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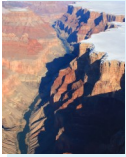


Western States Water Council RECEPTION

April 5, 2022
Arlington, Virginia

Thank you to our Sponsor:





► WHO WE ARE AND WHAT WE DO

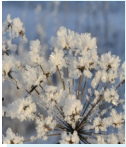
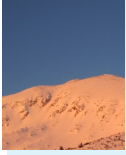
► ADVISING WESTERN GOVERNORS ON WATER POLICIES, PROGRAMS AND LAWS

► RAISING WATER AS A HIGHER, PUBLIC POLICY PRIORITY

► PROTECTING STATES' WATER RIGHTS AND MANAGEMENT PREROGATIVES

► FOSTERING STATE AND FEDERAL COOPERATION

► PROMOTING SOUND SCIENCE AND DATA SHARING AND NETWORKS



2022



WESTERN STATES WATER COUNCIL

Since its creation in 1965, the Western States Water Council (WSWC) has served as a resource and advisor on water policy issues for the governors. The Council now includes 18 western states. The governors are ex-officio WSWC members and appoint members to represent their individual states. Members serve at the pleasure of their respective governors and include state natural resource department directors, water resource agency directors, state engineers, state water quality managers, assistant attorneys general, private practice attorneys, and other western water experts. WSWC members are key decision-makers with access to their governor.

Water in the West

is an increasingly scarce and precious resource. Population growth, competing economic and ecological demands, and changing social values have left surface and ground water supplies stressed in many areas. This has increased the number and complexity of conflicts among users and uses. A secure water future is becoming more costly and increasingly uncertain given our unpredictable climate, aging and often inadequate infrastructure, data limitations regarding water supplies and demands, competing or poorly defined water rights, and a constantly evolving regulatory landscape. Effectively addressing these challenges requires stronger collaboration and cooperation that transcends political and geographic boundaries between states, federal agencies, tribes, and local communities.

The Council serves a number of governmental purposes on behalf of western states, with members advising the governors on planning, conservation, development, management, and protection of their water resources — to ensure that the West has an

adequate, sustainable supply of water of suitable quality to meet its diverse economic and environmental needs now and in the future. The Council fosters cooperation among member states and provides a forum for expressing a collective voice on federal water issues. It also facilitates the exchange of state views and experiences, fostering better state laws, management practices and policies. It assists states in monitoring and evaluating the impact of federal laws, programs and policies. It strives to elevate water as a higher public policy priority, impacting the economy, environment, public health, and the West's way of life.

State primacy is fundamental to a sustainable water future. States should be engaged early in meaningful consultation on federal policies and regulations, and federal actions should support state water laws, plans, policies, programs, water rights adjudications, court decrees, compacts and settlements.

Drought Management

The WSWC promotes coordinated drought planning and preparedness, with an emphasis on sharing data and improving drought forecasting. The National Integrated Drought Information System (NIDIS), led by the National Oceanic and Atmospheric Administration (NOAA), was created to develop an inter-agency, multi-partner approach to improving drought monitoring, early warning systems and forecasting. The WSWC has been an integral partner in helping implement NIDIS, as well as supporting NOAA's efforts to improve earth observations, drought prediction, and seasonal forecasting.



What We Do...



- **STATE WATER RIGHTS:** Numerous WSWC activities are designed to preserve the primary authority of the states to allocate and manage their waters, protect private property rights, and maintain water quality.
- **WATER TRANSFERS:** The WSWC supports voluntary, intrastate water rights transfers and has identified tools that states and others can use to avoid or mitigate the impacts of transfers on agricultural economies, rural communities, and the environment.
- **INDIAN WATER RIGHTS:** For over 40 years, the WSWC and the Native American Rights Fund (NARF) have worked together as part of an Ad Hoc Group on Indian Water Rights with Congress and the Administration to settle Indian reserved water rights claims through negotiation. The WSWC and NARF hold a biennial symposium on settlements, and the WSWC maintains a summary table of Congressionally-authorized settlements. Frequent interactions build relationships and trust, leading to results.
- **WATER REUSE:** Working with its members, the WSWC has published a comprehensive reference report describing the water reuse programs in 17 western states.
- **GROUNDWATER:** The WSWC has actively worked to protect the role of the States in allocating, managing and protecting groundwater resources and promoting recharge and conjunctive use.
- **WATER-RELATED DATA:** The WSWC has long worked with Congress and the Administration to secure adequate federal funding for data programs that support state water management, such as U.S. Geological Survey's stream-gaging system, Natural Resources Conservation Service's Snow Survey program, National Aeronautics and Space Administration's Landsat satellites, and various National Oceanic and Atmospheric Administration programs.

agement, such as U.S. Geological Survey's stream-gaging system, Natural Resources Conservation Service's Snow Survey program, National Aeronautics and Space Administration's Landsat satellites, and various National Oceanic and Atmospheric Administration programs.

- **INFRASTRUCTURE STRATEGIES:** The WSWC has sponsored symposia on strategies to meet our present and future water infrastructure needs. The WSWC has promoted the expenditure of Reclamation Fund receipts for their authorized purposes, as well as EPA's State Revolving Funds and other federal water infrastructure development programs.
- **SYMPOSIA AND WORKSHOPS:** The WSWC sponsors a variety of symposia and workshops to bring together stakeholders from around the West to discuss water challenges. The WSWC has held meetings on improving and advancing sub-seasonal to seasonal precipitation forecasting, drought planning and preparedness, Federal water rights/needs, the energy/water nexus, water quality and water quantity protection and management, and other topics.
- **OTHER ORGANIZATIONS:** The WSWC collaborates with many academic, public and private, state and interstate organizations, and coordinates with a Western Federal Agency Support Team (WestFAST).

Demands on the West's limited water resources are growing and are complicated by population growth, extreme weather, and increasingly complex federal laws and regulations. These forces magnify the importance of regional cooperation to address common water problems and achieve solutions.

THE WATER DATA EXCHANGE (WADE) PROGRAM: TRANSFORMING WESTERN WATER PLANNING, MANAGEMENT, AND POLICY BY SHARING STATES' WATER DATA SINCE 2011

States allocate and administer rights to the use of water in the West and are therefore in the best position to provide data on water rights and water use. Water rights, uses, and associated data are managed separately and distinctly by each state which makes regional analysis cumbersome. Analyses across regions and multi-state basins are becoming increasingly relevant, especially given the unprecedented drought and population growth that the West is experiencing. The WSWC Water Data Exchange (WaDE) Program is designed to share WSWC member states' water rights, allocation, supply, and use data through a common streamlined, and standardized service. It enables regional and local analyses to transform water resources planning, management, and policies.

Initiated with the support of Western Governors, state natural resource and water agency directors, state engineers, and their staff, the WaDE Program recently celebrated its 10th anniversary with new advancements focused on building a user-friendly dashboard called the Western States Water Data Access and Analysis Tool (WestDAAT).



In response to interest and funding from the WSWC States, federal agencies (DOE, EPA), and philanthropic groups, the WaDE Program's initial concept and creation phase (2011-2018) established working relationships with state agencies and created data sharing protocols while building and populating a collaborative data management system. In its second phase (2019-2021), the WaDE Data System was upgraded to a cloud-based database that shares a variety of water data for WSWC's eighteen member states and has become one of the major data hubs within the Internet of Water project. See <https://internetofwater.org/resources/hubs/>.

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<http://www.westernstateswater.org>

For more information about WaDE, please visit
<https://westernstateswater.org/wade>

March 29, 2022

The Honorable Gary Peters
Chairman
Committee on Homeland Security
and Governmental Affairs
U.S. Senate
340 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Rob Portman
Ranking Member
Committee on Homeland Security
and Governmental Affairs
U.S. Senate
340 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Peters and Ranking Member Portman:

We, the undersigned organizations, write to express support for S. 3875, the Community Disaster Resilience Zones (CDRZ) Act of 2022. Collectively, our organizations represent a wide variety of constituencies, including business, conservation, emergency managers, housing, infrastructure, local government, public safety, science, and taxpayer organizations. We commend you for your bipartisan leadership and thank you for introducing the CDRZ Act. This bill is a critical, foundational step toward prioritizing and directing a whole-of-nation focus on the most vulnerable communities facing the risk of potentially life-threatening and economically devastating climate and natural disaster events.

The CDRZ Act would amend the Stafford Act to establish a statutory structure to identify and designate CDRZ communities that are the most in need and most at risk to natural hazards, such as hurricanes, flooding, earthquakes, and wildfires, to increase public and private sector investments in housing, infrastructure, and community-wide resilience. Building smart, modern, resilient infrastructure, including nature-based infrastructure, has long been among our top priorities. We support the CDRZ Act, which will:

- Amend the Stafford Act by adding a requirement that FEMA maintain and update products and tools that define natural hazard risk across the U.S. and use that dataset to identify and designate CDRZ communities that are the most in need and most at risk to natural hazards;
- Authorize the President to provide CDRZ-designated communities with assistance and funding for pre-disaster mitigation planning and projects to increase resilience against the identified hazards; and
- Help prioritize and attract additional public and private sector funding (including public-private partnerships) for resilience projects in or primarily benefitting CDRZ-designated communities.

We greatly appreciate your leadership, and we look forward to continuing to work with you and Congress to ensure our communities most threatened by climate and natural disaster risk and most economically vulnerable have the support, resources, and opportunities they need to improve their resilience.

Sincerely,

US Resiliency Council (USRC)
U.S. Chamber of Commerce
Taxpayers for Common Sense (TCS)
SBP
Resilience Innovation Hub
Reinsurance Association of America (RAA)
R Street Institute
National Wildlife Federation (NWF)
National Special Districts Coalition (NSDC)
National Institute of Building Sciences (NIBS)
National Emergency Management Association (NEMA)
National Association of Mutual Insurance Companies (NAMIC)
National Association of Counties (NACo)
Interstate Council on Water Policy (ICWP)
International Code Council (ICC)
International Association of Emergency Managers (IAEM)
Insurance Institute for Business & Home Safety (IBHS)
Ecological Restoration Business Association (ERBA)
The Council of Insurance Agents & Brokers (CIAB)
Central United States Earthquake Consortium (CUSEC)
Center for Climate and Energy Solutions (C2ES)
BuildStrong Coalition
American Society of Landscape Architects (ASLA)
American Society of Civil Engineers (ASCE)
American Property Casualty Insurance Association (APCIA)
American Planning Association (APA)
American Institute of Architects (AIA)



2022-2023

<u>Full Members</u>	<u>State</u>	<u>Joined</u>
Atlanta Regional Commission	GA	07/17
Tarrant Regional Water District	TX	07/17
Murfreesboro, TN Water Resources	TN	07/17
Kansas Water Office	KS	07/17
Cobb County-Marietta Water Authority	GA	07/17
North Dakota Department of Water Resources	ND	08/17
Susquehanna River Basin Commission	PA	08/17
Consolidated Utility District of Rutherford County	TN	08/17
City of Gainesville	GA	08/17
Beaver Water District	AR	09/17
Clarence Cannon Wholesale Water Commission	MO	09/17
Gwinnett County Water Resources	GA	09/17
Brazos River Authority	TX	09/17
North Texas Municipal Water District	TX	12/17
Tacoma Water	WA	02/18
Gulf Coast Water Authority	TX	06/18
Riverbend Water Resources District	TX	02/19
Central Arkansas Water	AR	09/19
Northeast Texas Municipal Water District	TX	09/19
Anderson Regional Joint Water System	SC	10/21
Dallas Water Utilities	TX	03/22

Affiliate Members

King & Spalding LLC		07/17
Southwest Missouri Water	MO	12/20
Burns & McDonnell	MO	03/22

ADVANCING THE INTERESTS OF WATER PROVIDERS

STRATEGIC PLAN

OCTOBER 29, 2021

NWSA
NATIONAL WATER SUPPLY ALLIANCE

MEMBERS

Atlanta Regional Commission
Tarrant Regional Water District
Murfreesboro, TN Water Resources
Kansas Water Office
Cobb County-Marietta Water Authority
North Dakota Department of Water Resources
Susquehanna River Basin Commission
Consolidated Utility District of Rutherford County
City of Gainesville
Beaver Water District
Clarence Cannon Wholesale Water Commission
Gwinnett County Water Resources
Brazos River Authority
North Texas Municipal Water District
Tacoma Water
Gulf Coast Water Authority
Riverbend Water Resources District
Central Arkansas Water
Northeast Municipal Water District
King & Spalding, affiliate
Southwest Missouri Water, affiliate

BOARD OF DIRECTORS

Darren Gore, President
Dan Buhman, Vice President
Katherine Zitsch, Secretary
Glenn Page, Treasurer
Andrew Dehoff, Director
Jennifer Verleger, Director
Brad Brunett, Director
Greg Volkhardt, Director
Dave Mitamura, Executive Director

INTRODUCTION

Thanks to a knowledgeable and active membership, the National Water Supply Alliance has established its credibility with the Corps of Engineers and Congress, increasing its influence over the past several years. To continue this successful momentum and enhance NWSA's impact on water supply policy, the Board of Directors presents this Strategic Plan to focus and guide the organization's efforts moving forward.

On August 23-24, 2021, a small group met in Murfreesboro, TN, to develop this plan. In addition to the Board of Directors, the group included Andrew Morris (Communications Chair), Lewis Jones (WRDA lead), and Dave Mitamura (Executive Director).



Murfreesboro, TN
August 23-24, 2021

STRATEGIC PLANNING

Prior to convening in Murfreesboro, the Strategic Planning group members submitted responses to a survey to elicit discussion points at the planning session. In addition, each member of the group performed a Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis to help guide the discussion. At the Murfreesboro session, the group deliberated on the responses and analysis to develop NWSA's first strategic plan.



NWSA'S FIRST STRATEGIC PLAN INCLUDES:



VISION
Our aspiration



MISSION
Our purpose



GOALS
Our focus



**STRATEGIES
/TACTICS**
Our tasks

VISION

Federal water supply policy fully aligned with regional, state, and local rights and needs



Description/Rationale:

NWSA is working to create a world in which federal water supply policy recognizes state primacy and reinforces the equal partnership between the federal government and regional, state, and local governments in managing water supplies. As such, federal water supply policy would be developed through full consultation with non-federal partners, to include incorporating regional, state, and local rights and needs.

MISSION

Our purpose



Our mission is three-fold:

- 1 Provide a forum for water supply interests;
- 2 Advocate for sensible federal water supply policy; and,
- 3 Advise and inform water supply stakeholders.

GOALS

Our focus



We will:

- 1 Strengthen membership engagement services;
- 2 Define key policy/legislative/appropriations issues, and develop a workplan; and,
- 3 Develop water supply terminology and educational materials needed for effective advocacy and member engagement (Water Supply 101).

STRATEGIES/TACTICS

Our tasks



Membership Engagement

To strengthen membership engagement services, we will:

- 1 Identify and survey water supply interests on USACE/water supply issues;
- 2 Engage current members and leadership in membership recruitment;
- 3 Invite states and prospective members to explain their local water supply issues;
- 4 Develop additional NWSA conference execution strategies; and,
- 5 Create an inventory of subject matter experts to assist NWSA members.



Key Issues

To define key issues, we will:

- 1 Document a process that identifies key issues and determines priorities, as well as delineates initiatives vs. positions; and,
- 2 Define key issues and strategies for Congressional and USACE engagement.



Educational and Advocacy Materials

To develop water supply terminology and educational materials needed for effective advocacy and member engagement, we will:

- 1 Develop one-pagers on water supply fundamentals;
- 2 Define key terminology to provide clarity (e.g., storage, allocation, reuse, flows);
- 3 Develop a communications strategy; and,
- 4 Establish a clearinghouse for research, case studies, and lessons learned.

NEXT STEPS: Under the guidance of the Board of Directors in November/December 2021, the Executive Director will develop a workplan for executing the Strategic Plan. All NWSA members are welcome and encouraged to participate in developing and carrying out the workplan. If needed, committees will be established to manage discrete efforts.



Water Resources Development Act 117th Congress

PROVIDE FLEXIBILITY TO NON-FEDERAL SPONSORS TO FINANCE REPAYMENT OF REPAIR, REHABILITATION, AND REPLACEMENT COSTS

State and local entities need additional time to be able to finance their share of the Repair, Rehabilitation, and Replacement (RR&R) costs associated with the storage at U.S. Army Corps of Engineers (USACE) reservoirs set aside for water supply. Providing the ability to finance their share over a 25 year period following the completion of construction minimizes the impacts on water users and allows states and local entities to more efficiently plan and budget.

Under the Water Supply Act of 1958 (WSA 58), the non-federal sponsor of the water supply storage component of a USACE reservoir is responsible for 100 percent of the costs of construction, operations and maintenance (O&M), and repairs, rehabilitation and replacement (RR&R) associated with that storage. WSA 58 provided an option to pay for construction costs in installments, but did not specify a similar option for O&M or RR&R. Under WSA 58, all water supply storage contracts required the non-federal sponsor to make annual payment for associated O&M costs. Payment arrangements for RR&R, however, were occasionally negotiated on a case-by-case basis. While a majority of water supply storage contracts required RR&R payment during or at the completion of construction, many contracts allowed for payment of RR&R over a period of time, up to 25 years. The Water Resources Development Act of 1986 (WRDA 86) amended WSA 58, prescribing annual payment of O&M and payment of RR&R costs during the period of construction. Most, if not all, water supply storage contracts executed since 1986 incorporate the WRDA 86 provisions.

Current Policy Results in Significant Financial Impact to Water Supply Providers and Ratepayers

- As USACE reservoirs age, the need for RR&R increases, as does the cost of such capital investment. Dam safety activities further raises these costs, as the non-federal sponsor of the water supply storage is responsible for its proportionate share of the costs of risk reduction measures.
- The non-federal sponsor is typically not involved in the decision making or timing of RR&R nor dam safety activities; the lack of adequate advance notice on implementation of these high-dollar activities can be devastating for a non-federal sponsor's budget.
- Unplanned financial impacts can force the non-federal sponsors to recommend bond propositions or significantly raise water rates.

Allowing Flexibility to Pay for RR&R Minimizes Impacts

- Allowing non-federal sponsors to repay their share of RR&R, including dam safety fixes, over a 25-year period minimizes the significant financial impacts to a non-federal sponsor and its ratepayers due to RR&R costs.
- USACE districts should be required to comply with a request by the non-federal sponsor to amend its water supply storage contract to allow for a 25-year repayment of RR&R.

Draft Legislative Language

Sec. ____ Payment of Repair, Rehabilitation, and Replacement by Non-Federal Interests

Section 301(b) of the Water Supply Act of 1958 (72 Stat. 319; 43 U.S.C. 390b(b)), is amended by striking the second sentence of the fourth proviso and inserting: "For Corps of Engineers projects all annual operation and maintenance costs for municipal and industrial water supply storage under the provisions of this section shall be reimbursed from State or local interests on an annual basis; and repair and replacement costs shall, at the request of the State or local interests, be reimbursed on an annual basis or over a period of not more than twenty-five years from the date of completion."



Water Resources Development Act 117th Congress

INCREASE FLEXIBILITY FOR NON-FEDERAL INTERESTS FOR REALLOCATION STUDIES

U.S. Army Corps of Engineers (USACE) reservoirs are an increasingly important source of water supply storage for state and local governments. Providing storage for water supply may be the highest and best use of a portion of the storage in many existing USACE projects. Existing USACE procedures present obstacles to reallocating storage to the water supply purpose, however, because the studies and approvals routinely take a decade or more to complete when undertaken by the USACE. These delays are causing state and local governments to pursue local alternatives, which are often sub-optimal from both an environmental and economic perspective—diverting limited resources from more valuable infrastructure projects and preventing important national benefits from being realized. The Water Resources Reform and Development Act of 2014 (WRRDA 2014) broke down many similar barriers that have plagued other aspects of the USACE Civil Works program. Specifically, WRRDA 2014 authorized non-federal interests to undertake studies and even construct certain water resources development projects themselves. Water supply storage reallocation studies are not currently eligible for these important reforms.

Impediments to Water Supply Reallocation Studies

- The Water Supply Act of 1958 authorizes USACE to include storage for water supply in existing reservoirs by reallocating storage from other purposes. Congressional approval is required for any reallocation that would involve a “major operational change” or “seriously affect” the purposes for which the project was originally authorized. Before approving a reallocation, USACE must conduct a reallocation study to ensure the reallocation is both authorized and justified.
- Reallocation studies take many years to complete—routinely a decade or more—due in part to funding constraints and lengthy process requirements.

Amend the Water Supply Act of 1958 (WSA 1958) to Give Non-Federal Interests Flexibility to Undertake Reallocation Studies

- Amending WSA 1958 would allow non-Federal interests to use their own funds and efforts to conduct a reallocation study within a reasonable time.
- Reallocation studies prepared by non-Federal interests should be submitted to the Secretary for review. The Secretary should then determine if the studies were completed in accordance with established standards and procedures. Provided they were, the Secretary should then determine if the reallocation is both warranted and justified.

Draft Legislative Language

SEC. —The Water Supply Act of 1958 (43 U.S. Code § 390b) is amended by inserting the following paragraph (f):

“(f) SERVICES BY NON-FEDERAL INTERESTS. —As relates to reservoirs surveyed, planned, or to be planned, surveyed, or constructed, by the Corps of Engineers:

(1) REALLOCATION STUDIES BY NON-FEDERAL INTERESTS. —

a. IN GENERAL. —Upon notice to the Secretary, a non-Federal interest may undertake a study, or any discrete component of a study, to include storage capacity at a reservoir project for domestic, municipal, and industrial water supply.

b. REVIEW AND APPROVAL BY THE SECRETARY. —

i. Within 120 days from submission by the non-Federal interest of any study, or component of a study, prepared under subparagraph (a), the Secretary shall determine whether—

A. All substantive and procedural requirements that would apply to the work if it had been undertaken by the Secretary have been satisfied;

B. The work conforms to requirements set forth in the implementation guidelines published pursuant to subsection (f)(5);

C. The proposal is within the Corps' authority; and

D. Based on available information, including any documentation compiled in accordance with the National Environmental Policy Act, the proposal is in the federal interest.

ii. If the Secretary determines that the submission by the non-Federal interest does not satisfy the requirements of subparagraph (b)(i), the Secretary shall provide written notice to the non-Federal interest within 30 days from the determination identifying any such inconsistencies and the actions by the non-Federal interest required to remedy them.

iii. If the Secretary determines that the submission by the non-Federal interest satisfies the requirements of subparagraph (b)(i), the Secretary shall utilize the information provided by the non-Federal interest; provided further that, in the case of a completed study recommending modification of a reservoir to include storage for water supply, the Secretary shall take final action upon the information submitted by the non-Federal interest within 180 days from such determination.

c. REVIEW AND TECHNICAL ASSISTANCE. —

i. REVIEW. —The Secretary may accept and expend funds provided by non-Federal interests to undertake reviews, inspections, certifications, and other activities that are the responsibility of the Secretary in carrying out this section.

ii. TECHNICAL ASSISTANCE. —At the request of a non-Federal interest, the Secretary shall provide to the non-Federal interest technical assistance relating to any aspect of a study to provide additional storage capacity for domestic water supply storage if the non-Federal interest contracts with the Secretary to pay all costs of providing such technical assistance.

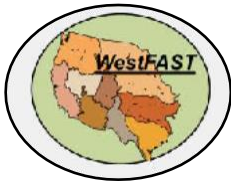
iii. LIMITATION. —Funds provided under this paragraph (f)(1)(c) shall not be eligible for credit under subsection (f)(4) or reimbursement.

(2) IN-KIND SERVICES. — The Secretary is authorized to accept services, materials, supplies, or other in-kind services from a non-Federal interest related to the implementation of this section.

(3) MONETARY CONTRIBUTIONS. —The Secretary may accept funds contributed by a non-Federal interest for work relating to the implementation of this section, to be expended in connection with funds appropriated by the United States, including funds appropriated for Operations and Maintenance of reservoir projects, whenever such work and expenditure may be considered by the Secretary as advantageous in the public interest.

(4) CREDIT. —The Secretary shall credit against either the cost of storage or the annual operation, maintenance, and replacement costs, at the non-Federal interest's option, an amount equal to the services provided by a non-Federal interest under this subsection (f). The amount of credit shall not exceed the amount that would have been the responsibility of the Secretary if the study had been developed by the Secretary.

(5) IMPLEMENTATION GUIDANCE. —Within 180 days after the date of enactment, the Secretary shall publish guidance on the implementation of this subsection (f).



WestFAST on the Web: <https://westernstateswater.org/westfast/>

Western States Federal Agency Support Team (WestFAST)

The Western States Federal Agency Support Team (WestFAST) was formally organized in 2008 in response to the Western Governors' Association's recommendation to facilitate coordination of federal activities, and to develop and enhance collaborative partnerships among state and federal agencies working on priority water-resource issues.

Today, WestFAST is a collaboration of 13 Federal agencies with water management responsibilities in the West: Environmental Protection Agency, National Oceanic Atmospheric Administration, Bureau of Reclamation, Bureau of Land Management, U.S. Geological Survey, U.S. Fish and Wildlife Service, U.S. Forest Service, Natural Resources Conservation Service, U.S. Army Corps of Engineers, U.S. Department of Defense, U.S. Department of Justice, U.S. Department of Energy, and National Aeronautics and Space Administration.

WestFAST works closely with the Western States Water Council (WSWC), an organization consisting of representatives appointed by the governors of 18 western states striving to accomplish effective cooperation among western states, and their partners, in the conservation, development and management of water resources. The thirteen WestFAST federal agencies form a dynamic, flexible team that provides the opportunity for interaction initiated by WSWC, individual states, or the federal government.

These agencies support a federal liaison stationed in the WSWC's office responsible for coordinating efforts among the agencies with the WSWC. The WestFAST collaboration has provided excellent opportunities for cross-agency discussions and leveraging of shared knowledge.

The federal agencies that make up WestFAST all have unique roles within western water management. WestFAST provides a means for those agencies to collaborate in ways that may not otherwise take place. The WestFAST team stresses collaboration in the following areas:

1. Climate Change
2. Water Availability, Water Use, and Water Reuse
3. Water Quality

Additional areas of collaboration include:

1. The development of the Water Data Exchange (WaDE) Program
2. Supporting the National Integrated Drought Information System (NIDIS)
3. Providing communication on federal funding opportunities.
4. Promoting Federal and State collaboration in the Colorado River Basin



○ WestFAST | ○ 2022



Western States Federal Agency Support Team

WestFAST supports a continued commitment on the part of Federal, and State organizations; working with local, Tribal, and other stakeholders; to improve the effectiveness of collaboration to seek solution to water issues in the Western States.

Why WestFAST?

The Western States Federal Agency Support Team (WestFAST) was formally organized in 2008 in response to the Western Governors' Association's recommendation to facilitate coordination of federal activities, and to develop and enhance collaborative partnerships among state and federal agencies working on priority water-resource issues.

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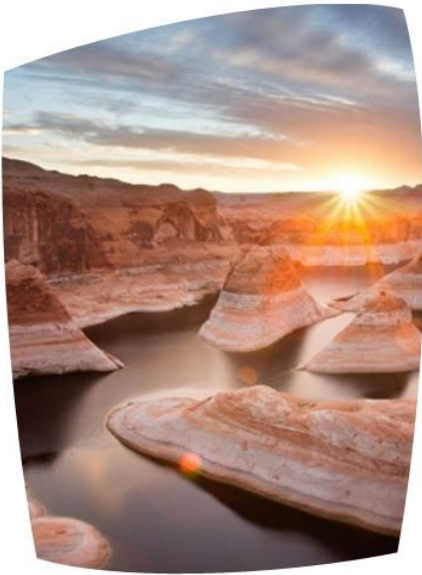
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Our State Partners and the Western States Water Council

"WestFAST has been a great success and the concept of WestFAST has made the Western States Water Council a greater success." - Hal Simpson, past WSWC Chair and Colorado State Engineer

As states continue to carry out their traditional role with regard to water allocation and management, the challenges are increasing. With changing and increasing demands on limited water resources, combined with a new and changing overlay of federal laws and regulations, the WSWC and our western water-resource management partners view the importance of cooperative efforts and exchanges by and among states as being likewise magnified. Concerning Federal and State collaboration the Western Governors' Association has declared that "Developing optimal solutions to [water resource] challenges... will require an integrated approach and greater partnerships among state, local and federal agencies."

Priority efforts of WestFAST with the WSWC, WGA, and local partners -

- *Provide excellent opportunities for cross-agency discussions and leveraging of shared knowledge.*
- *Formulate and promote new concepts and practices to improve the planning and execution of Federal and State water policies and programs to better preserve and manage water in the West.*
- *Identify and promote efficient and productive cooperation and collaboration practices between state and federal agencies*

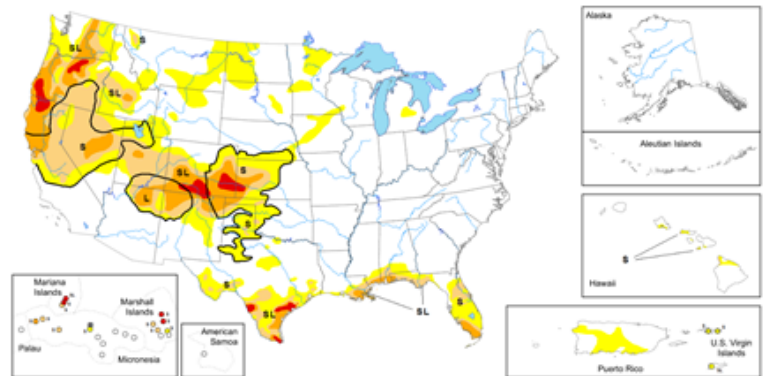
WestFAST facilitates collaboration

Drought

WestFAST member agencies strive to improve services related to drought in the areas of monitoring and information dissemination, projection tools and decision support system development, and the development of resiliency and response plans among others.

WestFAST is working closely within a National Drought Resilience Partnership to promote drought resilience in support of and to complement state, regional, tribal and local drought preparedness, planning and implementation efforts.

WestFAST is assisting to mobilize our Federal agencies in western watersheds toward providing improved information and data, emergency and planning assistance, landscape-scale land management improvements, and investments in new approaches to water resource management.



WestFAST

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**Western States Water Council/Interstate Council on Water Policy
National Water Supply Alliance
Washington DC Roundtable Meeting
April 5-7, 2022 | Doubletree Crystal City**

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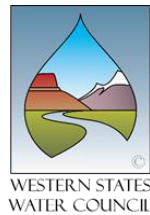
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Speaker Biographies By Panel

Federal Water Resources Data Programs

CHAD WAGNER is a Program Coordinator for the Groundwater and Streamflow Information Program (GWSIP) in the USGS Water Resources Mission Area. The GWSIP serves as the national source of impartial, timely, rigorous, and relevant data for short- and long-term water decisions by stakeholders across the United States. In 2018, the USGS began piloting the Nation's Next Generation Water Observing System (NGWOS) that will provide high-fidelity, real-time data on water quantity and quality.

MINDI DALTON is a Program Coordinator for the Water Availability and Use Science Program (WAUSP) in the USGS Water Resources Mission Area. The WAUSP assists in the determination of water that is available for human and ecological uses, now and in the future. This includes evaluating the quantity and quality of water, identifying long-term trends in water availability, and developing an improved ability to forecast water availability for economic, energy production, and environmental uses.

LORI SPRAGUE is currently the National Program Manager of the USGS Water Mission Area's Integrated Water Availability Assessments (IWAAs) Program, which provides national and regional assessments of water for human and ecological needs and identifies factors that limit water availability. Lori is also the USGS representative on the interagency Mississippi River/Gulf of Mexico Watershed Nutrient Task Force coordinating committee, which works to understand the causes and effects of eutrophication in the Gulf of Mexico; coordinate activities to reduce the size, severity, and duration of the seasonal hypoxic zone in the Gulf of Mexico; and ameliorate the effects of hypoxia.

BRIAN CLARK is the Acting Drought Program Manager for the Water Availability and Use Science Program in the USGS Water Resources Mission Area. Brian began his career with the USGS in 2001 working on regional groundwater-flow and optimization models within Arkansas, Louisiana, and Mississippi. Over the next 18 years, he led teams to evaluate groundwater availability across nine states, supervised information management and software development teams, taught Hydrogeology at the University of Arkansas, worked to improve water-use reporting, and helped develop and deliver a watershed model of the Tigris-Euphrates river system to water managers in Iraq.

BRIAN EBEL is a Research Hydrologist for the USGS Water Resources Mission Area. His work focuses on landscape disturbance impacts on water availability and water-related hazards to human lives and infrastructure. He was awarded the Presidential Early Career Award for Scientists and Engineers (PECASE) in 2019 for his contributions to understanding post-wildfire flooding and water availability issues. Brian is currently in the Earth System Processes Division of the Water Mission Area. He has a Ph.D. in Hydrogeology from Stanford University and a B.A. in Earth and Planetary Science from Washington University in St. Louis.

DWANE YOUNG is the Chief of the Water Data Integration Branch in EPA's Office of Water. Dwane has worked with EPA since 2005, and has worked on environmental data management systems in both the Office of Water and the Office of Solid Waste and Emergency Response. Dwane has also served as the Federal Liaison to the Western States Water Council. Dwane led the initial development of the Water Quality Exchange (WQX) for EPA, played a key role in the development of EPA's Clean Water Act Integrated Reporting systems, oversaw the implementation of updates to the RCRAInfo system, and has extensive experience with assisting partners in sharing water quality data. Dwane has a degree in Fisheries and Wildlife Management from Utah State University. He has spent the last twenty years working on environmental data management systems.

STEVE AICHELE is the User Engagement Chief (Acting) and the UE Hydrography Focus Area Coordinator. He has worked for the USGS since 1996, spending 10 years as a project chief with the Michigan Water Science Center and 10 years with the National Geospatial Program. In Michigan, his projects typically involved water quality work and groundwater-surface water interactions. With NGP, his work has primarily focused on making geospatial data and services more accessible to hydrologists.

Non-federal Water Resources Data Management Initiatives

PETER COLOHAN is the Director of the Internet of Water (IoW) initiative at the Lincoln Institute of Land Policy's Center for Geospatial Solutions, an effort that builds on the successful Internet of Water start-up project at Duke University, which he led from 2018 to 2021. Peter came to the IoW following nearly a decade of Federal service with the National Oceanic and Atmospheric Administration (NOAA). At NOAA, Peter was a key advocate for the development of the National Water Model and the creation of the NOAA Water Initiative. He also served as a Federal Coordinating Lead Author for the Water Chapter of the Fourth National Climate Assessment, published in November 2018. From 2010 to 2014, he served in the White House Office of Science and Technology Policy, on assignment from NOAA, where he provided advice to the Office of Management and Budget on the nation's \$3 billion investments in environmental data collection.

ADEL ABDALLAH is the Program Manager of the Water Data Exchange (WaDE) Program. He is the lead architect of the WaDE 2.0 data system. Adel joined the Council in June 2017 as a Hydroinformatics intern and started a full-time position as Senior Hydroinformatics Specialist in January 2019 and then was promoted as WaDE Program Manager in July 2019. Adel has a Ph.D. in Civil and Environmental Engineering with an emphasis on Hydroinformatics from Utah State University. His expertise is in designing data models for water management data to reconcile semantic and syntactic differences and streamline their access and analysis.

Integrating State and Federal Resources for Water Planning

MICHELINE FAIRBANK is a Deputy Administrator with the Nevada Division of Water Resources (NDWR). Prior to joining the Division in 2018, Micheline was the Senior Deputy Attorney General representing NDWR, as well as the Nevada Division of Environmental Protection. Micheline is responsible for supervising many facets of NDWR's sections, including Water Planning and Drought Resiliency, Hearings, Compliance and Enforcement, Administration, and Fiscal. Micheline, she received her law degree from Willamette University of College of Law and a Bachelor of Arts in Political Science with Minors in Biology and Environmental Studies. Micheline has previously worked with the Nevada Legislature as a Senior Research Analyst, as an Environmental Technical Provider with the Rural Community Assistance Corporation in Nevada before entering private practice where she has worked on a broad spectrum of matters from general civil litigation, water law, employment law, medical practice law, insurance defense, and a host of other matters. Micheline is licensed to practice in the states of California, Colorado, Nevada, before the 9th Circuit Court of Appeals, and United States Supreme Court.

JENNIFER CARR is a Deputy Administrator for the Nevada Division of Environmental Protection (NDEP). Jennifer's current NDEP portfolio of responsibilities includes oversight of the Agency's water quality programs statewide, including the Bureau of Safe Drinking Water, the Bureau of Water Pollution Control, the Bureau of Water Quality Planning and the Bureau of Administrative Services that also includes the Office of Financial Assistance for infrastructure financing. Ms. Carr has been with the NDEP since 1996 in various programs and capacities including eight years as the Bureau Chief for Safe Drinking Water, two years as Chief for the Bureau of Air Quality Planning, and many years working and supervising within the Bureaus of Water Pollution Control and Corrective Actions. She is a Nevada Registered Professional Engineer in Civil Engineering, is a Nevada Certified Public Manager, holds a B.S. in Civil Engineering from Montana State University and an A.A.S. in Architecture and Building Engineering Technology from Vermont Technical College.

ROGER GORKE is a Senior Policy Advisor in the Office of Water at the U.S. Environmental Protection Agency (USEPA). In that role, Roger is Agency lead for drought and western water issues, such as the nexus between water quantity and water quality and the cleanup of abandoned mines. Roger played a key role for USEPA in the development of the 2016 Presidential Memorandum "Building National Capabilities for Long Term Drought Resilience." He serves as the liaison for USEPA with the Western States Water Council (WSWC) and the Western Governors' Association (WGA) with respect to water issues. Roger has over 30 years of experience in water related environmental and public health protection at the local and federal levels. Roger is a native of southern California and a graduate of the University of California, Santa Barbara.

Groundwater Management

EARL LEWIS is the Chief Engineer and Director of the Kansas Department of Agriculture's Division of Water Resources (KDA-DWR). KDA-DWR administers 30 laws and responsibilities including the Kansas Water Appropriation Act which governs how water is allocated and used. The Chief Engineer oversees policies related to these laws, including water structures, stream obstruction, and represents Kansas in interstate water matters. Earl was previously with the Kansas Water Office for 20 years serving in various capacities including 14 years as the Assistant Director and 2 as the Director of the Kansas Water Office. In this role he oversaw the Kansas water planning effort and management of the state's reservoir storage system. He has represented the state on various organizations including WSWC, being on the board of the ICWP, and as President of the NWSA. He started his career working with the KDA-DWR on issues ranging from management and compliance of water rights to interstate litigation. Earl graduated from the University of Kansas with a B.S. degree in mechanical engineering in 1992.

KENNETH TITUS serves as Chief Counsel to the Kansas Department of Agriculture. He works with the various regulatory programs maintained by the department, manages all agency litigation, assists in all phases of the legislative process, advises the chief engineer and the Division of Water Resources, and provides general advice to the Secretary of Agriculture and staff. He specializes in water law and is experienced with Kansas administrative law issues. Titus previously served as an assistant attorney general specializing in water law and providing advice to various state boards, including the Kansas Water Office. He also worked at the Kansas Department of Transportation, dealing with property and condemnation law, tort law and insurance law.

TOM BUSCHATZKE is the Director, Arizona Department of Water Resources. Tom was appointed director in January 2015. Prior to this appointment he served as the Assistant Director of the Department's Water Planning Division, overseeing the Colorado River Management, Active Management Areas, Planning and Data Management, Assured and Adequate Water Supply and Recharge Permitting, and Statewide Planning programs and Tribal Liaison. He is responsible for multiple planning and policy, regulatory and permitting programs for the management of the state's water supplies.

AMANDA LONG-RODRIGUEZ is the Active Management Area Planning Manager at the Arizona Department of Water Resources (ADWR). Amanda is responsible for the development of the ADWR's new planning efforts in the Active Management Areas. In a previous role at ADWR, Amanda worked on the development of the 5th Management Plans, including the public stakeholder process, development of the mandatory conservation programs and the method for assessing the management goals. Amanda holds a BS and MS in environmental economics and policy.

Water Supply Studies and Forecasting

GLENN PAGE is a water resources and utility management consultant based in Woodstock, Georgia. He retired in December 2021 from the Cobb County-Marietta Water Authority, having served as its General Manager since April 2007. He formerly served as Assistant General Manager and Project Engineer during his 34-year career with the Authority. Prior to that, Page worked as a design engineer and project manager for two consulting engineering firms. He was appointed to the Metropolitan North Georgia Water Planning District by Governor Nathan Deal in 2017, and currently serves as its Chairman.

BRAD HUDGENS currently serves as the USACE Water Supply Business Line Manager, Program Manager for the National Portfolio Assessment for Reallocations and Contracting Officer's Representative for Independent External Peer Reviews. He previously served in the Southwestern Division as the first full-time technical director for the USACE Planning Center of Expertise for Water Management and Reallocation Studies. Prior to joining the Corps in 2009, Brad worked in the private sector as a project manager and engineer for the study, design and construction of water supply and flood risk management projects ranging from treatment plant pilot studies and residential storm drainage to metropolitan area water system and river basin studies. He holds a BSE in Systems Engineering from the University of Pennsylvania and a MSE in Water Resources Engineering from the University of Texas. He is a former Army officer, licensed Professional Engineer in Virginia and a Diplomat of the American Academy of Water Resources Engineers.

CARY TALBOT is Chief of the Flood and Storm Protection Division in the Coastal and Hydraulics Laboratory (CHL), U.S. Army Engineer Research and Development Center (ERDC) where he has worked since 1994. As Division Chief, he supervises the execution of research and development activities of over 100 scientists, engineers and technicians in a wide range of coastal, hydraulic, hydrologic, estuarine and riverine engineering, data collection and analysis applications. He is also the Program Manager of the Forecast Informed Reservoir Operations (FIRO) Program, a reservoir-operations strategy that uses enhanced monitoring and improved weather and water forecasts to inform decision making to selectively retain or release water from reservoirs to improve specifically targeted benefits. Dr. Talbot earned B.S. and M.S. degrees in Civil & Environmental Engineering from Brigham Young University in 1993 and 1994, respectively. He is a licensed Professional Engineer. He earned a PhD in Environmental Engineering from the University of Connecticut in 2008.

Basin Wide Water Planning and Climate Resilience

CHERIE SCHULTZ is the Director of Operations for the Section for Cooperative Water Supply Operations on the Potomac (CO-OP) at the Interstate Commission on the Potomac River Basin (ICPRB). ICPRB's CO-OP Section provides support to the Washington metropolitan area's regional water supply system, which includes suppliers in Maryland, Virginia, and the District of Columbia. Cherie is responsible for water demand and availability forecasts for the region, conducted every five years, which include estimates of the impact of upstream consumptive use on Potomac River flows and the potential impact of climate change on future supplies. She is also responsible for management of metropolitan area water supplies and operations during periods of drought. Recent projects include development of a real-time Low Flow Forecast System to help inform reservoir release decisions and an evaluation of the relative abilities of proposed structural and operational water supply alternatives to meet future challenges. Cherie holds a bachelor's

degree in physics from Stanford University, a doctoral degree in physics from the State University of New York at Stony Brook, and a master's degree in civil engineering from the University of Maryland.

BRANDT THORINGTON serves as the Policy Director for the Mississippi River Cities and Towns Initiative (MRCTI). Brandt has over 15-years of experience advancing the interests of state and local governments, in the process, he has helped to secure millions in funding from federal, state and local governments. Brandt specializes in analyzing legislation affects, building coalitions and advancing legislation. His primary areas of expertise are tax policy, appropriations, budget, energy, health care, immigration reform, homeland security, public safety, transportation, water infrastructure, and community development. Brandt has extensive experience working with various levels of government including Congress, federal officials, state legislators, mayors, and other local officials. Brandt received his Bachelor's degrees in Political Science and Economics at The Pennsylvania State University. He also has Master's degrees in Political Management from George Washington University and an MBA from John's Hopkins University.

KENNETH (KENNY) BLUMENFELD is a climate scientist who grew up in Minnesota with a love for storms, blizzards, and being outside. He works for the Minnesota State Climatology Office (Department of Natural Resources), where he provides the state's agencies, communities, and citizens with up-to-date scientific information about the region's changing and variable climate. He received a Ph.D. in 2008 from the University of Minnesota, where he studied hazards, extremes, and modern climatic change. Kenny enjoys talking to people about their weather, and often does it long after the workday is done.

DAVID WUNSCH is the Director and State Geologist of the Delaware Geological Survey. David previously served as the Director of Science and Technology for the National Ground Water Association (NGWA). He was the State Geologist of New Hampshire from 2000 to 2010, and had statutory appointments to the New Hampshire Joint Board of Geology, and Water Well Board. He is Licensed Professional Geologist in Kentucky, New Hampshire, and Delaware, and holds a doctoral degree. His scientific interests and areas of expertise are ground-water monitoring and exploration, aqueous geochemistry, mine hydrology, and engineering geology. David has served on the Board of Directors of the scientists and engineers division of NGWA, President of the Association of American State Geologists (AASG), and is currently past-President of the American Geoscience Institute. He has also served on federal advisory committees, study committees of the National Academy of Science, and has testified before Congress regarding national water and energy issues. He represented AASG on the Federal Advisory Committee on Water Information (ACWI), and was a founding member of its Subcommittee on Ground Water (SOGW), which developed a framework for monitoring the Nation's groundwater resources. By merit of his position, Dr. Wunsch represents the state of Delaware on the Delaware River Master Advisory Committee, which negotiates out-of-basin transfers and water management within the Delaware River Basin. David is a Fellow of the Geological Society of America. In 1999, he was presented the Outstanding Kentucky Geologist Award by the Kentucky Chapter of the American Institute of Professional Geologists, and in 2014, Wunsch was the recipient of the American Geosciences Institute's Outstanding Contribution to the Understanding of Geoscience award.

State Water Infrastructure Projects and Financing

BROOKE PAUP is the Chair of the Texas Water Development Board. Brooke has served as a Board member of the Texas Water Development Board since February 22, 2018. Governor Greg Abbott designated her as Chairwoman on April 22, 2021. Prior to her appointment to the Board, she served as the director of legislative affairs for the Texas Comptroller of Public Accounts for the previous three years. While there, she led a team of legislative professionals to address statutory tax reforms. She is formerly the deputy division chief of intergovernmental relations and former special assistant for policy and research for the Office of the Attorney General, where she worked on legislative issues, special litigation, and public finance-notably House

Bill 4 and Senate Joint Resolution 1 in the 83rd Legislative Session, which created the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT). She has 15 years of state government experience.

JEFF WALKER is the Executive Administrator of the Texas Water Development Board. Walker has served in various areas of the TWDB for more than 30 years, including as an Agricultural Conservation Specialist, a Financial Analyst, a Non-Point Source Coordinator, Director of Project Development, and Deputy Executive Administrator of Water Supply and Infrastructure. Looking back, his experience throughout the agency was training for his current role as what he calls the “best job in Texas.” Under his leadership, the TWDB has been named among top workplaces in Austin annually since 2017 and demonstrated exemplary fiscal management of its bond sale programs, which continually receive the highest credit ratings. In 2016, the TWDB was the recipient of the Bond Buyer’s Deal of the Year - Southwest Region. To date, the agency has issued more than \$6.5 billion in bonds and committed to fund more than \$8.9 billion for state water plan projects in Texas through the State Water Implementation Fund for Texas (SWIFT) program. He has also overseen the implementation of a new state flood program that initiated the first statewide flood planning and that, to date, has funded more than \$300 million in flood improvement projects across Texas. Walker holds a master of business administration from Texas State University and a bachelor of science in agricultural economics from Texas A&M University. He is the current treasurer and a member of the board of directors for the Council of Infrastructure Financing Authorities.

CANDICE HASENYAGER is the Director of the Utah Division of Water Resources. Candice has worked on water resources and planning projects since 2007. Over her career, she has been involved in the water banking legislation workgroup, Great Salt Lake Resolution (HCR-10) Steering Group, water resources planning, surface water modeling, hydrology studies, and municipal water demand projections. She graduated from the University of Utah with a Bachelor of Science and Master of Science in Civil Engineering.

ANDREA TRAVNICEK is the Director of the North Dakota Department of Water Resources. She was appointed by Governor Doug Burgum to lead the department in August 2021. In this role, she oversees the management of water resources for the state through water development, regulatory responsibilities, planning, education, and safety. As Director, Andrea provides overall leadership and decisionmaking, has hiring responsibilities, and oversees the State Engineer and the agency’s divisions and staff. She has over 15 years of research, communication, and work experience within the natural resources field. Her experience expands many facets including, water, agriculture, trade, energy, national security, disaster response and recovery, aviation, recreation, and public policy fields. Andrea’s extensive background also includes diverse international experience working on trade-related matters and international relations related to water management.

DOI Roundtable Discussion

TANYA TRUJILLO is the Assistant Secretary for Water & Science, DOI. Tanya is a water lawyer with more than 20 years of experience working on complex natural resources management issues and interstate and transboundary water agreements. She most recently worked as a project director with the Colorado River Sustainability Campaign. Before then, she served as the Executive Director of the Colorado River Board of California. She has served as Senior Counsel to the U.S. Senate Energy and Natural Resources Committee and as Counselor to the Assistant Secretary for Water and Science at Interior. A native New Mexican, Tanya attended Stanford University and the University of Iowa College of Law.

MICHAEL BRAIN serves as Deputy Commissioner at the U.S. Bureau of Reclamation and has 12 years’ experience working on water resource development and management issues on Capitol Hill. Most recently, Michael served as Professional Staff on the U.S. House of Representatives Appropriations Subcommittee on Energy and Water Development. He joined the Subcommittee staff in 2019 with a distinct focus on the development

and implementation of annual funding legislation, with a specific focus on the Bureau of Reclamation, Army Corps of Engineers, and emergency supplemental funding legislation for these agencies, including the CARES Act. Prior to joining the staff of the Appropriations Committee, Michael was Counsel to the U.S. House Committee on Transportation and Infrastructure. There, his portfolio included: the Army Corps of Engineers and related water resources policy; the U.S. Environmental Protection Agency; implementation of the Clean Water Act; and general oversight of National Environmental Policy Act issues. Michael holds a Bachelor of Arts degree from the Boston College School of Arts and Sciences and is a graduate of the St. Louis University School of Law, with a concentration on Land Use, Environmental Law and Urban Development.

DON CLINE is the U.S. Geological Survey's Associate Director for Water Resources. Don leads the USGS' research, monitoring, assessment, modeling, and prediction of the nation's water resources. The USGS Water Resources Mission Area (WMA) provides society with the information it needs on water quantity and quality across the Nation. Don oversees the WMA's efforts to advance understanding of the controls over water availability; to better predict changes in water quantity and quality in response to natural and human-induced changes; to anticipate and respond to water-related emergencies and conflicts; and to deliver timely water data, analyses, and decision-support tools seamlessly across the Nation to support water-resource decisions. Don joined USGS in 2016 following a 19-year career with the National Oceanic and Atmospheric Administration's National Weather Service, where he served as the Director of the National Water Center, the Chief of the Hydrology Laboratory, and the Director of the National Operational Hydrologic Remote Sensing Center. Don has been in the Senior Executive Service since 2010.

EPA Roundtable Discussion

RAFFAEL STEIN is the Director of EPA's Water Infrastructure Division and oversees the Clean Water State Revolving Fund (SRF) program which has provided over \$145 billion in assistance since its inception. He helped establish the Water Infrastructure Finance and Innovation Act (WIFIA) program as well as the Water Infrastructure & Resiliency Finance Center. Raffael has been with the Agency for over 25 years. During the course of his EPA career he worked as an economist in the Office of Water and served in several management positions in the Agency's Office of the Chief Financial Officer including Director of EPA's Office of Financial Services where he was responsible for all of the Agency's financial operations. Prior to coming to EPA, Raffael was an economist for the Commonwealth of Virginia and a financial analyst in a consulting firm specializing in municipal finance research. He earned a B.A. from Grinnell College and an MPP from Duke University.

JOHN GOODIN has served as the Director of EPA's Office of Wetlands, Oceans, and Watersheds since January of 2017, where he leads multiple programs related to the protection and restoration of the nation's waters. Chief among them are Clean Water Act efforts in collaboration with states to monitor and assess water quality, develop restoration plans and nonpoint source pollution reduction plans, promulgate rulemakings and guidance related to the Act's jurisdiction, administer permitting responsibilities related to inland and ocean discharges of dredged and fill material, and advance state and local efforts under our National Estuary Program and Urban Waters program. Prior to his OWOW position, John was Director of EPA's Wetlands Division where he was responsible for leading the development and implementation of national wetlands policy, including advancing rulemakings and regulatory actions with the Army Corps of Engineers, as well as the strategic and financial support of state programs and aquatic resource science and monitoring. Since joining EPA in 1990, John has also led the Agency's Watershed Branch, where he championed a new vision for the Clean Water Act's program on identifying and restoring impaired waters with the collaboration of state partners. He also previously led the Wetlands and Aquatic Resources Regulatory Branch and served as Acting Deputy Director of the Oceans and Coastal Protection Division. John holds a Master's degree in Zoology from the University of Western Australia and a Bachelor's degree in Biology from the University of Richmond.

U.S. Army Corps of Engineers Roundtable Discussion

ERIC BUSH serves as the Chief of Planning, U.S. Army Corps of Engineers (USACE) Eric has worked for the USACE since 2001. He is responsible for strategic leadership and program-level oversight of planning, environmental, and economics work performed in five district offices supporting the Division's civil works mission. Prior to working for the USACE, Eric worked for 10 years for the Florida Department of Environmental Protection (FDEP), including four years on the interagency planning team responsible for the development of the Comprehensive Everglades Restoration Plan. Eric has a Bachelor's Degree in Biological Science from Florida State University, has certificates from the University of Florida and George Washington University, and is a graduate of the AMSC's CES Advanced Course.

NOAA Roundtable Discussion

MARY ERICKSON is NOAA's Acting Assistant Administrator for Weather Services and the Acting Director of the National Weather Service (NWS). She served as the NWS Deputy Director from January 2017 to January of 2022. As Acting NWS Director, Mary is responsible for the overall leadership of the NWS, and ensuring the day-to-day civilian weather operations for the United States, its territories, adjacent waters and ocean areas. Strategic areas of focus include transforming the way Americans receive, understand, and act upon NWS information; ensuring NWS decision support services are equitably delivered across all communities, and advancing partnerships across the weather enterprise to reduce the impacts of extreme weather, water and climate events. She also oversees advances to strengthen the NWS scientific, forecast and dissemination infrastructure, and champions efforts to support NWS employees in a diverse, equitable, inclusive and accessible workplace.

USDA Roundtable Discussion

HOMER WILKES currently serves as Undersecretary of Agriculture for Natural Resources and the Environment. He also served as the Director of Gulf of Mexico Ecosystem Restoration Team, where he was responsible for overseeing the rebuilding of the Ecosystem of the Gulf of Mexico after the BP Oil Spill of 2010. He has also served as the Acting Associate Chief of USDA/Natural Resources Conservation Service (NRCS) in Washington DC. Dr. Wilkes tenure with the United States Department of Agriculture spans over 41 years, during his tenure he has served as State Conservationist for Mississippi; Chief Financial Officer for NRCS in Washington, DC; Deputy State Conservationist for Mississippi; Chief of Administrative Staff for the South Technical Center for NRCS in Fort Worth, Texas. Dr. Wilkes also served as Naval Supply Officer in the United States Navy Reserves from November 1984 – April-2007. He received his Bachelors, Master of Business Administration, and Ph.D. in Urban Higher Education from Jackson State University. He also successfully completed the USDA Senior Executive Service Candidate Development Program (SES CDP) through American University's Key Executive Leadership Certificate in Public Policy.

ASTOR BOOZER has served as the NRCS Regional Conservationist for the West Region since December 2011. He provides agency and natural resources leadership and support to state conservationists and partners and ensures states effectively manage an extensive portfolio of comprehensive conservation strategies – which includes implementing NRCS's conservation technical assistance and financial assistance programs on private lands. Through his leadership, NRCS has addressed water quantity and quality issues and strengthened partnership collaboration and customer service throughout the region. Boozer works to improve private and public lands conservation and help landowners efficiently gain access to USDA technical and financial assistance programs and services. He also helps leverage funding for boots-on-the-ground to deliver voluntary, science-based conservation. He's passionate about employee development and works closely with NRCS national and state leadership to provide training, offer temporary career-enhancing assignments, and explore mentoring opportunities to develop future agency leaders. A native Texan and diehard Cowboys

fan, Boozer grew up on a farm and ranch operation where he learned all about agriculture and caring for the land. During his 34-year tenure with NRCS, he has worked in eight states in a variety of state, regional, and national positions. He holds a Bachelor of Science in Agriculture from Prairie View A&M University in Prairie View, Texas.

BARNIE GYANT serves as the Associate Deputy Chief for National Forest System in Washington, DC. In this position, he oversees Forest and Range Management, Vegetation Ecology, Biological and Physical Resources, Ecosystem Management Coordination (Environmental Compliance, NEPA) and the National Partnership Office. Barnie has over 30 years of government experience with the USDA Forest Service in a variety of positions across the country.

NASA Roundtable Discussion

LAWRENCE FRIEDL serves as the Director of the Applied Sciences Program within the Earth Science Division at NASA Headquarters. The Program supports efforts to discover and demonstrate innovative and practical applications of Earth science by government, business, and other organizations. He has been with NASA since 2002, and he has served as the program manager for air quality applications along with several other applications themes. Before joining NASA, Lawrence worked at the U.S. Environmental Protection Agency, where he focused on applications of geospatial data and technology. He also served as a Space Shuttle Flight Controller in NASA's Mission Control Center for 15 missions, including several Earth science missions. He joined the federal government as a Presidential Management Intern.

BRADLEY DOORN is the Program Manager for Water Resources and Agriculture in the Applied Science Program of the Earth Science Division of NASA. With over 35 years of experience in applying remote sensing data to Earth applications, Dr. Doorn now manages over 30 applied research projects and two consortia. He also serves as the Applied Sciences Project Lead for the Surface Water Ocean Topography (SWOT) and the Mass Change missions and various interagency committees; such as the NOAA-led Executive Council for the National Interagency Drought Information System (NIDIS) and co-lead of the Green House Gas Interagency Working Group for Climate-Smart Agriculture, among other duties. Previously, Dr. Doorn was the Division Director of the International Production Assessment Division in the Office of Global Analysis, Foreign Agricultural Service (FAS), USDA. Dr. Doorn also served on active duty for nearly 10 years as a U.S. Army Corps of Engineers Topographic Officer. He is a long-time member and former President of the American Society for Photogrammetry and Remote Sensing (ASPRS). Dr. Doorn received his doctorate and master's degrees from The Ohio State University in Geodetic Science and Surveying and his bachelor's degree in Geological Engineering from South Dakota School of Mines and Technology.

Congressional Panel Discussion with Key Committee Staff

MATTHEW MUIRRAGUI is Staff Director for the Water, Oceans and Wildlife Subcommittee on the U.S. House Natural Resources Committee. He has been the staff lead for Natural Resources Committee Democrats on water issues for the past eight years. Matthew provides policy and strategic advice for Democratic Members of Congress and their staff and regularly develops and drafts legislation to advance Member priorities, including multiple water priorities recently enacted through the Bipartisan Infrastructure Law. Prior to his tenure on the Natural Resources Committee, Matthew worked on congressional campaigns and graduated with a degree in Government from the College of William and Mary.

LOGAN FERREE serves as a Professional Staff Member for the Water Resources and Environment Subcommittee on the House Transportation and Infrastructure Committee. This subcommittee's jurisdiction includes water resources projects in the Army Corps of Engineers as well as the Clean Water Act and clean water infrastructure. He formerly spent nine years working for California North Coast Representative Jared Huffman, ending as

Deputy Chief of Staff for the office. From Virginia originally, Logan graduated the College of William and Mary with a B.A. in Government and a minor in Anthropology, and has a Master's in Transportation Policy from George Mason University's School of Policy and Government.

RYAN HAMBLETON is the Minority Staff Director of the Water Resources and Environment Subcommittee on the U.S. House Committee on Transportation and Infrastructure. The primary areas of jurisdiction of the subcommittee include the clean water programs and water infrastructure, mostly conducted by the Environmental Protection Agency and the U.S. Army Corps of Engineers, respectively. Before taking that position, he was at the U.S. Department of the Interior as Deputy Assistant Secretary for Fish and Wildlife and Parks, where he helped oversee and provide direction to the National Park Service and the U.S. Fish and Wildlife Service. Prior to that, he was on the staff of the House Committee on Oversight and Government Reform, most recently as staff director of Subcommittee on Interior, Energy and Environment. Finally, before that, he worked on energy, environment, and other issues on the staffs of U.S. Senators Jim Bunning of Kentucky and Bob Smith of New Hampshire. Ryan is a graduate of Colby College in Waterville, Maine and a native of the Seacoast Region of New Hampshire.

MELANIE THORNTON is a Professional Staff Member for the Senate Energy and Natural Resources Committee (Majority). Melanie joined the Senate Energy and Natural Resources Committee in August 2019. She advises on western water, science and insular affairs policies. Prior to the Senate Energy and Natural Resources Committee, she worked at an environmental nonprofit and served as a science legislative fellow for U.S. Senator Tom Udall. Melanie earned a B.S. from Texas A&M University in 2011 and an M.S. (2012) and Ph.D. (2017) from Washington State University, where her doctoral research focused on hydrology, stakeholder engagement and water management.