Western States Water Council
Policy Position #536 in black text
(with edits in green incorporating other positions[i] and staff suggestions in red)
SUPPORT FOR CRITICAL FEDERAL WATER DATA PROGRAMS

Who We Are

The Western States Water Council (WSWC) is a government entity representing western states,[1] with members appointed by their respective governors. The WSWC's mission 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.

What We Need Congress and the Administration to Do

Critical and vital information is gathered and disseminated through a number of important federal programs, some of which are described below. We need Congress and the Administration to:

1. Immediately ensure that the following critical federal water data programs receive authorization, support, and appropriations that are adequate to fulfill their stated purposes.

2. Focus existing resources on implementing the programs.

3. Support legislation and policies that:
   a. enhance and expand the availability of and access to consistent and comprehensive water supply, demand, and water use data and information
   b. preserve and modernize water data programs
   c. maintain and enhance water data gathering and monitoring, data communication capabilities, and identifying and addressing data gaps and overlap
   d. maintain and improve programs that advance research to assist water agencies at all levels of government
   e. improve collaboration and coordination among agencies and organizations at all levels
   f. increase consultation with state, local, and tribal governments
   g. recognize and address regional differences
   h. authorize and create a federal water data council, a national water data framework, an advisory committee, and water data grants programs
   i. identify federal agency responsibilities for disaster preparedness and response, and address regulatory and other barriers

Critical Federal Water Data Programs

A. The **Natural Resources Conservation Service (NRCS) Snow Survey and Water Supply Forecasting Program** manages a comprehensive network of snow monitoring sites that provides weather and snow conditions in mountainous regions throughout the west; and the data collected through these snow monitoring sites provides an understanding of current conditions in historical context, offers ground truthing for more advanced methods to measure snowpack, feeds into forecast models and generates seasonal streamflow and watershed conditions forecasts – all essential to water management and the health and human safety of western citizens. The NRCS also manages the Soil and Climate Analysis Network (SCAN).

B. The **U.S. Geological Survey (USGS)** works in partnership with state and local agencies to fund and manage a multipurpose **network of streamgages, groundwater monitoring wells and water quality networks, in part through the Groundwater and Streamflow Information**

[1] AZ, CA, CO, ID, KS, MT, NE, NV, NM, ND, OK, OR, SD, TX, UT, WA, WY

Program (GWSIP) and the National Streamflow Network. These USGS real-time and historical streamflow measurements are foundational to understanding of current and past hydrology which delivers critical flood warnings to safeguard people and property, signals emerging drought conditions and informs water distribution systems managed by the State Engineer and its importance cannot be overstated. Additionally, the USGS Water Resources Research Act program promotes, facilitates, and conducts research that helps resolve state and regional water problems; promotes technology transfer; facilitates dissemination and application of research; trains scientists through participation in research; and awards competitive grants.

C. Multiple federal agencies provide **weather, evapotranspiration, and soil moisture data** including **U.S. Bureau of Reclamation (USBR) AGRIMET** to support efficient irrigation and farming practices. Data from the AGRIMET network of observing stations are used by irrigation districts, farmers, resource conservation agencies, and municipal and state governments. The data are used for improving water planning and crop yields, reducing pesticide and fertilizer application, conserving water, and reducing energy costs for growers. The data also serve as an important ground-truthing, calibration, and model validation tool for analysis of information derived from satellite and remote sensing platforms such as Landsat.

D. The **National Oceanic Atmospheric Administration (NOAA)** agencies including the National Weather Service, Oceanic and Atmospheric Research, National Centers for Environmental Information, and National Environmental Satellite Data and Information Service, conduct research and collect, process, and serve **weather, climate and drought data** through in-situ and remotely sensed observations to make operational forecasts, ~~and~~ outlooks of precipitation and temperature, and weather hazard warnings that are indispensable for operating water supply and flood risk management infrastructure and for making water management decisions by federal, state, local, and private agencies and utilities. The National Integrated Drought Information System (NIDIS) coordinates drought monitoring, information, planning, and research, building on existing federal, state, tribal, and local partnerships to create a national drought early warning information system.

E. The **National Aeronautics and Space Administration (NASA)** operates earth observing missions such as **Landsat and NISAR** that collect remotely sensed information enabling measurement of **evapotranspiration and land surface deformation**, archived and distributed by USGS, allowing water agencies to estimate agricultural and landscape water use and land subsidence caused by groundwater extraction. This monitoring assists water agencies in administering water rights and managing water supplies.

F. The Environmental Protection Agency's National Environmental Exchange Network (NEIEN) is a partnership among EPA, states, tribes, and territories that facilitates the sharing of environmental data, streamlining data collection and exchange to improve timeliness for decision making.

Why It Matters

In the West, water is a critical, vital, and scarce resource. Its limited availability circumscribes growth, development, our economic well-being, and the environmental quality of life. Western states have exclusive authority over the allocation and administration of rights to the use of surface water and groundwater located within their borders and are primarily responsible for protecting, managing, and otherwise controlling the resource. Nothing stated in this position is intended to apply to the interpretation or application of any interstate compact, court decrees, international treaty, or tribal settlement agreement.

Western states experience great variability in precipitation, with seasonal or annual volatility that brings floods, droughts, wildfires, and other extreme weather events. These events tax the capacity of our aging water infrastructure and have serious impacts and consequences for water supply availability, water resources planning and management, drought and flood preparedness and response, water rights

administration, water quality management, operation of water projects, economic activity, and the protection of life, property, and the environment.

Sound decision-making about our water resources depends on our ability to observe, monitor, understand, model, predict, and adapt to precipitation variability. These decisions rely on accurate and timely data on precipitation, temperature, evapotranspiration, soil moisture, snow depth, snow water content, streamflow, groundwater levels, water quality, and similar information.

Water and climate related data are 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. 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.

Federal agency data and research programs provide an important foundation for supporting water management decision-making at all levels of government. Our nation's complex observation networks and data collection efforts include critical contributions from state agencies, local interests, volunteer private observers, and universities. However, the quality of water resource management, operations and planning would not be what it is today without the valuable contribution of these federal programs and the experts who keep them running. Many of these programs and networks operate very efficiently and yield public safety and water supply benefits that are much greater than the cost of their operation, providing significant value to their users. Without them, human life, health, welfare, property, and environmental and natural resources are at considerably greater risk of loss.

The WSWC has long supported federal programs that provide reliable and objective water data that informs the western states' administration of water, improves long term planning and policy and helps prepare western states for flood and drought conditions. Western states have a long history of promoting drought preparedness planning and response programs in cooperation with federal agencies. The data and services federal agencies provide are invaluable to state agencies, municipal water providers, agricultural producers, hydropower generation and revenues, water managers, tribal groups, recreation, and ecological efforts.

Too often program authorization and appropriations have not kept up with the need, limiting program benefits. Aging instruments, deferred maintenance, and the need for technology upgrades make it difficult to maintain data continuity for end users. Wildfires, floods, and other natural disasters have led to the significant loss of instruments and their monitoring capabilities

Examples

- The impacts of climate variability can include increased frequency and intensity of severe weather (droughts and floods), reduction of mountain snowpacks, changes in the timing and amount of snowmelt runoff, and changes in plant and crop evapotranspiration resulting in changed water demand patterns. This is an additional stressor on western water resources, which are already challenged by population growth, competition for scarce resources to meet economic and environmental demands, increasingly stringent environmental regulations, and other factors.

Cost of Disasters in the West

- Recent billion-dollar weather disasters in the West have included: western flooding and mudslides, severe weather and wildfires (2023): extensive West and Midwest drought, heatwave, and wildfires, as well as severe Central weather and North Central and South Central hail (2022): Western drought, heatwave and wildfires, with California flooding, as well as Central and South Central severe storms and cold wave (2021); continued drought, heatwave, wildfires, as well as

severe storms and hail (2020);Missouri River and northern Great Plains flooding (2019);Colorado hail storms (multiple years), drought in the southern Great Plains (2018); California and Nevada flooding (2017);severe multi-year drought in California and much of the West (2012-16); Texas and Oklahoma flooding (2015); and flooding in Texas resulting from Hurricane Harvey (2017); drought across the southern Great Plains (2011); and Missouri River and northern Great Plains flooding (2011).

- According to the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI), from 1980-2023, there have been 31 drought events costing over $1B/event with total economic losses of $352.9B due to drought, or an average of $11.4B/event, also leading to an average of 103 deaths/year, with drought contributing to another $142.4B in wildfire losses, and 12 deaths/year, and NCEI noting a rise in vulnerability to drought and wildfire in the western states. (See https://www.climate.gov/news-features/blogs/beyond-data/2023-historic-year-us-billion-dollar-weather-and-climate-disasters)

Droughts and Water Conservation

- Prolonged drought (classified by the U.S. Drought Monitor as exceptional, extreme, or severe) increasingly afflicts the West and the Nation, and affects the performance of interstate compacts and international treaties.
- Extreme prolonged drought spanning more than two decades has plagued the Colorado and Rio Grande River Basin States, the United States, and Mexico, prompting calls for further reductions in water use. Tree ring data showing historical multi-decadal or mega-droughts in the region may indicate that persistent drought is our new normal.
- The wise use, conservation, development, and management of our water resources is critical to maintaining human life, health, safety, and property.
- Agricultural water use is the largest consumptive use of water in the West, and weather stations and other observing systems that aid in water conservation and more efficient use of water will be a critical tool for meeting future water supply and water quality challenges posed by growing needs for food and fiber. For example, network observations can provide near real-time information for estimation of vegetation evapotranspiration (ET) and in-the-field crop water use, that can be used to optimize production and increase the efficiency of irrigation, and estimate crop water shortages.
- Early drought warning systems facilitate early drought assessment and mitigation efforts to minimize drought impacts. There is a need to maintain and improve existing monitoring networks that help provide drought early warning signals, as well as for tracking the impact of drought.
- The collection and monitoring of basic data on streamflow, snow pack, groundwater levels, and weather and climate data are essential to understanding water availability and interpreting the early signs of drought.
- Improving drought prediction entails research supported through OAR on climate dynamics and process studies, developing and applying paleoclimate data sets, and regionally focused pilot research projects.
- These continuing drought conditions highlight the need for greater attention to developing more comprehensive and coordinated drought prediction, preparedness, planning, and response programs at all levels. There is a continuing need for a permanent federal role in coordination of research programs related to drought early warning and prediction.

Precipitation, Streamflow and Flood Control

- Much of the West's water infrastructure was designed and constructed prior to our current understanding of climate variability, often from short hydrologic records from the first half of the 20th century.

- Extreme precipitation events and the corresponding economic, social, and environmental damages have demonstrated the continuing need for more flood control capacity and early warning systems, with timely and accurate forecasts.
- At the local scale, the National Weather Service's Cooperative Observer Program—the nation's oldest and largest weather network—collects critical information on precipitation intensity that supports the design of community flood control infrastructure and planning for flood hazard mitigation, especially in rural areas. It has provided the only long-record spatially dense precipitation observing system in rural areas and mountain regions where precipitation is highly variable. It is not being supported and modernized in proportion to the high value it provides for measuring extreme precipitation.
- NWS River Forecast Centers play an important role in using weather and climate data to produce streamflow forecasts, and in delivering forecast products to end users.
- NCEI's Regional Climate Centers (RCCs) provide special-purpose, customized data products such as daily plots of mountain freezing elevations or precipitation anomalies for regional water and agricultural stakeholders.
- Flood control, drainage, and other water resource issues affect Columbia River Basin States, the United States, and Canada, including negotiations over renewing the Columbia River Treaty.

Short-Term and Long-Term Forecasting

- Satellite data collected by NESDIS' Geostationary Operational Environmental Satellites (GOES) program is foundational to modern weather forecasting, with GOES-17 just having transitioned to operations as GOES-West in 2020.
- At the global scale, the National Weather Service geostationary and polar-orbiting weather satellites capture the data needed to make hourly to two-week forecasts, and issue public safety warning and watches. Weather forecasts are operationally issued out to about two weeks, but most of the forecast skill is in the first seven days.
- In the mid-1990s, the NWS began producing precipitation forecasts at the subseasonal to seasonal (S2S) timescale (two weeks to two years). These forecasts have demonstrated no significant increase in skill since that time, pointing to the need for new approaches and focused pilot projects to improve forecasting skill.
- The skill of S2S forecasts is minimal and is insufficient to support water management decision-making at these lead times, important for flood and drought preparedness and response. WSWC supports efforts to improve the utility and skill of these S2S outlooks.
- Much of the Western States' precipitation originates as storms moving over the Pacific Ocean and Gulf of Mexico, and the absence of key ocean observations constrains the ability to improve the skill of precipitation forecasting at operational timescales between near-term and seasonal.
- OAR supports the collection and acquisition of tropical ocean temperature profiles and other data from sources such as the TAO/Triton array of moored buoys, data that are used for monitoring El Nino-Southern Oscillation status.
- A National Academy of Sciences' report suggests a pathway and 10-year research agenda for advancing our capabilities with a vision of using S2S forecasts as widely as we now use 5-10 day weather forecasts.
- Advances in weather forecasting and research, such as NOAA's Hydrometeorological Testbed Program on the West Coast atmospheric rivers, demonstrate the potential for improving extreme event forecasting at the operational time scale through innovative instrumentation. This program should build upon progress made for developing and installing new technologies for precipitation observations, and should continue and expand ocean observations that are critical for weather and S2S forecasting. OAR's testbed programs (Hydrometeorological Testbed, Climate Testbed) have an important role in transitioning research to operational forecasting, and OAR's information

delivery programs (Regional Integrated Services and Assessments, NIDIS) help translate research to end communities.

- Improving S2S precipitation forecasting will require targeted observations, dedication of high-performance computing resources, focused research, and improvements to dynamical and statistical modeling.
- In 2017, Congress directed NOAA to improve its S2S forecasting ability in the Weather Research and Forecasting Innovation Act (Title II of P.L. 115-25). NOAA's 2020 report[2] to Congress detailed several research pilot programs to develop new predictive capability. WSWC has sought additional appropriations for these pilot projects and has urged NOAA to implement the western and midwestern pilot projects for improving S2S precipitation forecasting contained in this report. The Flood Level Observation, Operations, and Decision Support (FLOODS) Act of 2022 (P.L. 117-316) directs NOAA to improve S2S forecasting to support flood management. However, NOAA has allocated minimal resources for improving the skill of S2S forecasts. A coordinated effort by the NWS Climate Prediction Center, the NWS Office of Air and Quality Research, and OAR and its laboratories is needed to improve S2S precipitation forecasting as directed by Congress.

21st Century Technology Developments

- 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 environment. 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.
- 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 to data gathering activities.
- Many of the nation's weather observing networks suffer from budgets that fail to keep up with system needs.
- These critical, vital programs benefit so many, yet they 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.
- 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.
- There is a need for developing new monitoring technologies, such as remote sensing, that provide more timely data on water availability and better spatial coverage for assessing flooding and drought impacts.
- There is a need for maintaining and improving existing monitoring networks that help provide early warning as well as tracking impacts of extreme events. 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.
- There is a need for improving precipitation forecasting at all time scales, ranging from hours to days, weeks and months, seasons and longer, to support implementation of Forecast Informed Reservoir Operations (FIRO). Investments in observations, modeling, high performance

[2] https://repository.library.noaa.gov/view/noaa/27408

computing capabilities, research, and demonstration projects are essential to significantly improving operational forecasting of precipitation to maximize the use of our existing water storage projects to significantly improve planning and project operations, reduce flood damages, mitigate economic and environmental damages, and maximize water storage and water use efficiently.

- Applied research needs and improvements to water resources planning capabilities include subjects such as evaluation of modifications to reservoir flood control rule curves, evaluation of the adequacy of existing federal hydroclimate monitoring networks and data collection programs, improvements to extreme precipitation observing networks and forecasting capabilities, development and improvement of applications for remote sensing data (satellite imagery), preparation of reconstructed paleoclimate datasets for drought analyses, and development of new guidelines for estimation of flood flow frequences.
- Investments in research, forecasting, observations, and monitoring provide an opportunity to significantly improve real-time water rights administration, planning and project design, and operations to maximize water storage. Such investments can avoid or minimize the loss of life and property, as well as mitigate economic and environmental damages.
- Water resources research, the dissemination and application of research results or research to operations (R2O) and technology transfer are increasingly important to meeting our present and future water needs.
- NOAA's NWS first developed methodologies for estimating National Probably Maximum Precipitation (PMP) standards for extreme rainfall in the 1940s, using historic data available at that time, and applied them across the United States through hydrologic and hydrometeorological studies and reports between 1961 and 1999. These standards have long been used for the design and regulation of infrastructure including dams, roads, and bridges, as well as thermal power facilities. They are used to promote consistency between federal and state agencies, as well as the private sector professional design community. State dam safety programs have developed statutes, rules, and guidance documents for the design of facilities that are typically based on these federal standards and studies. Decades of storm event data (the basis for calculating the standards) have been recorded since the existing standards were published, but the PMP standards have never been officially updated to include new methods, technologies, and more recent storm data. While some states have changed their statutes to allow for the use of new methodologies provided by entities outside of the federal government, many state dam and safety programs continue to use these outdated reports and standards, finding the change too difficult to attempt. Inconsistencies between minimum design criteria of adjacent states and between federal and state design or performance expectations within states are increasing. The Association of State Dam Safety Officials prepared a 2023 report[3] on the number of high hazard potential dams with a rating of less than satisfactory, and the estimated cost to repair or rehabilitate them. Consistent and standardized PMPs and modern methodologies are needed for the design and repair of spillways at high-hazard potential dams rated unsatisfactory in order to ensure the highest level of public safety. Federal leadership is again needed to update these standards. Funding and explicit direction for NOAA to update PMP standards were not included in the FLOODS Act of 2022 (P.L. 117-316). The 2018 Colorado-New Mexico Regional Extreme Precipitation Study (REPS)[4] included state-of-the-practice updates to existing methodologies using NOAA research and high-resolution operational tools for prediction of extreme rainfall. The REPS study – reviewed by a board of subject matter experts from numerous federal agencies – demonstrated possible approaches to updating extreme precipitation estimates at a national scale and also included research and recommendations for climate change considerations. The WSWC supports NOAA leading federal efforts toward developing 21st century national PMP standards for estimating extreme rainfall in order to provide consistent requirements for ensuring public safety. The WSWC recommends Congress address this issue and authorize and fund

[3] https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/2023%20ASDSO%20Costs%20of%20Dam%20Rehab%20Report.pdf
[4] https://spl.cde.state.co.us/artemis/nrmonos/nr5102p412018internet/

necessary steps to update federal PMP standards, including a National Academies of Science, Engineering and Medicine (NASEM) study of the current state of the practice and options for extreme rainfall estimation, in order to provide NOAA clear direction toward development of a 21st century national standards for estimating extreme rainfall (including PMPs)

- Much of the nation's data for emergency and administrative information on weather, river and streamflows, groundwater, and forest fires are transmitted from remote platforms to satellites (GOES and POES) and then to "direct receive or downlink" stations on the 1675-1710 MHz range of the electromagnetic spectrum. Additionally, earth-observation satellites use several radio frequency bands tied to the physical properties of the scientific measurements, including water vapor (23.8 GHz), rain and snow (36-37 GHz), atmospheric temperature (50.2 – 50.4 GHz), clouds and ice (86 – 92 GHz) and others. Recent federal efforts have sought to make as many frequencies of the radio spectrum as possible available for commercial broadband and wireless technologies. Sharing bandwidth, or noise from adjacent bands on the spectrum with inadequate controls, has the potential to interfere with the quality, accessibility, and utility of Earth-observation satellite data and data collected and transmitted from remote platforms on earth to satellites. Serious, unintended consequences of data interference may include degradation in short-term weather forecasts; loss of data for streamgaging and water monitoring networks; ability of state and federal agencies to prepare for and respond to floods, fires, and extreme weather events; the ability of western states to administer and manage their scarce water resources and water quality programs; and risks of loss to human life, health, welfare, property, and environmental and natural resources. Significant public and private funds have been invested to establish our satellite and ground networks, many of which would be costly to replace, and some of which are irreplaceable. The WSWC supports interagency coordination to quantify and analyze the effects of commercial broadband use on satellite observations data and transmissions, as well as a meaningful evaluation of the existing government and potential alternative uses of the electromagnetic spectrum without discounting the costs of natural disasters and degradations in data needed for water management decisions, and with input from the states as appropriate.

Collaboration and Cooperative Federalism

- Western states have invested millions of dollars in monitoring programs, observing systems, and networks, some of which are carried out in collaboration with federal agencies and programs.
- There is a continuing need for greater collaboration between and among federal agencies, state agencies, local governments, non-governmental organizations, and public/private organizations and businesses.
- The Open Access Evapotranspiration (OpenET) data program began as a collaborative public-private partnership involving NASA, USGS, USDA, DRI, and several universities. The program created a platform that uses Landsat data to bridge the gap in affordable, accurate data on how much water is consumed by crops (ET). The program helps farmers and water managers to track field-level water consumption, and supports sustainable water management and irrigation efficiency.
- The SECURE Water Act (P.L. 111-11) authorized the USGS Water Use and Data Research (WUDR) program, which provides financial assistance through cooperative agreements with state water resource agencies to improve the availability, quality, compatibility, and delivery of water-use data that is collected or estimated by states.
- Over the years, the WSWC has co-sponsored several workshops to gather input on climate adaptation and research needs, including research on extreme events. These workshops and various federal reports have helped in identifying knowledge gaps, research needs, opportunities to improve planning capabilities, and other activities that would assist in climate adaptation, including those that could impact water quality and thus, available water supply.
- The Water Resources Research Act of 1964 authorized a program that included the establishment of state water resources institutes (WRRIs) or centers in each state to address our water resources challenges. Today's institutes and centers provide a research infrastructure that

uses the capabilities of universities to greatly assist and provide important support to western state water agencies in long-term planning, policy development and management of the increasingly complex challenges associated with water in the West. The WSWC and its member states continue to work with the institutes/centers and the academic community to ensure research investments are relevant to our most pressing water problems and allow each state to solve its problems by methods most appropriate to its own situation. The WRRIs' outreach and information transfer services and activities are very valuable to the water communities in various wester states. **This is a very worthwhile federal-state partnership that promotes collaboration, cooperation and the conservation of limited physical, financial, and personnel resources**.

- Operating aging water infrastructure effectively in the face of growing and often competing water supply, water management, and flood protection demands requires that state, federal, tribal, and local agencies optimize operations for maximum efficiency and seek innovative and alternative strategies to support their decision-making. Project operations and alternatives may include using enhanced forecasting capabilities to better inform reservoir operators, operations, and actions—to dynamically determine reservoir levels to improve storage opportunities, and to alter static reservoir operating rule curves and requirements based on updated hydrologic information. The WSWC supports the use of innovative and forecast informed reservoir operations (FIRO) by public and private entities at all levels to maximize the effective and efficient use of our existing and future infrastructure to benefit our myriad and growing economic uses of water, while at the same time balancing and protecting our need for public health and safety, as well as a resilient and healthy environment. FY2020 appropriations legislation directed the U.S. Army Corps of Engineers (USACE) to develop a comprehensive list of water control manuals at Corps-owned projects located in states where a Reclamation project is also located, including a prioritized list of needed updates of those manuals. Section 8109 of WRDA 2022 (P.L. 117-263) authorized USACE to update water control manuals for water resources development projects in states where the governor declared a statewide drought disaster in 2021, with priority given to projects that include water supply or water conservation as an authorized purpose. The USACE Engineer and Research Development Center (ERDC) developed a FIRO screening process and has tested it in the South Pacific Division. [Add updates based on the FIRO presentation in San Pedro Fall 2025?]
- Decisions to operate water projects to protect life and property by reducing flood risks, while at the same time maximizing water supply storage, including carryover storage, impact billions of dollars of economic investments and activities in the West to maintain and protect municipal and industrial centers, agriculture, hydropower generation, and fisheries.

[i] For the purposes of drafting a consolidated policy position on water data, language from the following policy positions was incorporated:

- Position No. 491: Resolution of the Western States Water Council Urging Congress and The Administration to Support Subseasonal to Seasonal Weather Research, Forecasting, And Innovation
- Position No. 500: Resolution of the Western States Water Council Supporting NOAA Data, Forecasting, and Research Programs
- Position No. 502: Resolution of the Western States Water Council in Support of the Water Resources Research Institutes and the USGS Water Resources Research Act Program
- Position No. 508: Resolution of the Western States Water Council Regarding Probable Maximum Precipitation Standards

- Position No. 509: Resolution of the Western States Water Council to Support the Use of Forecast Informed Reservoir Operations and Innovations
- Position No. 510: Resolution of the Western States Water Council in Support of Weather Station Networks
- Position No. 513: Resolution of the Western States Water Council Supporting Federal Research on Climate Adaptation
- Position No. 522: Position of the Western States Water Council Regarding Federal Water and Climate Data Collection and Analysis Programs
- Position No. 523: Position of the Western States Water Council Regarding Drought Preparedness, Prediction and Early Warning Programs
- Position No. 532: Resolution of the Western States Water Council on The Preservation of Radio Frequencies Necessary for Weather Forecasting and Water Management
- Position No. 533, Position Statement of the Western States Water Council in Support of Strengthening the Resiliency of Our Nation to the Impacts of Extreme Weather Events