pioneers

Glenn Sullivan | loe Taron



### November 4

### **Arbuckle Simpson Aquifer Symposium**

- 1:00 Registration
- 1:30 Welcome and Introductions Grady Grandstaff, Chairman Oklahoma Water Resources Board
- 1:45 Water 2025 Initiative: Preventing Crises and Conflict John Keys, Commissioner, Bureau of Reclamation
- 2:05 Can Private Property Rights be Protected Without Strong Regulations?

  Gregory Ellis, General Manager

  Edwards Aquifer Authority (San Antonio)
- 2:25 Water Law Issues in Senate Bill 288

  Drew L. Kershen, Earl Sneed Centennial Professor

  University of Oklahoma
- 2:45 Coffee Break
- 3:00 Study Overview and Technical Challenges
  Moderator: Duane Smith, OWRB Executive Director
  Randall Ross, U.S. Environmental Protection Agency
  Noel Osborn, OWRB
  Neil Suneson, Oklahoma Geological Survey
  Scott Christenson, U.S. Geological Survey
- ·4:00 Local Water Management Issues Dick Scalf, Ada Water Resources Board Jim Crosby, Manager, City of Yukon Senator Jay Paul Gumm Representative Susan Winchester
- 5:00 Adjournment
- 6:00 Reception

# 2003 Oklahoma Water Pioneers Wes Watkins Mark Coleman Clifford Younger

The Oklahoma Water Pioneer Award was initiated in 1987 to honor the men and women who have made significant contributions in the planning, development, management, and conservation of Oklahoma's water resources.

### November 5

- 8:00 Registration
- 8:30 Welcome and Introductions Grady Grandstaff, Chairman Oklahoma Water Resources Board
- 8:50 Keynote Address Governor Brad Henry
- 9:10 State of the State's Water

  Duane Smith, Executive Director

  Oklahoma Water Resources Board
- 9:30 Western States Water Issues
  Paul Sweeney
  NRCS Liaison to Western Governor's Association
- 9:50 EPA Update

  Miguel Flores, Director of Water

  EPA Region 6
- 10:10 Corps of Engineers Activities

  Christine Altendorf

  Tulsa District, U.S. Army Corps of Engineers
- 10:30 Coffee Break/Exhibits
- 10:45 Cabinet Secretary Panel Water for the Environment,
  Agriculture, Tourism and Recreation, and Transportation
  Miles Tolbert, Secretary of Environment
  Terry Peach, Secretary of Agriculture
  Kathryn Taylor, Secretary of Commerce & Tourism
  Phil Tomlinson, Secretary of Transportation
- 12:00 Luncheon Program
  U.S. Coast Guard Public Service Awards
  Oklahoma Water Pioneer Awards
  Featured Luncheon Speaker, George Nigh
  Water Outlook from Washington DC
  Oklahoma Congressional Delegation (invited)
  State Legislative Water Perspective
  Speaker Larry Adair
  Representative Jari Askins
  Representative Danny Hilliard
  Senator Jay Paul Gumm



# Celebrating Water

Past Successes/Future Challenges

### AGENDA

8 a.m. Registration

8:30 Welcome

Grady Grandstaff, Chairman Oklahoma Water Resources Board

Bill LaFortune, Mayor City of Tulsa

8:50 Addressing Interstate Water Quality Issues

Brian Griffin, Secretary of Environment State of Oklahoma

9:10 Celebrating 30 Years of Clean Water

Allan Stokes, Chief Operations Officer America's Clean Water Foundation

9:30 Tribal Water Rights and Water Quality
Administration

Taiawagi Helton, Professor University of Oklahoma College of Law

Lindsay G. Robertson, Associate Professor University of Oklahoma College of Law

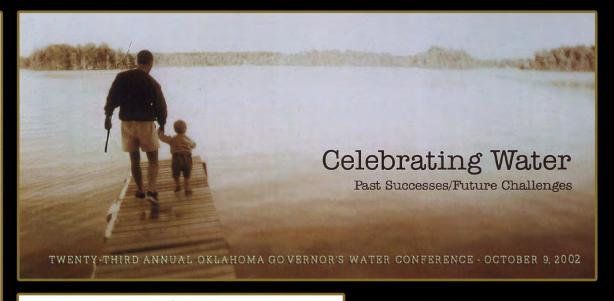
Michael Brophy, Attorney Ryley, Carlock & Applewhite

10:20 Coffee/Exhibits

10:45 A Century of Water for the West: The Bureau

of Reclamation's Centennial Celebration Larry Walkoviak, Manager

OK-TX Area Office, Bureau of Reclamation



### 11:05 The Legal Ramifications of Water Transfer

Drew L. Kershen, Earl Sneed Centennial Professor, University of Oklahoma Gary Allison, Professor

University of Tulsa College of Law

### 11:40 Science for a Changing World

Kim T. Winton, Oklahoma District Chief U.S. Geological Survey

Noon Luncheon Program

**OK Water Pioneer Awards** 

State of the State's Water

Duane A. Smith, Executive Director Oklahoma Water Resources Board

The Outlook from Washington D.C.

Oklahoma's Congressional Delegation

State Legislative Outlook

Sen. Rick Littlefield

Sen. James Dunlap

Rep. M.C. Leist

Rep. Mark Liotta

Oklahoma's Gubernatorial Candidates

Brad Henry Steve Largent Gary Richardson

2:30 Adjournment

### 2002

### OKLAHOMA WATER PIONEERS

Frank Condon Mae Cooper Murray Williams

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"Their vision in water development inspired those less daring; their strength of conviction upheld us; their commitment to progress for all Oklahomans gave us abundant supplies of good water for our homes, cities, towns, farms, and industries."

# Agenda

8:a.m. Registration

2<sup>nd</sup> Level - Myriad Convention Center

8:30 Welcome

Grady Grandstaff, Chairman, Oklahoma Water Resources Board

8:40 Governor's Address

Frank Keating, Governor of Oklahoma

9:00 State/Tribal Water Compact and Water Marketing Update

Howard Barnett, Governor Keating's Chief of Staff and a representative of the Choctaw and/or Chickasaw Nation

9:30 Thirsting for Power: Potential Impact of New Powerplants on Oklahoma Water Supplies

Ted Coombes, President, Southwest Power Resources Association

9:50 Water Gazette

Terrorism - Protecting Our Water Sources Albert Ashwood, Director, Oklahoma Department of Civil Emergency Management

Compacting to Protect State Water Rights

Dean Couch, General Counsel, Oklahoma Water Resources Board

Well Drillers Advisory Council

Danny Ewbank, Ewbank Inc. Fairview, Oklahoma

Economic Impact of the McClellan-Kerr Arkansas River Navigation System

Scott Robinson, Director Port of Muskogee

10:20 Coffee/Exhibits

10:40 National Agenda for Water

Roberta (Robbi) Savage, Executive Director, Association of State and Interstate Water Pollution Control Administrators - Washington DC

11:00 Big Plans for Small Systems

Robert Johnson, CEO, National Rural Water Association, Duncan, Oklahoma

11:20 Meeting Oklahoma's Future Water Infrastructure Financing Needs Gene Rainbolt, Chairman of the Board.

BancFirst





November 14, 2001 - Myriad Convention Center - Oklahoma City, Oklahoma

### 11:40 Oklahoma Comprehensive Water Plan a New Focus

Duane Smith, Executive Director, Oklahoma Water Resources Board

12:00 Noon - Luncheon Program

The Texas Water Plan, a Regional Approach Texas State Senator J. E. "Buster" Brown

Washington DC Outlook

Oklahoma Congressional Delegation

State Legislative Outlook

Senator Cal Hobson, Vice Chairman, Senate Appropriations Committee, Oklahoma State Senate

Senator Jim Dunlap, Republican Floor Leader, Oklahoma State Senate

Representative Larry Adair, Speaker, Oklahoma House of Representatives

Rural Economic Action Plan (REAP)
Announcement of 2002 Grant Recipients
Mr. Smith

Oklahoma Water Pioneer Awards Mr. Grandstaff, Mr. Smith

2:30 Adjournment

### 2001 Oklahoma Water Pioneer Awards

Robert Johnson Phillip B. Lorenz Ken McFall James H. Norick

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# OKLAHOMA WATER

Shaping The Future

November 15, 2000





21st Annual GOVERNOR'S WATER CONFERENCE

> Myriad Convention Center Oklahoma City, Oklahoma

8 a.m.	Registration 2nd Level – Myriad Convention Center					
8:30	Welcome Lonnie Farmer, Chairman Oklahoma Water Resources Board					
8:40	Governor Frank Keating					
9:00	Water for Oklahoma City's Future Mayor Kirk Humphreys, Oklahoma City					
9:20	Water for Oklahoma: The Kiamichi Basin Plan Brian C. Griffin, Secretary of Environment					
9:40	The Waste by Pollution Ruling Duane A. Smith, Executive Director Oklahoma Water Resources Board					
10:00	The Importance of Research in Weather Modification Planning Dr. Kelvin Droegemeir, Director Center for Analysis and Prediction of Storms – University of Oklahoma					
10:20	Coffee/Exhibits					
10:40	The Continuing Development of the McClellan-Kerr Arkansas River Navigation System Scott Robinson, Director Port of Muskogee					
11:00	New Protection for the Nation's Waters Gregg Cooke, Administrator, Region 6 U.S. Environmental Protection Agency					
11:20	Endangered Species – The Ultimate Trump Card William H. Satterfield, Attorney Balch & Bingham, Birmingham, AL					
12:00	Luncheon Program					
T. E	Gold on Tap – Water in the 21st Century T. Boone Pickens, President, CEO Mesa Water, Inc., Dallas, TX					

### Washington D.C. Outlook

### State Legislative Outlook

Senator Billy Mickle
Majority Floor Leader, Oklahoma Senate

Senator Jim Dunlap Incoming Republican Floor Leader Oklahoma Senate

Representative Larry Adair Speaker-Elect Oklahoma House of Representatives

Representative Randall Erwin
Chairman, Natural Resources Appropriations
and Budget Subcommittee
Oklahoma House of Representatives

Others Invited

# Rural Economic Action Plan (REAP) Announcement of 2001 Grant Recipients Mr. Smith

Oklahoma Water Pioneer Awards Mr. Farmer, Mr. Smith

2:30 Adjournment

### 2000 Water Pioneers

Michelle (Mike) Henson James C. Leake Jim C. Murphy

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### November 17, 1999

Agenda

8 a.m. Registration

8:30 Welcome

Lonnie Farmer, Chairman Oklahoma Water Resources Board

8:35 Lieutenant Governor Mary Fallin

8:50 Water Quality Issues 2000 and Beyond

Carolyn S. Richardson
Director of Environmental Advocacy
California Farm Bureau Federation

Gregg Cooke Administrator, Region 6 U.S. Environmental Protection Agency

Patsy Bragg, Chair Tulsa Metropolitan Utility Authority

9:45 Water for Oklahoma 2000 PANEL

> Chuck Thomas, Member Stillwater City Commission

Gene Whatley, Executive Director Oklahoma Rural Water Association

Zach D. Taylor, Executive Director
Association of Central Oklahoma Governments

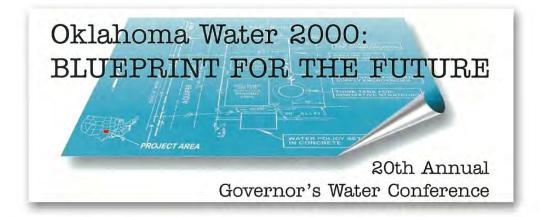
Purcy Walker, Commissioner Beckham County District 3

10:25 Break - Coffee/Exhibits

10:45 The Federal Agencies Look Ahead PANEL

Col. Leonardo V. Flor, District Engineer U.S. Army Corps of Engineers Tulsa District

Mark F. Becker, Hydrologist U.S. Geological Survey



Larry Caldwell, State Conservation Engineer Natural Resources Conservation Service

Elizabeth Cordova-Harrison, Area Manager Oklahoma - Texas Area, Bureau of Reclamation

11:30 The Industry Underwrites Hail Suppression Carroll Fisher, Insurance Commissioner Oklahoma Insurance Department

11:50 Kiamichi River Basin Plan: Deadline 2/2000 Greg Pyle, Chief Choctaw Nation

> Duane A. Smith, Executive Director Oklahoma Water Resources Board

12:40 p.m. Luncheon Program

Introductions - Mr. Farmer

Water Pioneer Awards Mr. Farmer, Mr. Smith

Legislative Outlook - 21st Century

Congressman Ernest Istook
Congressman Frank Lucas
Congressman Wes Watkins
Speaker Loyd Benson, House of Representatives
Representative Randall Erwin
Representative Larry Rice
Senator Mark Snyder
Senator Rick Littlefield

Luncheon Address

Larry Watkins, General Manager Electric Cooperatives of Oklahoma

Grant Presentation 2000 Ceremony Rural Economic Action Plan (REAP)

Representative Mike Mass Mr. Smith

2:30 Adjournment Mr. Farmer

> 1999 Oklahoma Water Pioneer Awards

> > Sidney D. Williams James Eddie Phillips Jimmie Pigg

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### AGENDA

9:30 Registration, Coffee, Exhibits

10:00 Welcome
J. Ross Kirtley, Chairman
Oklahoma Water Resources Board

Welcome to Muskogee Jim Bushnell, Mayor

10:15 National Outlook for Water Development Dr. Joseph W. Westphal Assistant Secretary of the Army for Civil Works

10:40 The Corps' Mission in Oklahoma Col. Leonardo V. Flor, District Engineer Tulsa District, U.S. Army Corps of Engineers

11:00 State of the State's Environment
Duane A. Smith, Executive Director
Oklahoma Water Resources Board

Dennis V. Howard, Secretary of Agriculture

Mike Thralls, Executive Director Oklahoma Conservation Commission

Jon L. Craig, Director, Water Quality Division Oklahoma Department of Environmental Quality

### 12:00 Luncheon Program

Musical Interlude Parkview School Jazz Band Jim Gilmartin, Director

Introductions - Mr. Kirtley

Legislative Update Sen. Ben Robinson, Sen. Rick Littlefield Rep. Bill Settle, Rep. Larry Adair The Honorable Frank Keating Governor of Oklahoma

Oklahoma Water Pioneer Awards Mr. Smith

1:40 Insight to Oklahoma Water Law
Drew Edmondson, Attorney General
State of Oklahoma

2:00 Native American Issues
Chris Kenney, Native American Coordinator
U.S. Department of Interior, Bureau of
Reclamation

Joe Byrd, Principal Chief Cherokee Nation

Bill Anoatubby, Governor Chickasaw Nation

2:45 Is Drought Our Destiny?
Albert Ashwood, Director
Oklahoma Department of Emergency
Management

Dr. Kenneth C. Crawford, Director Oklahoma Climatological Survey

3:10 Environmental Initiatives for Oklahoma Brian C. Griffin, Secretary of Environment

> Patsy Bragg, Vice-Chair, Tulsa Metropolitan Utility Authority

3:40 A Delicate Balance:
Environment and Economy
Gregg Cooke, Region 6 Administrator
U.S. Environmental Protection Agency

4:00 Adjournment - Mr. Kirtley

### 1998 Oklahoma Water Pioneer Awards

Bill Secrest Robert W. "Bob" Portiss

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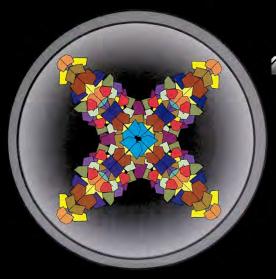
Their vision in water development inspired those less daring; their strength of conviction upheld us; their commitment to progress for all Oklahomans gave us abundant supplies of good water for our homes, cities, towns, farms and industries.

# Pollin' on the Piver Toward Changin' Times



19th Annual Governor's Water Conference

> Muskogee. Oklahoma September 29-30, 1998



# CKLAHOMA WATER A KALCIDOSCOPE OF ISSUES

### 18th Annual Governor's Water Conference

November 5, 1997 Marriott Hotel - Oklahoma City

### **AGENDA**

8:00	Registration
8:30	Welcome J. Ross Kirtley, Chairman Oklahoma Water Resources Board
8:45	Native American Water Issues Larry EchoHawk Professor of Law, Brigham Young University
	Bob Rabon, General Counsel Choctaw Nation, Chickasaw Nation
	Tim Vollmann, Regional Solicitor SW Region, U.S. Department of Interior
9:50	Coffee, Networking, Exhibits

### 10:10 State Agency Issues

Panel Moderator: Richard Sevenoaks, Member Oklahoma Water Resources Board

Duane A. Smith, Executive Director Oklahoma Water Resources Board

Mark S. Coleman, Executive Director Oklahoma Department of Environmental Quality

Dennis V. Howard, Commissioner Oklahoma Department of Agriculture

John Hassell, Director, Water Quality Programs Oklahoma Conservation Commission

### 11:00 Can Good Water and Poultry Production Co-Exist? M. Susan Savage, Mayor

City of Tulsa

### 11:20 Legal and Environmental Issues Affecting Animal Feeding Operations

Janie Simms Hipp, Attorney National Agricultural Law and Research Center

### 11:45 Interstate Water Gazette

Moderator

Glen Cheatham, Jr., Executive Vice-President Arkansas Basin Development Association

Here Comes El Nino
Ken Crawford, State Climatologist
Oklahoma Climate Survey

The Arkansas Shiner Minnow Jerry Brabander, Field Supervisor Tulsa Office, U.S. Fish & Wildlife Service

Weather Modification
Patrick H. Sweeney, President
Weather Modification, Inc., Fargo, N.D.

### 12:30 Luncheon Program

Introductions - Mr. Kirtley

Brian Griffin, Secretary of Environment Chairman, Governor's Animal Waste and Water Quality Protection Task Force

Legislative Issues

Speaker Loyd L. Benson Oklahoma House of Representatives

Senator Billy Mickle Majority Floor Leader, Oklahoma Senate

Senator Bill Gustafson Senate Minority Leader

Representative Larry Rice Chairman, House Committee on Energy, Environment and Natural Resources

Representative Al Sadler Chairman, Natural Resources Subcommittee House Appropriations and Budget Committee

Oklahoma Water Pioneer Awards
Duane A. Smith, Executive Director

2:30 Adjournment - Mr. Kirtley

### 1997 Oklahoma Water Pioneer Awards

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Wayne A. Pettyjohn, Ph.D. Lonnie L. Farmer John "Jack" Story, Jr.

### Seventeenth Annual Governor's Water Conference

November 20, 1996 Marriott Hotel - Oklahoma City

# "Working Together in Managing 21st Century Water Resources"

### AGENDA

Pagistration

0.00	1 Cogisti attori
8:30	Welcome J. Ross Kirtley, Chairman Oklahoma Water Resources Board
8:45	Forging Unity from Diversity on Capitol Hill J.D. Williams, Washington, D.C. Attorn Specialist in Legal and Political Affairs
9:10	Panel - Partners in Infrastructure Financing Moderator: Gary L. Sherrer, Executive Director Oklahoma Water Resources Board
	Charles P. Rainbolt, State Director Rural Development
	James G. Fulmer, President, CEO Oklahoma Finance Authorities
	Joe S. Freeman, Chief Financial Assistance Division Oklahoma Water Resources Board
	Leo Presley, Director Oklahoma Department of Commerce
10:15	Coffee, Networking, Exhibits
10:35	Partnering with the States in Regulation William B. Hathaway, Director Water Quality Protection Division Region 6, U.S. EPA
11:00	Teamwork in Tempering Drought Dr. Donald A. Wilhite, Director National Drought Mitigation Center University of Nebraska - Lincoln



Working Together
in Managing 21st Century
Water Resources

Seventeenth Annual Governor's Water Conference

11:25 Cloud Seeding as a Water Management Tool

Patrick H. Sweeney, President Weather Modification, Inc., Fargo, N.D.

11:50 Luncheon Program
Introductions - Mr. Kirtley

The Honorable Frank Keating Governor of Oklahoma

The View from the State Capitol Senator Robert M. Kerr Chairman, Senate Rules Committee

Speaker-Elect Loyd L. Benson Oklahoma House of Representatives

Representative Mike Mass, Chairman Subcommittee on Natural Resources, Appropriations and Budget Committee

The View From Capitol Hill Senator Don Nickles Other Members of the Congressional Delegation Invited

Oklahoma Water Pioneer Awards

2:30 Adjournment - Mr. Kirtley

### 1996 Oklahoma Pioneer Awards

The Oklahoma Water Pioneer Award was initiated in 1985 to honor the men and women who have made significant contributions in the planning, development, management and conservation of Oklahoma's water resources.

Their vision in water development inspired those less daring; their strength of conviction upheld us; their commitment to progress for all Oklahomans gave us abundant supplies of good water for our homes, cities, towns, farms and industries.

Senator Henry Bellmon James M. Hewgley, Jr. Ladd Hitch Phillip Klutts Donald R. Vandersypen November 15, 1995

Sixteenth Annual Governor's Water Conference

### The Shifting Federal Role: Oklahoma's Opportunity to Redefine Water Policies

- 8:00 Registration
- 8:30 Welcome J. Ross Kirtley, Chairman Oklahoma Water Resources Board
- 8:45 Budgets in Crisis: If They Hand You a Lemon, Make Lemonade!
  D. Craig Bell, Executive Director
  Western States Water Council
- 9:05 Panel The Downsizing Dilemma Moderator: Christopher J. Brescia Executive Director, Midwest Area River Coalition - MARC 2000
  - Col. Timothy L. Sanford Commander, Tulsa District U.S. Army Corps of Engineers
  - A. Stanley Meiburg, Deputy Regional Administrator, U.S. Environmental Protection Agency, Region 6
  - Charles Rainbolt, State Director Rural Economic & Community Development
  - Elizabeth Harrison, Area Manager Bureau of Reclamation
- 10:20 Questions and Answers
- 10:25 Coffee, Networking, Exhibits
- 10:45 The Honorable Frank Keating Governor of Oklahoma
- 1 1:05 Panel New Directions, New Destinies Moderator: Dick Seybolt, Member Oklahoma Water Resources Board
  - Bill Moyer, Executive Director Oklahoma Municipal League
  - Rob Johnson, Chief Executive Officer National Rural Water Association

s water conference governor's water conference governor ference governor's water conference governor's water conference governor's water conference swater conference governor's water conference the shifting federal role "governor's water conference sovernor's water conference governor's water governor

Ronn Cupp, Vice-President, Oklahoma State Chamber of Commerce & Industry

Jarold Callahan, Executive Director Oklahoma Cattlemen's Association

Scott Robinson, President Arkansas Basin Development Association

- 12:20 Questions and Answers
- 12:30 Luncheon Program

Introductions, Remarks Mr. Kirtley

Oklahoma Congressional Delegation Questions & Answers

Oklahoma Comprehensive Water Plan Gary L. Sherrer, Executive Director Oklahoma Water Resources Board

Update from the Oklahoma Legislature Speaker Glen Johnson Representative Mike Mass Senator Robert M. Kerr

Oklahoma Water Pioneer Awards Mr. Kirtley, Mr. Sherrer

3:00 Adjournment - Mr. Kirtley

### 1995 Oklahoma Water Pioneer Awards

The Oklahoma Water Pioneer Award was initiated in 1985 to honor the men and women who have made significant contributions in the planning, development, management and conservation of Oklahoma's water resources.

Their vision in water development inspired those less daring; their strength of conviction upheld us; their commitment to progress for all Oklahomans gave us abundant supplies of good water for our homes, cities, towns and industries.

- Norman N. Durham
  - Billy Ray Wilson
  - Oscar Hughes
- Paul E. Thornbrugh

November 2, 1994

Marriott Hotel 3233 Northwest Expressway Oklahoma City

### Fifteenth Annual

### Governor's Water Conference

### Planning Today for a Secure Tomorrow

### Agenda

8:00 a.m. Registration, Coffee

Introductory Remarks 8:30

J. Ross Kirtley, Chairman

Oklahoma Water Resources Board

Water Resources: Strategies 8:40

to Carry us Forward

Senator Gene Stipe Oklahoma Senate

Oklahoma Comprehensive Water Plan 9:00

Patricia P. Eaton

Executive Director, Oklahoma Water

Resources Board

9:20 Sharing the Challenge: Floodplain Management into the 21st Century

Raymond "Buddy" Young

Region VI Administrator, Federal Emergency Management Agency

9:45 Coffee, Networking, Exhibits

10:10 Panel - Water Planning Issues

on the Horizon

Moderator: Kathy D. Peter

District Chief, U. S. Geological Survey

**Agribusiness and Environmental Concerns** 

Drew Kirshen

Professor of Law, College of Law University of Oklahoma

Indian Water Rights: The Tribal Perspective

Phillip D. Luian

Associate Professor, Department of Communication, University of Oklahoma

Neosho River Basin: Multistate Planning and Multipurpose Uses

Col. Otis Williams

District Engineer, Tulsa District U.S. Army Corps of Engineers



### Oklahoma's New Wetlands Strategy

Mason Mungle

Executive Director, Oklahoma Conservation Commission

### 11:15 **Questions and Answers**

### 11:35 The View from Capital Hill

Oklahoma Congressional Delegation

### 12:30 Luncheon Program

### Introductions and Remarks

Mr. Kirtleu

### Oklahoma Water Pioneer Awards

Ms. Eaton/Mr. Kirtleu

### Legislative Committee Updates

Joint Committee on Financing Environment, Infrastructure for Economic Development Representative Randy Beutler, Co-Chairman

Kiamichi River Basin Water Supply Study Senator Jack Bell, Chairman

### Introduction of Gubernatorial Candidates

Patricia Acebo, President League of Women Voters of Oklahoma

Lt. Governor Jack Mildren Wes Watkins Frank Keating

3:00 Adjournment

Mr. Kirtley



November 17, 1993

Marriott Hotel 3233 Northwest Expressway Oklahoma City, OK

### AGENDA

8:00 a.m. Registration, Coffee 8:30 Introductory Remarks Robert S. Kerr, Jr., Chairman Oklahoma Water Resources Board Welcome Governor David Walters Federal Mandates: One Size Fits All? 9:00 Mayor Susan Savage, City of Tulsa 9:25 Communities in Crisis Ann Cole Small Community Coordinator U.S. Environmental Protection Agency Office of Regional Operations 9:50 Coffee Break 10:15 Panel: Meeting the Mandates with Innovation Moderator: Connie Irby Deputy Executive Director Oklahoma Department of Commerce Panelists: Lonnie L. Farmer, Member, OWRB Regional Rural Water Systems Wayne Hill, City Manager, Guymon New Ways in Wastewater Treatment Lee Chew, County Commissioner Washington County Sales Tax Can Finance Infrastructure The View from Capitol Hill 11:15 Oklahoma Congressional Delegation

Luncheon Program

Mr. Kerr

Introductions and Remarks

11:45

### Infrastructures Under Pressure



The Fourteenth Annual Governor's Water Conference - November 17, 1993

When EPA Came to Buffalo Gap Robert E. Roberts, Secretary South Dakota Department of Environment and Natural Resources

Members of the Oklahoma Legislature

Oklahoma Water Pioneer Awards Duane A. Smith, Assistant Director **OWRB** 

1:45 Oklahoma Water Gazette 10-Minute News Updates

> Moderator: Mike Henson Member, OWRB

Consequences of Flooding Jack Page, Manager Development Services City of Tulsa PWA

Navigation Fuel Taxes Bob Portiss, Director Tulsa Port of Catoosa

Water Rights: Impact of the Franco Decision Diane Pedicord, General Counsel Oklahoma Municipal League

DEQ: The First Half-Year Roger Miner, Chairman Oklahoma Environmental Quality Board

Questions and Answers

2:45 Adjournment Mr. Kerr

November 18, 1992 Marriott Hotel 3233 Northwest Expressway Oklahoma City



# Agenda

o u.m.	Registration, Conce					
8:30	Welcome					
	Robert S. Kerr, Jr., Chairman					
	Oklahoma Water Resources Board					

Registration Coffee

# 8:45 The Future of the Clean Water Act and The Safe Drinking Water Act Ben Lesser, Special Assistant to the Assistant Administrator for Water, U.S. Environmental Protection Agency

9:10	The Consequences of "Can't"
	Eric J. Groves, Attorney
	Groves & Tague, Oklahoma City

### 9:30 The Best Water in the Nation Governor David L. Walters

### 9:50 Coffee Break

# 10:05 Drinking Water—the Widening Gap Between Needs and Resources Steven L. Elstein, Assistant Director, Water Quality Issues U.S. General Accounting Office

### 10:25 Regional Systems—The Dallas Success Story Mike Marcotte, Director Dallas Water Utilities

# 10:45 Yes We Can! Financing Options Robert M. Cochran Executive Vice-President Stifel, Nicolaus & Co., Inc.

# 11:05 How Can Small Systems Comply? Walter E. Hill Deputy Under Secretary for Small Community and Rural Development U.S. Department of Agriculture

# 11:25 Clean Water Act Impacts on Agriculture John Baker, Agriculture Advisor to the Administrator—EPA

### 11:45 Oklahoma Water Gazette 10-Minute News Updates

Moderator: Glen Cheatham, Jr. Executive Vice-President Arkansas Basin Development Assoc.

### HB 2227—the Department of Environmental Quality (DEQ) Sen. Cal Hobson, Co-Chair Joint Legislative Environmental Task Force

Navigation—Montgomery Point L&D Bob Portiss, Director Port of Catoosa

Water Research at the Universities Dr. Tom Collins, Director Oklahoma State University Center for Water Research

### 12:30 Luncheon Program

**Introductions and Remarks** Mr. Kerr

### Remarks

Congressman Mike Synar

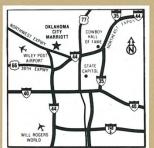
Other Members of the Congressional Delegation

Oklahoma Legislature Sen. Kevin Easley Rep. Larry Rice

Oklahoma Water Pioneer Awards Patty Eaton, Executive Director Oklahoma Water Resources Board

Adjournment Mr. Kerr

### Accommodations



Guestrooms are available at a special Conference rate of \$70 per night, single or double. Please make reservations by November 9 by calling the Marriott Hotel at (405) 842-6633.



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THIRTEENTH ANNUAL GOVERNOR'S WATER CONFERENCE

# Twelfth Annual Governor's Water Conference

December 18, 1991 Marriott Hotel Oklahoma City

# Groundwater Oklahoma's Buried Creasure

Morning Agenda

8 a.m.

Registration, Coffee

8:30

Welcome

Robert S. Keri, Jr., Chairman Oklahoma Water Resources Board

8:45

Keynote-New Respect for an Old Resource

Ramona Trovato, Director Groundwater Protection Division U.S. Environmental Protection Agency

9:10

Panel—Defining the Problems

Moderator:

Kathy Peter, District Chief U.S. Geological Survey

Panelists:

David G. Boyer, Hydrogeologist K, W. Brown Environmental Services College Station, Texas

Kathy McNally, Director of National Affairs Oklahoma Farm Bureau

Phil Brown, Chief Community and Business Programs Farmers Home Administration 10:10

"How well will we manage it?"

Coffee Break

10:30

Panel-Protecting a Fragile Resource

Moderator:

Glenn Sullivan, Engineer Sullivan & Associates

Panelists:

Dr. Larry W. Canter, Director Environmental & Groundwater Institute University of Oklahoma

David Pope, Chief Engineer Kansas Division of Water Resources

Blaine Reely, Director of Public Works City of Enid

11:30

The Washington Perspective

Rep. Mike Synar

Noon

Luncheon Program

Introductions, Remarks

Mr. Kerr

Address

Sen. Don Nickles

Observations from the Oklahoma Legislature

Sen. Ray Giles, Chairman Senate Committee on Natural Resources Rep. Larry Rice, Chairman House Committee on Energy, Environment and Natural Resources

Oklahoma Water Pioneer Awards

Patty Eaton, Executive Director Oklahoma Water Resources Board

Adjournment-Mr. Kerr

### The 1991 Oklahoma Water Pioneers

The Oklahoma Water Pioneer Awards were initiated in 1985 to recognize those men and women who have made significant contributions in the management, planning, development and conservation of Oklahoma's water resources.

Their vision inspired those less daring; their strength of conviction upheld us; their devotion to progress for all Oklahomans provided abundant supplies of good water for our homes, cities, farms and industries.

Gov. Raymond Gary

Ed Edmondson

Heber Finch

Jack Grimmett

# Eleventh Annual OKLAHOMA WATER CONFERENCE

December 5,1990 Marriott Hotel Oklahoma City

# SProwning In These High Cost Of Water

11:15

### Drowning in the High Cost of Water

A strategy conference to cope with the ever increasing costs of providing water to the public. The issue is multi-faceted: the reduction in federal funds, increased cost-sharing and user fees and compliance costs of new EPA regulations.

8:30 Welcome—Robert S. Kerr, Jr., Chairman Oklahoma Water Resources Board  8:40 Keynote Drowning in the High Cost of Water E. Donald Elliott, General Counsel Environmental Protection Agency  9:00 Managing Our Water Resources Maj. Gen. Patrick J. Kelly Director of Civil Works U.S. Army Corps of Engineers  9:20 Joe D. Hall, Deputy Commissioner Bureau of Reclamation	Agend 8 a.m.	la Registration, Coffee	9:5
Drowning in the High Cost of Water E. Donald Elliott, General Counsel Environmental Protection Agency  9:00 Managing Our Water Resources  Maj. Gen. Patrick J. Kelly Director of Civil Works U.S. Army Corps of Engineers  9:20 Joe D. Hall, Deputy Commissioner	8:30		
Maj. Gen. Patrick J. Kelly Director of Civil Works U.S. Army Corps of Engineers  9:20 Joe D. Hall, Deputy Commissioner	8:40	Drowning in the High Cost of Water E. Donald Elliott, General Counsel	
oc b. Hail, Deputy Commissioner	9:00	Maj. Gen. Patrick J. Kelly Director of Civil Works	
	9:20		

9:40

Coffee Break

Panel—Increased Costs Where's the Money to Come From?
Moderator: James R. Barnett, Executive Director Oklahoma Water Resources Board
Panelists:
Jack Brown, Chairman Tulsa Metropolitan Utility Authority
Henry Lamb, Executive Vice-President Land Improvement Contractors of America
Larry Wornom, Director Lincoln County Conservation District
Ernie Fawcett, President National Rural Water Association
Wm. Don Kiser, Attorney Fagin, Brown, Bush, Tinney & Kiser

	Rep. Glenn English Rep. Mickey Edwards Rep. James Inhofe Rep. Mike Synar Rep. Wes Watkins
Noon	Luncheon Program
	Introductions and Remarks-Mr. Kerr
	Water Funding Prospects in the 43rd Legislature
	Sen. Darryl F. Roberts Senate Majority Leader
	Rep. Glen Johnson, Speaker-Designate House of Representatives
	Oklahoma Water Pioneer Awards Governor Bellmon Glenn Sullivan, Secretary Department of Natural Resources
	Address- The Governor-Elect
	Adjournment-Mr. Kerr

The Washington Perspective

Sen Don Nickles

8 a.m.	Registration, Coffee
8:30	Welcome Robert S. Kerr, Jr., Chairman Oklahoma Water Resources Board
8:45	<b>Keynote</b> Dennis Underwood Commissioner (Designate) Bureau of Reclamation
9:05	Federal Activities in the State and Region
	Dan Mauldin Deputy Director of Civil Works U.S. Army Corps of Engineers
9:25	Robert E. Layton, Jr. Administrator, Region VI Environmental Protection Agency
9:45	Gary Margheim Associate Deputy Chief for Progra USDA Soil Conservation Service
10:05	John R. George Assistant Regional Hydrologist U.S. Geological Survey
10:25	Coffee Break
10:40	Update on the Governor's Environmental Concerns Cou Ross O. Swimmer Council Coordinator
11 a.m.	Are Wetlands Worth the Cost? Michael Spear, Panel Moderator Regional Director, U.S. Fish & Wildlife Service
	Panelists:
	Ken McFall, President Oklahoma Farm Bureau
	Russell Rhoades, Director Environmental Services Region VI, U.S. EPA
	Michael Luzier, Director Environmental Regulations National Assn. of Home Builders
	Donald McCrory, Port Director Memphis/Shelby County Port Commission
	Barry Rought, Chief of Planning

Corps of Engineers

### The Tenth Annual Oklahoma Water Conference

December 13, 1989 Marriott Hotel 3233 Northwest Expressway Oklahoma City

### Oklahoma Water - From Dust Bowl to Wetlands



### 12 noon The Washington Perspective

\*Congressional Delegation

Sen. David Boren Rep. Dave McCurdy
Sen. Don Nickles Rep. Mickey Edwards
Rep. Wes Watkins Rep. James Inhofe
Rep. Glenn English Rep. Mike Synar
\*contingent upon Congressional recess date

### 12:30 Luncheon Program

Introductions and Remarks

Mr. Kerr

Prospects for Statewide Water Development Revolving Fund

Rep. Cal Hobson, Chairman House Budget and Appropriations Committee Sen. Ben Brown, Chairman Senate Natural Resources and Regulatory Services Subcommittee of the Appropriations and Budget Committee

### **Gubernatorial Address**

Governor Henry Bellmon

### Presentation of Oklahoma Water Pioneer Awards

Glenn Sullivan, Secretary Department of Natural Resources

Adjournment—Mr. Kerr

# "Water Quality— Balancing the Interests"



Agenda	a	10:25	Overview of Groundwater Quality	12:15	Luncheon Program	
8 a.m. 8:30	Registration, Coffee Welcome Robert S. Kerr, Jr., Chairman Oklahoma Water Resources Board Federal Agencies' Contributions	10:45	Marian Mlay, Director Office of Groundwater Protection Office of Water EPA, Washington, D.C. Panel Costs and Benefits of Clean Water	•	Remarks— Mr. Kerr Glenn Sullivan, Secretary Department of Natural Resources Address — Governor Henry Bellmon Legislative Accomplishments Prospects for the 42nd Session	
8:45	to Water Quality Brig. Gen. Robert C. Lee Commander, Southwestern Division U.S. Army Corps of Engineers		Terry Childers, City Manager City of Oklahoma City James P. Odendahl, Manager Environmental and Regulatory Affairs		Sen. Ray Giles, Chairman Senate Natural Resources Committee Sen. Ben Brown, Chairman	
9:05	Billy Martin, Director Great Plains Region Bureau of Reclamation			Weyerhaeuser Company  James W. Bennett, Executive Director  Oklahoma Wildlife Federation		Natural Resources & Regulatory Services Subcommittee, Comm. on Appropriations Rep. Cal Hobson, Chairman
9:25	Joseph D. Winkle Deputy Administrator, Region 6 Environmental Protection Agency	11:45	Ed Long, Agribusinessman  The Washington Perspective Oklahoma Congressional Delegation		House Natural Resources Committee Rep. Glen D. Johnson, Chairman Committee on Appropriations and Budget	
9:45	Charles R. Burchett, District Chief U.S. Geological Survey		Representative Wes Watkins Senator Don Nickles		Presentation of Water Pioneer Awards	
10:05	Coffee Break		Invited: Representative Mike Synar		Adjournment—Mr. Kerr	

Representative James Inhofe Representative Dave McCurdy Representative Mickey Edwards

		10:00	Coffee Break	2:30	Water Magazine—a Panel Discussing Current Issues
		10:20	The New Water Resources		Moderator: Mr. Sullivan
Agend	la		Development Act Col. Frank M. Patete District Engineer, Tulsa District, U.S. Army Corps of Engineers		Panelists: Charles Huddleston, Attorney Franco-American/Water Rights
8 a.m. 9:00	Registration, Coffee  Welcome Gerald E. Borelli, Chairman	10:40	Outlook for Navigation Harry N. Cook, President National Waterways Conference		Robert Johnson Chief Staff Officer, NRWA Is the Government Selling Rural Water Short?
	Oklahoma Water Resources Board  Introductory Remarks Glenn Sullivan, Secretary	11:00	Remarks Congressional Delegation		Marshall Hawkins Financial Consultant Water Development Financing
	Dept. of Natural Resources Conference Chairman	12 Noon	Luncheon Program Introductions—Mr. Sullivan Address, Presentation of		R. Thomas Lay, Attorney Ute Reservoir Water Rights
9:20	Clean Water Act Update Robert E. Layton Jr. Administrator, Region VI, EPA		Water Pioneer Awards Governor Henry Bellmon	1	Myron Knudson, Director, Water Mgmt. Div., EPA Region VI
9:40	A New Direction for the Bureau Joe D. Hall, Deputy Commissioner Bureau of Reclamation	2:00	Tulsa's Stormwater Management Strategies Stan Williams, Director, Dept. of Stormwater Management	3:40	Matador Oil Co./Oklahoma Water Quality Standards  Adjournment—Mr. Sullivan

# Water End Water The Governor's Water

# Eighth Annual Governor's Water Conference

December 16, 1987



Joe D. Hall, P.E.

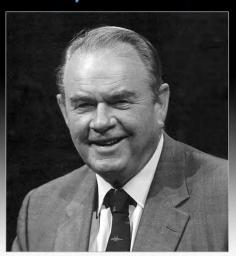


Harry N. Cook



Col. Frank M. Patete

# Speakers



**Governor Henry Bellmon** 

Robert E. Layton, Jr.





### Early Bird Reception

October 27, 1986 6:30-7:30 p.m. Senate Room, Lincoln Plaza

October 28, 1986 Gold Crown Room

8 a.m. Registration, Coffee

9:00 Welcome-Introductory Remarks Gerald E. Borelli, Chairman Oklahoma Water Resources Board

9:20 Federal Water Policy-What's in it for Oklahoma? Robert K.

Dawson, Assistant Secretary of the Army for Civil Works

9:40 What's in the Bureau's Future? C. Dale Duvall, Commissioner, Bureau of Reclamation

10:00 Break

10:20 Remarks—Congressional Delegation The Honorable Don Nickles

The Honorable Dave McCurdy The Honorable James R. Jones The Honorable Mike Synar

11:20 Weak Infrastructure: Down the Drain with Economic Recovery Dr. Francis Tuttle, Oklahoma

Secretary of Commerce

11:40 How Much Quality Can We Afford? John M. (Jack) Campbell,

Deputy Asst. Administrator for Policy, Planning and Evaluation, EPA

12:15 Luncheon Program—Stars Room

Introductions, Special Award Robert S. Kerr, Jr., OWRB

Remarks — Water Pioneer Awards Governor Niah

Water and a Firmer Financial Future The Honorable Henry Bellmon David L. Walters

2:30 Program Resumes in Gold Crown Room Edmond High School Show Choir Act II, Terry Attebery, Director

2:50 Administration Water Policy-Help or Hindrance? Joseph Haas, Associate Chief, USDA Soil Conservation Service

3:10 Cost-Sharing and User Fees-Another View Joseph Farrell, President, American Waterways Operators, Inc.

3:30 Adjournment—Mr. Borelli

## Conference **Speakers**



Robert K. Dawson



C. Dale Duvall



Dr. Francis Tuttle



Campbell

### 1986 Oklahoma Water Pioneers

Col. Francis J. Wilson George W. Reid James "Buster" Hight LT. Gov. Spencer Bemard Clarence Base

A. A. Sewell James H. Irwin Marvin T. Edmison Early R. Cass

Orville B. Saunders W.R. Holway

Looking Back as We Plan Ahead

Sixth Annual **GOVERNOR'S** WATER CONFERENCE Hilton Inn West, Oklahoma City

Early Bird Reception December 3, 1985 6:30-7:30 p.m. Gazebo, Hilton Inn West



December 4, 1985

8 a.m. Registration, Coffee

9:00

Welcome — Gerald E. Borelli. Chairman, Oklahoma Water Resources Board

9:10

Edmond High School Show Choir Act II - Terry Attebery, Director

9:30

Keynote — The Honorable George Nigh, Governor

10:00 Coffee Break

10:20

National Water Policy Lt. Gen. John W. Morris (USA Ret) President, J.W. Morris, Ltd.

10:50

Dam Safety — Who is Responsible? Slide Show Prepared by the National Association of Conservation Districts

11:20

Perspective from Capitol Hill Remarks by Members of Oklahoma Congressional Delegation

12:15

Luncheon Program Presentation of Awards, Remarks Gov. Nigh

The Nation's Water Quality Lawrence J. Jensen, Assistant Administrator Designate Office of Water, U.S. EPA

2:00

Is Cost-Sharing Leaving America's Infrastructure High and Dry? Debate by Brian Robison, Chris Man Heritage Hall Upper School Glenda Ferguson, Coach

Sixth Annual **GOVERNOR'S** WATER **CONFERENCE** 

DECEMBER 4, 1985

3:00

Ground Water Management A. Wayne Wyatt, Manager, High Plains Water Conservation District No. 1

3:30 Break

3:45

Oklahoma's Reach to the Clouds Weather Modification Slide Show Prepared by the Oklahoma Water Resources Board

4:05

Is Chloride Control in Oklahoma's Future? Glenn Sullivan, P.E. The Benham Group

4:30 Closing Remarks, Adjournment

4:30 - 5:30

Cracker Barrel Session - Your opportunity to meet speakers, have your questions answered and visit around the cracker barrel.











### 1985 Oklahoma Water Pioneers

V. Ray Trent Leonard A. Solomon Marvin Scherler P. Ward Perryman Forrest Nelson L.L. (Red) Males Glade R. Kirkpatrick Sen. Robert S. Kerr Nolen J. Fuqua Ferdie J. Deering Bemice N. Crockett Francis J. Borelli

David R. Strickland Harold B. Scoggins Frank Raab Harold Norris Donald 0. McBride Richard C. Longmire Robert S. Kerr Jr. Newton R. Graham L.B. (Ed) Edinger Jacques Cunningham Dr. Lloyd E. Church

# Fifth Annual GOVERNOR'S WATER CONFERENCE

Fifth Annual
GOVERNOR'S

WATER CONFERENCE

Paying for Water— It's Up to Us

Hilton Inn West, Oklahoma City

EARLY BIRD RECEPTION December 11, 6:30-7:30 p.m.

### AGENDA - December 12, 1984

8 a.m. Registration, Coffee

9:00 Welcome – Gerald E. Borelli Chairman, Oklahoma Water Resources

9:15 Keynote — Joan M. Kovalic.

Executive Director, Gen. Counsel,
Interstate Conference on Water Problems

Keynote - James R. Nelson, PhD Prof., Agricultural Economics, OSU

10:00 Remarks - The Honorable

The Honorable Wes Watkins Other Congressmen Invited

10:30 Coffee, Visit Exhibits

11:00 Interstate Water Issues
Michael C. Turpen, Attorney General
R. Thomas Lay, Gen. Counsel, OWRB

12:15 p.m. Luncheon Program, Introductions The Honorable George Nigh.

Governor
The Honorable Robert A. Olson.
Acting Commissioner, Bureau of
Reclamation

1:55 PLANNING AND PAYING FOR WATER

Moderated by JoAnn Puckett, President Oklahoma League of Women Voters

Using Hydraulic Analyses in Planning or Expanding Water Systems

Cecil Wildman, P.E. Settle and Spear Engineers, Inc.

Oklahoma's Loan and Grant Assistance to Water, Sewer Improvements James R. Barnett, Executive Director, Oklaboma Water

Resources Board

Realism in Rate-Setting Claudia Peck, PhD, Asst. Prof. Home Economics, OSU

Rate Structures for Rural Water Marie Dunn, CPA, Oklahoma Rural Water Association Board 3:10 WATER TO GROW ON—WATER FOR COMMERCE AND INDUSTRY

Moderated by Charles L. Tyree Chief, Environmental Affairs, ONG

Who Pays, Who Benefits from Conservation?

Francis M. Epplin, PhD, Aut. Prof. Agricultural Economics, OSU

Conservation Practices as Means of Improving Water Quality John Hassell, Director of Water Quality Programs, Oklaboma Conservation Commission

Oklahoma's Waterway – the Giant is Awakening Robert W. Portiss, Port Director

Port of Catoosa

How Much Regulation for Industry's Water?

4:15-5:30 Cracker Barrel Session - Informal Question and Answer Period "Around the Cracker Barrel."

### **SPEAKERS**



### R. Thomas Lay

R. Thomas Lay assumed his role as General Counsel of the Oklahoma Water Resources Board in 1970. He received his BS degree from Oklahoma State University in 1970 and his JD degree from Oklahoma City University School of Law in 1973. Subsequently, Lay served as

Assistant Municipal Counselor for the City of Oklahoma City and later was engaged in the private practice of law. He has served as Assistant Attorney General and is a member of the Oklahoma State, Oklahoma County and American Bar Association

Lay's present duties involve him in all major aspects of Oklahoma water law.



### Joan M. Kovalic

In addition to leadership of ICWP. Kovalic is an associate of the Washington, D.C. law firm of Talt. Stettinius and Hollister, serving as counsel on environmental, water quality and water resources matters. Kovalic earlier had served as deputy director of EPAs Office of Water Program Operations, during which time she directed the multi-billion dollar grant program

for the construction of municipal wastewater facilities and developed legislation including Clean Water Act amendments of 1981.

Royalic holds a B.A. in social relations and an M.S. in public administration from Carnegie-Mellon University, a J.D. degree from George Washington University Law School and attended seminars at Harvard University and the Brookings Institute. She is a member of the American Bar Association, Pennsylvania Bar Association, District of Columbia Bar Association, U.S. District Court and U.S. Court of Appeals for the District of Columbia.



### Robert A. Olson

Prior to his appointment to Acting Commissioner, Robert A. Olson was Assistant Commissioner — Planning and Operations. He managed the Boulder City, Nevada, area of the

Department of Energy's Western Area Power Administration and directed WAPA's power activities in the southwest, including the marketing of power from Hooven Davis, Parker and Glen Canyon Dams on the Colorado River. He is an electrical engineer, a graduate of South Dakota State University and an associate of the Bureau of Reclamation since 1965.



James R. Nelson

Nelson joined the faculty of Oklahoma State University in 1975 from a previous position on the faculty of the University of Idaho. He holds BS and MS degrees from Texas Technical Uni-

versity and a PhD degree from Oklahoma State University. Nelson has worked in rural development with emphasis on the development of land and water resources and the economics of rural community services. He has authored more than 100 papers on rural development and agricultural economics.



### Michael C. Turpen

Michael C. Turpen was elected Attorney General in 1982, having served previously as Muskogee County District Attorney, Muskogee County Chief Prosecutor and First Assistant District Attorney, He is a graduate of the University of Tulsa and the TU College of Law. In 1975 Turpen was named the Outstanding Young Lawyer of the Year by the Oklahoma Bar Association.

He has served as adjunct professor at Northeastern State University, Connors State College and Oral Roberts University College of Law, and is the recipient of many awards including the 1981 Maurice Merrill Golden Quill Award for his contribution of the outstanding article of the year to the Oklahoma Bar Journal.

Announcing

### The Governor's Fourth Annual Water Conference October 25, 1983

in Conjunction with

The 52nd Annual Convention and Water Resources Seminar of the National Water Resources Association October 24-27, 1983

Tulsa Assembly Center Tulsa, Oklahoma



The Honorable George Nigh Governor of Oklahoma

### AGENDA

### MONDAY, OCTOBER 24° WATER MANAGEMENT SEMINAR

- 8:00 Registration Gallery, Third Level
- 9:30 Welcome, George Proctor, President
  Keynote Address, The Honorable Wes Watkins
- 10:00 "Planning A Skill for Water Managers"
- 11:00 "Effective Meeting Techiniques"
- Noon Recess
- 1:30 "Computers and Information Systems for Water Management"
- 3:00 Adjourn

### TUESDAY, OCTOBER 25. JOINT SESSIONS Oklahoma Governor's Water Conference / NWRA

- 9:00 Musical Interlude, The Marching Scots of McLain High School
- 9:30 Call to Order, George Proctor, NWRA President Welcome, The Honorable James Inhoff, Mayor of Tulsa
- 10:00 Keynote Address, The Honorable Donald Hodel, Secretary of Energy
- 10:30 State of the Association Address, President George Proctor
- 11:00 "The Rio Grande Ribbon of Life," Bureau of Reclamation
- 11:20 Address The Honorable Don Nickles
- 12:30 Awards Luncheon Luncheon Address, The Honorable George Nigh, Governor
- 2:30 Announcements, Gerald E. Borelli, Chairman
  James R. Barnett, Executive Director
  Oklahoma Water Resources Board
  "Financing Water Projects, Oklahoma Style" Robert M. Cochran
  Senior Vice President, Stifel Nicolaus & Company

3:10 Panel Discussion - "Outlook for State and Regional Water Development" Brig. Gen. Robert J. Dacey, U.S. Army Corps of Engineers Commander and Division Engineer, Southwest Division Eugene Hinds, Director, Bureau of Reclamation Southwest Region Roland R. Willis, State Conservationist, Soil Conservation Service Alfred Clebsch, Jr., Regional Hydrologist, U.S. Geological Survey

4:30 Adjourn

### WEDNESDAY, OCTOBER 26

- 9:00 Opening Remarks
  Vern Fahy, Director, North Dakota
  "The Continuing Struggle for Water Projects"
  The Honorable Allen Olson, Governor of North Dakota
- 9:30 "Developing Ground Water Resources," Dr. Wayne Pettyjohn Chairman, Department of Geology, OSU
- 10:00 "World Water Watch," Valsin Marmillion, Manager of Public Information Programs, Atlantic Richfield Corporation, Los Angeles
- 10:45 "Financing Cost-Shared Projects," N.L. Hagan, Vice President Municipal Utilities Department, Merrill Lynch, New York City
- 11:15 Presentation Lt. Gen. Joseph K. Bratton, Chief of Engineers U.S. Army Corps of Engineers
- 11:45 Presentation The Honorable Robert Broadbent Commissioner, Bureau of Reclamation
- 12:30 Recess
- 2:30 "Hydropower," Multi-Image Show by the Bureau of Reclamation
- 3:00 Washington Report, J.W. "Pat" O'Meara NWRA Executive Vice President
- 3:30 Committee Chair Reports, Adoption of Resolutions, Business Meeting
- 5:00 Adjourn
- 7:00 All States Banquet, John Specht, Master of Ceremonies



Rep. Wes Watkins



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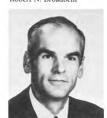
Robert M. Cochran



Brig. Gen. Robert J. Dacey



Commissioner Robert N. Broadbent



Secretary Donald Hodel



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Lt. Gen. Joseph K. Bratton

NORS WATER CONFERENCE GOVERNORS WATER CONFIER CONFERENCE GOVERNORS WATER CONFERENCE OVERNORS WATER CONFERENCE GOVERNORS WATER CONFERENCE GOVERNORS

11:00

NOON

THE EPA'S CHANGING ROLE

Frederic A. Eidsness, Jr., Assistant

NEW RESPONSIBILITIES

FOR OKLAHOMA

The Benham Group

Governor George Nigh

Pro Tempore, Senate

Water Resources

House of Representatives

Administrator, Office of Water, EPA

Glenn H. Sullivan, Executive Vice-President,

LUNCHEON PROGRAM - South Ballroom

The Honorable Marvin York, President

The Honorable Dan Draper, Speaker,

CONSERVATION -CALIFORNIA'S

HOTTEST EXPORT - Ronald B. Robie,

CONCURRENT SESSIONS - North Ballroom

Director, California Department of

Public Water Supply - Allegheny Room

Water for Agriculture - Cumberland Room

Cheese and crackers in a relaxed atmosphere

and an opportunity to have your question

Water for Commerce and Industry -

Water Awareness - Shenandoah Room

4:15-5:30 CRACKER BARREL SESSION - Gazebo

answered by an expert.

### Water: Meeting the Challenge

December 7, 1982

Hilton Inn West, Oklahoma City 10:30



Governor George Nigh

8 a.m. REGISTRATION - Lobby

9:00 GENERAL SESSION - North Ballroom Welcome - Robert S. Kerr, Jr.,

Conference Chairman

9:15 KEYNOTE ADDRESS

The Honorable George Nigh
Governor of Oklahoma

9:45 FEDERAL WATER PROGRAMS

William R. Gianelli, Assistant Secretary of the Army for Civil Works



Frederic A. Eidsness administers the Clean Water and Safe Drinking Water Acts, manages a multi-billion dollar sewage treatment program, establishes national regulations to control the discharge of industrial pollutants and oversees \$70 million in state program

William R. Gianelli has been

responsible for the Army Corps of

Engineers Civil Works Program for

water resources since June 1981. He

was director of the California Depart-

ment of Water Resources during con-

struction of initial features of the \$2.5

billion State Water Project.



Ronald B. Robie, director, California Department of Water Resources, has served as vice-chairman of the State Water Resources Control Board, Consultant to the Assembly Committee on Water (California Legislature), and is a nationally recognized authority on water conservation.



Glenn H. Sullivan, executive vicepresident and principal water resources engineer with the Benham Group, is a specialist in wastewater and water resources development. He has expertise in conducting feasibility and economic studies and solving water and energy problems.

### MODERATORS AND PANELISTS

Public Water Supply - Allegheny Room

Moderator: William Morgan, Mayor, City of Norman

### Panelists:

Dr. Jay Lehr, Executive Director, National Water Well Assn. Andy Peck, Oklahoma Representative, Bureau of Reclamation John Marsh, President, Engineering Enterprises, Inc. Larry E. Stephenson, State Director, FmHA Ed Schermerhorn, Rate Review Committee, City of Tulsa

Water for Agriculture - Cumberland Room

Moderator: Ferdie J. Deering, Former Editor, "Oklahoma Farmer Stockman"

### Panelists:

Dr. Norman N. Durham, Director, Oklahoma Water Resources Research Institute, OSU Bob Day, Irrigation Specialist, SCS Dr. Billy Tucker, Extension Agronomist, OSU

### Mini-Reports by:

Mike Mathis, Hydrologist Supervisor, OWRB Joseph P. Marak, Section Supervisor, State Board of Agriculture Robert Toole, Assistant Director, Oklahoma Conservation

Commission

John Morgan, Assistant Manager of Pollution Abatement, Oklahoma Corporation Commission

Water Awareness Shenandoah Room

Moderator: JoAnn Puckett, President, League of Women Voters

### Panelists:

R. Thomas Lay, General Counsel, OWRB

Dr. Wayne Pettyjohn, Head of Department of Geology, OSU Dr. Harry Mapp, Professor of Agricultural Economics, OSU Jim Schuelein, Hydrologist-Meteorologist, OWRB

### Water for Commerce and Industry Blueridge Room

Moderator: Ronn Cupp, Director of Governmental Affairs, Oklahoma State Chamber of Commerce

### Panelists:

Charles Tyree, Chief, Environmental Affairs, OG&E Sen. Tim Leonard, Oklahoma State Legislature Bill Bryan, Engineer, Cities Service Company Harry Hansen, President, Pollution Control Assn., Inc. Rosie Stoos, Executive Director, Lake Eufaula Assn. Dr. Wayne Turner, Professor, Rick Webb, Research Engineer, OSU School of Industrial Engineering

# Water: A Time For Action

The Governor's Second Annual Water Conference

December 1, 1981

Lincoln Plaza Inn Oklahoma City, Oklahoma Water: A Time For Action

**AGENDA** 

### 8 A.M. REGISTRATION, COFFEE

# 9:00 WELCOME, OPENING REMARKS James H. Norick, Honorary Host Robert J. LaFortune, Conference Chairman

9:20 KEYNOTE ADDRESS

The Honorable George Nigh

### 9:45 CONCURRENT SESSIONS, DISCUSSION

Water for Agriculture Water for Commerce and Industry Public Water Supply

### NOON LUNCHEON PROGRAM

"National Water Policy — A New Partnership,"
The Honorable Garrey E. Carruthers, Assistant
Secretary of Interior for Land and Water
Resources
The Honorable Marvin York, President Pro

Tempore, Senate The Honorable Dan Draper, Speaker, House of Representatives

### 2 P.M. CONCURRENT SESSIONS, ACTION RECOMMENDATIONS

Water for Agriculture Water for Commerce and Industry Rural Water Municipal Water

### 4:15 CO-CHAIRMEN REPORTS, RESPONSE

Robert J. LaFortune Gerald E. Borelli Patty Eaton Dr. Tom Hurst

### 4:45 CLOSING REMARKS, ADJOURN

Gov. Nigh James H. Norick

### CONFERENCE SPEAKERS



Dr. Carruthers



Mr. Yor



Mr. LaFortune



Mr. Norick





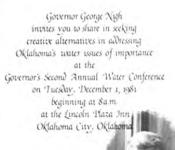
Mrs. Eaton



Dr. Hurst

"The test of our progress is not whether we add more to the abundance of those who have too much; it is whether we provide enough for those who have too little."

-Franklin Delano Roosevelt



### THE GOVERNOR'S WATER CONFERENCE

"WATER: The Issue of the 80s"

December 15, 1980

Skirvin Plaza Hotel Sheraton Century Center
One Park Avenue Broadway and Main
Oklahoma City, Oklahoma



George Nigh



GEORGE NIGH

STATE OF OKLAHOMA
OFFICE OF THE GOVERNOR
OKLAHOMA CITY
December 15, 1980

CREETINGS:

It is certainly a pleasure to welcome you to our first Statewide Water Conference, "Water: The Issue of the 80's", a forum for the discussion of Oklahoma's water future.

I am firmly convinced that water will replace energy in the next ten years as Oklahoma's most scrious challenge. This problem is rapidly becoming more evident, especially when we look sack at the severe water problems faced by hundreds of our communities this past summer.

It is essential, therefore, that we join together to discuss all aspects of this critical issue. We must be aware of the need to develop a comprehensive statewide plan of water management—a plan that will assure dependable supplies of good water to all Oklahomans, now and in the years ahead.

As Governor, I urge you to assume an active role in the discussions here today as we work together for Oklahoma.

"Coming together is a beginning, Staying Together is progress, Working together is success!"





### AGENDA

8:00 - 9:00 Registration

### SHERATON CENTURY CENTER

9:00 – 9:05 Opening Remarks
Gerald Borelli, Chairman
Oklahoma Water Resources Board

9:05 – 9:15 Welcome and Introduction Robert S. Kerr, Jr., Conference Chairman

9:15 – 9:40 Keynote Address
The Honorable George Nigh, Governor

9:40 – 10:10 Water Resources Development Financing

— A Discussion of Alternatives

Dr. Herbert Grubb, Director of Planning Texas Department of Water Resources

10:10 – 10:30 Arkansas Red River Basin Chloride Control W.M. (Bill) Gamel, Chief of Engineering Tulsa District Corps of Engineers

10:30 -- 10:50 Oklahoma Water, Present and Future

Joe Hall, Conservation Officer
Western Area Power Administration
Golden, Colorado

10:50 – 11:20 Oklahoma Comprehensive Water Plan James R. Barnett, Executive Director Oklahoma Water Resources Board

11:20 - 11:30 Wrap Up Robert S. Kerr, Jr.

### SKIRVIN PLAZA HOTEL

11:45 - 1:30 Luncheon

Jim Gillie, Assistant to the Vice President Public Affairs Phillips Petroleum Company

Congressional Delegates in Attendance

1:30 - 3:15 Afternoon Sessions

3:15 - 4:20 General Assembly

Summarization of Afternoon Sessions

by Moderators

4:20 - 4:30 Closing Remarks

Governor Nigh

4:30 Adjourn