

Testimony of

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**Before the House Committee on Natural Resources,
Subcommittee on Water and Power**

**Oversight Hearing on Water Management and Climate Variability: Information Support
at the USGS and Bureau of Reclamation**

October 27, 2009

My name is Tony Willardson, and I am the Executive Director of the Western States Water Council (WSWC). Our members are appointed by the Governors of eighteen states. We are an advisory body on water policy issues affiliated with the Western Governors' Association (WGA). My testimony is based on official reports, statements and positions taken by both organizations. Of note, the Council is a member of the federal Advisory Committee on Water Information.

Madame Chair, and members of the subcommittee, we appreciate the opportunity to testify on the important issues related to water management and climate variability and the information needed for sound decisionmaking. Thanks you for your leadership in addressing the serious water-related challenges facing the West and the Nation.

Water Needs and Strategies for a Sustainable Future - National Water Assessment

In June 2006, the Western Governors' Association unanimously adopted a report prepared by the Western States Water Council entitled, "Water Needs and Strategies for a Sustainable Future" and in 2008 a follow up "Next Steps" report. The 2006 report included 28 recommendations in six different areas, all of which are dependent on water resources information. The 2006 Report called for "...a state-by-state and westwide summary of existing water uses..., current ground and surface water supplies, and anticipated water demands, ...[that] should address both consumptive and non-consumptive uses and demands."

The 2008 "Next Steps" report's Executive Summary included 42 recommendations for action. It recommended, "State and federal water resource agencies should work together to provide universal access to the water-related data collected by all state, local and federal agencies, as well as tools and models that better enable the synthesis, visualization and evaluation of water-related data..." It also called for "an accurate assessment of the Nation's water availability and water demands, with the goal of integrating the information into state water resources planning, recognizing that a truly national assessment must begin at the state and local level with appropriate technical and financial support from the federal government."

In 2007, the Council undertook a survey of its member states regarding their existing water supplies, projected future water uses, and strategies for closing any gaps in water supply

and demands. The effort highlighted the general lack of good information. Much of the future projected water use data could be characterized as “unsubstantiated estimates.” Also in 2007, the National Science and Technology Council’s Committee on Environment and Natural Resources, Subcommittee on Water Availability and Quality (SWAQ) released a report entitled, “A Strategy for Federal Science and Technology to Support Water Availability and Quality in the United States.” The report said, “Simply stated, quantitative knowledge of U.S. water supply is currently inadequate.”

Our present situation regarding water supplies, water uses and the impact of climate change and variability might be compared to trying to balance your bank account without knowing what your income and expenses are, or how much you have or can expect to have in savings. Snowpack, reservoir storage and ground water are our savings accounts. Precipitation, streamflow and ground water recharge represent our deposits, against which we write water use checks for our growing population and demands related to agriculture, our cities and towns municipal, commercial and industrial uses, rural areas domestic uses, energy production, the environment, fish and wildlife, endangered species, recreation and the list goes on. Balancing our Nation’s water books is a challenge that will require a collaborative state and federal effort and must involve myriad stakeholders.

Western Federal Agency Support Team

One of the first recommendation from the WGA’s 2008 Water Report to be implemented has been the formation of a Western States Federal Agency Support Team (WestFAST) to work to address the challenges related to water scarcity that we in the West have struggled with for more than a century and that other parts of the country are experiencing with greater frequency. Nine federal agencies, including the USGS and Bureau of Reclamation, joined the Western States Water Council in signing an agreement to work together on our water problems, as outlined in the Western Governors’ 2006 and 2008 reports. WestFAST is currently chaired by Roger Gorke, Senior Policy Advisor, EPA Office of Water. Four WestFAST agencies also agreed to fund a Federal Liaison position, located in our office, and Jonne Hower, a Bureau of Reclamation employee was competitively selected and has been working with us since last October. Her job – coordinating water-related activities between 18 states and nine federal agencies – isn’t easy! We very much appreciate WestFAST’s support and believe it provides an appropriate model for other regions to emulate.

The Council sponsors a series of annual Water Management Symposia and Water Information Management System (WIMS) Workshops in cooperation with relevant federal agencies and other stakeholders to improve federal and state water and information management programs. A month ago, the Council and Colorado Department of Natural Resources and Colorado Water Conservation Board cosponsored a symposium on integrating water resource and local land use planning and decision-making. Two weeks ago, the Council and WGA, with support from NOAA, held a workshop on implementation of the National Integrated Drought Information System (NIDIS) and current and future climate services. Next month, the Council and California Department of Water Resources are cosponsoring a workshop on water information needs related to climate adaptation. WestFAST agency representatives have

participated in all these efforts, which have led to incremental progress on recommendations in the WGA Water Reports.

In 2008, the Council worked with a number of federal agencies, under the U.S. Army Corps' of Engineers' Western Watershed Study, to identify existing water resources related information and tools. The Council continues to work with the Corps on a separate initiative for Building Strong Collaborative Relationships for a Sustainable Water Resources Future.

SECURE Water Act – U.S. Geological Surveyh

On March 30, President Barack Obama signed into law the Omnibus Public Lands Act of 2009, which incorporated the SECURE Water Act of 2009 (P.L. 111-11). The Council testified in 2007 in support of the legislation. Among other things, it directs the U.S. Geological Survey (USGS) to: (1) implement a National Water Use and Availability Assessment Program to provide better information on the water resources in the United States, identify trends in use and availability, and help forecast water availability for future needs; (2) maintain a national inventory on water and provide grants to states to enable locally generated data to be integrated with national data sets; (3) improve water estimation, measuring and monitoring technologies; (4) enhance the USGS National Streamflow Information Program (NSIP); (5) work with federal, state, and local entities to develop a systematic groundwater monitoring program for major aquifer systems in the United States and to support the Groundwater Climate Response Network; (6) work with appropriate state and local entities to conduct a study identifying significant brackish aquifers in the United States and the potential of saline, brackish and wastewater resources; (7) identify trends affecting water availability as a result of global climate change; and (8) evaluate changes in water use related to energy development; and (9) project significant water shortages. We look forward to working with the Administration in implementing the provisions of this act. However, we caution that significant additional financial resources will need to be appropriated for USGS and the States to accomplish this work.

Federal Water and Climate Data Collection and Analysis Programs

The Council recently reiterated its support for federal water and climate data collection and analysis programs. 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 Cooperative Streamgaging Program and National Stream Flow Information Program, which are funded through the Department of Interior; (4) Landsat thermal data acquired through the National Atmospheric and Space Administration (NASA) and USGS; (5) USGS ground water measurement and monitoring; and (6) the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service and Climate Programs Office. It is important to note that interdependent and interrelated public and private decisions are made using this information. This testimony focuses on Department of the Interior programs.

A copy of the Council's Position #320 is attached.

Without timely and accurate information, human life, health, welfare, property, and environmental and natural resources are at considerably greater risk of loss. The demands for water and related climate data continue to increase along with our population, 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 climate change impacts; (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.

A substantial increase in related federal program appropriations is required to avoid the loss of critical information and data, and to address new emerging needs. There is a serious need for adequate and consistent federal funding to maintain, restore, modernize, and provide for the targeted expansion of federal programs with a primary focus on coordinated data collection and dissemination.

The Western States Water Council urges 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 decision makers and stakeholders, with significantly adverse consequences.

National Integrated Drought Information System

I'd like to highlight the WGA 2008 Water Report recommendation that Federal agencies work in cooperation with States to help communities develop drought preparedness and contingency plans and support the implementation of the National Drought Information System (NIDIS). This includes providing information such as reservoir storage levels, and linking Federal web sites with the NIDIS web portal, providing information on drought impact assessment in areas where they have expertise, such as navigation, hydropower, ecosystem needs and recreation, etc. NOAA and the Bureau of Reclamation have both identified the Colorado River Basin for pilot and basin studies, which will provide valuable information.

National Streamgaging Network

Over the years, federal appropriations have not kept up with increasing needs, program costs and/or capital replacement requirements, as well as matching non-federal contributions, and this erosion in funding has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water resources related data gathering activities. For example, the USGS lists some 287 streamgages that have been or are being considered for discontinuation or for conversion from continuous record discharge to stage-only stations.

The Council has consistently supported the fully-federally funded USGS National Streamflow Information Program (NSIP) and Cooperative Water Program (CWP), a federal/state streamgaging program. The Council has urged the Congress to appropriate sufficient money to

restore the latter to a 50-50% funding match. Together, these programs form a national streamgaging network.

The 2008 WGA Water Report also suggested that the Congress should: (a) fully fund the USGS National Streamflow Information Program to establish and add an additional 881 streamgages in the western states; (b) increase funding for the USGS Cooperative Water Program to preserve long-term streamgages; and (c) equally match state CWP contributions.

As federal program costs have increased, western states and other cooperators have borne an increasingly larger percentage of CWP costs. At present, roughly two-thirds of CWP costs are paid by cooperators. For the first time, in FY2009, cooperator contributions declined, reflecting the difficult financial situation states and other cooperators are facing. Given increasingly limited budgets, western states have urged USGS to focus on basic data collection.

The Council has worked with the Interstate Council on Water Policy (ICWP) and many other interests to promote the long-term stability of the National Streamgaging Network. The Congress and Administration have responded favorably, though with only a modest request and increase in funding. The Council has also been represented in discussions to better define federal streamgaging overhead costs and opportunities to provide non-federal in-kind services.

Under a fully funded NSIP, the USGS would operate 4,745 federally funded streamgages to meet well defined Federal water information needs for drought, floods, and interstate water compacts. This national backbone streamgaging network would include 3,445 existing and 1,300 new or reactivated streamgages. In addition, the USGS would continue to operate at least 3,300 streamgages in partnership with other State, Tribal and local agencies under the CWP to meet joint streamflow information needs and about 1,000 streamgages funded by other Federal Agencies (principally the Army Corps of Engineers and the Bureau of Reclamation), for a total national network of over 9,000 streamgages.

Full NSIP implementation will require installation costs of \$121 million over a 5-year period and final annual operational costs of \$114 million. With the NSIP federal backbone streamgage network in place, the CWP would require an increase of \$35 million to restore the program to its historic 50/50 match with State, Tribal and local governments. The President's 2010 budget currently calls for funding NSIP at \$27.7 million and CWP at \$65.6 million.

It should be noted that some States also operate hundreds of gages designed to meet specific water management and water rights administration needs.

NASA/USGS Landsat Thermal Infrared Sensor and Consumptive Water Use

Landsat thermal infrared sensor (TIRS) data acquired through the National Atmospheric and Space Administration (NASA) and archived and distributed by the USGS is becoming an increasingly important tool in the West for measuring and monitoring consumptive water use, particularly evapotranspiration from irrigated agriculture, which accounts for some 80% of the water use in the West. TIRS data, now freely distributed on the internet by the U.S. Geological Survey, has opened the door for greater water use efficiency, better defined rights to the use of

water, and subsequently markets and transfer mechanisms that can be employed to facilitate changes in uses to maximize both our economic and environmental well being.

As the cost of obtaining thermal infrared sensor (TIRS) imaging has dropped, the use to which this information has been put has increased dramatically. Currently, demonstrated water resources planning and management applications include quantifying and monitoring consumptive water use by irrigated agriculture, urban and suburban landscapes, and natural vegetation, as well as calibrating ground water models, monitoring aquifer depletion, and computing water budgets for surface water models. It is also an increasingly essential tool in monitoring the exercise of water rights, in order to ensure their use according to myriad state and federal laws, decrees, compacts and negotiated agreements, as well as rules and regulations.

The Idaho Department of Water Resources program for mapping evapotranspiration was recently recognized with an Innovations in American Government Award by Harvard's Kennedy School from among nearly 700 applicants for public sector innovations that "demonstrate creative approaches to previously intractable civic challenges and prove instrumental in enhancing scholarly research and academic study of government innovation." The Council has worked with the Congress for many years to provide funding to insure this tool remains available for present and future water managers.

It appears NASA is finally committed to funding a replacement sensor as part of the Landsat Data Continuity Mission (LDCM) scheduled for launch in 2012, but USGS will need funding to continue to receive, archive and distribute the data. Until TIRS is launched, this will continue to be a significant Council priority, given the real potential loss of this instrument and its capabilities. The Council, working with the WGA, will continue to urge the Administration to request and the Congress to appropriate money to ensure TIRS is deployed as part of LDCM.

Bureau of Reclamation

The Council and its member states maintain a close working relationship with the Bureau of Reclamation on a variety of issues. In addition to those previously noted herein, the 2008 WGA Water Report made many recommendations that involve or impact Reclamation. The following selected recommendations from the report's Executive Summary pre-suppose the availability of water-related information for sound decision-making. Given the breadth and depth of many of these recommendations, significant ongoing cooperation will be required to effectively prioritize and apply our limited resources.

- "The Congress should instruct the federal water resources agencies to include Integrated Water Resources Planning and Assistance as one of their primary missions."
- "The Congress and the Administration should support more spending for research and development related to innovative water conservation and supply augmentation strategies, including ground water recharge and recovery, desalination, recycling and reuse, and weather modification. Financial assistance should be provided as well where there is a significant national or regional benefit."

- “Federal, state and local agencies should further their efforts to investigate the availability and use of brackish waters to meet future water needs....”
- “States (who have the legal responsibility associated with the resource), working with interested stakeholders, should identify innovative ways to allow water transfers from agricultural to urban uses while avoiding or mitigating damages to agricultural economies and environmental values.”
- “States should encourage the use of water banks, rotating fallowing and dry year leasing, as well as other voluntary means to improve agricultural water use efficiency and to provide water for other uses during periods of shortage.”
- “States and federal water management agencies should evaluate the potential for integrating artificial groundwater storage and recovery opportunities with existing and future project operations, new construction and rehabilitation and betterment work.”
- “All levels of government, along with appropriate private sector involvement, should cooperate in the development and implementation of appropriate criteria for prioritizing infrastructure needs, asset management strategies, policies, standards, techniques and technologies.”
- “Congress should appropriate sufficient funds to conduct a portfolio assessment of federal projects to evaluate the performance of such projects given current conditions and to determine the vulnerability of project to changing conditions.”
- “Federal agencies should begin a systematic updating of their respective reservoir operating plans and drought contingency plans to assure that operating plans are adaptable to a changing climate.”
- “Water managers should take the initiative to clearly communicate their needs for applied science to the climate research community, and must seek opportunities to guide hydroclimate research in directions that will support real-world problemsolving.”
- “Planning for climate change should be undertaken at all levels, from the federal government to private and public water utilities, with participation from non-governmental organizations.”
- “More water storage should be considered, accompanied by an extensive risk and cost-benefit analysis, together with an analysis of the potential for reducing demand and increasing water use efficiency.”

We look forward to continuing to work closely with Reclamation, USGS and our other WestFAST partners to implement these recommendations.

Madame Chair, thank you again for the opportunity to testify and I will be happy to answer any questions.

**POSITION
of the
WESTERN STATES WATER COUNCIL
regarding
FEDERAL WATER AND CLIMATE DATA COLLECTION AND ANALYSIS PROGRAMS
Lincoln, Nebraska
October 16, 20106**

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 (much of which originates from mountain snows) and sound decision making demands accurate and timely data on precipitation, temperature, soil moisture, snow depth, snow water content, streamflow, groundwater and similar information; and

WHEREAS, the demands for water and related climate data continue to increase along with our population, 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 climate change impacts; (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 Cooperative Streamgaging Program and National Stream Flow Information Program, which are funded through the Department of Interior; (4) Landsat thermal data acquired through the National Atmospheric and Space Administration (NASA) and USGS; (5) USGS ground water measurement and monitoring; and (6) the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service and Climate Programs Office; and

WHEREAS, state-of-the-art technology has been developed to provide real or near real-time data 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, over a number of years, federal appropriations have not kept up with increasing needs, program costs and/or capital replacement requirements, as well as matching non-federal contributions, and this erosion in funding has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water resources related data gathering activities; and

WHEREAS, a substantial increase in related federal program appropriations is required to avoid the loss of critical information and data, and to address new emerging needs; and

WHEREAS, there is a serious need for adequate and consistent federal funding to maintain, restore, modernize, and provide for the targeted expansion of federal programs with a primary focus on coordinated data collection and dissemination.

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 decision makers and stakeholders, with significantly adverse consequences.