Written Testimony
of the
WESTERN STATES WATER COUNCIL

submitted to the
Senate Energy and Natural Resources Committee
on
Examining Short and Long-Term Solutions to Extreme Drought in the Western U.S.

June 14, 2022

Chairman Machin, Ranking Member Barrasso, and members of the Committee, the Western States Water Council (WSWC) appreciates the opportunity to submit testimony on the drought afflicting the West, and some of the tools to address this and future extreme events. The Council is a government entity, an instrumentality of each and every one of the 18 participating States, created by Western Governors in 1965. Member state representatives are appointed by and serve at the pleasure of their respective governors, advising them on a wide range of water policy issues and initiatives. The WSWC charge is to ensure that the West has an adequate, secure, and sustainable supply of water of suitable quality to meet its diverse economic and environmental needs now and in the future. These are difficult times for water in the West and an unprecedented time for agriculture.

Water is the lifeblood of the West. This is most apparent in the agricultural sector. Irrigated agriculture accounts for most of the diversion and consumption of freshwater resources in western States. Agriculture is a vital national industry that sustains many rural economies, provides important employment opportunities, and significant environmental benefits. The present drought, the worst in some 1200 years in the Southwest, together with growing and competing demands for already scarce water resources threatens economic and environmental sustainability, and inflicts serious social and emotional costs. Much of the West is arid and water availability is an ever-present constraint defining our economic and environmental wellbeing and quality of life. The Council recognizes the increasing demands on often scarce water resources. The current historic drought threatens the West and its agricultural base, as well as communities built on that base, and the important link to hydropower. (For some brief examples of recent state efforts to grapple with drought in 2022, see Appendix A.)

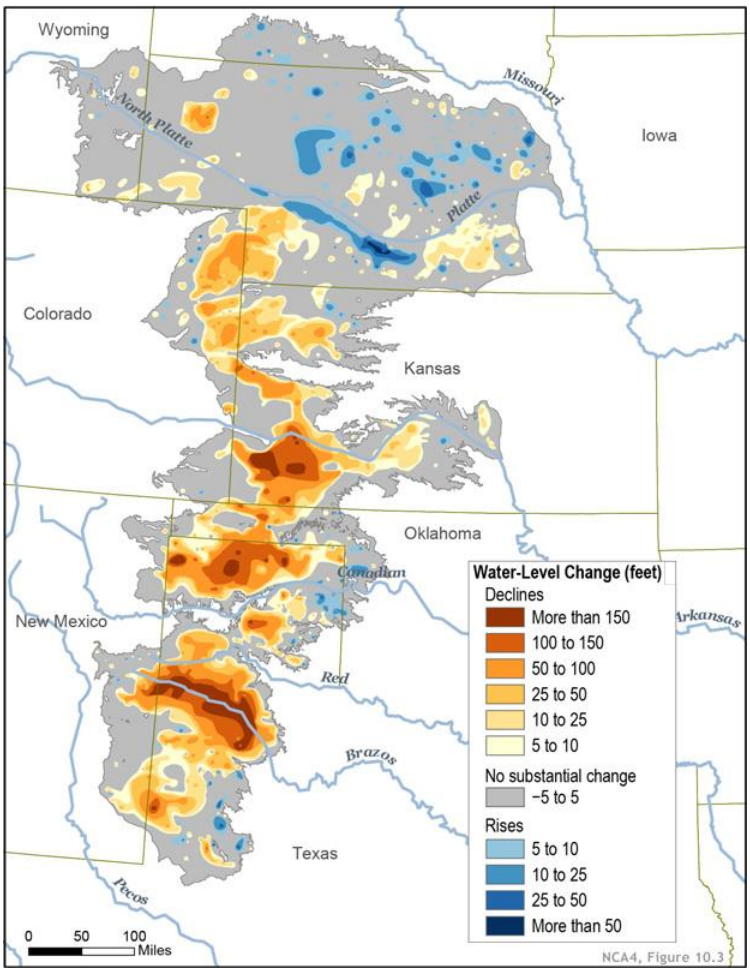
Much of the news surrounding the drought in the West has focused on dropping reservoir levels, particularly in the Colorado River Basin, due to declining precipitation, snowpack, and streamflows. "Since 2000, historically dry conditions have added stress to the Colorado River's already over-allocated water resources. The Colorado River provides water to almost 40 million people in two countries, seven states, 29 federally recognized Indian tribes, and 4 million acres of farmland." According to a University of Arizona study, the Colorado River supports $1.4 trillion in annual economic activity – equivalent to 1/12th of total U.S. gross domestic product – and 16 million jobs in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The drought has impacted regional water supplies and other resources, such as hydropower, recreation, and ecological goods and services.[1]

[1] www.drought.gov/watersheds/colorado

Colorado River Basin

Ogallala Aquifer

While largely invisible, long-term drought has also led to groundwater over-drafting and declining aquifer levels. In the Great Plains, the Ogallala Aquifer underlies about 112 million acres, or 175,000 square miles, in parts of eight states, including: Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming. It is the principal water source for agriculture, public water supply, industry, and the environment. The U.S. Department of Agriculture (USDA) indicates that 30 percent of all groundwater pumped in the United States is pumped from the Ogallala Aquifer. The Aquifer serves as an extensive underground reservoir providing water to grow cash crops making up the difference between crop needs and precipitation.



Drought by its very nature reduces precipitation requiring producers to pump more water for irrigation to ensure a reliable food and fiber supply. The correlation is clear that as we have more and longer droughts, the amount of water pumped from the Ogallala Aquifer increases as do the related water level declines.

The Ogallala is not an inexhaustible supply as many early users believed it would be. The USGS map on this page shows the levels of decline across the aquifer from predevelopment (roughly the 1940s) through 2015.

There are many localized areas where the aquifer is effectively dewatered to the point that it is no longer useful for agriculture. Without additional action at all levels of government and by individuals, we will see this critical resource eliminated.

At this point, we can't do much in the short-term to enhance our physical water supply situation significantly. We have turned to address water demand to find solutions.

In the West, water rights define both public and private uses, as well as opportunities for flexible management of existing supplies and demands. Water rights are limited by state law to beneficial consumptive use, and waste is prohibited. While water is considered a public good under state law, once "perfected," water rights are viewed as private property that may be bought, sold, leased and bequeathed. Well defined rights are a necessary component of efficient water markets that offer opportunities to help balance supplies and demands. Federal and tribal reserved water rights settlements, as well as state recognized rights to the use of water (including ground water) in Indian Country and on federal lands also serve to eliminate uncertainty and facilitate flexible arrangements to address shortages. The Arizona Drought Contingency Plan, developed within state law and facilitated by the Gila Indian Community, is an example of what may be possible.

For over 30 years, the Western States Water Council has worked with the Secretary's Indian Water Rights Office in collaboration with the Native American Rights Fund and others to promote the settlement of tribal water rights claims. This benefits both tribal and non-tribal communities by reducing the uncertainty related to unquantified tribal rights. The Bureau of Reclamation has an important role related to construction of projects approved by the Congress

as part of such settlements that provide "wet" water, as opposed to the recognition of "paper" water rights. Similarly, the WSWC continues to work with federal agencies to better define and quantify rights related to the use of water on federal lands under the reserved water rights doctrine. At present, there is no "one-stop-shop" for federal water rights data.

With federal and philanthropic financial support, over the past decade the WSWC has worked to identify and provide access to state water rights data and metadata, as well as aggregate water use data held by western states. The recent award of a WaterSMART grant from the Bureau of Reclamation will help identify and quantify state-recognized rights to store and distribute water in the West, as well as rights related to Reclamation projects held by the United States, Department of the Interior, Reclamation, or entities contracting for water delivered from federal projects.

Western States Water Data Exchange

A fundamental principle of the WSWC mission and vision is that all levels of government must prioritize the collection, analysis and open sharing of reliable data regarding water availability, quality, and usage given its importance to research for sound science and data-driven decision making. One of the West's and the Nation's most pressing challenges is addressing gaps in data and information to enable us to more sustainably manage our water resource. To address this challenge, the WSWC aimed to formulate a strategy and to develop a framework for its member states to begin to share important water supply, water use, and water rights administration datasets with each other, with federal partners and with the public. For over a decade, the WSWC has been working to create a Water Data Exchange (WaDE).

Taking a principles-based approach, the Council has sought to articulate and put into action its vision for sharing water data. These principles include making transparency, openness, discoverability, and accessibility the default for public water data, while also ensuring the highest levels of security and privacy for stakeholders. Whenever possible, data is shared using developed standards and machine-readable formats – including thoroughly documented metadata – to promote interoperability, regional analyses, and user flexibility.

Since 2012, the WSWC has been laying the foundation for an effective program. This includes the mundane tasks of surveying and offering outreach to data providers, procuring additional resources for States who needed assistance, forming partnership to oversee the funds and other governance, development of the WaDE code and application, extensive assistance for implementation with state partners, and ongoing maintenance and updates. It's not glamorous work, but cumulatively it represents a tremendous step forward in not only the data-sharing and publishing practices within the States, but in the way we value the information we have concerning our water resources. We are starting to think of water data beyond its limited and specific mission, and beginning to see the limitless value of high-quality data shared in a way that is easily discoverable and accessible. (https://westernstateswater.org/wade-updates)

Western States Water and Data Assessment and Analysis Tool (WestDAAT)

The WSWC is developing and will soon publicly release WestDAAT, a dashboard that will be an online operational decision support and planning tool providing user-friendly design choices. While a prototype has been built, its final operational functions will be driven by

outreach that will involve envisioning use cases. Use case will represent a range of stakeholders and water managers or decision-makers that include governors, state water right administrators [state engineers], state water planners, river basin managers, farmers and ranchers, and local irrigation district and groundwater managers. States and stakeholders are helping identify applications or deriving insights for water management and planning scenarios (e.g., simulating water calls during shortages, promoting water markets, shepherding conserved water downstream, tracking water use for planning purposes, and administering water rights under state law, interstate compacts, and international treaties). WestDAAT will help make western states' water data more FAIR (Findable, Accessible, Interoperable, and Reusable). At present, data from over 2.5 million water rights, with their points of diversion and place of use are accessible through WestDAAT.

Internet of Water Coalition

The Internet of Water (IOW) Coalition is a group of organizations working together with federal, state, and local government partners to build foundational water data infrastructure across the U.S. and create a community of people and organizations using water data to make better decisions. The Coalition is a multi-sector collaboration co-led by five non-profit organizations: Duke University's Nicholas Institute for Environmental Policy Solutions, the Lincoln Institute of Land Policy's Center for Geospatial Solutions (CGS), the Western States Water Council's Water Data Exchange (WaDE), the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI), and the Water Data Collaborative (WDC).

Successfully modernizing our nation's water data infrastructure requires all of us: public agencies, utilities, NGOs, private industry and individual water users, working together toward this common goal. "Addressing that challenge, however, requires not just innovative new data discovery and access tools, but also a coordinated effort across the whole water data community to use common standards and share and exchange water data in common formats. We also need to stay close to the needs of water decision-makers and the wider community of water stakeholders to realize the vision of the Internet of Water: equitable and resilient water management outcomes," says Peter Colohan, the IOW Coalition Chair. The WSWC Executive Director, Tony Willardson, is the vice-chair.

At present, IOW includes a network of organized water data hubs across the U.S. that increases the amount of data being shared by public agencies within and across jurisdictions in accessible and interoperable ways. The Environmental Protection Agency and U.S. Geological Survey (USGS) are IOW hubs. Other than WaDE, IOW public agency water data inventories include more than 500 water data platforms across nine states and the federal government. Public agencies hold large amounts of data. A data inventory is the first step in understanding data fragmentation and identifying areas for improvement.

Geoconnex is a framework for data providers to allow their data to be easily found alongside relevant data from other organizations. Five organizations are now participating, providing geospatial information for four million data points, such as water diversions, USGS streamgages, EPA water quality monitoring sites, etc. Geoconnex provides persistent identifiers for real-world locations, allowing multiple data providers to publish their data tied to a specific location identified in the same manner across agencies. Reclamation and agricultural interests

and organizations are welcome to join these efforts to expand and magnify the sharing and use of water data to improve decision making.

Federal Water Data Legislation

New Mexico Senators Martin Heinrich and Ben Ray Lujan, together with New Mexico Representative Melanie Stansbury, have introduced identical legislation to establish a national water data framework. The WSWC welcomes the introduction of the Water Data Act, as a separate title of S. 4236. The WSWC supports coordination and leveraging state and federal resources within a national framework consistent with IOW principles, and has separately submitted written testimony on the bill.

The Water Data Act will: (1) support and invest in the development of innovative next-generation water data technologies and tools; (2) develop common standards for water data to unlock the power of existing and future data for use in countless tools and technologies to empower water users and managers; (3) organize and direct federal agencies that generate and use water data to work together; (4) support consultation, coordination, and partnerships with stakeholders by permanently authorizing the Advisory Committee on Water Information; and (5) establish a new grant program under the Department of the Interior to invest in improving water data in partnership with state, local, and other organizations. These steps will help transform water management.

Open Evapotranspiration Information

Water resources managers and agricultural interests across the western United States are reliant on evapotranspiration (ET) information for irrigation scheduling, managing water deliveries, water supply planning, water rights administration, and hydrologic modeling and prediction. Some state agencies and agricultural enterprises use simplified methods to estimate ET that rely on crop coefficients and outdated irrigated area maps to estimate consumptive use (CU) volumes, while others rely on manual processing of satellite data over limited areas, making processing and coverage for all irrigated lands difficult and costly, and based on available staff, expertise, and agency funding.

The WSWC has actively supported the use of ET data for measuring and monitoring consumptive beneficial water use, which is the basis and limit for most western state water rights. While ET data may already exist for some regions, it is often not readily usable for modeling or decision making at the watershed scale. Consistency is also important in ET approaches and products, including irrigated lands identification that spans across political boundaries and covers the entire western U.S. Rapid accessibility and usability of field- and watershed-scale ET summary data is lacking for efficient integration into water management processes.

Additionally, there is a need for ET data from a trusted source that can easily be integrated with water rights information to assess and compare consumptive use for irrigated lands. For example, many state water agencies want to assess if hydrographic basins are truly over appropriated with respect to actual consumptive water use based on ET, rather than simply comparing total water right appropriations to system yield estimates.

The WSWC has expressed our support for OpenET proposals to leverage the work of a broad network of collaborators to develop and provide credible, transparent, automated, and easily accessible data on evapotranspiration (ET) and consumptive use (CU) using satellite-based sensors and cloud computing.[2] For many years, the Council has supported the use of satellite imagery to estimate ET and CU under actual field conditions over large areas, particularly the use of thermal infrared imaging data available from Landsat 7 and Landsat 8 and collected and archived by USGS.

Senator Cortez Masto has introduced S. 2568, the Open Access Evapotranspiration Data Act. OpenET addresses an urgent need for an operational system that can produce accurate consumptive use estimates that are available for automated data transfer to federal, state, and local water agencies that can also be used with irrigation management information systems.

Agrimet

WSWC also strongly supports the Bureau of Reclamation's Agrimet network of weather stations that provide data for irrigation scheduling. Agrimet also serves as an important and efficient means for ground-truthing, calibration, and model validation tool for analysis of information products derived from satellite platforms such as OpenET. Agrimet provides basic data on precipitation, temperature, solar radiance, wind speed and humidity required to calculate reference evapotranspiration (ET) and inform remote-sensing platforms. The Agrimet weather observing network suffers from the challenges of aging instrumentation infrastructure, deferred maintenance, need for technology upgrades, and funding that fails to keep up with these needs, making it difficult to maintain data continuity and coverage for users.[3]

Reclamation's Drought Response Program

The Reclamation States Emergency Drought Relief Act of 1991 (43 U.S.C. 2214(c)) and subsequent reauthorizations, under Title I, provide only temporary authority for some critical Reclamation actions. Reclamation's current Drought Response Program supports a proactive approach to drought and provides financial assistance to water managers and users via its WaterSMART program to: (1) develop drought contingency plans; (2) implement drought resiliency projects to build the capacity of communities to mitigate and respond to drought – increasing the reliability of water supplies, improving water management and operational flexibility, facilitating voluntary sales, transfers or exchanges of water, and providing benefits for fish and wildlife and the environment; and (3) undertake emergency actions to minimize losses due to drought through temporary construction activities and other activities, including water purchases and the use of Reclamation facilities to convey and store water.

There is a continuing need for making permanent the temporary authority allowing Reclamation the flexibility to continue delivering water to meet authorized project purposes, meet environmental requirements, respect state water rights, work with all stakeholders, and provide leadership, innovation, and assistance. The Western States Water Council strongly supports legislation to permanently authorize Title I activities under the Reclamation States

[2] Ibid.
[3] Written testimony submitted to the Senate Committee on Appropriations, Subcommittee on Energy and Water Development, and Related Agencies, regarding U.S. Bureau of Reclamation FY2022 Appropriations, June 24, 2021.

Emergency Drought Relief Act, and provide for adequate appropriations to meet priority needs and continue the Reclamation Drought Response Program. (WSWC Position #475 attached)

SECURE Water Act/WaterSMART

The Western States Water Council expresses our continuing strong support for implementation of the SECURE Water Act and WaterSMART program (WSWC Position #439 attached) The SECURE Water Act[4] noted, "…States bear the primary responsibility and authority for managing the water resources of the United States," while also recognizing that "the Federal Government should support the States, as well as regional, local and tribal governments…." The Act authorized a number of important programs to provide this much needed support. The Council supports technical and financial assistance to states and local watershed groups and water districts as an appropriate federal role, consistent with authorized federal programs. The Council has long supported watershed and basin-wide coordination that involves governmental entities and stakeholders interested in finding solutions to present and future water management challenges.

Section 9504 of the Act authorized the Secretary of the Interior to provide grants or enter into cooperative agreements to assist states and other non-federal entities in carrying out a range of water use efficiency improvements to address crucial water supply issues, stretch limited water supplies, and improve water management. The Act also authorized a variety of activities to enhance the Department of the Interior's water data efforts with significant progress made on the development of a national groundwater monitoring program, a brackish water assessment, and the establishment of a national water availability and use assessment.

U.S. Geological Survey

Section 9507 of the Act authorizes funding for enhancements to the U.S. Geological Survey's (USGS) National Streamflow Information Program (NSIP) in order to provide an improved national backbone focused on national needs and interests. Further, the Groundwater and Streamflow Information Program (GWSIP), as well as USGS' cooperative matching funds within the Water Availability and Use Science Program (WAUSP), together provide vital water data that States and other public and private entities and individuals rely on in making day-to-day water resources planning and management decisions.

Section 9508 (c) of the Act authorized the USGS to "provide grants to State water resource agencies to assist in developing water use and availability datasets" and has led to initiation of the Water-Use Data and Research (WUDR) program, in support of the Water Use Data for the Nation publication and the National Water Census. USGS' GWSIP, WAUSP, and WUDR together provide support for vital water data that States and other public and private entities and individuals rely on.

[4] See Section 9501, SECURE Water Act, which Congress passed as Subtitle F of the Omnibus Public Lands Management Act of 2009 (Public Law 111-11).

Bureau of Reclamation

Through WaterSMART, Reclamation continues to work cooperatively with States, tribes, and local entities to plan for and implement actions to increase water supply through investments to modernize existing infrastructure and reduce demands to mitigate potential water conflicts. These programs include Water and Energy Efficiency Grants, Water Marketing Strategy Grants Small-Scale Water Efficiency Projects, Environmental Water Resources Projects, Title XVI Water Reuse Projects, Desalination, Basin Studies, Baseline Assessments, Reservoir Operation Pilots, Applied Science Grants, the Cooperative Watershed Management Program, Drought Program and Water Conservation Field Services Program.

May 16, Reclamation announced the selection of 22 projects to receive $17.3 million to improve water efficiency that will support $89.1 million in projects in California, Idaho, Kansas, Montana, Nebraska, Nevada, Oklahoma, Texas, Utah, Washington and Wyoming. Assistant Secretary for Water and Science Tanya Trujillo noted, "The funding for these projects is an example of how the Bipartisan Infrastructure Law is supporting the Department of the Interior's work to address the impacts of climate change by helping water districts become more efficient in water delivery." The grants will leverage non-federal funds for lining and piping canals, installing and upgrading water meters and timers, installing solar to reduce power demand, and adding automated gate controls.

The Western States Water Council reiterates our continuing strong support for these WaterSMART programs.

While not under the jurisdiction of the Committee, we would also like to highlight other federal programs that are critical to western water management. (WSWC Position #473 attached)

National Integrated Drought Information System (NIDIS)

NIDIS is a multi-agency partnership that coordinates drought monitoring, forecasting, planning, and information at national, state, and local levels across the country. The U.S. Drought Monitor (USDM) is a multi-agency product updated each Thursday to show the location and intensity of drought across the country. Drought categories show experts' assessments of conditions related to dryness and drought including observations of how much water is available in streams, lakes, and soils compared to usual for the same time of year.

The WSWC supports NIDIS and other federal programs and actions designed to improve our drought forecasting and response capabilities. NIDIS is directed by an Executive Council that is co-chaired by USDA, NOAA and the WSWC, and Reclamation is also represented.

Senator John Thune (R-SD) championed NIDIS reauthorization in 2018, declaring: "Congress must do everything it can to update and modernize drought tools like NIDIS, which our farmers and ranchers depend on to stay up-to-date and fully informed on drought conditions in their area." NIDIS will again be up for reauthorization in 2023.

Sub-Seasonal to Seasonal Precipitation Forecasting

The 2018 NIDIS reauthorization legislation also amended the Weather Research and Forecasting Innovation Act of 2017 to among other things authorize NOAA to create one or more pilot programs for assessing new or innovative information and technology capabilities and services (132 STAT. 54578). Subsequently, a 2020 NOAA report to the Congress recommended four pilot projects focused on improving sub-seasonal to seasonal (S2S) precipitation forecasting, that is, beyond present 5–15 day weather forecasts to extend out several weeks or months, even one or two years. (https://repository.library.noaa.gov/view/noaa/27408)

The purpose of the pilot projects is to improve S2S precipitation forecasting. As the report noted, NOAA pilot projects were necessary "…based on the existence of major climate phenomena that have huge economic impacts and for which current S2S predictive skill is too low to be effectively used by many stakeholders." Persistent drought conditions across the West highlight the need for better forecasting tools to allow federal, state and local water agencies, soil and water conservation districts, irrigation districts, farmers and ranchers to better prepare for and respond to drought. Forecasts at S2S time scales are needed to support farming decisions, such as seed and fertilizer purchases, field preparation and planting, and equipment investments, as well as water management decision, including shortage contingency planning, reservoir management, water project operations, etc.

NOAA's Climate Prediction Center has been issuing S2S precipitation outlooks since the mid-1990s. Their skill for the western U.S. has been minimal, just slightly better than predicting average weather conditions, and has shown little improvement over time. Forecasting precipitation at S2S timescales is scientifically challenging and has historically received little federal research support. The WSWC has actively supported a $15 million programmatic increase in the U.S. Weather Research Program line item within NOAA's Office of Oceanic and Atmospheric Research appropriations account for S2S pilot projects toward improving our understanding of the science and opportunities to improve the skill of S2S outlooks.

Snow Survey and Water Supply Forecasting

USDA's Snow Survey and Water Supply Forecasting Program is administered by the National Water and Climate Center (NWCC) in Portland, Oregon, and funded through USDA's Natural Resources Conservation Service (NRCS) is critical for western water managers. Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the fall, winter and early spring seasons. As snowpack accumulates each year, NRCS hydrologists measure the snow and estimate the runoff that will occur when it melts. To predict this annual runoff, the NWCC manages and maintains a comprehensive network of manually-measured snow courses and automated Snow Telemetry (SNOTEL) monitoring sites throughout the West that collects and distributes timely, quality-controlled snowpack, water supply, and soil climate data to users westwide.

Funding for the program is critical, but has been flat at around $9 million annually for about 20 years, while equipment, travel and staffing costs have increased leading to challenges due to understaffing and delayed or inadequate system maintenance. An anticipated 50% increase in the President's draft FY2023 budget and related appropriations did not materialize.

Such an increase would allow for expansion of the SNOTEL network, including implementation of an Objective Network Design approach for optimizing placement of new

stations and sensor suites within the existing network configuration. This would include improving the accuracy and precision of core observations (air temperature, precipitation, snow water equivalent, and snow depth).

Western Governors and the WSWC have historically supported the program and continue to be deeply interested in the long-term health and capability of the program's data, products, and services and its role in generating vital snowpack and water-related information. Data on present and future water supplies are critical, as are data on present and future uses, if we are to balance supplies and demands during drought.

Again, we appreciate the opportunity to highlight some of the tools and programs that are increasingly important as we address the short and long-term impacts of drought and seek innovative solutions to water supply and demand management challenges in the West.

Thank you for the opportunity to submit this testimony.

Position #439
Revised and Readopted
(*see also Position #357, 10/3/ 2013, and Position #397, 9/30/16*)

POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
THE DEPARTMENT OF THE INTERIOR's WATER SMART PROGRAM

Breckenridge, Colorado
October 18, 2019

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states, and has long been involved in western water conservation, development, protection, and management issues, and the member states and political subdivisions have long been partners in cooperative federal water programs; and

WHEREAS, in the West, water is a critical, vital resource and "…States bear the primary responsibility and authority for managing the water resources of the United States," as recognized in the SECURE Water Act[5] ; and

WHEREAS, Western water law and policy are based on the reality of scarcity and the need to use water wisely, and Western states have made great strides in increasing efficiency and reducing water use, but continued investments and sacrifices are needed to maintain our quality of life in the West and to protect our environment; and

WHEREAS, the Act also recognizes that "the Federal Government should support the States, as well as regional, local and tribal governments…" and authorizes a number of important programs to provide this much needed support; and

WHEREAS, the Council supports technical and financial assistance to states and local watershed groups and water districts as an appropriate federal role, consistent with authorized federal programs; and

WHEREAS, the Council has long supported watershed and basin-wide coordination that involves all governmental entities and stakeholders interested in finding solutions to present and future water management challenges; and

WHEREAS, Section 9504 of the Act authorizes the Secretary of the Interior to provide grants or enter into cooperative agreements to assist states and other non-federal entities in carrying out a range of water use efficiency improvements to address crucial water supply issues, stretch limited water supplies, and improve water management; and

[5] See Section 9501, SECURE Water Act, which Congress passed as Subtitle F of the Omnibus Public Lands Management Act of 2009 (Public Law 111-11).

WHEREAS, the Act authorizes a variety of activities to enhance the Department of the Interior's water data efforts with significant progress made on these activities, including the development of a national groundwater monitoring program, a brackish water assessment, and the establishment of a national water availability and use assessment; and

WHEREAS, real-time water resources data are critical for timely actions in response to droughts, flooding, and other extreme weather events, and the lack of federal capital investments in water data programs has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water data gathering activities; and

WHEREAS, the lack of timely and accurate streamflow information threatens to put human life, health, welfare, property, and environmental and natural resources at a considerably greater risk of loss; and

WHEREAS, Section 9507 of the Act authorizes an additional $10 million for each of fiscal years 2009 through 2019 for enhancements to the U.S. Geological Survey's (USGS) National Streamflow Information Program (NSIP) in order to provide an improved national backbone focused on national needs and interests; and

WHEREAS, the Groundwater and Streamflow Information Program (GWSIP), as well as USGS' cooperative matching funds within the Water Availability and Use Science Program (WAUSP), together provide vital water data that States and other public and private entities and individuals rely on in making day-to-day planning and management decisions; and

WHEREAS, Section 9508 (c) of the Act authorizes the USGS to "provide grants to State water resource agencies to assist in developing water use and availability datasets" and has led to initiation of the Water-Use Data and Research (WUDR) program, in support of the Water Use Data for the Nation publication and the National Water Census; and

WHEREAS, USGS' GWSIP, WAUSP, and WUDR together will provide vital water data that States and other public and private entities and individuals rely on to make day-to-day planning and management decisions; and

WHEREAS, these and many WaterSMART programs have largely gone unfunded or underfunded or remain dependent on year-to-year appropriations, as opposed to a dedicated line item.

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council expresses our continuing strong support for implementation of the SECURE Water Act; and

BE IT FURTHER RESOLVED, that the Council encourages the Administration to request and the Congress to ensure that the Act's authorized activities receive support and appropriations that are adequate to fulfill their stated purposes as a dedicated line item.

Position No. 473
(*See also No. 428, 385, 345, 320, 284, 256, and 235*)
Adopted as revised September 16, 2021

POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
FEDERAL WATER AND CLIMATE DATA COLLECTION AND ANALYSIS PROGRAMS
Deadwood, South Dakota
September 16, 2021

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states, and has long been involved in western water conservation, development, protection, and management issues, and the member states and political subdivisions have long been partners in cooperative federal water and climate data collection and analysis programs; and

WHEREAS, in the West, water is a critical, vital resource and sound decision-making demands accurate and timely data on precipitation, temperature, evapotranspiration, soil moisture, snow depth, snow water content, streamflow, groundwater, water quality and similar information; and

WHEREAS, the demands for water and related climate data continue to increase, and this information is used by federal, state, tribal, and local government agencies, as well as private entities and individuals to: (1) forecast flooding, drought and other climate-related events; (2) project future water supplies for agricultural, municipal, and industrial uses; (3) estimate streamflows for hydropower production, recreation, and environmental purposes, such as for fish and wildlife management, including endangered species needs; and (4) facilitate water management and administration of water rights, decrees, and interstate compacts; and

WHEREAS, without timely and accurate information, human life, health, welfare, property, and environmental and natural resources are at considerably greater risk of loss; and

WHEREAS, critical and vital information is gathered and disseminated through a number of important federal programs including, but not limited to: (1) the Snow Survey and Water Supply Forecasting Program, administered by the National Water and Climate Center (NWCC) in Portland, Oregon, and funded through USDA's Natural Resources Conservation Service (NRCS); (2) NWCC's Soil and Climate Analysis Network (SCAN); (3) the U.S. Geological Survey's (USGS) Groundwater and Streamflow Information Program (GWSIP) and National Streamflow Network, which are funded through the Department of Interior; (4) Landsat thermal data, archived and distributed by the USGS, and other remotely-sensed data acquired through the National Atmospheric and Space Administration (NASA) and its water-related missions; (5) the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service and Climate Programs Office; (6) the Environmental Protection Agency's National Environmental Information Exchange Network (NEIEN); and (7) the Bureau of Reclamation's Agrimet System and similar weather station networks; and

WHEREAS, state-of-the-art technology has been developed to provide real or near real-time data in formats that can be shared and used by different computer programs with the potential to vastly improve the water-related information available to decisionmakers in natural resources and emergency management, and thus better protect the public safety, welfare and the environment; and

WHEREAS, these federal programs and newly proposed projects and programs provide useful products to assist in visualizing and interpreting data on water and snow, water use, evapotranspiration and other parameters making water supply, demand and availability information more accessible and easy to interpret; and

WHEREAS, over a number of years, the lack of capital investments in water data programs has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water resources related data gathering activities; and

WHEREAS, there is a serious need for adequate and consistent federal funding to maintain, restore, modernize, and upgrade federal water, weather and climate observation programs, not only to avoid the loss or further erosion of critical information and data, but also to address new emerging needs, with a primary focus on coordinated data collection and dissemination; and

WHEREAS, wildfires, floods, and other natural disasters have led to the significant loss of monitoring capabilities and require timely action to restore, maintain, and upgrade sensors and observing systems and networks.

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council urge the Administration and the Congress to give a high priority to the allocation and appropriation of sufficient funds for these critical, vital programs, which benefit so many, yet have been or are being allowed to erode to the point that it threatens the quantity and quality of basic data provided to a myriad, growing and diffuse number of decisionmakers and stakeholders, with significantly adverse consequences.

BE IT FURTHER RESOLVED, that the Western States Water Council supports efforts to enhance and expand the availability of and access to consistent and comprehensive water supply, demand and water use data and information, such as, but not limited to, the Open Access Evapotranspiration (OpenET) data program and related federal authorizing legislation and appropriations.

Position No. 475
Revised and Readopted
(*formerly Position No. 430, October 26, 2018, 387, October 9, 2015. and #347, October 12, 2012*)

POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
BUREAU OF RECLAMATION DROUGHT RESPONSE PROGRAM
Deadwood, South Dakota
September 16, 2021

WHEREAS, the Western States Water Council is a policy advisory body representing eighteen states and since its inception the Council has been actively involved in national drought preparedness, planning and response, as well as related policy and program development and implementation; and

WHEREAS, in the West, water is often scarce and drought is a recurring threat; and

WHEREAS, according to the National Centers for Environmental Information (NCEI), from 1980-2020, there have been 28 drought events costing over $1B/event with total economic losses of $258.9B due to drought, or an average of $9.2B/event, also leading to an average of 95 deaths/year, with drought contributing to another $102.3B in wildfire losses, and 10 deaths/year, and NCEI noting a rise in vulnerability to drought and wildfire in the western states[i]; and

WHEREAS, the Reclamation States Emergency Drought Relief Act of 1991 (43 U.S.C. 2214(c)) and subsequent reauthorizations, under Title I, provide only temporary authority for some critical Reclamation actions; and

WHEREAS, Reclamation's current Drought Response Program supports a proactive approach to drought and provides financial assistance to water managers and users via its WaterSMART program to: (1) develop drought contingency plans; (2) implement drought resiliency projects to build the capacity of communities to mitigate and respond to drought – increasing the reliability of water supplies, improving water management and operational flexibility, facilitating voluntary sales, transfers or exchanges of water, and providing benefits for fish and wildlife and the environment; and (3) undertake emergency actions to minimize losses due to drought through temporary construction activities and other activities, including water purchases and the use of Reclamation facilities to convey and store water; and

WHEREAS, there is a continuing need for making permanent the temporary authority allowing Reclamation the flexibility to continue delivering water to meet authorized project purposes, meet environmental requirements, respect state water rights, work with all stakeholders, and provide leadership, innovation, and assistance.

NOW THEREFORE BE IT RESOLVED, that the Western States Water Council strongly supports legislation to permanently authorize Title I activities under the Reclamation States Emergency Drought Relief Act, and provide for adequate appropriations to meet priority needs and continue the Reclamation Drought Response Program.

BE IT FURTHER RESOLVED that the Council urges and encourages the Administration and the Congress to assess and consider the need for a comprehensive national drought preparedness and response program on par with federal efforts to address other natural disasters such as hurricanes, tornadoes and similar extreme events.

Appendix A

Several of our western states have been grappling with emergencies related to ongoing and worsening drought conditions in 2022. While this is by no means an exhaustive list, it provides a small sample of some of the challenges across the West, culled from recent articles in the WSWC weekly newsletter. (See https://westernstateswater.org/past-newsletters/)

- California Governor Gavin Newsom expanded drought measures in March, calling on urban water suppliers to meet the requirements of water shortage contingency plans, and calling on state water agencies to enforce laws against illegal water diversions and waste and to engage in activities that improve water supply sustainability.
- Idaho Governor Brad Little and the Idaho Department of Water Resources issued an emergency drought declaration in April, and a curtailment notification in May for water users with priority dates junior to 1979.
- Kansas has seen an average one-foot drop in aquifer levels in the past year as drought conditions continue.
- In New Mexico, Governor Michelle Lujan Grisham has issued emergency declarations for both extensive drought and wildfires.
- Oregon Governor Kate Brown declared drought emergencies across multiple counties in March and April due to low snowpack, low reservoir levels, and low streamflow, with forecasted water supply and precipitation not expected to improve.
- Utah Governor Spencer Cox declared a statewide drought emergency in April, noting the volatile water year, with late spring precipitation unable to make up for the winter snowpack shortages.
- Several states and federal agencies (particularly the Department of the Interior's Bureau of Reclamation) have worked together in an effort to manage water resources for agricultural and urban areas through the worsening drought conditions.

California

On March 28, Governor Gavin Newsom (D-CA) signed an Executive Order (N-7-22) expanding measures to address the ongoing drought emergency in California. It called on urban water suppliers to move Water Shortage Contingency Plans to Level 2, based on a projected shortage of up to 20%, and encourage voluntary activation of Level 3 requirements based on a shortage level up to 30%. The order directed the State Water Resources Control Board (SWRCB) to adopt emergency regulations defining "non-functional turf" and ban its irrigation in commercial, industrial, and institutional sectors. It directed the Department of Water Resources (DWR) to develop strategies to improve conservation, including technical and financial assistance.

The order directed SWRCB to "expand inspections to determine whether illegal diversions or wasteful or unreasonable use of water are occurring and bring enforcement actions…." Further, it suspended ordinances and regulations that prohibit hauling water outside a basin of origin to facilitate hauling water by truck for domestic use to communities with degraded water quality or supply due to drought. To increase the resilience of state water supplies, the order directed DWR to "prepare for the potential creation and implementation of a multi-year transfer program pilot project for the purpose of acquiring water from willing partners and storing and conveying water to areas of need."

To facilitate and protect the use of groundwater during drought, the order directed DWR to work with other agencies to expedite regulatory pathways to repair or reconstruct small community public supply wells. It prohibits local agencies from issuing new permits for groundwater wells – other than domestic wells less than two acre-feet per year – in basins "subject to the Sustainable Groundwater Management Act [SGMA] and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency [GSA]" that the proposed well would not interfere with the local GSA's sustainability plan.

The order directed state agencies to "collaborate with tribes and federal, regional, and local agencies on actions related to promoting groundwater recharge and increasing storage." It directed SWRCB and the Regional Water Quality Control Boards to prioritize "water right permits, water quality certifications, waste discharge requirements, and conditional waivers of waste discharge requirements to accelerate approvals for projects that enhance the ability of a local or state agency to capture high precipitation events for local storage or recharge, consistent with water right priorities and protections for fish and wildlife." It suspends various statutes and regulations to address the need to recharge groundwater during the drought. See https://www.gov.ca.gov/wp-content/uploads/2022/ /03/March-2022-Drought-EO.pdf.

Idaho

On April 29, with approval from Idaho Governor Brad Little (R), the Idaho Department of Water Resources (IDWR) issued an emergency drought declaration for southern Idaho. The declaration allows temporary water right changes in the point of diversion, place of use, and purpose of use for valid, existing water rights, when it is determined that such changes can be accomplished without harming other existing water rights. The declaration may also help with the eligibility requirements for federal drought assistance.

IDWR Director Gary Spackman noted that all Idaho counties south of the Salmon River are classified as being in moderate to severe drought and are experiencing below-normal snowpack. The press release said: "Specifically, total cumulative snow water equivalent (SWE) levels in these basins as of April 1, 2022, ranged from 50 to 78 percent of median. The April-to-September streamflow forecasts for most locations south of the Salmon River are between 25 and 75 percent of median. As of April 1, 2022, storage in most reservoirs serving the southern half of Idaho were between 20 to 65 percent of capacity, increasing the chances that many reservoirs will not fill." https://idwr.idaho.gov/news-releases/

On May 6, the IDWR issued a methodology order, predicting a 162,600 acre-foot shortfall for senior priority surface water users on the Eastern Snake River Plain (ESPA) for the 2022 irrigation season. IDWR will begin curtailing more than 328 junior groundwater users with priority dates junior to 1979, unless they have joined one of seven approved mitigation plans or can otherwise demonstrate how their water use will not cause injury to senior surface water users. Past water litigation on the Snake River, between surface water and groundwater users, resulted in settlement agreements. The IDWR Director is required to issue an order at the beginning of the irrigation season and again in July to determine any shortfalls and curtailment obligations.

Mathew Weaver, IDWR Deputy Director, said: "By law, we have to keep people with senior water rights whole, and we want to make the junior ground water pumpers aware that despite the settlement agreements…if junior ground water pumpers are not participating in an approved mitigation plan, they could be subject to curtailment this year." https://idwr.idaho.gov/wp-

content/uploads/sites/2/news-release/IDWR-order-predicts-162600-acre-foot-water-shortfall-on-Snake-River-FINAL.pdf

Kansas

On March 24, the University of Kansas published preliminary data compiled by the Kansas Geological Survey (KGS) showing that average groundwater levels dropped by more than a foot in 2021. "The KGS, based at the University of Kansas, and the Division of Water Resources (DWR) of the Kansas Department of Agriculture measure about 1,400 wells every year to monitor the health of the High Plains aquifer and other aquifers in western and central Kansas. Those measurements showed an overall average decline of 1.01 feet last year. Most parts of the region saw below-average precipitation for the year, especially during the summer growing season for agricultural crops.... The 2021 decline followed an overall drop of 0.93 feet in 2020, which was another abnormally dry year. Dry years lead to increased pumping demands, primarily for irrigation, which in turn typically cause greater declines in water levels." Most of Kansas continues to experience drought conditions in 2022.The article noted that most of the wells monitored by KGS and DWR are located in Groundwater Management Districts.

New Mexico

On April 25, New Mexico Governor Michelle Lujan Grisham (D) declared a statewide emergency for severe drought and fire conditions. The executive order noted that 93% of New Mexico was experiencing severe to exceptional drought conditions, and that significant fire danger "has increased throughout the State due to warmer temperatures, lower humidity, high winds, and an abundance of dry, fine fuels." According to the National Interagency Fire Center, New Mexico is currently fighting six large fires across more than 235,000 acres. Governor Lujan Grisham has issued five other emergency declarations in April regarding the various fires. https://www.governor.state.nm.us/about-the-governor/executive-orders/

On May 4, Governor Lujan Grisham submitted a request for a Presidential Disaster Declaration through the Federal Emergency Management Agency (FEMA), as well as applied for a hazard mitigation assistance grant. In a press release she said: "The state has aggressively pursued a Presidential Disaster Declaration for New Mexico, using every available tool and technology to document the damage that we know New Mexico communities have sustained and are still experiencing in order to expedite the process. I am laser focused on getting New Mexicans the disaster relief they need and deserve, and I am confident that FEMA and the President will grant our request." https://www.governor.state.nm.us/press-releases/

Oregon

On March 4, Governor Kate Brown (D-OR) declared a severe, continuing drought emergency in Klamath County based on the low snowpack, low reservoir levels, low streamflow, and forecasted water supply conditions that are not expected to improve. "Drought is likely to have a significant economic impact on the farm, ranch, and natural resources sectors, as well as an impact on drinking water, fish and wildlife, important minimum flows for public instream uses and other natural resources dependent on adequate precipitation, stored water, and stream flow in these areas. Extreme conditions are expected to affect local growers, increase the potential for fire, shorten the growing season, and decrease water supplies." The Executive Order 22-02 directs state interagency coordination for mitigation efforts. See https://www.oregon.gov/gov/eo/eo_22-02.pdf.

On April 25, Governor Brown signed an executive order declaring drought across four counties with low snowpack, low reservoir levels, and low streamflow. "Forecasted water supply conditions and precipitation levels are not expected to improve. Drought is likely to have a significant economic impact on the farm, ranch, vineyard, recreation, tourism, and natural resources sectors, as well as an impact on drinking water, fish and wildlife, and important minimum flows for public instream uses and other natural resources dependent on adequate precipitation, stored water, and streamflow in these areas. Extreme conditions are expected to affect the local growers and livestock, increase the potential for fire, shorten the growing season, and decrease water supplies." The order directs agencies to coordinate and provide assistance to water users, to understand the impacts of water availability on wildlife, to assess and mitigate emergency activities, and to assist with federal resources to mitigate drought conditions and agricultural recovery. https://www.oregon.gov/gov/eo/eo_22-07.pdf

Utah

On April 12, Salt Lake City, Utah announced that it would start the peak season of water demand at Stage 2 of its 5-stage Water Shortage Contingency Plan. The Plan's five water shortage stages are triggered by water supply levels, streamflows, and water demand. Under Stage 2, actions are focused on augmenting current water supplies and saving for prolonged shortages, while water customers are asked to meet a 5% reduction in daily water use, and municipal water users, parks, and city-owned buildings will be required to take specific actions to reduce overall water use and adjust lawn watering frequency. The Department of Salt Lake City Public Utilities (SLCDPU), tasked with monitoring water conditions, noted that Utah remains in severe or extreme drought, with many reservoirs below capacity. The snowpack is below normal, although soil moisture has improved, and forecasts indicate a season of higher temperatures and lower precipitation. See https://www.slc.gov/mayor/2022/04/12/salt-lake-city-starts-peak-demand-season-under-stage-2-of-its-water-shortage-contingency-plan/.

On April 21, Governor Spencer Cox (R-UT) declared a state of emergency due to drought. He said: "We've had a very volatile water year, and unfortunately, recent spring storms are not enough to make up the shortage in our snowpack. Once again, I call on all Utahns – households, farmers, businesses, governments and other groups – to carefully consider their needs and reduce their water use. We saved billions of gallons last year and we can do it again."

The press release noted that Utah has been in drought eight of the past ten years, and that this year's snowpack is 25% below normal. The Utah Department of Natural Resources reported that: (1) 99.39% of the state is in severe drought or worse, with 43.46% of Utah in extreme drought; (2) statewide snow water equivalent (SWE), or how much water would be in the snowpack if it melted, peaked at 12 inches (75% of the typical median peak of 16 inches for our water year); (3) nineteen of Utah's largest 45 reservoirs are below 55% of available capacity, with overall statewide storage at 59% of capacity (compared to 67% capacity at this time in 2021); (4) soil moisture – critical for effective spring runoff – is 4% higher compared to normal for this time of year; (5) of the 94 measured streams, 59 are flowing below normal despite spring runoff, and two streams are flowing at record low conditions. See: https://governor.utah.gov/2022/04/21/drought-emergency-order/#:~:text=SALT%20LAKE%20CITY%20(April%2021,triggers%20increased%20monitoring%20and%20reporting.

[i] 2020 U.S. billion-dollar weather and climate disasters in historical context | NOAA Climate.gov