



Water Information and Data Subcommittee (WIDS)

<https://westernstateswater.org/wids/>

April 2021 “Kickoff” Webinar

Western States Water Council (WSWC)

Water Data Exchange (WaDE) Program

Date/Time: April 23, 2021, 9:00 am PT/10:00 am MT/ 11:00 am CT, 12:00 pm ET

Attendees (36)

Terry Schwarz (Alaska), Amber Bethe (Alaska), Charley Palmer (Alaska), Allison Odell (Bureau of Reclamation), Jennifer Stricklin (California), Brent Vanderburgh (California), Brian Macpherson (Colorado), Dwane Young (EPA), Linda Davis (Idaho), Christopher Estes (Instream Flow Council), Kyle Onda (Internet of Water), Sue Lowry (Interstate Council on Water Policy), Chris Beightel (Kansas), Chris Kuntz (Montana), Paul Azevedo (Montana), Forrest Melton (NASA), Shea Winkler (Nebraska), Ryan Kelly (Nebraska), Jennifer Schellpeper (Nebraska), Stacy Timmons (New Mexico), Chris Colby (North Dakota), Chris Neel (Oklahoma), Jordan Beamer (Oregon), Brad Melendy (Oregon), Ron Duvall (South Dakota), Taylor Christian (Texas), Nancy Barber (USGS), Dave Blodget (USGS), Jaime Painter (USGS), Craig Miller (Utah), Ann-Marie Sweeten (Washington), Heather Hofman (WestFAST), Adel Abdallah (WSWC), Ryan James (WSWC), Tony Willardson (WSWC), Mabel Jones (Wyoming)

Absentees (4)

Chris Colby (North Dakota), Levi Kryder (Nevada), James Dieckhoff (Arizona), Sara Larsen (Upper Colorado River Commission)

MEETING MINUTES

Welcome and Introductions

Adel welcomed everyone to the call. The agenda was approved with no objections. Everyone introduced themselves and which agency or organization they represented.

Background and Resuming WIDS

Tony Willardson, the Executive Director of the WSWC, shared a brief background about the Council, the Water Data Exchange Program that was established in 2011, and the WIDS group formation in the 1990s and its purpose to connect water resources and IT managers across western states agencies to share and discuss topics of common interest. Tony pointed out that the formation phase of WaDE has come to an end and we are looking to operationalize and build new tools that state agencies can use. Tony recognized the role Sara Larsen had in establishing and managing WaDE before she left to the Upper Colorado Commission in 2019. He also recognized the role of Dwane Young from EPA who initially helped in building the architecture of WaDE 1.0 distributed data system.

Tony introduced WaDE’s new goal to build the Western States Water Data Access and Analysis Tool (WestDAAT) as a dashboard that will offer a series of functionalities to access, filter, and analyze data on water rights and water use for the 18 western states. He also

mentioned that WSWC has applied last week to the WaterSmart Applied Science Grant with the Bureau of Reclamation seeking funding to build WestDAAT and operationalize WaDE. Tony acknowledged the role of EPA Exchange Network Grants in establishing WaDE early stages. He pointed out that many states have applied to the USGS Water Use and Research (WUDR) grants to improve their water use data reporting.

Tony concluded that the WaDE Program has grown and will continue to grow over the next phase where the WIDS group input will be particularly critical to make sure that WestDAAT fits the needs of our member states to eventually advise the governors on water related issues.

WSWC'S WATER DATA EXCHANGE PROGRAM STATUS (Presentation and Demonstration by the WaDE staff and its progress.)

Adel Abdallah (WSWC) the Program Manager of WaDE shared an overview of the WaDE Program including why its important as it fills the data gap on regional water rights and use data and compliments other national data services such as the USGS stream gages, Bureau of Reclamation water information system on its reservoirs, and EPA water quality data services. Adel briefly explained how the WaDE 2.0 architecture works to streamline water rights and water use data from the member states into a consistent format. Adel pointed out that WaDE is concluding its second phase which aims to complete building the centralized database design along with its Application Programming Interface (API) and controlled vocabulary system. WaDE has over 32 key metadata terms that are often shared across the western states but with different synonyms. WaDE supports these native terms and adds a WaDE term that serves as a controlled term which links synonyms across states. The third phase of WaDE will focus on operationalizing WaDE data services and analysis tools.

Adel also summarized the status of states' data sharing through WaDE across the three data types: water rights, site-specific water use, and aggregate water budget and use estimates. WaDE staff has completed importing water rights data with points of diversions for sixteen states while Texas and New Mexico still to make their data fully shared online. Seven states are now sharing their aggregate water use or supply data through WaDE. Four states are sharing their site-specific time series water use or withdrawal.

Adel talked about the recent efforts in building a prototype dashboard for WaDE and the completion of a mockup tool that shows the full functionality of the desired dashboard. He briefly introduced the six fictional personas that motivate unique use cases for data access and analysis on WaDE data. The personas are: 1) Gary the Governor, 2) Stan the State Engineer, 3) Frank the Framer, 4) Maggie the River Basin Manager, 5) Laila the Land Use Manager, 6) Ratibah the Researcher. He highlighted coordination with the Internet of Water and USGS on connecting WaDE to the Geoconnex project which includes indexing WaDE data with the Network-Linked-Data-Index (NLDI) tool. Geoconnex will provide permanent identifiers to all sites that have data in WaDE and generalized landing pages that have common metadata to allow their discovery. NLDI will provide data query capabilities upstream or downstream of water sites in WaDE.

Adel concluded by listing the next steps that the WaDE Program will focus on, including securing funding, holding focus groups to refine the use case personas and their data needs, continuing to connect states to WaDE 2.0, support data interoperability with Geoconnex, and building WestDAAT.

Ryan James (WSWC) the WaDE Data Analyst and Hydroinformatics Specialist provided a demonstration of WestDAAT prototype and its functionalities for both water rights and aggregate water use data. The prototype is meant to be a technical proof-of-concept application that evaluates how the key features of the dashboard work, such as rendering near two million points of diversions on the map, and how those sites react to users' activities. The prototype uses Mapbox geospatial services and connects to the WaDE 2.0 database through the secure Application Programming Interface (API). The prototype currently supports these key data filters for water rights across the western states: priority date slider, beneficial use, owner name, water source type, and river basin. The prototype also supports these filters for the aggregate water use data: reporting area type, variable type, beneficial use, water source type, and year.

Ryan demonstrated an example of how the prototype works by filtering water rights data by basin such as the Colorado River Basin where the priority date slider is set to 1922 to show senior water rights that predate the Colorado River Compact. Ryan mentioned that we are currently working on categorizing water right owner types as another filter for federal and state recognized, privately owned commercial. Ryan also demonstrated the aggregate water use part of the prototype and showed how the states of Utah, New Mexico, and Texas report water withdrawals at the county level for the years 2000-2016.

Ryan then shared the recent work on a mockup that simulates the fill desired features of WestDAAT. The first example is for supporting landing pages for points of diversions, places of use, and water rights where each water right has a landing page with a permanent identifier as defined by Geoconex project with metadata that allows its discovery. The second example was for using the NLDI API call to query water rights or even USGS or EPA water quantity or quality sites upstream or downstream of a location of interest in WestDAAT.

DISCUSSION ON WADE'S PROGRESS

(Questions and answers related to WaDE's progress.)

Tony Willardson (WSWC) commented on the overall progress of the WaDE program since it started. Tony pointed out the importance of all WSWC members, state engineers and directors, WIDS members, and state agencies staff time and effort which without them, none of this progress would have happened. Tony shared the excitement about getting letters of support to the WaterSmart Applies Science grant application to develop WestDAAT. We received letters from twelve states in addition to the Upper Colorado River Commission, Environmental Defense Fund, and the Nature Conservancy, all within a 24-hour short notice. Tony believes this support and quick response reflects the interest in this kind of information that WaDE provides, how valuable this is going to be into the future. Tony hopes WestDAAT will be the foundation that will help meet member state agency needs for consistent regional water data for planning purposes.

Tony then reflected the many possibilities of WestDAAT uses that range from a state engineer looking to evaluate the impact of new water rights application on existing rights or a governor looking at water availability in a dry year. He shared the different applications for individual water sectors and water transfers and markets. Tony also said that all this data is already public information, and that WaDE will simply make it easier to access and analyze the data for decision making purposes on all levels (public and private). He pointed out to the role of the Western Federal Agency Support Team (WestFAST), which includes twelve agencies that are interested in states water use data as it was the case when Department of Energy and Sandia National Labs case study a decade ago. Federal agencies will be able to access states' data through WestDAAT instead of the current method of asking all eighteen states separately one-at-a-time, which would also save the time of states' staff in responding to many data inquires.

WaDE will also help USGS National Water Use Assessments by sharing states water use data. Tony again recognized the role of Dwane Young from EPA who helped in establishing WaDE when he was a WestFAST liaison.

Chris Kuntz (Montana) suggested using a WaDE discussion platform such as Discord (<https://discord.com/>).

Jennifer Schellpeper (Nebraska) asked about the process of approving states' data in WaDE. Adel Abdallah answered the WaDE team works and coordinates diligently with each state agency staff regarding how their data is used and mapped into WaDE. He pointed to the step-by-step documentation of this process, which is located on GitHub. Tony then mentioned that the WSWC has the Executive Committee which represents all states through their natural resources departments and state engineers' offices. Progress on WaDE is regularly presented to the WSWC at the three annual meetings.

Kyle Onda (Internet of Water) suggested using an authentication layer on the dashboard link that only provides access to state agency staff to review the dashboard before it goes public. Adel liked the idea and will consider it with the WestDAAT IT contractor.

Charlie Palmer (Alaska) shared Alaska DEC Open Data Site: <https://data-soa-adec.opendata.arcgis.com/> and asked how they could review what has been done in WaDE. Adel pointed out to the newly website design as a starting point <https://westernstateswater.org/wade/> and to GitHub at <https://github.com/WSWCWaterDataExchange>

NEXT STEPS AND DIRECTIONS

(Discussion on how the WaDE Program can help member states and federal agencies in their water data initiatives.)

Tony Willardson (WSWC) mentioned that while initial funding for WaDE was provided by the Council and the EPA Exchange Network Grants, many philanthropic organizations offered nearly a million dollars over the past several years to support WaDE. Those agreements and contracts will end in September 2021, but we already have a commitment moving forward over the next five years with the Internet of Water that will most likely be finalized this summer or fall, in addition to the potential funding from the WaterSmart grant. Tony shared that the WaDE's annual budget is now about \$300,000, where some of that budget was used to financially assist member states and hire interns to help them with their data management and reporting efforts. Over the next five years, Tony believes WaDE will be moving to an operational structure. During that period, the WSWC will work on institutionalizing the WestDAAT dashboard and support it indefinitely. Tony emphasized the important role of the WIDS members in participating in the personas' development for WestDAAT in identifying states needs and how can we improve WestDAAT and make it valuable.

Amber Bethe (Alaska) asked if there are plans to pull in other data types such as what is hosted by the Water Quality Portal. Adel commented that water quality data are outside the scope of the WaDE because EPA does an excellent job in that regard. As pointed out earlier, WaDE will integrate with the NLDI call to query sites that EPA offers water quality data for.

Dwane Young (EPA) commended WaDE's plan to work with the NLDI call which later will be integrated with the National Hydrography Infrastructure.

Tony Willardson (WSWC) commented on WestDAAT planned feature to support filtering water data using regulatory overlays. Tony asked the state participants to share any questions or concerns, any idea to improve the system, or how it could be used or abused.

Adel Abdallah (WSWC) pointed out that WestDAAT is not meant to replace states data services but rather provide a regional consistent access across state boundaries.

Christopher Estes (Instream Flow Council) asked if there are future plans to include tribal data. Tony answered that WaDE is open to supporting tribal information data and pointed out to the WSWC efforts with the Native American Rights Fund to recognize tribal water rights.

WRAP UP

Adel Abdallah (WSWC) suggested holding a second WIDS call in late July or August 2021, to summarize the use cases and personas that the focus groups will refine. Adel thanked all participants for joining the meeting and adjourned the meeting.

Action Items

#	Description	Assignee
1	Create a discussion channel for WaDE.	Adel
2	Send a poll for a second WIDS Committee Meeting in July or August.	Adel
3	Send invitations for focus groups to refine WaDE use cases and how WaDE can help the states.	Adel
4	Send any comments, questions, or concerns to Adel via email.	All WIDS members