

Incorporating Arid State & Water Quantity Priorities in NACWA's Advocacy Agenda

A CONCEPT PAPER

PRESENTED BY:

NACWA

IN COLLABORATION WITH:



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Executive Summary

The National Association of Clean Water Agencies (NACWA) recognizes that there are unique perspectives and water resource challenges in both the arid west and the southeast. These regions, perhaps most acutely in the southwest, face significant water quantity and water quality challenges that are predicted to intensify with climate change and growing demands for fresh water. NACWA's leadership has made it a top priority to ensure these challenges can be addressed effectively through its national policy agenda and through more collaboration with existing organizations that are focused on these issues at the state, regional, or national level.

As a first step to developing a set of advocacy priorities on these water quality and quantity issues, NACWA partnered with the Western Coalition of Arid States (WESTCAS) during the 2017 WESTCAS Annual Conference in San Diego, California for a half-day of roundtable discussions with an array of water professionals from key western states.

In preparation for the workshop, NACWA and WESTCAS jointly pinpointed critical water resource issues impacting their respective members and the water sector more broadly. Each issue identified by NACWA and WESTCAS became a topic theme and later served as the foundation for a more focused and comprehensive roundtable discussion. Utility leaders and experts shared past experiences, current challenges, and practical solutions that could help other peer utilities facing similar challenges and galvanize national attention to real water resource needs.

The five roundtable discussion themes were:

- **Regulatory improvement, Clean Water Act reform, and related opportunities**
- **Affordability, funding, and financing**
- **Climate change and resiliency policies**
- **The water quality and water quantity nexus**
- **The Utility of the Future and technology**

Workshop participants were provided with background summaries for each topic theme as well as thought-provoking questions to help foster a robust dialogue. Participants identified a variety of ideas on critical issues that affect the daily operation of their water utilities. During these discussions, it became apparent that many of the challenges extend well beyond the arid west borders and demand greater national focus.

This White Paper details each of the roundtable discussion topic themes and summarizes the participants' dialogue. It also touches on some of the broadly discussed roundtable recommendations that warrant national attention.

This White Paper will be shared with all the NACWA and WESTCAS members as well as with key stakeholders who may want to add input. While this White Paper is a summary of the initial discussions with WESTCAS and as a start to formulating an advocacy agenda, it is intended to ultimately evolve into a more thorough statement of NACWA's priorities on arid state/water quantity issues and should be considered a living document.

Regulatory Improvement, Clean Water Act Reform, & Related Opportunities

REGULATORY IMPROVEMENT, CLEAN WATER ACT REFORM, & RELATED OPPORTUNITIES

President Donald Trump recently issued two Executive Orders directing federal departments and agencies to review existing regulations and propose rules (and guidance) for elimination or modification with a focus on how to alleviate burdens that impact the regulated community. The Obama Administration's Clean Water Rule, also referred to as the Waters of the United States definition, has been a notable target among environmental regulations.

The 115th Congress has also made streamlining existing regulations to reduce burdens a top priority. Coupled with this focus on regulatory reform, the Trump Administration has proposed dramatic reductions in the funding of EPA enforcement programs. Water agency managers must consider the high probability that reform efforts and reduced enforcement could trigger reinvigorated state and citizen enforcement actions.

Beyond the regulatory sphere, the escalating demands placed on municipal water sector agencies are driving a need for utilities to operate as efficiently and effectively as possible to maximize benefits and opportunities with limited resources. NACWA believes Clean Water Act reforms are needed to encourage necessary flexibility and recognize issues of affordability to better enable local approaches that many municipal utilities and throughout the country need.

ROUNDTABLE QUESTIONS:

1. Is broad regulatory reform necessary to achieve the objectives of the Clean Water Act or to better address the unique arid and semi-arid state water issues? Can current issues be fixed through improved implementation (e.g., site specific criteria, use attainability analysis, variances, etc.)?
2. If reform is necessary, what would be your top recommendations relating to arid and semi-arid state water issues that should be revised?
3. Are there specific provisions of the Clean Water Act that need to be modified or clarified from your point of view to help you manage your agency more effectively?

ROUNDTABLE THOUGHTS:

The Clean Water Act is primarily a dry weather statute, with criteria and other provisions focused on protecting water quality conditions. Seemingly, the Clean Water Act could reflect and benefit the unique challenges experienced in the arid southwest with less predictable wet weather events and a drier climate. However, it became clear during the roundtable discussions that municipal drinking water and clean water utilities have significant challenges with existing federal regulatory requirements.

Water availability, both short-term and long-term, continues to be a major concern for the water sector not only in the arid west but also in many parts of the country where water appears more plentiful, including the southeast. Extreme weather events such as episodic flash flooding and historic long-term drought periods create an unpredictable meteorological phenomenon that often causes heightened supply and water quality concerns. Increasing land development, shifting climate patterns, and growing competition for already over-allocated freshwater supplies adds to freshwater demand challenges.

To truly reflect the known realities observed in arid states and southeast, regulatory flexibility that considers and encourages water reuse, recycled water, and/or desalinization initiatives may provide a practical path forward for utilities to meet future supply demands. An emphasis on aquifer storage and recovery (ASR) technology is also needed as the water sector seeks to supplement local

water sources for short and long-term supply.

In addition to supply, meeting water quality standards and criteria also pose unique challenges to water sector utilities. In arid states, many streams and rivers are effluent dominated receiving waters. As such, as ephemeral or intermittent streams become more prevalent with the changing climate and dwindling quantities; therefore, regulatory flexibility in meeting water quality requirements in low-flow environments is vital.

POTENTIAL ADVOCACY ACTIONS:

- Modernize the Clean Water Act. The Clean Water Act should be modernized to include nonpoint sources that are contributing to surface water degradation. Point source dischargers have been regulated for nearly half a century; the time has arrived to modernize the Clean Water Act to reflect all sources.
- Consider net environmental benefit. Strict water quality requirements are often only attainable at an excessive cost and, if met, do not always guarantee greater protection of human health or the environment. Regulations need to consider and account for permittee costs before imposing heightened water quality requirements.
- Redefine the Waters of the United States (WOTUS). The controversial WOTUS definition should consider the unique hydrology of the arid west. Streams and tributaries are ephemeral or intermittent for significant periods, if not permanently, and should not have the same regulatory requirements as a permanent or continuous surface water. The revised WOTUS definition should also consider hydrology in the southeast where groundwater levels and movement can significantly influence surface waters.
- Encourage nationwide and general permits with longer term periods. General permits, as opposed to individual permits, are usually more streamlined and efficient for the clean water sector. It would be beneficial to many permittees if permit lengths were extended from 5 years to 10 years.
- Reject groundwater and flow legal challenges. The Clean Water Act does not regulate groundwater or mandate in-stream flow requirements. As more legal challenges arise, Congress or EPA must provide national clarity on the extent water utilities can be subject to groundwater and flow litigation.
- Allow flexibility in green infrastructure and low impact development initiatives. The arid west is drastically different than more temperate, wetter regions. Fostering flexible stormwater requirements for municipalities in these regions will encourage more interest in investing in low impact development and green infrastructure that are appropriate for arid climates.
- Ensure guidance documents are not regulatory in nature. Guidance documents are intended to be voluntary in nature and to assist users. There is growing concern that guidance documents are inappropriately used to influence permit writers or are incorporated into federal or state regulatory frameworks.

Affordability, Funding, & Financing

AFFORDABILITY, FUNDING, & FINANCING

The nation's water infrastructure is aging. How to pay for the needed investment and the resulting increasing cost of water and wastewater services is a paramount question facing many utilities, including in the arid parts of the country that can present unique challenges when establishing user fees.

The federal government's commitment to water infrastructure funding continues to stay stagnant while states and local governments strive to meet increasing capital needs. Municipal water utility managers must develop novel approaches to help close this increasing infrastructure financing gap without passing unsustainable rates on to ratepayers.

A variety of funding options exist, including the Clean Water State Revolving Fund (CWSRF) and the new Water Infrastructure Finance and Innovation Act (WIFIA) program. Both allow utilities to leverage federal financial support to finance water infrastructure improvement projects. However, these financial packages fall short of the vast investments needed.

President Trump has vowed to rebuild America's infrastructure. NACWA is working to ensure the highest funding level possible for water infrastructure in any package or bill that is developed. However, this potential funding opportunity could be compromised by federal tax reform efforts that restrict or eliminate the use of tax-exempt municipal bonds. NACWA is aggressively defending any attempt to roll back or deny tax-exempt municipal bonds as these are a primary and proven financing tool to help water utilities secure financing for infrastructure investment.

ROUNDTABLE QUESTIONS:

1. Water rates are rising across arid and semi-arid states, while conservation continues to reduce water usage—how do these trends impact affordability for your agency? What other affordability issues are you facing and how can they be addressed?
2. In what ways can or should municipal water agencies engage with private entities or other partnerships to finance or operate projects? Are there other partnerships beyond Public-Private Partnerships (PPPs) that need to be considered?
3. What type of funding and financing tools are used most by your utility and are there new ones that need to be put in place?

ROUNDTABLE THOUGHTS:

Drinking water and clean water utilities agreed during the roundtable discussions that aging infrastructure is a top challenge. Utilities are faced with the delicate balance of maintaining aging infrastructure, keeping customer rates sustainable, and assisting low income or disadvantaged communities with affordability issues where possible. In addition, the growing public trend to conserve water by installing more water-efficient products has created a dilemma for utilities in raising the necessary capital to fulfill ongoing operational and maintenance obligations.

It became clear from the roundtable discussions that messaging the “true value” of water to consumers and finding a way to close the funding gap for operation and maintenance needs are critical long-term challenges for municipal water agencies.

The roundtable discussions also noted that the water sector has witnessed the end of federal and state grant era. Federal and state loan opportunities are the new normal and competition over these opportunities is likely to become more fierce. Therefore, water utilities in the arid west are looking for novel approaches to financing projects such as creating rainy-day fund reserves, passing legislation for affordability programs, and considering private partnerships.

POTENTIAL ADVOCACY ACTIONS:

- Advocate and message the “true value” of water. Recent long-term droughts have enhanced the public’s understanding and willingness to take more comprehensive steps towards water conservation. This effort, however, has diminished the municipal water sector’s capital that is traditionally allocated to maintain and operate infrastructure. The water sector must take every step to communicate and message the true value of water to the greater public.
- Create innovative funding opportunities. As federal grant programs dwindle, states should make every effort to create alternative funding resources. For example, the Texas Legislature created the State Water Implementation Fund (SWIFT), a rainy-day fund that allows communities to receive financial assistance for a variety of public water projects.
- Promote sensible funding resources for rural, underserved, or disadvantaged communities. The water sector agrees that it is critical to advance sensible funding measures and to ensure safe, reliable supplies for low-income, rural, and disadvantaged communities. Subsidized financing opportunities through the CWSRF such as principal forgiveness and grants should be increased and expanded for these communities.
- Support water affordability legislation. California’s state legislature recently introduced a bill to create a “safe and affordable drinking water fee” on public water systems to help leverage financial assistance for disadvantaged communities and low income individual domestic well users. This legislation is an effort to provide ongoing funding to ensure that all people have access to safe and affordable water. However, states should be diligent and consider some caveats on this support to make sure that this is not just another water fee or a tax on water that raises rates for water users.
- Evaluate PPPs. PPPs can apply to a broad range of services and ownership arrangements through all phases of project development to operation. For this reason, the financial and economic benefits of PPPs can vary considerably from project to project, and each project must be evaluated independently to determine if there is a significant need and benefit that can be provided through a PPP.
- Support increased federal funding through SRF programs and WIFIA. Clean water and drinking water agencies have relied heavily on low-interest financing through the CWSRF programs and WIFIA. Utility needs to address aging infrastructure issues are increasing. Advocacy should continue for increased program funding.
- Defend tax-exempt municipal bonds. Many municipalities rely on tax-exempt bonds to finance their critical water infrastructure. With increasing needs and decreasing grant and loan programs, maintaining tax-exempt municipal bond status is a high priority for public agencies.
- Be consistent with ratepayers. Customers value consistency and predictability with their utility bills. In the arid west, as supplies fluctuate, it is important to boost communications with the public on the value of water and be transparent in deciding what rate structure is best for each community.
- Draft economic guidance for municipalities. EPA or the states should develop a guidance document for municipal water utilities to assist communities in selecting the most practical economic strategies when establishing utility rates.

Climate Change & Resiliency Policies

CLIMATE CHANGE & RESILIENCY POLICIES

Shifting climate patterns are creating new programmatic, technical, and infrastructure-related challenges for water agencies. Extreme drought conditions, decreased water content in snowpack, sea level rise, flood events, and salt water intrusion are ongoing examples of climate resiliency challenges.

Utility managers must be prepared to adopt resiliency solutions to meet climate related challenges to protect public health and the environment while balancing competing demands like population growth, increased environmental regulation, and ensuring sustainable economic development.

Water agencies need to actively engage in developing flexible, creative, effective and proactive climate solutions to address the persistent and growing climatological threats. Exploring solutions that enhance infrastructure resiliency by, for example, designing and installing green infrastructure and using innovative technology can help reduce the costs of compliance while simultaneously protecting against future climatological events. In addition, water reuse/recycling (e.g., indirect potable reuse and direct potable reuse), and desalination technologies can help meet the twin goals of promoting a safe and reliable water supply.

ROUNDTABLE QUESTIONS:

1. What are the top challenges in arid and semi-arid states in seeking solutions to climate and resiliency issues?
2. What should the federal role be in helping your utility and municipality mitigate climate impacts to become more resilient?

ROUNDTABLE THOUGHTS:

The arid west is prone to weather extremes including more intensive rain events and consecutive drought years. It became clear during discussions that models used to predict hydrological patterns are often inadequate to address contemporary changes in climatic patterns. Ultimately, these models fail to accurately estimate current availability as well as predict future water supplies.

Therefore, roundtable discussions noted that regulatory flexibility is key for arid state water utilities. This is especially true when addressing the unpredictable nature of water availability and demands. If Clean Water Act requirements offered greater flexibility, such as flexibilities that correspond to seasonal precipitation or immediate water quantity realities, the water sector would be able to meet these requirements at lower costs while protecting human health and the environment.

POTENTIAL ADVOCACY ACTIONS:

- Develop best practices for addressing climate change and resiliency strategies. States and the water sector more broadly should develop best practices or guidance on addressing the specific challenges drinking water and clean water utilities are likely to encounter as well as practical methods to promote resiliency.
- Prioritize integrated planning. Integrated planning is a core approach to managing wastewater and stormwater responsibilities. It is a mechanism that interlaces many of the water sector's concerns including: sustainability and innovation, community involvement, affordability, and environmental justice, among others. Integrated planning efforts need more federal funding and need to be prioritized.
- Invest in additional water storage techniques. Diversifying supply resources and capabilities, such

as increasing long-term infrastructure storage or capturing and storing stormwater, can offer arid states greater supply reserves during prolonged drought periods.

- Incentivize the workforce. The municipal water sector is experiencing work force challenges such as employee attraction, retention, and a generally aging workforce. Techniques to prioritize and emphasize professional development and opportunities must be realized to attract the next generation workforce and to continually engage employees.

The Water Quality & Water Quantity Nexus

THE WATER QUALITY & WATER QUANTITY NEXUS

Water agency managers are encountering new challenges to ensuring safe and reliable water supplies because evolving extreme climatic events, growing populations, and the need to protect ecosystems. Competing demands and increasing regulatory mandates only exacerbate these challenges.

The water quality/quantity nexus is not a new phenomenon. The increasingly complex interaction between quality and quantity suggests that a new clean water framework is needed to address 21st century water management issues. Under such a framework, states may in fact have a more significant role delivering sustainable and safe water resources, and federal regulations should reflect this.

Any new framework should consider the relationship between land use decisionmakers and water resource managers. Local land use decisions impact both surface water and groundwater quality and quantity. In addition, water agency managers must deal with increased salinity, expanding brackish waters, dwindling inland freshwater and groundwater resources, and changing surface landscapes. Communication, innovation, and emerging technologies will play a critical role in how utility and water resource managers provide high quality water for growing municipal, industrial, agricultural, and ecosystem needs.

Utilities are considering and adopting new solutions to meet the growing societal demands for affordable and accessible clean water. However, water management systems that consider increased variability in water quality and quantity, as well as local land use decisions, are needed to comprehensively address current and future water needs.

ROUNDTABLE QUESTIONS:

1. What are the top challenges and opportunities to ensuring a safe reliable water supply given the increasing demands on water quality/quantity? Does your utility encounter challenges with environmental regulations or statutes such as the Endangered Species Act, Clean Air Act, or National Environmental Policy Act?
2. What kind of role, if any, should the federal government serve in developing solutions to the water quality/quantity nexus—with a focus on reuse and desalination? Should the regulatory process be modernized to address changing water availability (e.g., permit reform, advanced monitoring, streamlining reporting, Integrated Planning)?

ROUNDTABLE THOUGHTS:

During roundtable discussions on water quality and water quantity, it became clear that regulatory authorities must balance between water “wants” and the realities of arid state water “needs.” For example, groups that advocate for more robust water conservation practices may indeed help improve short-term and long-term supply issues. However, increased conservation efforts can also result in an overall decrease in water quality as surface waters have more concentrated pollution. The water sector must continue to advocate for water use efficiency while improving surface water quality.

An additional “want” in arid states is the desire to promote water reuse and recycled water programs that could reduce withdrawals, increase conservation, and ultimately provide an avenue for direct potable reuse. As technology advances and allows for more affordable water reuse and recycling programs, the water sector must find a balance between meeting this contemporary water quantity challenge and the consequences of reduced stream flow and impacted downstream users.

POTENTIAL ADVOCACY ACTIONS:

- Eliminate water sector silos. Drinking water utilities, wastewater utilities, and stormwater management programs, each of which are often financially overburdened and understaffed, grapple with communicating and collaborating with each other on similar water issues. Breaking down these regulatory barriers and promoting policies that allow for cross-collaboration would benefit the clean water sector. Fostering collaborative dialogue among professional associations may also provide a manner for the water sector to advocate with a unified voice.
- Advance more practical water quality standards and testing methods. Current regulations are often too restrictive for certain water quality parameters such as total dissolved salts (TDS), chlorides, sulfates, and conductivity. There is no cost-effective method for treating or removing these constituents. In addition, testing methods such as whole effluent toxicity tests are unclear and often inconsistent.
- Incorporate watershed-based permits. This type of permitting not only takes a more comprehensive approach to addressing water pollution within a watershed, it would allow for the creation of a nutrient bank. Addressing all sources of water and pollution would be a helpful approach to developing an overall water quality or water improvement plan.
- Compromise between water reuse and environmental needs. Return flows are important to maintain downstream western water right obligations. To meet future supply demands, there must be a compromise or flexibility between users. Possible solutions include considering additional storage or stormwater capture.
- Foster flexible stormwater requirements. Incorporating flexibility into stormwater requirements by region would give municipalities in different parts of the country the ability to assess their stormwater management techniques and ultimately help reduce stormwater from entering rivers and streams.
- Further local and regional water planning partnerships. Land use decisionmakers, water right holders, and water utilities should create partnerships to advocate for local and regional best practices for addressing supply concerns and climate.
- Commit to more research and development. Research, development, and technology are a backbone of the water sector. In order to remain up-to-date with modern water quality and quantity challenges, it is imperative to continue to advocate for scientific research that identifies actual problems and provides real solutions. A greater emphasis on water quantity research is needed especially practical research that focuses on water utilization and long-term supply strategies.

Utility of the Future & Technology

UTILITY OF THE FUTURE & TECHNOLOGY

Municipal water sector utilities are multi-purpose organizations serving the public health needs of the local community, protecting the environment, and implementing sustainable energy solutions. This is the underlying concept of the Utility of the Future (UOTF) model, where today's water agencies work to design and implement advanced processes and technologies targeting energy production, water recycling, green infrastructure, and partnerships to achieve maximum benefits to the environment, public health, and local and regional economies. In addition, the UOTF model aims to reduce pressures on rates and increase a diverse portfolio of revenue sources.

The UOTF concept is equally pertinent to utilities located in arid and semi-arid states, especially as it relates to water supply and reuse. The uncertainty of a safe and reliable water supply can restrain a community's ability to grow its economy and meet its obligations to protect human health and the environment without unreasonably increasing the burden on ratepayers.

Many utilities in arid states have adopted innovative concepts due to growing demands on energy, water resource supplies, and climatological concerns.

ROUNDTABLE QUESTIONS:

1. As arid and semi-arid utility leaders, what emerging technologies or processes, resource recovery approaches, or innovative funding opportunities do you see as solutions both for your utility and on a national scale?

ROUNDTABLE THOUGHTS:

In the arid regions of the country, the water sector is frequently confronted with distinct short-term and long-term supply challenges. From the roundtable discussions, water reuse and recycling efforts are becoming a more welcomed solution to meeting local and regional supply demands. As public acceptance of water reuse increases, municipal water agencies continue to encounter legislative and regulatory hurdles and conflicts with water right holders. Municipal clean water utilities must collaborate with their fellow water peers regionally and nationally to find the best solutions.

Roundtable discussion participants identified integrated planning as a critical issue for the water sector in the arid west. Integrated planning is a realistic opportunity for arid states to consider, and have the time to develop, appropriate responses to water management goals, costly and more stringent regulatory water quality requirements, aging infrastructure, and adapting to the changing climate.

Participants in the roundtable workshop also recognized that innovation can inspire change and is a vital arid state issue. Water reuse, recycling, desalination, brine management, and other policies and advanced technologies would help utilities "focus on the future" as climate patterns shift and population levels fluctuate, and regulatory and economic demands change.

POTENTIAL ADVOCACY ACTIONS:

- Unite the water sector. The "One Water" concept may have its own challenges, but it seems to be a recurring theme nationwide. Developing a strategy to mitigate regulatory silos between drinking water, wastewater, recycled water, and stormwater management would be beneficial to nationwide—especially in areas where potable and non-potable water reuse are gaining greater public traction.
- Expand revenue streams. Clean water utilities can be important generators of energy and other marketable products such as recovered phosphorus and biosolids materials. Incorporating

innovative technologies such as solar power, biogas production, nutrient recovery (e.g., Struvite), and pre-processing food/organic waste into utility management programs can further local sustainability goals, and reduce costs while adding new revenue streams for utilities.

- Foster comprehensive training programs. As technology advances, particularly big data, training and education programs should be in place for existing and prospective employees to learn the skills necessary to adapt to emerging technologies. Apprenticeships and ongoing certification programs could close the knowledge gap and help utility operators with professional development and furthering career goals.
- Pursue State Revolving Fund (SRF) partnerships. As financing programs become scarcer, competition over SRF funding is likely to increase. Greater opportunities and incentives for watershed-based or regional projects would develop if municipal utilities could partner together for SRF financing resources.
- Inspire cross-collaboration. Much like the anticipated peer-to-peer networking, a regional or national platform for sharing ideas and lessons learned is needed between the municipal water sectors, regulatory bodies, industries, and academia.

Conclusion & Next Steps

The NACWA and WESTCAS roundtable discussions revealed the stark reality and daily challenges that many municipal water and wastewater utilities in the arid and semi-arid regions of the country encounter with respect to water quality and quantity. At the same time, the discussions also revealed that many of the issues raised by arid state utilities parallel those raised by utilities nationwide, including affordability, funding and financing, as well as the need for greater flexibility to meet increasingly stringent water quality requirements.

NACWA is committed to incorporating the issues raised during the roundtable discussions into its overall advocacy portfolio and revising NACWA's Strategic Plan to reflect these important arid state and broader water quantity issues. While arid state challenges may present themselves somewhat differently than in utilities in wetter areas, combined they constitute a vital policy matter necessary to advancing NACWA's national advocacy agenda.

NACWA would like to thank WESTCAS for hosting the collaborative roundtable workshop at its *25th Annual Conference* in San Diego and several of its state partners for helping us in this process as well. NACWA would also like to express its appreciation to each roundtable leader and participant who contributed to the thought-provoking conversation and provided us with a solid footing on which to build a more responsive national advocacy agenda.