



June 27, 2024

President's Council of Advisors on Science and Technology (PCAST)
Emailed to pcast@ostp.eop.gov

RE: ASDWA's Input on America's Groundwater Challenges

Dear PCAST Working Group Members,

The Association of State Drinking Water Administrators (ASDWA) appreciates this opportunity to provide responses to the [PCAST's important questions related to the nation's groundwater challenges](#). ASDWA is the independent, nonpartisan, national organization representing the collective interests of the drinking water program administrators in the 50 states, five territories, the District of Columbia, and the Navajo Nation. ASDWA's members implement the Safe Drinking Water Act (SDWA) by regulating and providing technical assistance and funding for the nation's public water systems (PWS) and coordinating with many partners to protect both surface and groundwater sources of drinking water.

Beyond the Federal Underground Injection Control (UIC) program regulations for groundwater under the SDWA, each state has different laws, regulations, and policies in place for groundwater quality and quantity. The states also collaborate with many partners to assess and address groundwater needs. These partners include other state and Federal agencies and programs, local governments, water systems, community engagement groups, universities, associations, the private sector, and other experts and stakeholders.

The most important actions the President and the Federal government can take to optimize groundwater quality and quantity strategies and actions are to promote collaboration with states and other new and existing partners, to support the expansion and enhancement of tools and resources, and to ensure that Federal agencies provide flexibility for allowing current Federal funding programs to be directed toward groundwater. For more information about the importance of, and special considerations for, protecting groundwater sources of drinking water, read the [ASDWA – GWPC Groundwater-Based Source Water Protection Paper \(September 2019\)](#).

For your consideration, below are a series of overarching recommendations, as well as specific responses to the PCAST questions for building a better understanding of total groundwater use, recharge, and storage across the U.S., and for developing national groundwater stewardship strategies.

Overarching Comments: ASDWA recommends that the PCAST Working Group broaden the focus of this effort to develop strategies to assess and address groundwater challenges throughout the entire U.S., beyond water conservation and drought resilience in the Colorado River Basin and across the West, as is stated in [the White House briefing](#). These nationwide strategies should ensure deference to and consultation with the state programs that have exclusive authority over the allocation and administration for groundwater within their borders. These strategies should also focus on hydrologic and regional areas of scale for decision-making, by examining the water cycle across all sectors, including groundwater and surface water connections. These strategies should consider impacts to

groundwater from agriculture and energy laws, policies, and funding, as well as economic and community development factors that drive depletion and contamination of the nation's groundwater resources, while at the same time continuing to ensure food, energy, and economic security. Groundwater quality and quantity impacts must be considered as part of these Federal, state, and local decision-making processes aimed at providing for the needs of the nation's citizens and communities.

ASDWA Comments in Response to PCAST Questions:

How can we enhance the timely collection of data on groundwater inventory, use, recharge, and flow across the United States to gain a whole-of-country picture of the nation's groundwater resources?

- Develop a method for registering the location and construction of all wells for the entire country. Many states do not or did not require all wells to be registered and therefore are unable to mitigate groundwater quality impacts from unknown wells.
- Expand research and funding for groundwater modeling, monitoring, and mapping.
- Promote data collection and research to better understand the water cycle and impacts from energy and food production demands.
- Support funding for the USGS [National Water Quality Monitoring Network](#) and [National Ground Water Monitoring Network \(NGWMN\)](#) and other state and tribal efforts and opportunities to collect, manage, and share groundwater data.

How can we effectively model and predict changes in the inventory, recharge, and flow of groundwater in the context of the overall water cycle and provide that information to stakeholders and decision-makers?

- Expand and build upon the USGS [National Water Census](#) and NGWMN that is directly coordinated with states and other stakeholders.
- Ensure that surface and groundwater interconnections are included, especially for shallow groundwater areas.
- Conduct research and develop and deploy technologies for accurately mapping and modeling hydrogeography/geology and groundwater levels.

How can we efficiently scale groundwater recharge while mitigating risks?

- Promote regional collaboration across all state programs that looks at the whole water cycle, in coordination with water and wastewater utilities and stakeholders to ensure buy-in and funding for including recharge and reuse as potential solutions to address groundwater needs.
- Support research and funding, and the development of resources and guidance for aquifer recharge projects that consider risks from floods and excess instream flows; from emerging contaminants such as per- and polyfluoroalkyl substances (PFAS) in stormwater capture and infiltration; and from additional groundwater discharges beyond UIC wells.
- Implement aggressive pollution prevention initiatives for PFAS and other emerging contaminants.
- Incentivize coordinated, cost-effective, and sustainable recharge and reuse solutions.
- Support and promote municipal land use controls that limit the development of new impervious surfaces while requiring clean artificial recharge.

How can we ensure clean and safe groundwater, especially for the communities that are affected most by groundwater contamination and depletion?

- Support state groundwater protection efforts and coordination with Federal, state, local governments, water utilities, and communities.

- Support planning and education in water-rich states that have also experienced increased competition for groundwater resources and impacts from contamination, including emerging contaminants such as PFAS.
- Take federal action to remove chemicals such as PFAS from commerce so they do not end up in waste streams and impact drinking water wells and septic systems.
- Work with states to share data and examples for addressing groundwater impacts from septic systems.
- Support funding for orphaned well plugging and cleanup and well decommissioning, particularly in source water protection areas and for old poorly constructed wells and irrigation wells built for maximum capacity that are gravel packed to the surface and act as direct conduits for contaminants to enter groundwater used for drinking water.
- Provide technical assistance, resources, and funding to help these communities with long-term, holistic, and sustainable financial and environmental solutions for groundwater quality and quantity.
- Support municipal water supply resources planning, zoning, ordinances, and health regulations, including protections where the geology supports natural separations between aquifers such as clay layers between unconfined and confined aquifers.
- Support collaborative community efforts to incentivize voluntary actions and best management practices, including set-back distances between well houses and lands where chemigation or irrigation occurs along with the application of pesticides and fertilizers.

How can we engage with communities to successfully ensure a sustainable supply of groundwater, including for agriculture, industry, energy, human consumption, and healthy ecosystems and biodiversity?

- Ensure continued deference to states that have exclusive authority over the allocation and administration of rights for the protection, control, and management of groundwater within their borders.
- Support funding for states to administer UIC, source water protection, and other groundwater programs. Encourage opportunities for training, coordination, sharing examples, and communication between all levels of government including interstate and intrastate programs.
- Coordinate efforts to partner with states, local governments, universities, and technical assistance providers who are already known and trusted by communities.
- Impacts to groundwater also often occur outside the jurisdiction of local communities. Encourage regional and interstate water resource planning coordinated with multiple communities across jurisdictional boundaries in a way that supports individual state resource planning efforts.
- Encourage coordination and policy-making between state agencies on approvals for aquifer storage and recovery projects. Existing water planning, reuse, and aquifer storage and recovery efforts throughout the U.S. can be used as examples for other areas.
 - The [Sustainable Water Initiative for Tomorrow \(SWIFT\)](#) is an innovative water treatment project in southeast Virginia designed to further protect the region’s environment, enhance the sustainability of the region’s long-term groundwater supply and help address environmental concerns such as Chesapeake Bay restoration, sea level rise and saltwater intrusion.
 - The [Tampa Bay Florida water supply projects](#) include aquifer storage and recovery and desalination for meeting the region’s future drinking water needs.

- The [Central Arizona Groundwater Replenishment District \(CAGRDR\)](#) was created in the mid-1990s to help water providers and landowners comply with Arizona's groundwater laws. CAGRDR plays an important role in Arizona's groundwater management by replenishing groundwater pumped by its members.
- See additional suggestions in the [GWPC Groundwater Report to the Nation Call to Action](#) on page 5.

What strategies and incentives can help limit groundwater over-use?

Strategies and incentives are needed to:

- Encourage and support water reuse and the [Water Reuse Action Plan](#), as well as research for the treatment and reuse of marginal quality waters, including oil and gas produced waters.
- Support research and coordination efforts that aid the development of state laws and regulations for reuse, recycling, recharge, and recovery, as well as state permitting and pilot projects.
- Directly coordinate with state programs that manage consumptive use and assess supply and demand for groundwater basins.
- Promote better integration between surface and groundwater programs and ensure that national water strategies address both quality and quantity issues.
- Promote coordination among water quality and water use agencies and programs and encourage water resource planning aimed at ensuring the long-term sustainability of groundwater sources.
- Ensure that Federal laws, policies, and funding for food and energy production such as natural gas and ethanol consider impacts to groundwater quality and quantity.
- Promote the use of the U.S. Department of Agriculture (USDA) Inflation Reduction Act funding for climate smart agriculture and forestry practices that can be used to address water quality and quantity.
 - For example, ASDWA and GWPC are working with the [Source Water Collaborative](#) to promote the use of this funding for protecting the quantity and quality of drinking water sources.

Thank you for your consideration of these recommendations to ensure safe drinking water and the protection of groundwater quality and quantity. Please contact Deirdre White at dwhite@asdwa.org or Alan Roberson at aroberson@asdwa.org or 703-812-9507 for questions or comments. We look forward to discussing these recommendations with you in more detail.

Sincerely,



J. Alan Roberson, P.E.
ASDWA Executive Director

cc: Jennifer McLain – EPA OGWDW



Recommended Actions

To USEPA:

- ▶ Support state efforts to develop guiding principles that state and local water-planning and water-use entities should take into consideration when conserving the integrity of watersheds and ensuring adequate water supplies.
- ▶ Require better integration between surface and ground water programs and ensure that the national water strategy addresses both quality and quantity issues, including interaction between surface and ground water.

To USGS and State Geological Surveys:

- ▶ Continue to conduct research and provide information—at a scale that is useful to states and local entities—about such matters as the safe, or sustainable, yield of aquifers (and methods for determining that yield); water-use data; and delineating boundaries and water budgets of three-dimensional watersheds, including scientifically based and cost-effective methods of quantifying interaction between ground water and surface water.

To Governors and State Legislatures:

- ▶ Authorize water supply planning at the state level and encourage water supply planning at regional and local levels to conserve the integrity of watersheds and ensure adequate water supplies.
- ▶ Consider adopting ground water protection and management laws that:
 - Recognize and manage the impact of ground water withdrawals on surface water.
 - Link development to sustainable availability of water and other water supply infrastructure.
 - Allow for and encourage techniques such as transfer-of-development rights for the purpose of ground water conservation and protection.
 - Ensure coordination among agencies responsible for water quality and water use in order to determine watershed water budgets and base water withdrawal and recharge policies.

- Regulate the interbasin transfer of water in order to protect ecosystem integrity.
- Require water conservation practices for all new construction (e.g., agricultural, industrial, residential) by changing plumbing codes so that they require water conservation.

To State Agencies:

- ▶ Ensure coordination among water-quality and water-use agencies/programs and associated surface water and ground water policies/programs. Benefits of this strategy can include:
 - Integration of ground water resource characterization and monitoring into state water-monitoring strategies.
 - Development and implementation of water-reuse policies.
 - Development of tools and policies to match water sources of various quality with the most suitable use (e.g., domestic, agricultural, industrial).

To Local Governments:

- ▶ Conduct water resources planning for long-term resource sustainability, focusing on 5- to 50-year water availability projections and plans. Incorporate this information into local comprehensive and infrastructure plans, zoning, and other local ordinances, as well as incentive programs, including:
 - Ordinances that tie development to sustainable water availability.
 - Ordinances and best management practices (BMPs) that provide for sustainable ground water recharge and improved stormwater management practices.
 - Transfer-of-development rights and development of property tax incentive programs to encourage land owners and developers to maintain recharge areas as open spaces, helping to achieve ground water protection and conservation goals.
 - Ordinances and plumbing codes designed to conserve water through improved efficiency, water reuse, water rationing, and gray water-use requirements.