

# AQUIFER RECHARGE

Annual Conference - Monday, Jan 30 and Tuesday, Jan 31, 2012  
Hilton Hotel Ontario Airport, Ontario, California

## WATER RESOURCES ISSUES

**American Ground Water Trust  
Association of Ground Water Agencies**

in cooperation with:

**Groundwater Resources Association of California**

**California Groundwater Coalition**

**IAH Commission – Groundwater for Decision-Makers**

**Southern California Water Utilities Association**



## PROGRAM PRESENTER BIOGRAPHIC INFORMATION SPONSOR CONTACT INFORMATION

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# PRESENTATIONS AND PRESENTERS – Monday, January 30

- 9:00 – 10:00      **REGISTRATION, SIGN-IN AND EXHIBITOR SET-UP**
- 10:00 – 10:30      **WELCOME, OPENING REMARKS**
- ◆ Tony Zampello, Chairman, Association of Ground Water Agencies
  - ◆ Tim Parker, Chairman, American Ground Water Trust

## Session 1 - STATUS OF AQUIFER RECHARGE PROJECTS IN THE US

Moderator Andrew Stone, American Ground Water Trust

- 10:30 – 11:00      **OPENING KEYNOTE PRESENTATION**
- OVERVIEW OF AQUIFER RECHARGE – PAST, PRESENT & FUTURE**
- ◆ David Pyne, President, ASR Systems, Gainesville, FL
- 11:00 – 11:30      **RECHARGE PROJECTS IN THE NORTHWEST**
- ◆ Jeff Barry, Business Development Director, GSI Water Solutions, Portland, OR
- 11:30 – 12:00      **STATUS OF RECHARGE PROJECTS EAST OF THE MISSISSIPPI**
- ◆ John Jansen, Senior Managing Hydrogeologist, Cardno Entrix, Cedarburg, WI
- 12:00 – 12:30      **AQUIFER RECHARGE IN ARIZONA**
- ◆ Rita Maguire, Attorney, Maguire & Pearce, PLLC, Phoenix, AZ
- 12:30 – 1:45      **LUNCH AND KEYNOTE PRESENTATION**
- ROLE OF AQUIFER RECHARGE IN THE FLORIDA EVERGLADES RESTORATION PROJECT**
- ◆ June Mirecki, Senior Hydrogeologist, Geotechnical Branch, US Army Corps of Engineers, Jacksonville, FL

## Session 2 - CASE STUDIES OF AQUIFER RECHARGE PROJECTS

Moderator Carol Williams, Main San Gabriel Watermaster

- 1:45 – 2:15      **HYDROLOGY & POLITICS OF THE SNAKE RIVER RECHARGE PROJECT, IDAHO**
- ◆ Clive Strong, Attorney, Natural Resources Division, Office of Idaho Attorney General, Boise, ID
- 2:15 – 2:45      **AQUIFER RECHARGE IN EL PASO, TEXAS**
- ◆ Bill Hutchison, Director, Groundwater Resources Division, LBG-Guyton Associates, Austin, TX
- 2:45 – 3:15      **HYDRAULIC FRACTURING OF DENVER BASIN RECHARGE WELLS**
- ◆ Courtney Hemenway, President, Hemenway Groundwater Engineering, Parker, CO
- 3:15 – 3:30      **BREAK**

## Session 3 - RECHARGING CALIFORNIA: LATEST ON STATUS, NEEDS AND POLICY ISSUES

Panel Moderator Tim Parker, Parker Groundwater

- 3:30 – 5:30      **RECHARGING CALIFORNIA**
- ◆ Noah Garrison, Natural Resources Defense Council
- PROGRESS ON INVENTORY OF STATEWIDE GROUNDWATER RECHARGE PROJECTS**
- ◆ Danielle Blacet, Senior Regulatory Advocate, Association of California Water Agencies, Sacramento, CA
- PLAN FOR STATEWIDE CONJUNCTIVE USE AND INCREASED RECHARGE IN CALIFORNIA**
- ◆ Greg Thomas, President, Natural Heritage Institute, San Francisco, CA
- PROGRESS ON PREPARATION OF A STATEWIDE ASR POLICY**
- ◆ Robert Busby, Supervising Engineering Geologist, Central Valley Regional Water Quality Control Board, Rancho Cordova, CA
- WATER RIGHTS AND WASTE DISCHARGE PERMITS**
- ◆ David Aladjem, Partner, Downey Brand, Sacramento, CA

5:30 – 7:00

### RECEPTION - CASH-BAR

### NETWORKING - TALK WITH THE PRESENTERS - MEET THE EXHIBITORS

Reception hors d'oeuvres sponsor: BHFS

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# PRESENTATIONS AND PRESENTERS – Tuesday, January 31

## Session 4 - RECHARGE APPROACHES AND TECHNOLOGIES

Moderator Tony Zampielo, Main San Gabriel Basin Watermaster

- 8:00 – 8:30      **ESTABLISHING REALISTIC EXPECTATIONS FOR LONG TERM ASR PERFORMANCE**  
◆ Daniel Wendell, Principal Hydrogeologist, Groundwater Dynamics LLC, Oakland, CA
- 8:30 -9:00      **GROUNDWATER BANKING, STORMWATER CAPTURE & RECHARGE IN SONOMA COUNTY – FOUNDATIONAL STUDIES**  
◆ Marcus Trotta, Hydrogeologist, Sonoma County Water Agency, Santa Rosa, CA
- 9:00 – 9:30      **TECHNOLOGIES THAT HAVE BEEN PROPOSED AND IMPLEMENTED TO OVERCOME AQUIFER RECHARGE REGULATORY ISSUES IN FLORIDA**  
◆ Don Ellison, ASR Projects Coordinator, Southwest Florida Water Management District, Brooksville, FL
- 9:30 -10:00      **MANAGED AQUIFER RECHARGE AND SALT MANAGEMENT CHALLENGES – The “maximum benefit” program and OBMP implementation in the Chino Basin**  
◆ Mark Wildermuth, President, Wildermuth Environmental Inc. Lake Forest, CA
- 10:00 – 10:30      BREAK

## Session 5 - CALIFORNIA RECHARGE PROJECTS

Moderator Ken Manning, San Gabriel Basin Water Quality Authority

- 10:30 – 11:00      **CRITICAL ROLE OF AQUIFER RECHARGE FOR ORANGE COUNTY**  
◆ Adam Hutchinson, Director of Recharge Operations, Orange County Water District, Fountain Valley, CA
- 11:00 – 11:30      **IMPLEMENTATION OF THE SWITCH TO 100% RECYCLED WATER FOR SEAWATER INTRUSION BARRIER RECHARGE**  
◆ Ted Johnson, Chief Hydrogeologist, Water Replenishment District of Southern California, Lakewood CA
- 11:30 – 12:00      **TRIALS AND TRIBULATIONS OF PERMITTING AN ASR PROJECT IN THE CENTRAL VALLEY RWQCB REGION**  
◆ Derrick Whitehead, Director of Environmental Utilities, City of Roseville, CA
- 12:00 – 12:30      **RESOLVING LEGAL AND INSTITUTIONAL IMPEDIMENTS TO CONJUNCTIVE USE AND ENHANCED RECHARGE IN CALIFORNIA**  
◆ Russell McGlothlin, Shareholder, Brownstein Hyatt Farber Schreck, Santa Barbara, CA
- 12:30 – 1:45      **LUNCH AND KEYNOTE PRESENTATION**  
**GROUNDWATER MANAGEMENT AND INCREASED AQUIFER RECHARGE**  
**IN THE DELTA PLAN POLICY RECOMMENDATIONS**  
◆ Martha Davis, Senior Policy Advisor, Delta Stewardship Council, Sacramento, CA

## Session 6 CALIFORNIA RECHARGE PROJECTS

Moderator Ted Johnson, Water Replenishment District of Southern California

- 1:45-2:15      **UPDATE ON THE CADIZ VALLEY WATER CONSERVATION, STORAGE AND RECOVERY PROJECT**  
◆ Terry Foreman, Vice-President, CH2M Hill, Thousand Oaks, CA and Dennis Williams, President, Geoscience Support Services, Claremont, CA
- 2:15 – 2:45      **METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA PERSPECTIVE ON MANAGED AQUIFER RECHARGE CHALLENGES AND SUCCESSES**  
◆ Kathy Kunysz, Program Manager, Metropolitan Water District of Southern California, Los Angeles, CA
- 2:45 – 3:15      **ASR ON THE MONTEREY PENINSULA**  
◆ Stephen P. Tanner, Pueblo Water Resources, Inc. Ventura, CA
- 3:15 – 3:45      **CALIFORNIA AGRICULTURE – SCALING UP GROUNDWATER RECHARGE SUCCESS**  
◆ Juliet Christian Smith, Senior Research Associate, Pacific Institute, Oakland, CA
- 3:45      **CONFERENCE SUMMARY AND CLOSING REMARKS**  
◆ Amy Steinfeld, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA

Wednesday February 1<sup>st</sup>

## FIELD TRIP TO LONG BEACH SALTWATER BARRIER RECHARGE SITE

Field trip participants will meet at:      **Water Replenishment District of Southern California**  
The street address is:                      **4040 Paramount Blvd, Lakewood, CA 90712**

(Easy access from the 710, 405 or 605. Detailed directions will be sent to those who register for the field trip)

Field trip leader: ◆ Ted Johnson, Chief Hydrogeologist Water Replenishment District of Southern California

9:00 – 9:30      Coffee & donuts at WRD HQ in Lakewood, CA

9:30 – 10:15      Presentation giving an overview of groundwater management in the Central and West Coast Basins including managed aquifer recharge, recycled water reuse, seawater barrier injection, and the struggles of developing a storage plan in the basins.

10:15 – 12 noon      Visits to the Vander Lans Water Treatment Facility in Long Beach where recycled water has received advanced treatment with microfiltration, reverse osmosis and ultraviolet light since 2005 prior to injection into the Alamitos seawater barrier, and a visit to one of the sea-water intrusion barrier wells receiving this treated water.



# American Ground Water Trust      Association of Ground Water Agencies

## 2012 CALIFORNIA AQUIFER RECHARGE CONFERENCE

### MODERATOR AND PRESENTER BIOGRAPHICAL INFORMATION

Listed in program order

#### ◆ **Tony Zampielo, Assistant Executive Officer, Main San Gabriel Basin Watermaster, and Executive Officer- Raymond Basin Management Board, Azusa, CA**

As Assistant Executive Officer for the Main San Gabriel Basin Watermaster, Mr. Zampielo directs staff functions associated with basin management as it directly relates to groundwater production, groundwater quality, well construction, groundwater treatment and resource planning. As Executive Officer for the Raymond Basin Management Board Mr. Zampielo answers directly to a ten member board of directors and oversees the groundwater quality and supply management activities as well as administration of the Raymond Basin Groundwater Basin Adjudication.

Mr. Zampielo was appointed to the position of Executive Officer for the Raymond Basin Management Board in 2002 and in 2004 he accepted the additional position of Assistant Executive Officer for the Main Basin San Gabriel Basin Watermaster. Including his time with Watermaster, Mr. Zampielo has over twenty-eight years of water management and resource planning experience with the City of Monrovia and City of Glendora and has previously held the position of General Manager with La Habra Heights County Water District and Foothill Municipal Water District.

Mr. Zampielo holds a Bachelor's Degree in Business Management from the University of Phoenix and is certified by the State of California as a Water Treatment Operator (T-3) and Water Distribution Operator (D-2). Mr. Zampielo Currently serves as President of The Association of Ground Water Agencies (AGWA).

#### ◆ **Tim Parker, President, Parker Groundwater, Sacramento, CA - Chairman American Ground Water Trust**

Mr. Parker's groundwater experience spans more than 25 years and includes groundwater resources development, groundwater management, groundwater monitoring, water policy analysis, and contaminant hydrogeology in public and private sectors. He was previously with Schlumberger Water and Carbon Services, and prior to that with the California Department of Water Resources in the Conjunctive Water Management Program.

He is a California Professional Geologist, Certified Engineering Geologist, and Certified Hydrogeologist, and co-author of the book California Groundwater Management, 2nd edition 2005. Mr. Parker serves the American Ground Water Trust as Chair, Groundwater Resources Association of California as a Director and Legislative Committee Chair, and the California Groundwater Coalition as Director. Additionally, Mr. Parker serves as a Director on the National Ground Water Association-Ground Water Scientists and Engineers Division and is actively engaged in the Association of California Water Agencies Groundwater Committee current efforts to develop a strategic framework for sustainable groundwater management in California.

#### ◆ **Andrew Stone, American Ground Water Trust, Concord, NH**

Andrew Stone has over thirty five years of ground water experience in Africa and the U.S. as a university professor, ground water consultant and ground water advocate & educator. He has first-hand experience of ground water exploration, well design and source protection in a wide variety of geologic environments. As the director of the AGWT's education programs he has convened and coordinated over one hundred and fifty conference programs related to ground source heating and cooling technology, well design, ground water management, aquifer storage recovery, conjunctive use, water banking, and asset management. From 1990 to 2002, as adjunct professor, he taught an annual course on Ground Water Protection Policy in the Masters Degree Program at Antioch New England Graduate School. He is the Director of the *International Association of Hydrogeologists' Commission on Groundwater for Decision Makers*.

#### ◆ **David Pyne, President, ASR Systems, Gainesville, FL**

David Pyne is the President of ASR Systems LLC, Gainesville, Florida. He has pioneered development of ASR technology during the past 30 years and has directed or provided technical consultant assistance during development of about half of the 95 operating ASR wellfields in the United States, including 10 of the 13 ASR wellfields in Florida. He is a civil engineer with extensive national and international experience, and is the author of the only book published on ASR, the second edition of which was released in 2006.

#### ◆ **Jeff Barry, Business Development Director, GSI Water Solutions, Portland, OR**

Jeff Barry is GSI Business Development Director and Principal Hydrogeologist. He provides senior review of hydrogeologic and groundwater resource projects. He is an expert in aquifer storage and recovery technology. He conducts production and collector well siting, design, installation, rehabilitation, and testing, as well as dewatering projects and wellfield capacity and siting studies and permitting. Jeff is knowledgeable about state regulatory programs related to groundwater protection and water rights. He frequently presents technical concepts to regulatory and public audiences, and provides technical expertise to support permitting and litigation. He has an MS, Hydrogeology, from University of Nevada-Reno and a BS in Natural Resources Planning, from Humboldt State University. He is a Registered Geologist and a Certified Water Rights Examiner in Oregon and a Licensed Geologist and Hydrogeologist in Washington.

#### ◆ **John Jansen, Senior Managing Hydrogeologist, Cardno Entrix, Cedarburg, WI**

Mr. Jansen has a B.S. in Geology and a M.S. and Ph.D. in Geological Sciences with an emphasis in hydrogeology and geophysics, all from the University of Wisconsin-Milwaukee. He is a Senior Managing Hydrogeologist for Cardno ENTRIX, a natural resource management company with over 30 offices in 28 states and part of Cardno, an Australian based international engineering company. John works on a wide variety of ground water resource issues around the country. John holds three U.S. Patents on water well related technologies and is the lead author of the chapter on borehole geophysics in the third edition of Groundwater and Wells published in 2007. He is a Professional Geologist in seven states, and a Registered Geophysicist in California.

#### ◆ **Rita Maguire, Attorney, Maguire & Pearce, PLLC, Phoenix, AZ**

Rita P. Maguire is a founding member of Maguire & Pearce, PLLC a Phoenix-based law firm with an emphasis on water rights and water management in the Southwest. Prior to forming the law firm, Ms. Maguire served as Director of the Arizona Department of Water Resources from 1993 through 2001. During her tenure as the Department's longest serving Director, Ms. Maguire represented the state's interests in the Colorado River Basin, was a key figure in the development of the Arizona Water Bank Authority, developed an extensive aquifer recharge and recovery program in the state's major metropolitan areas, and played a central role in Indian water rights negotiations in Arizona.

As a recognized expert on western water policy, she has written extensively on the subject and makes frequent public speaking appearances, and is a contributor to editorial pages and industry publications. Her client list includes public and private water providers, mining companies, international corporations and real estate

developers. Ms. Maguire holds three degrees from Arizona State University: a Juris Doctorate, a Masters in Business Administration, and a Bachelor of Science. In 2001, Ms. Maguire was awarded the Outstanding Alumnus of the Sandra Day O'Connor College of Law

#### ◆ **June Mirecki, Senior Hydrogeologist, Geotechnical Branch, US Army Corps of Engineers, Jacksonville, FL**

June Mirecki has served as a technical team member on ASR systems development and testing in Charleston SC and Florida since 1994, on projects with the US Geological Survey, Southwest Florida Water Management District, and the Army Corps of Engineers. Her technical areas of research are ground-water geochemistry and geochemical modeling, particularly during ASR cycle testing. Currently she is the technical lead for ASR projects in the Jacksonville District. She earned a Ph.D. in geochemistry from University of Delaware back in the Paleocene. She is P.G. in Florida, and an associate editor for Applied Geochemistry and the Journal of Environmental and Engineering Geoscience.

#### ◆ **Carol Williams, Main San Gabriel Watermaster, Azusa, CA**

As Executive Officer of the Main San Gabriel Basin Watermaster, Carol Williams manages the operations of the San Gabriel Valley's court-appointed groundwater management agency. She reports to the nine person Watermaster Board which oversees pumping, groundwater replenishment, water rights and water quality in the basin. Ms. Williams also serves as Executive Secretary of the San Gabriel Valley Water Association and the Central Basin Water Association, and as Assistant Secretary/treasurer if the San Gabriel Valley Protective Association. Additionally she serves as an officer of the Association of Groundwater Agencies and the California Groundwater Association.

Ms. Williams joined the Watermaster in 1990, after spending several years with a local water utility. She has served as the Watermaster's Executive Officer since 1994. Ms. Williams graduated Cum Laude from Cal Poly, Pomona with a Bachelor of Science degree in Communication Arts.

#### ◆ **Clive Strong, Natural Resources Division, Office of Idaho Attorney General, Boise, ID**

Clive J. Strong is Chief of the Natural Resources Division for the Office of the Idaho Attorney General. Mr. Strong works exclusively in the areas of environmental, natural resources and Indian Law. Mr. Strong is the lead attorney for the State of Idaho in the Snake River Basin General Stream Adjudication, an adjudication of over 150,000 claims to water rights. As part of the adjudication, he negotiated the 1990 Fort Hall Indian Water Rights Agreement, the 2004 Snake River Water Rights Agreement, the Shoshone-Paiute Reserved Water Rights Agreement and the Wild and Scenic Rivers Agreement.

Mr. Strong is coordinating litigation related to the conjunctive administration of surface and ground water of the Snake River Basin. Mr. Strong mediated three interim conjunctive management agreements and negotiated the leveraged buyout of Pristine Springs, a fish farm facility. The buyout successfully resolved a water delivery call, a municipal water supply problem, and a pending water quality lawsuit.

Mr. Strong earned his LL.M. in 1983 from the University of Michigan, his J.D. in 1977 from the University of Idaho and his B.S. in Forestry in 1974 from the University of Idaho. Mr. Strong argued the *United States v. Idaho*, 508 U.S. 1 (1993) and *Idaho v. Coeur d'Alene Tribe of Idaho*, 521 U.S. 261 (1997) cases before the United States Supreme Court.

#### ◆ **Bill Hutchison, Associate, LBG-Guyton Associates, Austin, TX**

Dr. Hutchison is a Professional Engineer and Professional Geoscientist with over 25 years of experience in groundwater and surface water hydrology, water resources development and planning, utility planning and operations, permitting, numerical flow and solute transport modeling, and litigation support. As a consultant, he has completed projects for water districts, counties and municipalities, Indian Tribes, corporate farming interests, mining interests, and engineering and environmental firms. Consultations have also included the technical aspects of surface water and groundwater rights, and have included expert witness testimony.

As an executive with El Paso Water Utilities and, later, as the Director of the Groundwater Resources Division of the Texas Water Development Board, he has extensive experience with well construction (both production and injection), desalination plant planning and construction, regional water planning, joint groundwater planning, groundwater model development and application, real estate acquisition, and strategic planning.

Dr. Hutchison received a B.S. in Soil and Water Science from the University of California, Davis, an M.S. in Hydrology from the University of Arizona, and a Ph.D. in Environmental Science and Engineering from the University of Texas at El Paso. He is licensed as a Professional Engineer and Professional Geoscientist in Texas, and as Registered Professional Geologist in Mississippi.

#### ◆ **Courtney Hemenway, President, Hemenway Groundwater Engineering, Parker, CO**

Courtney Hemenway is a Colorado native and graduate of Colorado State University with Bachelor and Master of Science degrees in Civil Engineering. The M. S. degree focused on groundwater hydrology. Mr. Hemenway is the President of Hemenway Groundwater Engineering, Inc. and has been involved in groundwater hydrology for over 30 years. In his groundwater hydrology consulting, Mr. Hemenway has conducted numerous municipal groundwater development programs and has participated in many water resources management projects involving the conjunctive use and interaction of groundwater and surface water. Over his career, Mr. Hemenway has been involved in the design, drilling, and testing of over 90 Denver Basin wells. He has also been the project engineer on several Aquifer Storage and Recovery (ASR) projects since 1991 and has managed the installation and operation of 33 ASR wells in the Denver Basin

#### ◆ **Noah Garrison, Project Attorney, Natural Resources Defense Council, San Francisco, CA**

Noah Garrison is a project attorney with the coastal water project in Los Angeles. His work focuses on improving water quality in California through enforcement of the Clean Water Act and related coastal laws. Noah is a graduate of the UCLA School of Law, and holds a master's degree in geological sciences from the University of California, Santa Barbara and a bachelor's degree in earth and environmental sciences from Wesleyan University.

#### ◆ **Danielle Blacet, Senior Regulatory Advocate, Association of California Water Agencies, Sacramento, CA**

Danielle Blacet joined ACWA in 2004 and currently manages regulatory matters related to groundwater quality and supply and the federal and state Safe Drinking Water Acts. She is a principal author of ACWA's strategic policy document, *Sustainability from the Ground Up: A Framework for Groundwater Management in California*. Ms. Blacet is the liaison for ACWA's Groundwater Committee, the Water Quality Committee and the Safe Drinking Water Subcommittee.

Ms. Blacet previously served as a lobbyist with Western Growers Association along with managing their charitable foundation, which provides grants for water-efficient school gardens in California and Arizona. She also has experience in political consulting and public affairs for statewide and national clients. Ms. Blacet holds a Bachelor of Arts degree in International Economics and Political Science from the University of California at Davis. She is a member of the Groundwater Resources Association and the American Water Works Association.

#### ◆ **Greg Thomas, President, Natural Heritage Institute, San Francisco, CA**

Gregory is the Institute's founder and president. Greg has practiced natural resources law since 1974, primarily for non-profit conservation organizations. In the 1970's, he played a central role in the enactment of many of the foundational federal laws in the energy and environmental field. He was a senior staff attorney with the Natural Resources Defense Council's international program, and became the managing attorney of its San Francisco office. He was a Fulbright Professor and advisor to the national environmental ministry of China, and he taught law at UCLA and UC Berkeley. Greg's practice has encompassed many areas of natural resource management, including water resources, energy, air quality, biodiversity, environmental planning, and international conservation. He has 35 years of experience in litigation, administrative trials, legislative advocacy, policy analysis, institutional design, and consensus building processes. At NHI, he develops and manages large-scale projects in California, throughout the United States and internationally.

◆ **Robert Busby, Supervising Engineering Geologist, Central Valley Regional Water Quality Control Board, Rancho Cordova, CA**

Robert Busby is a Supervising Engineering Geologist for the California Regional Water Quality Control Board, Central Valley Region in Sacramento, California. Robert manages a section of supervisory seniors and staff who enforce the dairy, landfill, mines and waste discharge to land regulatory programs. Robert has thirteen years of experience as a regulator for the State of California and six years of varied project management experience as a consultant. Robert has a Masters of Sciences degree in Hydrologic Sciences from the University of California at Davis. Robert and his staff recently developed a draft state-wide General Order for the permitting of Aquifer Storage and Recovery projects. Robert's previous work included supervising staff to assure implementation of Water Board requirements in the cleanup of large military facilities with extensive soil and groundwater contamination including McClellan Air Force Base - the highest ranked military Superfund Site in terms of complexity and cleanup funding. Robert negotiated many complex technical and legal issues with the USEPA and DoD. He also was engaged in supporting early transfers at former military bases which require the Governor's approval.

◆ **David Aladjem, Partner, Downey Brand, Sacramento, CA**

Mr. Aladjem regularly serves as counsel for public agencies in connection with complex multiparty water negotiations throughout California. Currently, he represents two municipal water districts in Southern California that have just acquired water rights that would provide a permanent water supply serving between 100,000 and 125,000 people. This effort has included overseeing the preparation of an environmental impact report (EIR) under the California Environmental Quality Act (CEQA); a contested water right hearing before the California State Water Resources Control Board; and multiparty negotiations with water districts, environmental groups, and state and federal regulatory agencies. He also recently served as counsel for three statewide and national associations in connection with the successful negotiation of a statewide policy regarding the use of recycled water. For that path-breaking agreement, he was awarded the 2009 Excellence in Water Leadership Award from the Association of California Water Agencies. This past year, he was deeply involved in the legislation that culminated in the landmark water conservation legislation that will require 20% water conservation in urban areas of California.

Mr. Aladjem has served as counsel to many agencies involved in complicated water rights negotiations. He also has extensive experience in negotiating the terms of water transfers with state and federal agencies, including issues relating to the regulatory restrictions placed on water rights as well as compliance with CEQA, the National Environmental Policy Act and the state and federal endangered species acts. Mr. Aladjem also served as counsel for a water agency located on the Central California coast. In that role, he counseled the agency in the reoperation of its reservoirs to reverse a half-century of seawater intrusion in coastal groundwater basins.

Mr. Aladjem is admitted to practice before all state courts in California, before the U.S. District Courts for the Central and Eastern Districts of California, before the U.S. Court of Appeals for the Ninth Circuit, and the U.S. Supreme Court. He attended law school at the University of California, Berkeley School of Law (Boalt Hall), and received his undergraduate degree from Stanford University, where he was elected to Phi Beta Kappa.

◆ **Daniel Wendell, Principal Hydrogeologist, Groundwater Dynamics LLC, Oakland, CA**

Mr. Wendell has 25 years of professional experience in groundwater resource analysis, including water resource investigations; safe yield studies; local and regional hydrostratigraphic studies; and computer modeling of groundwater flow, including transport and subsidence. He has evaluated and designed numerous conjunctive use projects, including those using reclaimed water, and has in-depth experience with the siting, design, construction, testing, operation and maintenance, and redevelopment of high-capacity municipal water supply wells, injection wells, and dual-purpose "Aquifer Storage and Recovery" (ASR) wells. He has participated in numerous public agency meetings, supplied court testimony, and been involved with numerous water rights issues. He has an M.S., Hydrogeology and a M.S., Geology from University of Nevada at Reno and a B.S., Geology from Illinois State University. He is a Professional Geologist and Certified Hydrogeologist in California.

◆ **Marcus Trotta, Hydrogeologist, Sonoma County Water Agency, Santa Rosa, CA**

Mr. Trotta is a hydrogeologist for the Sonoma County Water Agency's Water Resource Planning Section. The primary focus of his work at the Water Agency involves leading feasibility studies for enhanced groundwater recharge projects and managing groundwater monitoring programs and technical studies in support of collaborative groundwater management activities. His role also includes investigating the interaction and exchange of surface water and groundwater associated with the Water Agency's production facilities along the Russian River. He is a Professional Geologist and Certified Hydrogeologist in the State of California and received his Bachelor of Science degree in Geology with an emphasis in Hydrologic Science from the University of California at Davis.

◆ **Don Ellison, ASR Projects Coordinator, Southwest Florida Water Management District, Brooksville, FL**

Mr. Ellison has managed ASR projects and research efforts for the Southwest Florida Water Management District (District) since 1993. Acting as liaison between the District and over 14 water suppliers/utilities he helped develop and establish District funding for ASR projects that have resulted in approximately 50 ASR wells throughout the District. He manages several ASR research projects performed by the United States Geological Survey, University of Florida, Florida Geological Survey, University of South Florida, and various consultants. These projects focused on die off of microorganisms in the aquifer, mobilization of arsenic in the aquifer, bench scale arsenic mobilization studies, arsenic mobilization modeling, detailed ASR monitoring projects and pre-treatment of injection water to minimize arsenic mobilization. He has been a participant on the Florida Department of Environmental Protection's Underground Injection Control work group and attended the EPA's ASR expert meeting in May 2008 in Chicago. Prior to the District he worked in the Northeast on Superfund site assessment and remediation projects. Mr. Ellison received his B.S. in Geology from the University of Cincinnati and his M.A. in Geology from Boston University.

◆ **Mark Wildermuth, President, Wildermuth Environmental Inc., Lake Forest, CA**

Mr. Wildermuth has 36 years of experience in water resources engineering and planning, including surface and groundwater hydrology and hydraulics, water resources planning, surface water and groundwater simulation modeling, water rights, surface water and groundwater quality, flood plain management, municipal recycled water discharge impacts in receiving waters, and water supply and flood control facility design. Mr. Wildermuth has extensive expertise in the development of water resource management plans for groundwater basins and watersheds in Southern California, and he has provided expert witness testimony and opinions for litigation support and mediation. Mr. Wildermuth founded Wildermuth Environmental to focus specifically on water resources management studies and the application of state-of-the-art technology to the solution of important water problems, and to support environmental decision processes. Mr. Wildermuth lead the development of: the Chino Basin Optimum Basin Management Program, the salinity and nutrient management plan for the Santa Ana River Watershed, innovative regulatory compliance schemes that maximize the recharge of recycled water and discharge to surface waters, the deployment of a cloud-based water resources database, and several recharge master plans.

◆ **Ken Manning, San Gabriel Basin Water Quality Authority, West Covina, CA**

Kenneth R. "Ken" Manning rejoined the San Gabriel Basin Water Quality Authority (SGBWQA) in March of 2011 as their Executive Director. From 1992 through February 2005, Ken served as a member of the Board of Directors for the SGBWQA.

Prior to March 2011, Mr. Manning served as the CEO of the Chino Basin Watermaster. The court appointed agency responsible for administering the 1978 judgment for all water users in the basin. Ken served as President of the Association of Groundwater Agencies (AGWA) from 2005 to 2009 and currently serves as Chairman of the California Groundwater Coalition (CGC).

From December 1992 through March 2005, Mr. Manning served as a Board Member of the Upper San Gabriel Valley Municipal Water District and appointed as its representative to the San Gabriel Basin Water Quality Authority (WQA) board. Mr. Manning has served five one-year terms as President of the board for the Upper San Gabriel Valley Municipal Water District and three one-year terms as Chairman of the SGBWQA. During his 12 ½ years working in the San Gabriel Valley, Mr. Manning

was one of the primary architects of the plan to clean up the Basin Superfund sites and pioneered the use of recycled water to many of the large water users in the San Gabriel Valley.

Mr. Manning holds a Bachelors of Science degree in Architectural Design from California State Polytechnic State University (San Luis Obispo) and a Masters of Public Administration from Cal State Northridge. Prior to his selection as CEO of the Chino Basin Watermaster Mr. Manning served as Deputy Superintendent with the East San Gabriel Valley Regional Occupational Program, where he oversaw all administrative services. Mr. Manning spent almost twenty years as the CEO and Chief Designer for an Engineering and Architectural Design firm doing residential and commercial development throughout southern California.

#### ◆ **Adam Hutchinson, Director of Recharge Operations, Orange County Water District, Fountain Valley, CA**

Adam Hutchinson is Director of Recharge Operations for the Orange County Water District. In that role he is responsible for overseeing all of the District's surface water spreading and seawater barrier operations. Prior to working at the District, Adam spent seven years as a Senior Hydrogeologist for CH2M HILL working on a wide variety of water resources projects, with most having an artificial recharge component. He has an undergraduate degree in Geology and a master's degree in Hydrology from the University of Arizona.

#### ◆ **Ted Johnson, Chief Hydrogeologist, Water Replenishment District of Southern California, Lakewood CA**

Ted Johnson is the Chief Hydrogeologist at the Water Replenishment District of Southern California. He leads the Basin Management and Water Quality Department, providing technical analysis, review, and oversight for projects related to artificial recharge, seawater intrusion, groundwater quality, conjunctive use, computer modeling, recycled water, tracer tests, and groundwater production. Ted received his B.S. and M.S. degrees from the California State University at Fullerton and is a California Registered Geologist and Certified Hydrogeologist with over 20 years of experience in Southern California groundwater investigations.

#### ◆ **Derrick Whitehead, Director of Environmental Utilities, City of Roseville, CA**

Derrick Whitehead is the Director of Environmental Utilities for the City of Roseville. Throughout his career with the City he has been instrumental in implementing innovative programs such as regional recycled water in Placer County, development of a MODFLOW regional groundwater model, introduction of aquifer storage and recovery into the City's water supply portfolio, partnered in regional groundwater issues through the development of the ASR portal and development of the Placer County GWMP. Mr. Whitehead has served as the Utility Director for over 17 years for the City and received his B.S. and M.S. degrees from Brigham Young University in Civil Engineering.

#### ◆ **Russell McGlothlin, Shareholder, Brownstein Hyatt Farber Schreck, Santa Barbara, CA**

Mr. McGlothlin is a Shareholder in Brownstein Hyatt Farber Schreck's Santa Barbara office and a member of the Water & Public Lands and Renewable Energy Practice Groups. His experience includes a broad range of water use issues in California and the western United States, including water right permitting, adjudication of groundwater rights, conjunctive water use, water transfers, water quality, recycled water projects, and environmental matters, including CEQA and ESA compliance. Mr. McGlothlin represents private companies, municipalities, special districts and individual landowners with transactional negotiations, litigation and administrative agency proceedings. In his practice, he has defended groundwater water rights in several groundwater basin adjudications, assisted in post-judgment proceedings in multiple ongoing groundwater basin adjudication judgments, prosecuted water rights applications and petitions before the California State Water Resources Control Board, and negotiated and drafted a variety of transactional agreements concerning water resources. He is the author of several chapters concerning California groundwater law within the Groundwater Water Resources Agency's Groundwater Management Handbook. He also regularly speaks on water law-related matters before industry groups and publishes related articles within trade publications.

#### ◆ **Martha Davis, Exec. Manager Policy Development, Inland Empire Utilities Agency, Chino, CA**

Ms. Martha Davis is Executive Manager for Policy Development at the Inland Empire Utilities Agency (IEUA), a municipal water district serving 830,000 people in the western portion of San Bernardino County. IEUA provides regional sewage treatment services, distributes imported water and recycled water supplies, and provides other utility services for the Chino Basin. Since 2000, Ms. Davis has led many of the Agency's award-winning conservation, planning and green programs including initiatives promoting water conservation, renewable energy, stormwater capture, and recycled water.

As of February 2011, Ms. Davis has joined the staff of the Delta Stewardship Council on an 80% time basis to assist with the development of the Delta Plan over the next 18 months. She will serve as a Senior Policy Advisor to the Council.

Previously, Ms. Davis served as the Executive Director for Californians and the Land (1998-2000) and for the Mono Lake Committee (1984-1996). Under her leadership, the Mono Lake campaign culminated in a unanimous landmark public trust decision by the State Water Resources Control Board to protect Mono Lake. Ms. Davis graduated from Stanford University *cum laude* with a degree in human biology and received her master's degree from the Yale School of Forestry and Environmental Studies. She is the recipient of an honorary PhD in Public Policy from the Kennedy College in Oakland, California.

Ms. Davis serves on the boards of the Association of California Water Agency (and serves as chair of ACWA's Energy Committee and Climate Change Subcommittee), the California Section of the WaterReuse Association, Southern California Salinity Coalition, Rancho Santa Ana Botanical Garden, Mono Lake Committee and the Earth Island Institute, where she serves as President of the Board.

#### ◆ **Terry Foreman, Vice-President, CH2M Hill, Thousand Oaks, CA**

Terry Foreman's roles at CH2M HILL include Senior Hydrogeologist, Vice President and the Thousand Oaks Area Office Manager. Mr. Foreman's technical expertise is in the management and development of groundwater resources, including water supply development, conjunctive use of surface waters, groundwater, and recycled water, remediation of contaminated groundwater, and regulatory support. Mr. Foreman has over 30 years of consulting experience in water resources projects, mostly in the Southwestern United States. Mr. Foreman has served as project manager for the Las Posas Basin ASR project, the largest ASR project in California, the West Basin Water Recycling Program Injection Barrier Project, which involves injection of highly treated wastewater into the 9-mile long West Coast Basin Seawater Intrusion Barrier, the Dominguez Gap Seawater Intrusion Barrier Extension project. Mr. Foreman has authored over 30 technical papers and presentations. Mr. Foreman received his Bachelors and Masters degrees in Geology from the University of Missouri – Columbia. He is a Registered Geologist and Certified Hydrogeologist in California. He is on the Board of Directors of the American Ground Water Trust, where he has held offices of Secretary, Vice Chairman, and Chairman (2002). He is the President of the Central Coast Branch of the Groundwater Resources Association of California.

#### ◆ **Dennis Williams, President, Geoscience Support Services, Claremont, CA**

Dr. Dennis E. Williams, founder and president of the Southern California based firm GEOSCIENCE Support Services, Inc. has over 35 years of experience in ground water hydrology. During that time he has directed geohydrologic investigations domestically and worldwide which includes the design and supervision of construction of over 800 deep largescale municipal and irrigation water supply wells. Dr. Williams also pioneered the use of slant wells for desalination feedwater supply. He has been a consultant to the United Nations and several foreign governments and is currently a part-time research professor at the University of Southern California's Civil and Environmental Engineering Department where he has taught graduate level courses in geohydrology and ground water modeling since 1980. Dr. Williams is currently directing research on ground water and wells at USC's geohydrologic laboratory which houses the largest sand-tank model in the world.

Dr. Williams is author of over 30 publications on ground water and wells and was the principal author of the Handbook of Ground Water Development (John Wiley & Sons, 1990); the Handbook was awarded Honorable Mention in the Engineering Category of the Fifteenth Annual Awards for Excellence in Professional and

Scholarly Publishing by the Association of American Publishers. Dr. Williams was also chief reviewer for the American Society of Civil Engineers (ASCE) Manual of Water Well Design, Construction, Testing and Maintenance and primary author for two chapters, Water Well Construction, and Developing and Testing, and of Appendix Example of Water Well System Design (currently in press). Dr. Williams is a contributor for three entries in the Encyclopedia of Water: “Radial Wells”, “Well Tests”, and “Well Screens” published by John Wiley and Sons. Dr. Williams is a technical consultant to the American Water Works Association (AWWA) Standards Committee for Wells (ANSI/AWWA A100-04).

◆ **Kathy Kunysz, Program Manager, Metropolitan Water District of Southern California, Los Angeles, CA**

Ms. Kathy Kunysz is a Program Manager in the Water Resources Management Group at the Metropolitan Water District of Southern California. Metropolitan is a wholesale provider of supplemental imported water to its 26 member agencies serving 19 million people in six counties on the Southern California coastal plain. Since 2001, Ms. Kunysz has worked to develop groundwater storage programs in Metropolitan’s service area and has compiled the Groundwater Assessment Study Report published in 2007 documenting the status, management, and investments in groundwater resources in Southern California. During her 25-year tenure with Metropolitan, she has also contributed to the planning and successful approval of capital facilities such as Diamond Valley Lake and the Inland Feeder, managed a legislative task force and worked with coalitions to achieve broad-based legislative advocacy relating to clean water and endangered species issues. Prior to Metropolitan, Ms. Kunysz served with the U.S. Army Corps of Engineers, Los Angeles District for eight years working on water resource and flood control projects. She holds a B.S. from the University of California, Riverside in Environmental Science and an M.A. from the the University of California, Los Angeles in Urban Planning with an emphasis on water resources

◆ **Stephen Tanner, P.E.; Principal, Pueblo Water Resources Inc., Ventura, CA**

Mr. Tanner is a Principal Engineer for Pueblo Water Resources with over 25 years of experience in water works engineering, focused principally on groundwater resource development and Aquifer Storage and Recovery (ASR) program development. Since 1991, Mr. Tanner has served as the engineering team leader for a dozen ASR programs in California, from the LA basin to the Sacramento Valley. He has managed numerous projects involving ASR feasibility studies and facility design, groundwater treatment, water well design, injection well piping & instrumentation design, and groundwater treatment plant engineering. Additional ASR-related experience includes regulatory and permit negotiations for clients in five of California’s nine Regional Water Quality Control Board jurisdictions. Mr. Tanner has taught water treatment and groundwater related classes for both private clients and at Santa Barbara City College for 15 years. Mr. Tanner has also authored a variety of technical papers on ASR technical subjects.

◆ **Juliet Christian Smith, Senior Research Associate, Pacific Institute, Oakland, CA**

Dr. Juliet Christian-Smith is a Senior Research Associate with the Pacific Institute’s Water Program. Her interests include agricultural water uses, comparative analyses of water governance structures, water reuse, and climate change. Dr. Christian-Smith is a recipient of the Environmental Protection Agency’s Award for Outstanding Achievement and serves on the Executive Board of the Agricultural Water Management Council. She is also a Frontiers of Science Fellow for the National Academy of Sciences.

Prior to coming to the Pacific Institute, Dr. Christian-Smith was in Portugal on a Fulbright Fellowship studying the implementation of the European Union Water Framework Directive and examining agricultural water usage in the Alentejo region. During graduate school, she worked on several water policy projects in California through the University of California Cooperative Extension, managing the field work and data collection for an empirical study of agricultural water demand in California. Dr. Christian-Smith holds a Ph.D. in Environmental Science, Policy and Management from UC Berkeley and a B.A. in Biology from Smith College.

◆ **Amy Steinfeld, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA**

Ms. Steinfeld is an Associate in Brownstein Hyatt Farber Schreck’s Santa Barbara office and a member of the Water & Public Lands Group. She works a broad range of water issues, including legal transactions, litigation, groundwater adjudications and environmental quality projects.

Prior to attending law school, Ms. Steinfeld gained valuable experience in the environmental field, serving as the environmental director and an environmental consultant and analyst for the California Safety Compliance Corporation. She traveled to 37 countries to conduct social and environmental audits of factories for large manufacturing companies. She also developed an environmental audit tool and a forestry chain of custody audit. In addition, Ms. Steinfeld has worked with the National Wildlife Federation and Environmental Defense.







## ASSOCIATION OF GROUND WATER AGENCIES

AGWA, was formed in 1994 by a group of Southern California groundwater basin management agencies to provide a unified voice to coordinate efforts and exchange information to enhance the effective management of groundwater resources. AGWA's purpose is to create a forum for the discussion of groundwater issues for entities responsible for management of groundwater basin resources.

AGWA's primary objectives are to promote:

- ◆ More effective means of enhancing management of groundwater basins,
- ◆ The reliability of existing groundwater supplies,
- ◆ The increase of basin yields and the protection and enhancement of groundwater quality



## AMERICAN GROUND WATER TRUST

The AGWT was formed in 1986 as a non-profit education organization with the mission of promoting interest and awareness in ground water issues. Specifically, the AGWT's conference and workshop programs and educational materials:

- ◆ Communicate the environmental and economic value of ground water
- ◆ Showcase ground water science and technology solutions
- ◆ Increase citizen, community and decision-maker awareness
- ◆ Facilitate stakeholder participation in water resource decisions



## CALIFORNIA GROUNDWATER COALITION

CGC was formed in 2007 as a joint endeavor of the Association of Ground Water Agencies (AGWA), the Ground Water Resources Association of California (GRA) and the American Ground Water Trust (AGWT). The Coalition's principal mission is to educate policy makers about groundwater; and promote the benefits of comprehensive groundwater management and use in legislative and other water policy arenas. The Coalition recognizes:

- ◆ Groundwater development, conjunctive use, and groundwater storage have the capability to provide increased water supply reliability for California
- ◆ Groundwater management and monitoring are essential to the successful development and protection of the state's groundwater resources for current and future generations
- ◆ New infrastructure is needed to obtain statewide benefit from groundwater resources utilization and replenishment potential.



## SOUTHERN CALIFORNIA WATER UTILITIES ASSOCIATION

Southern California Water Utilities Association has a membership of over 400 from a wide range of water utility personnel and includes members from other utility organizations and regulatory agencies along with ancillary companies providing support services to the utilities.

The SCWUA objectives are:

- ◆ To establish a relationship and foster communications and cooperation between members and their respective agencies and companies.
- ◆ To assist in educating and advancing the professional growth of its members.
- ◆ To act as a media for the exchange of information pertinent to the water works industry.
- ◆ To promote the image of the water works profession.



## INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS COMMISSION - GROUNDWATER OUTREACH TO DECISION MAKERS

### Background to the Commission:

World-wide, ignorance and misunderstanding of groundwater is a major barrier to effective water resources management. Groundwater professionals need to be advocates for sensible water policy to ensure that water allocation decisions are based on hydrologic reality. The Commission plans to help IAH members and IAH national chapters promote awareness and appreciation of the value of groundwater. IAH “branded” technical information in non-technical format will be developed to assist members target their expertise among policy makers, end-users and resource managers. Science-based knowledge, effectively communicated, can support the dual objectives of sustainably maximizing the use of groundwater for economic, social and environmental benefit while protecting against overdevelopment and contamination.

Andrew Stone (USA), Executive Director of the American Ground Water Trust, is the Commission Director with co-Directors Karen G. Villholth (Denmark), Senior Researcher, Geological Survey of Denmark & Greenland and José Joel Carrillo Rivera (Mexico), Professor, Universidad Nacional Autónoma de México.



## GROUNDWATER RESOURCES ASSOCIATION OF CALIFORNIA

### Primary Objectives and Purpose

- Promote professional development of scientists, engineers, and others involved in the assessment, development, quality and management of the state's groundwater resources
- Help formulate statewide policy on the development, management, and protection of the state's groundwater resources, soil and groundwater remediation, and environmental assessments
- Disseminate scientific and technical information among GRA members and those who influence policy development concerning groundwater resources
- Develop scientific educational programs that promote the understanding and implementation of groundwater assessment, protection, and management
- Facilitate the development of alternative technologies and standardization of methods to advance investigation, management, and protection of California's groundwater resources
- Develop a pro-active role with the legislature as an authority on technical groundwater issues.
- The Groundwater Resources Association assumes a leadership role in communicating the needs and values of our industry to government officials and the public. Through GRA you can help influence the future groundwater policy of the State of California.