Plenary Remarks of Anne Castle,
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Thanks, Pixie, for the introduction and thank you also for the excellent work that the Council is doing. I'm really pleased to be with you today and have the opportunity to represent the Obama administration and Secretary Ken Salazar.

And because I'm the Chair of the Advisory Committee for Water Information, it seemed particularly fitting to be part of your 7th National Monitoring Conference.

As all of you know: water is vital to our Nation's economy, health, food security, energy supply, and the quality of our environment. But while clean, pure water was once in abundant supply, we now face very significant shortfalls in overall supply, and we're increasingly dealing with impaired water quality.

As Ben Franklin put it in one of his most famous quotes from Poor Richard's Almanac, **"When the well is dry, we know the worth of water." He could also have said, "When the well gets contaminated, we know the worth of clean water."**

Ben Franklin was a very wise man, but in 1746 when he made that statement, he could hardly have foreseen the many challenges to our water supplies that we face in 2010.

These challenges include:

- continued **population growth** in the most arid regions of the country, and in our coastal areas
- **declining groundwater aquifer levels** in some parts of the nation

- **decreased water quality** in some of our rivers and lakes due to historical spills or discharges, excess nutrients, and constituents that aren't dealt with in wastewater treatment processes,

- **climate change impacts**, including changes in the timing and amount of runoff, dust on snow problems, and increased erosion caused by wildland fires.

In many parts of the nation we're seeing intense conflict over our limited water resources. We have more direct competition between different needs:

- water for agricultural production,
- water for urban populations,
- water for environmental sustainability, and
- water for energy production.

All of these needs are legitimate and important to our national well-being.

Making good decisions about these conflicts requires a desire to collaborate, and sound scientific information on which to develop and evaluate options.

But, as this audience well knows, secure water supplies are not just about water quantity. "Available" water is a function of both water quantity *and* water quality. Poor water quality can render just as unavailable as decreased supply. And it can affect quality of life for all American citizens.

At the Interior Department, our programs need to integrate water quality and quantity on a national scale.

We need water of good quality that's safe for drinking, as well as suitable for recreation, irrigation, energy, industry, and for the protection of our ecosystems and living resources.

It's because we have that goal in mind that the Interior Department is a primary sponsor of water monitoring and water science to better understand both water quantity and quality.

Some of our programs and initiatives have been around for decades and you're all familiar with them. Some programs are much newer.

But the goal of all our water monitoring efforts is to provide timely and relevant science to support decision-making about the protection, management, and restoration of water for human and ecosystem health. And to achieve water sustainability for the future.

But even robust monitoring and science is not enough. We also need to use every opportunity to communicate that data and science in a way that's accessible to a multitude of federal, state, tribal, local, and non-governmental stakeholders involved in water issues.

We need to help the general public understand the relevancy of water issues and the data and science behind them. And that communication effort is a primary mission of the Interior Department and, particularly, of USGS.

I'm going to highlight today some Department programs—both new and existing—that I think will be of interest to this group, and that are intended to help us meet the water challenges brought of the 21st Century.

First – a new Department of the Interior program known as WaterSMART – SMART stands for Sustain and Manage America's Resources for Tomorrow. On Feb. 22, Secretary Salazar signed an order creating the WaterSMART program and establishing a new water sustainability strategy for the United States. Two Interior bureaus—the USGS and Bureau of Reclamation—are major players in the Department's WaterSMART program. USGS, of course, is the nation's leading earth science agency and Interior's science and water-monitoring arm, while the Bureau of Reclamation is the largest supplier and manager of water in the West.

WaterSMART will give a big boost to the USGS's National Water Census, which will be conducted for the first time in over 30 years. Because the WaterSMART program is implementing provisions of the SECURE Water Act, the water census has been renamed, to the WaterSMART availability and use assessment – that's the language used in the legislation.

Although this WaterSMART assessment will first focus, in large part, on water use—current supplies and future needs—it will also include water quality by looking not only at water needed for irrigation and energy, but also water needed by ecosystems and minimum flows to maintain healthy fish and biological communities.

This recognition of the water needed to support ecosystems is a significant shift in our overall thinking about water that has occurred in the past few decades. In the past, water was allocated among competing, mostly out-of-stream uses, without regard for the environment.

Today, the environment has a place at the negotiating table. And, in many different places, we're looking not only at the quantity of water needed by fish, but also at the timing and quality of water needed to maintain the entire riparian ecosystem, so that our future supplies and water quality won't be diminished.

The WaterSMART assessment will also look at water-availability indicators, such as changes in groundwater storage, stream runoff, and inter-basin transfers.

The WaterSMART initiative also includes a USGS grant program to assist state water resource agencies in integrating their water use and availability datasets with federal databases. We have $1 million in the President's 2011 budget for these grants. They're part of the SECURE Water Act implementation as well.

WaterSMART also includes Reclamation's cost share grant programs, Title XVI and WaterSMART grants. There's substantially increased funding requested in the President's 2011 budget: from $35 million to over $62 million. These grants support water efficiency projects and recycling and reuse facilities. Our increased funding is expected to support 60 to 75 new on-the-ground projects.

These cost-share grants allow states, tribes, irrigation districts, and water districts to leverage their money and resources on various types of projects that conserve and use water more efficiently.

In making the awards of the grant funding, we'll be looking for projects that also

increase the use of renewable energy in the management or delivery of water, or generate energy savings ans well as water savings, protect endangered and threatened species, or introduce new sources, like seawater or brackish ground water so we can stretch our available supplies.

Those programs are primarily about water quantity. But today, I also want to talk about some of our existing Interior Department programs that focus specifically on water quality – because again, both quantity and quality are necessary to ensure sustainable water supplies for our future needs.

I don't have to tell you how water quality issues facing the U.S. have changed since implementation of the Clean Water Act in 1972. Actions and regulations since then have greatly helped to control point-source contamination, particularly from the publicly-owned wastewater treatment plants and from private industry.

But now, we're turning to the next set of problems, we're seeing much more focus on *nonpoint sources* of pollution, like agricultural drainage, from urban runoff, from forest harvesting, and even from the atmosphere. Those wildland fires we're seeing as a result of climate change can mobilize years and years of atmospheric deposition in soils and bring those chemicals into the stream systems.

We're seeing more issues with constituents of emerging concern, like pharmaceuticals, volatile organic compounds, pesticides, herbicides, and industrial chemicals. We're also seeing seawater intrusion, nutrient loading, and invasive aquatic species.

More than ever, we need consistent information and assessments and research on these new contaminants and nonpoint sources and all of the stresses that affect water quality and trends over the long term.

To help provide that information, the Interior Department is continuing its support for a multitude of programs dealing with these issues.

Like the USGS Cooperative Water Program--which is conducted as a partnership in cooperation with about 1,500 local, state, and tribal agencies—and the National Water

Quality Assessment (NAWQA) Program, in existence since 1991. It originally focused on particular river basins and now has expanded to regional and national assessments.

The Toxic Substances Hydrology Program, even older, in existence since 1982. It evaluates environmental contamination and management of contaminated sites. It also looks at the transport of contaminants so that we'll be able to make good decisions about what to do in the future.

All of these programs provide critical science and monitoring on the physical, chemical, and biological conditions of our waters. And, even more importantly, this data allows us to relate those parameters to our human activities on the landscape, and to natural factors like climate, hydrology, and geology.

This is critical for a couple of reasons. **First**, water quality has to be interpreted in the context of streamflow. Ground water chemistry has to be interpreted with an understanding of the underground hydraulics and aquifer characteristics.

Second, the background data is critical because we all know that variability is the norm. Inevitably, we have wet and dry periods. Whether it's short term resulting from climatic shifts like El Nino, or long-term changes associated with greenhouse gases, this variability can literally overwhelm our best efforts to control pollution and restore ecosystems.

So, it's only by looking at water quality through the lens of the background data that we can pinpoint what is really happening – that we can identify what is really controlling water quality and impairment, so we can effectively manage our waters over changing times.

So what do we need to take on this challenge?

The Department supports 3 national commitments.

First, we need a national commitment to **long-term, credible data to understand where, when, how, and why the nation's water quality and quantity is changing over time**, for better or for worse. This kind of monitoring will help us predict and

understand future impacts from our changing climate, water use, population changes, and how we use our land.

Second, we need a national commitment to **research on emerging contaminants**.

Chemicals used in our daily lives at homes, on farms, and in industry, like pharmaceuticals, personal care products, detergents, pesticides, hormones, and flame retardants, etc., are now being found at low levels in streams and ground water across the country.

Some of these contaminants are accumulating in wild plants and animals, in agricultural commodities, **and** in humans.

The monitoring that's done for compliance with regulations (like the Safe Drinking Water Act or Clean Water Act) focus on only a subset of the thousands of chemicals created and released to the environment every day.

The new phrases "emerging contaminants" or "contaminants of emerging concern" are now used to describe these understudied chemicals, and research is needed to answer questions about the presence and magnitude and persistence of these elements in the environment.

Fortunately, modern analytical chemical techniques are enabling scientists to detect and quantify a broadening range of emerging contaminants in a variety of water environments. That's allowing us to assess and prioritize these contaminants, and to understand their associations with potential ecological harm or human effects.

Finaly, we need a national commitment to **continued development of reliable models that help to forecast the fate and transport of contaminants in places that we can't afford to monitor**.

These models have to be firmly grounded in long-term observational data. Improvements in modeling will help provide us with the decision-making tools we need to prioritize, manage, and protect our water resources in the most cost effective way.

It's only through these commitments that we as a nation can truly understand how changes in land and water use, climate, and regulatory policies and management strategies will affect water availability for human and ecosystem needs.

I've looked at this week's conference agenda and I'm really impressed with the scope of topics, and the discussions of new innovations and cutting-edge tools in water-quality monitoring, and in analysis and reporting. It's obvious to me that solutions to these challenges ***are*** achievable as technology and expertise have advanced.

It's particularly notable that there's such widespread interest in sensor technology – sensors that bring us continuous information in real time –

This kind of information is not only critical to minimize loss of life and property from water-related natural hazards, but also critical to truly understand the timing and severity of contaminant loadings to our waters.

I'm also impressed by the multi-agency efforts to develop compatible data management systems that allow the retrieval of data from multiple sources in common formats. These systems are going to help us get the most out of our existing data investments and improve our assessments of streams and ground water.

I want to compliment the USGS and EPA for starting the process of compatible water-quality data and exchange, and we're all benefitted by the extension of that effort to our colleagues in other agencies, like USDA and NOAA.

I also commend the efforts of this Council for developing a National Monitoring Network for Coastal Waters and Tributaries.

We're beginning to get the benefit of land-to-sea assessments in San Francisco Bay, Lake Michigan, and the Delaware Estuary, and these assessments are highlighting different responses to contaminants in estuaries and coastal waters.

This coastal network is aligned with the Department's commitment to protect ecosystems in all of our major estuaries, including the Gulf of Mexico, the Great Lakes, and the Chesapeake Bay. We support the network design the Council has put forward to better understanding the impacts of terrestrial forces on our coastal waters.

And, finally, I commend your efforts to develop a national ground-water network. We absolutely need a more comprehensive and consistent assessment of our groundwater reserves and principal aquifers.

I'll conclude by saying, having served on many task forces, commissions, and Boards in my former life— I greatly appreciate the Council's terrific efforts and involvement of *all the different* stakeholders. You're doing great work and moving us toward the goal of a national network of robust water quality data, accessible and usable by everyone.

Thank you for including me as part of this very dedicated water community.

And thank you again for the time and attention you're each giving to this work of improving water quality monitoring and science.