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Testimony of the Interstate Commission on the Potomac River Basin

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

House Natural Resources Committee Subcommittee on Water and Power Chairwoman Grace F. Napolitano

Presented by Joseph Hoffman
Executive Director
Interstate Commission on the Potomac River Basin

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The ICPRB is an interstate compact commission established by Congress in 1940. Its mission is the enhancement, protection, and conservation of the water resources of the Potomac River and its tributaries through regional and interstate cooperation. Represented by appointed commissioners, the ICPRB includes the District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia, and the federal government.

Madam Chairwoman, I appreciate the opportunity to testify before your panel today as part of your oversight hearing on "Water Management and Climate Variability: Information Support at the USGS and Bureau of Reclamation." I am speaking on behalf of the Interstate Commission on the Potomac River Basin (**ICPRB**). We are one of several river basin organizations created by states and the Congress with water resources management functions.

The Interstate Commission on the Potomac River Basin is the interstate agency created by the Commonwealths of Pennsylvania and Virginia, the States of Maryland and West Virginia, the District of Columbia, and the United States Congress to address water resources issues in the 14,700 square mile drainage area that forms the Potomac River watershed. We are a non-regulatory body that deals with the basin's water quality and water quantity issues. Among our major functions are providing the sound science needed by our member jurisdictions for water resources decision-making in the basin including providing a safe and adequate water supply for more than 5-million residents and visitors to our region. With respect to water supply for the Washington Metropolitan Area, ICPRB's Section for Cooperative Water Supply Operations on the Potomac (CO-OP) manages the distribution of stored water during times of drought.

Our Commissioners, appointed by the member jurisdictions, represent a range of basin interests and have adopted as the Commission's fundamental mission "to enhance, protect, and conserve the water and associated land resources of the Potomac River and its tributaries through regional and interstate cooperation." We have been doing this since 1940, when the Congress approved our interstate compact.

I note for the record as well that I serve on the Board of Directors for the Interstate Council on Water Policy, a non-profit association of state and interstate agency water managers from

across the United States that addresses a variety of water management issues. This organization has been working with the USGS during the last several years in conducting a series of regional roundtable sessions that has brought together cooperators and users of the USGS Cooperative Water Program (CWP) and the National Streamflow Information System Program (NSIP) to improve these programs.

Because I represent a river basin agency located in the eastern United States, I do not have

experience dealing with the Bureau of Reclamation, so I will limit my comments to focus on issues about USGS.

Water resources issues in this 21st century have been raised to new levels of awareness because large parts of the United States have to deal with multiple problems resulting from flooding and drought from time to time. This may be one of the consequences of a significant variation in our climate. The timing of this hearing is excellent as Congress deals with competing budget priorities and with the issue of climate change. The Commission's experience with regional and interstate cooperation is a potential element in the solution of those problems.

The development of new industry and new housing complexes in this region, as well as across the nation, have raised water challenges in many areas as suppliers try to keep pace with an expanding population. Environmental and regulatory concerns over construction of new reservoirs seem to point to the need to find new methods of providing water resources. For example, the use of groundwater as a source for domestic water supply may in some areas be an attractive alternative to reservoirs. Maybe a former quarry site can be used as a reservoir, eliminating a potential hazard while exploiting its potential for storing water. Water suppliers are exploring treatment options that may allow use of saline waters. Water demand is being reduced through a variety of conserving devices, some spurred on by the Energy Policy Act of 1992. Many basin utilities are actively promoting household and business conservation practices through education programs. In metropolitan Washington the water utilities, with ICPRB, conduct a demand and resource analysis every five (5) years to ensure that they stay current with growth and development and are able to continually plan to ensure adequacy of the future supplies.

The Potomac River Basin is seeing these and other initiatives. However, water managers at

all levels are reliant upon the U. S. Geological Survey for a wealth of data and data management actions that support the sound science needed to make decisions about water resources development, conservation, and use. Let me discuss a few of these from a water manager and data user's perspective.

Streamgaging programs are a significant effort by the USGS across the country. The National Streamflow Information Program is designed and implemented to provide a national

perspective and information that will protect life and property and contribute to the enhanced management of the nation's water resources and aquatic environments. There are some 7,500 streamgages operated by the USGS, large numbers of them through the NSIP program. Currently, the streamgaging network is not stable because of funding issues.

Changes occur from year to year in the funds available from partners because of funding difficulties at the state and local level. There are capabilities to make changes within the program, but these can disrupt the data collection process. There are infrastructure issues with gage equipment – mechanical and computerized devices fail, radio and telecommunications equipment needs to be upgraded, and structures that house equipment and appurtenant facilities such as pipes deteriorate or become damaged and must be repaired or replaced.

Earlier this year the Interstate Council on Water Policy coordinated to have letters signed by more than 50 concerned organizations to many congressional offices and committees, identifying the annual cost to fully implement the NSIP program as being $110 million, significantly higher than the $20 million available in FY 2008, the $22.4 million available in FY 2009, and the $27.7 million requested for FY 2010.

Funding is expected to remain a significant concern and constraint to this element of the data network of USGS. Recently I received a call from one of the Water Science Center Directors asking for help on a specific gage – one that was identified as a NSIP station and needed for the national interest since the National Weather Service uses the site as a flood forecasting point. He advised that neither the Weather Service nor his agency had funding to cover the needed repair to the station and the first year of annual operating costs to bring the station back on line.

We have heard about Corps of Engineers districts that have inadequate Corps and USGS funding to maintain gages used to manage Corps facilities that must be in the national interest since they are operated and maintained by a federal agency, yet they are not always included as part of the NSIP gage stations, and rely upon Corps of Engineers operation and maintenance funding. This funding is subject to the appropriations process and funding prioritization does not always address the need for gages.

The Cooperative Water Program of the USGS is another program that is a proven source for reliable, scientific information about our water resources. The Interstate Council on Water Policy has found that even with strong partnerships and cooperative funding efforts with multiple partners that the once 50-50 cost sharing has declined and non-federal partners are being asked to contribute more to make the program function, approaching the point where non-federal funds amount to about 70% of the program. When you consider the current fragile nature of many state and local environmental agency programs, this program effort can be expected to further decline as the states will be unable to continue their funding. This will impact not only streamgaging operations, but significant water resources research and investigations. The Cooperative Water Program needs almost $100 million dollars to fully function as intended. Only about $64 million was funded in FY 2009.

There are many challenges confronting water managers today and into the future. In addition to streamgaging, we need the strong expertise of USGS scientists in developing answers to many questions and to provide us with tools that will solve problems in the future. USGS hydrologists and managers should collect and manage data instead of spending part of their time selling the streamgage programs. For example:

1. We need the scientists at the Leetown Aquatic Ecology Laboratory of the USGS to analyze smallmouth bass from the Potomac basin and other locations to tell us why male fish are observed with eggs, a condition known as intersex.

2. We need cooperative program efforts with the states such as Maryland to assess the coast plain groundwater aquifers to ensure the continued adequacy of these water bearing zones for future water supplies, even with continuing growth in the region,

and with consideration to the impacts of climate change that may slowdown recharge to the aquifers.

3. Pennsylvania and Maryland have recently completed initial phases of new water resources planning. Both state planning efforts extensively relied on USGS data and data management capabilities to assist them. In Pennsylvania, the USGS Water Science Center staff was instrumental in developing a water use budget tool that

allows water managers at state and local levels to estimate the availability of water at the small watershed scale to assist in making development decisions.

4. In the Potomac basin, we are working with the Army Corps of Engineers and The Nature Conservancy to assess the flow needs required to support a healthy aquatic ecology while meeting the water supply withdrawal needs of various water users in and adjacent to the basin. We rely on the USGS science skills for a number of elements of this study. We need the basic gaging for ongoing monitoring, but we also need to have the science folks in the USGS define the habitat-flow relationships in the river and tributaries that will support the variety of living resources in the waterways.

5. Streamgages are used throughout the country for multiple purposes associated with water quality programs. Impaired waters are required by the Clean Water Act to have a total maximum daily load (TMDL) developed to pursue restoration to allow swimming and fishing. Knowing how many parts per million of a contaminant exist is important, along with the flow, to calculate the load that must be reduced.

6. The ICPRB staff will be using streamgage data and reference material in a support role to help the West Virginia Department of Environmental Protection expand the knowledge and expertise of water supply planners throughout West Virginia as they implement new state water planning and management responsibilities.

7. Data is an extremely important item provided by the USGS streamgaging program. We have access to real-time data from the streamgaging network that is so valuable to daily operational decisions about water withdrawals, ground water levels, and discharges from wastewater treatment facilities. We also have historic records that

are used in planning and design for projects and new facilities.

8. The USGS now has their StreamStats system that is accessible to a variety of users to compute streamflow statistics for ungaged stream locations, a valuable tool for planners and designers. This system also provides data from previous studies so designers can use the data without going back to an earlier published report. This system is useful in assessing climate change implications and in providing users with

an assortment of analytical tools that are useful for water-resources planning and management. For example, the ICPRB is developing a watershed runoff model to assess current flow parameters and how flows could be affected by varying rainfall patterns induced by climate change.

Without the data management capabilities for past, current and future data, the USGS is not going to be able to answer user questions. There must be funding to allow this to continue. With changes in our climate, and expected changes in flows of our streams, we cannot be satisfied with 10 or 25 or even 50 years of flow data. We need to sustain the infrastructure and continue to collect and manage the data from the many gages we have today, and will have in the future, for our water management efforts.

As an example of the need to continue to gather data, the Point of Rocks streamgage (Station Number 01638500) on the Potomac River has been part of the record since 1895 (with some flood marks going back to at least the flood of June 1889). During an eight (8) day period in late March 2009, new record low flows were observed, adding more data points to the computer models we use for water supply management, even though we have more than 114 years of record at this gage.

Understandably, USGS can find few partners to buy into equipment and data management that speculates on future conditions. In tight financial times the basic issue seems to be to provide funding only for information needed for a current, specific purpose.

Furthermore, the national program of flood forecasting carried out by the National Weather Service and its river forecast centers is of significant value to a wide range of interests, but it is critically important because it saves lives and dollars lost to flood damage. The system

relies on a network of precipitation (rain) gages, radar systems, and stream gages. This equipment, deployed throughout the United States, allows the experts in the forecast centers to know how much rain has fallen, the time period over which it fell, the continuing rate of rainfall, and existing stream conditions. These data are used in sophisticated models to allow forecasters to issue alerts and emergency planners to take action -- evacuation, protection of property, and so forth -- to help people avoid the adverse consequences of the flood event.

Flow forecasts for water supply are equally important in water management decisions, including reservoir release schedules, peak demand forecasting, and instream environmental uses. Just as in the case of floods, the use of gaging stations and their historic record of flow performance is paramount to obtaining as accurate and precise a set of probabilistic forecasts as possible. While technology and analytical techniques for forecasting continue to reach new plateaus in sophistication, they are worthless guesses without historic and real time streamflow data to feed them. In the art of forecasting, the value of "ground truth" to verify the projections and make necessary adjustments cannot be understated. The presence of a robust network of stream gages is an absolute necessity for supporting management decisions during pending hydrologic hazards of floods and droughts. It would be bad policy to subjugate basic data collection in the name of technological advances in research. Both efforts are needed in order to provide the public water management and disaster mitigation services.

We cannot allow the system that is in place to deteriorate because of funding shortfalls. This is in the national interest. The USGS streamgages provide reliable, impartial and timely information needed by many agencies for flood risk assessment, water supply planning, stream flow forecasting and water quality assessment.

The operations of the Interstate Commission of the Potomac River basin to manage the supply of water for the metropolitan Washington region and its residents and visitors rely upon timely and accurate stream gages. We use real time data available from the U.S. Geological Survey's gages to direct appropriate releases.

As I conclude, let me present a summary of lessons learned in the Potomac River Basin with respect to water resources management that may prove valuable in other parts of this nation

as we deal with shrinking resources:

- Significant financial resources were saved by governmental jurisdictions and a wide range of interests operating as a regional system. Interstate agencies such as the ICPRB can play a significant role in the cooperation necessary to such a system and the management of its resources. Innovative planning--rather than completely independent entities building reservoirs in the basin--has proven beneficial.

- Interstate agencies such as the Interstate Commission on the Potomac River Basin provide a good model for managing water resources on a watershed basis. The ICPRB is frequently visited by other water resources managers, many from other countries, interested in ways to improve management of sometimes very scarce resources.

- Cooperation, coordination, and communication among water suppliers and water resources agencies are necessary to ensure adequate supplies for a region.

- Advanced and continuous planning is essential. We cannot simply wait for an emergency to act.

- Local and regional action is essential. It is an old cliche, but we all know that water does not see and respect state and municipal boundaries. We need to work together on the issues.

- Federal agencies and the Congress have a major support role to play where needed and where appropriate. For example, the Corps of Engineers is a major player in the Potomac with the Low Flow Allocation Agreement, the Water Supply Coordination Agreement, in the construction, operations, and maintenance associated with the Jennings Randolph Reservoir, and as a water supplier for Washington, D.C.

- The Potomac model is not necessarily the only solution; however, it is a reasonable one. We have been successful because:

The cooperating utilities wanted it to be successful

The states and federal agencies wanted it to be successful
Parties have all given - and continue to give - a bit for the common good

It is important to remember that the data provided by federally supported stream gages are among the most valued services provided by government as demonstrated above. Long-term data collection is clearly in the public interest.

Funding only sponsor- assisted gages will fail to create and maintain a network for future uses.

I appreciate the opportunity to have participated today. Thank you, Madam Chairwoman.

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Mr. Hoffman received a Bachelor of Science in Civil Engineering from North Carolina State University, and is a Professional Engineer in Pennsylvania. His career with the Pennsylvania Department of Environmental Protection included assignments in drought response planning, abandoned coal mine reclamation, water supply management, rivers conservation, wetlands protection, coastal zone management, and state water planning. Hoffman was a Pennsylvania appointee on the Great Lakes Commission, serving as Chairman during 1993 and 1994. From February 1990 to April 1993, he was a member of the International Joint Commission's Levels Reference Study Board that evaluated fluctuating levels on the Great Lakes and recommended measures to alleviate the impacts. He also was the Pennsylvania representative to the Ohio River Basin

Commission where he served as Chair during 1990 and 1991.

In November 1998, he retired from Pennsylvania after 27 years to become Executive Director of the Interstate Commission on the Potomac River Basin, where he is the senior staff member for the organization charged with integrated water resources management of the basin. His staff is

professionals in various scientific and technical disciplines, who seek cooperative solutions to a variety of water quality and quantity concerns in this nearly 14,700 square mile region.

Mr. Hoffman serves on the board of directors of the Interstate Council on Water Policy, a national association of state and interstate water managers. He has been chair of the organization and currently is the Secretary Treasurer. Hoffman is a retired Army Reserve Lieutenant Colonel, Corps of Engineers branch.

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