



## BACKGROUND

The Western States Water Council (WSWC) has long-supported water data programs at federal and state levels, advocated for increased funding for essential water science and monitoring data programs, and encouraged greater data-sharing and transparency among its members. The Water Data Exchange (WaDE) Program began in 2011 under a subcontract with the Western Governors Association (WGA), as a cooperative effort between WSWC and Sandia National Labs, with funding from the Department of Energy made available under the American Recovery and Reinvestment Act (ARRA) of 2008. It was subsequently sustained with WSWC funds; in-kind support from our eighteen member states that committed staff, resources, and their water data; and a mix of federal grants and philanthropic funds, including the Environmental Protection Agency's Exchange Network (EN), Walton Family Foundation, Mitchell Foundation, Moore Foundation, Water Foundation, S.D. Bechtel Jr. Foundation, BHP Foundation through the Internet of Water and Duke University, the Bureau of Reclamation's WaterSMART grant program, and the Water Foundation.

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*The WaDE Program is committed to assisting WSWC member states in publicly sharing water rights, allocation, supply, and use data through a common streamlined and standardized service that enables regional analyses to inform water resources planning and policies.*

## WHY WADE?

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. However, water rights, uses, and associated data are managed separately and distinctly by each state which makes regional analysis cumbersome. Analyses across multi-state water basins and regions are becoming increasingly relevant, especially given the unprecedented drought and population growth in the arid West. With changing and ever-greater demands on limited water resources, complicated by an increasingly complex overlay of federal laws and regulations, the importance of cooperative efforts and data sharing among states has been magnified.

To address this challenge, the WSWC's WaDE program created a platform to streamline water rights and water use data sharing through standardized and machine-readable formats. Making this data findable, accessible, interoperable, and reusable (FAIR) enables users to answer questions about regional water availability, scarcity, and resilience in an effective, sustainable, and consistent way.

The WaDE Program's initial concept and creation phase (2011-2018) leveraged WSWC's working relationships with states agencies and created data sharing protocols while building and populating a collaborative data management system. (Figure 1) In its second phase (2019-2021), WaDE created a template for transforming disparate state water-related data systems into a functional regional and

cloud-based data system with standards and metadata. Under this phase, WaDE has become one of the major data hubs within the Internet of Water <https://internetofwater.org/resources/hubs/>. The WaDE metadata dictionary with its controlled vocabularies is considered the standard method for sharing state agency water use data with the U.S. Geological Survey (USGS) and its Water Use Data Research (WUDR) Program (<https://www.usgs.gov/mission-areas/water-resources/science/water-use-data-and-research-wudr-program>).

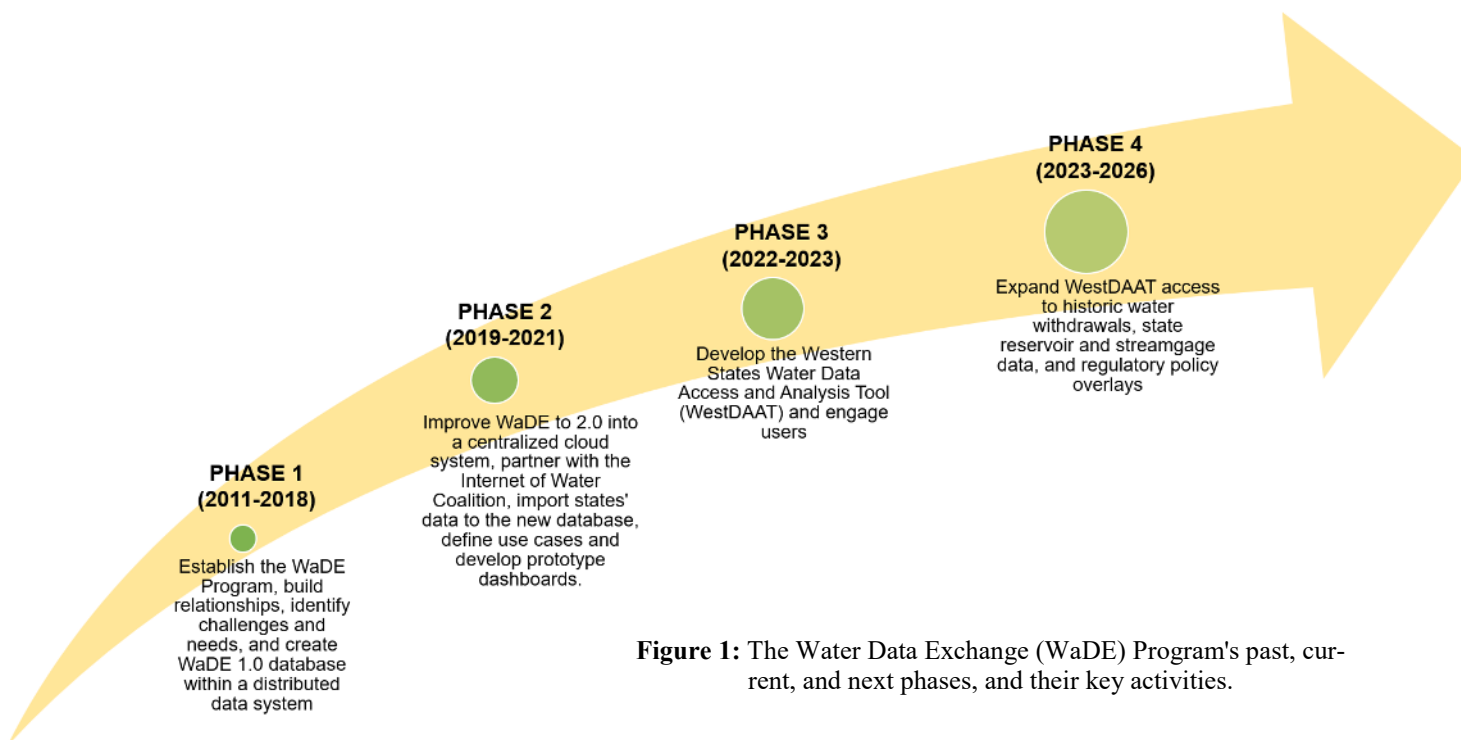
Phase three of WaDE focused on the development of a user-friendly Water Data Access and Analysis Tool (WestDAAT), released in April 2023. The tool enables users to search over 2.5 million water rights across the West, with filters focused on points of diversion, places of use, priority dates, beneficial uses, sources of supply, permitted flow or volume, and basin or watershed. WestDAAT integrates

WaDE data with other data tools, such as Geoconnex and the Hydro Network-Linked Index (NLDI).

### NEXT STEPS

WaDE will continue to work with states to expand access to additional data as it becomes available, including historic water withdrawals, state-operated reservoir and streamgage data, and regulatory and policy overlays.

Additionally, with WGA’s support, WSWC is seeking funding to develop a new Western Water Conservation Application Tool (WestCAAT) to help users integrate water rights data with evapotranspiration maps to estimate consumptive water use and potential water savings from alternative agricultural water conservation measures using OpenET.



**Figure 1:** The Water Data Exchange (WaDE) Program's past, current, and next phases, and their key activities.

For more information about WaDE, please visit <http://westernstateswater.org/wade> and reach out to the WaDE Program Manager, Adel Abdallah [adelabdallah@wswc.utah.gov](mailto:adelabdallah@wswc.utah.gov).