



**Advisory Committee on Water Information  
July 12-13, 2011**

USGS Auditorium, 12201 Sunrise Valley Drive, Reston, Virginia

**Tuesday, July 12**

**Welcome and opening remarks –  
Bill Werkheiser, USGS Associate Director for Water, ACWI Alternate Chair**

Introductions were made around the table:

Don Cline, Jerry Webb, Steven Heiskary, Darryl Glover, Harry Zhang, Sue Lowry, Peter Evans, Robert Mace, John Miller, Charlie Hunsicker, Doug McLaughlin, Bob Schreiber, Brandon Kernan, Terry Cheek, Tom Graziano, Gary Carter, Susan Holdsworth (substituting for Mike Shapiro), Bill Werkheiser, Wendy Norton

*Also in attendance:* Cathy Tate, Bill Cunningham, Donna Myers, Mike Norris, Eric Evenson, Darwin Ockerman, Pixie Hamilton, Tim Smith, Dan Cavanaugh, Tod Dabolt, John Gray, Matt Römken, Meg Jonas, Judy Campbell-Bird, Claudia Hoeft, Robert Mason, Jennifer Bracewell, Jerry Faulk, Nate Booth, Chris Reimer, Darrell Osterhoudt, Tom Dikes

*On the phone:* Dwane Young, Tony Willardson, Dawn Champney, Dave Avens, David Bylsma, Tom Leahy, Dan Sullivan (Note: there may have been more people on the phone, beyond those named here, since there were people joining and leaving and rejoining the call all day.)

*Bill Werkheiser* previewed the agenda and welcomed participants, and noted that Anne Castle will join the group on Wednesday afternoon.

The House mark (from yesterday) includes language calling for a National Ground Water Monitoring Network.

**WaterSMART –  
Eric Evenson, USGS**

See PowerPoint for goals, objectives, activities.

Water Census is a part of the USGS science strategy. It is also a component in the Department's Water SMART initiative, and is related to the SECURE Water Act, which was signed into law in March 2009.

The SECURE Water Act gave USGS the first authorization to give grants to the States for water use work.

Eric commented that there is a very active group of stakeholders – including several members of ACWI. The group will be meeting in Reston in September.

The new frontier of water use = consumptive use

We are also looking at major public supplies, including the locations of intakes and wells, to make sure we have complete geospatial data on these systems.

By the end of the year, we want to have substantial information on the three major categories of water use: public supply, thermoelectric power, and irrigation.

Fortunate to receive a \$4.0 Million allocation of funds – will work on a nationwide analysis system, water use, ecological flow, groundwater, focus area studies. The ultimate system desired is a nationwide system to deliver water accounting information addressing many issues (taking a water budget approach). Information/data will be served via a web application at scales that are relevant to the user – use an online tool to construct a water budget.

Goal is to enhance the nation's water use information – new methods to estimate water use, develop models based on land use, ability to track water from point of withdrawal through to return of flow.

We do not collect water use data at USGS; we are the first users of the data collected by States and regulators.

We are also putting work this year into our groundwater analyses, to develop a regional approach for estimating groundwater/surface water interactions.

In 2010 we will begin on a 3-year effort to assess the Nation's brackish water resources.

We are also using NAWQA's strength and tools like SPARROW to demonstrate the degree of water quality impairment that limits water availability, and to define the main compounds of concern.

We are also working in the Colorado, Delaware, and ACF Rivers, where there is significant competition over water resources. Work to define a set of technical questions that need to be addressed and bring USGS science in to address these questions.

Funding this year will focus on flow needs for wildlife and habitat – develop a system to classify water bodies by their hydro-ecological type.

How will we use the 2011 and 2012 funding? (see PowerPoint: [http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/01\\_Evenson\\_Census\\_Talk\\_07-12-11.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/01_Evenson_Census_Talk_07-12-11.pdf))

*Doug McLaughlin:* What is the scale of the projects? *Eric Evenson:* The estimation of parameters for the water budget will go down to the 12-digit HUC level. That's about 37 square miles. When we get to Alaska, we might aim differently because of the density of data there, but for the rest of the U.S. we will do the 12-digit level. We will also provide estimates of daily flow values, but water use information will be available only monthly. We will also be mapping interbasin transfers, but at the 8-digit HUC level.

*Doug McLaughlin:* As this effort moves forward, will the uncertainties in the estimates be characterized? *Eric Evenson:* Yes, there will be clarification of the uncertainty.

*Charlie Hunsicker:* Looking at your graphics describing public supply estimates, I want to encourage you to include a water reuse component - that is especially important in the southern States and water-short areas. If you just look at withdrawals without considering reuse, you may

not get an accurate picture. *Eric Evenson:* We are planning to do that in subsequent years, but not this year.

*Brandon Kernan:* Is there going to be an effort to query States to see who has done this type of water budgeting work? In some States there may have been significant work done already. Also, what intentions do you have to maintain the dataset once you have it? *Eric Evenson:* We are working with a number of States who have water budgeting systems already in place (Kentucky, New Jersey, Massachusetts, and some of New Hampshire). In some cases, it's even at higher resolution than we're attempting to do. In terms of refreshing of the data, this is intended to be an ongoing, cycling program. The ease of refreshing the data on an annual basis varies from sector to sector; but we will refresh all the information at least every 5 years.

*Terry Cheek:* I think you said you were going to draw a distinction between water withdrawn and water consumed. On the thermoelectric side the consumption is somewhat less. But there is a trend where that will be changing as a result of new EPA rules for water intake structures. *Eric Evenson:* Yes, we're well aware of the proposed regulations and what that might mean for us. We have a separate panel of advisors that includes organizations like EPRI to advise us in the area of thermoelectric power.

*Sue Lowry:* Regarding your regional studies, I know you're aware of the big Colorado study that's going, but I was wondering if you can talk to the level of detail you need versus what the current Colorado study is doing. And can you speak to the question of variability across regions? *Eric Evenson:* There are two significant efforts going on in the Colorado basin related to WaterSMART (Westwide Climate Risk Assessment, taking place in 17 basins in the west, and a river basins demand study that's a partnership between BOR and the States). We are coordinating very closely with BOR on the progress that's being made in these two efforts.

*Robert Mace:* Do you do ground-truthing with your ET-based estimates? *Eric Evenson:* Yes, though we don't have a large budget that we can apply to monitoring, but we do have some resources that we can use for synoptic verification of our ET-based estimates. We feel that's very important to build into our uncertainty analysis.

*Jerry Webb:* With respect to ACT/ACF, as you know, COE is doing some studies right now that are near completion, so as you move into the next stages of WaterSMART, we need to ensure that we have a high degree of collaboration: *Eric Evenson:* Good point. Jess Weaver, our southeast regional executive, has reminded me of this a number of times.

*Steve Heiskary:* You said you'll inventory at the HUC 8 level where you have discharge info. Does this inventory take State gages into account? *Eric Evenson:* Our overall analysis does account for State gages, although the map I showed only included USGS gages.

*Peter Evans:* How can ACWI and the ad hoc workgroup play a significant role as this effort moves forward? *Eric Evenson:* I have an agenda ready to roll out for the ad hoc advisory committee, and one of the things we'll focus on will be compiling recommendations to Bill Werkheiser on how the system should be revised to reflect the needs of stakeholders.

## Update on National Streamflow Information Program (NSIP) implementation – Mike Norris, USGS

See PowerPoint for summary of major talk points ([http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/02\\_Norris\\_ACWI\\_7-11%20nsip\\_status.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/02_Norris_ACWI_7-11%20nsip_status.pdf)).

Looking at the value of streamflow information to society is important – every citizen is impacted. The USGS currently collects, stores, and provides streamflow data for over 7,600 gages.

National streamgaging network funding model – the network is partly funded by USGS, but mostly funded by partners. The biggest issue we face is network instability, as the budgets of funding partners grow and shrink. This is particularly problematic with respect to our long-term gages (those that have 30 years or more of continuous record). In some years we have had to discontinue as many as 150 long-term gages in a single year, but that trend slowed when NSIP got an infusion of cash to help stabilize the situation. Now, we are beginning to lose streamgages again, largely due to State and Federal budget cuts. State and local agencies are now providing 47% of funding for streamgages, and OFAs are providing 21%. USGS provides the remaining 32%.

NSIP has 5 major goals, but I'm going to talk mainly about the first one: stabilize the streamgage network. We must ensure there is a national backbone network of gages to meet Federal needs, and we must modernize and harden the network streamgages.

The Federal needs are: data for interstate and international waters, streamflow forecasts to support the National Weather Service and other Federal agencies, river basin outflows, sentinel watersheds, and support for the USGS water quality networks.

So how is the stability issue going right now? As of today, 334 streamgages are either currently threatened or have been discontinued in the past year. Obviously, stability is still a problem, despite the infusion of funding NSIP received in 2001. This is partly due to an expected 15-20% reduction in COE support for the network (they fund nearly 2500 NSIP gages, in full or in part). Mike showed the group a map of what a fully implemented Federal needs program would look like, noting that ideally, this is what we would like to see. Currently, however, we see the opposite.

SECURE Water Act mandates that NSIP fund not less than 4700 streamgages by 2019, and that “the Federal share ... shall be 100 percent of the cost of carrying out the national streamgaging network.” We are far behind this goal, and there is a cost to that.

*Bob Schreiber:* For modelers, baseflow information is critical. Has there been any support from the flood insurance industry or other sectors to help leverage resources? *Mike Norris:* As far as permitting, people who apply for FERC licensing often are told they have to have USGS streamgaging activity downstream, so the answer is yes, to some extent. We have also tried to approach insurance agencies, but we haven't been very successful at getting their participation yet.

*Bob Schreiber:* regarding advancements in techniques, one thought is the use of remote sensing, and I'm curious about what's involved in that. Also, is it possible to apply an 80/20 rule so we don't have to have such a high quality of data for **all** our streamgages. *Mike Norris:* we've discussed this a lot within USGS, and our conclusion is that **all** the data must be of a high enough quality for **all** users. Maybe in the future we'll have a policy at USGS that says the lower quality data are ok, but I don't see that happening in the short term. *Bill Werkheiser:* If we had the Federal backbone of the network, we could explore the use of lower quality data, but we're just too far away from that point right now. *Mike Norris:* regarding new technology, we've had great advances in (and great success with) hydroacoustics. We have done some experiments with remote sensing and radar, but the results depend on how much sediment is in the water. We can measure velocity of the water, but the technology does not currently allow us to get a channel cross section.

*Bill Werkheiser* commented that we are far from the Federal backbone that is needed. *Mike Norris* commented that if data meets quality assurance guideline, it goes in the system as USGS data.

*Brandon Kernan*: Brandon commented about providing statistical and trend analyses with the data you're serving. The data are very accessible, but statistical analysis would be even better. *Mike Norris*: It would be good to get your feedback on what ASDWA and other stakeholders need us to provide.

*Peter Evans*: I'm curious to know how the regional characterization studies differ from those done in the Cooperative Water Program. *Mike Norris*: We are not currently doing any regional assessments, and when we do start, we'll be working closely with the Coop Program. The difference between what we'll do and what the States do is that we won't worry where the State boundary lines are. We'll be doing studies on a watershed basis.

*Sue Lowry*: At least some of the "at risk" gages are because of BIA funding reductions from a few years ago. That is still an issue. *Bill Werkheiser*: We probably need to reengage with BIA to see where they stand right now on this issue. *Mike Norris*: They recognize the value, but it's not a priority.

## **Report from the Subcommittee on Sediment – Matt Römken, USDA, Agricultural Research Service**

Update on next joint conference on hydrologic monitoring (SOH and SOS collaborate).

Background on RESSED database (see information sheet: [http://acwi.gov/acwi-minutes/acwi2011\\_14June-webex/slide.lib/06\\_rested\\_synopsis\\_need\\_statement\\_4\\_7\\_2011.pdf](http://acwi.gov/acwi-minutes/acwi2011_14June-webex/slide.lib/06_rested_synopsis_need_statement_4_7_2011.pdf))—

- Selected uses of reservoir sedimentation data (see PowerPoint: [http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/03\\_sos\\_romkens\\_rested ACWI 7 11 2011.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/03_sos_romkens_rested_ACWI_7_11_2011.pdf))
- Reservoir sedimentation is a special concern in the West, due to sediment loads from wildfire and debris flows, and due to water scarcity issues and shorter period of record.
- Current status of RESSED database reflects 20<sup>th</sup> century conditions. What we need is a database for the 21<sup>st</sup> century.
- About \$250k/year over 4 years is needed to proceed to maintain and update the database.
- Can the Nation afford **not** to track reservoir capacity losses?

*Bob Schreiber*: You described the Google Earth process; was that an efficient process that can be extrapolated to give us more coverage in the future? *Matt Römken*: It was a way of checking how good or bad the data were. In some cases it worked ok, in some cases not so well. Whatever is available is what we're going to use. *Bob Schreiber*: I'm wondering if we can get more reservoirs into the database through that process. *Matt Römken*: We can't get more reservoirs into the database with **any** tool right now; the key point is that no funds are appropriated for the activity.

*Sue Lowry*: If we have a methodology for doing an assessment, all of our States may be able to use that method. A lot of States are doing work like this. Maybe it's more important to have a method, rather than a database. *Meg Jonas*: The Google Earth analysis is a red herring, in a way. It was only designed to look at the predictions to see if they were accurate. It is not a robust method.

*Sue Lowry*: Is ACWI being asked to approve a method for this work, or to approve a database? *Meg Jonas*: We're asking ACWI to approve a statement that expresses the need for funding to support database **maintenance**.

*Doug McLaughlin:* The attachment to the resolution says that there are a huge number of reservoirs waiting to be included in the database. Does the resolution we're voting on address that need? *John Gray:* The RESSSED concept is "build it and they will come." We would build the product, place it online, QA the data, etc. All the effort to build information on reservoir capacity loss is on the user side.

*Doug McLaughlin:* All of the information in this database can be connected to stakeholders; is there a way that SOS can help a broader audience make the connection between the value of this database and the decisions that stakeholders need to make about water availability and quality. *Matt Römken:* One approach would be to have an extended version of this presentation on the internet so that anyone can see the relevance to their specific concerns; that would be helpful to advertise the program, though we would need to discuss it within SOS.

*Steve Heiskary:* I think what Doug was asking about is marketing – i.e., marketing the value of RESSSED. A more robust PowerPoint presentation isn't going to fill that need. *Doug McLaughlin:* Yes, that's very much on point. *Matt Römken:* This summer, the program comes to an end because there are no more funds. Everything we do is going to cost something. That's why we're making a presentation to ACWI, to identify the problem that we need funding, even if all we're going to do is advertise the existing product.

*Robert Mace:* A marketing strategy you may consider is "what is the benefit that States and operators are getting by sharing this information at a national level?"

*John Miller:* We're very interested in this project. Have you considered which agency is most appropriate to fund this activity? *Matt Römken:* BOR and USGS have been involved up until now, but none of the previous players have any funds for this work.

## **Report from the Subcommittee on Hydrology – Claudia Hoeft, USDA, Natural Resources Conservation Service**

Update on SOH membership – one organization resigned due to reorganization at American Forests, but there are two new member organizations (Global Ecosystems Center and California Division of Water).

Update on activities of the five SOH workgroups (Hydrologic Frequency Analysis, Extreme Storm Events, Hydrologic Modeling, Hydrologic and Hydraulic GIS Applications, Satellite Telemetry Interagency Work Group).

Extreme Storm Events workgroup has been active. Thomas Nicholson, US Nuclear Regulatory Commission, is serving as interim Chair. Vice Chair is Dr. John England, BOR.

SOH is also keeping track of Federal data sharing activities, through the efforts of SOH member Dave Goodrich.

"SOH Connections" began as a quarterly newsletter to share information among subcommittee members. The newsletter now has a very wide distribution, as well as being available through the SOH website. Perhaps Carol Lewis, who maintains the website, can tell us how many downloads of the newsletter we're getting.

*Sue Lowry:* One of the topics that keeps coming up at ICWP is data that are collected by non-USGS efforts and how we can make those data more accessible to the general public. Have you discussed that within SOH? *Claudia Hoeft:* One of the questions we've had within SOH is "what should the role be for the various ACWI subcommittees?" The type of thing you're describing seems like a

natural fit with ACWI's Subcommittee on Spatial Water Data. *Tod Dabolt*: Yes this is an area of interest that crosses many subcommittees. SSWD is looking at those water data that have a connection to spatial assets like streamgaging stations and cross-section info. *Sue Lowry*: As States collect data, how can they get connected into what you're doing? *Tod Dabolt*: We're trying to collect information now that will allow us to prioritize data sets that are most sought after by the membership and partners.

*Sue Lowry*: Will we have time to discuss some of the issues of jurisdiction among the various ACWI subcommittees? *Bill Werkheiser*: Yes, I think we will.

*Doug McLaughlin*: I'm not clear what the mechanism is for collaboration and communication across subcommittees. *Bill Werkheiser*: There's really not a formal mechanism, so this is a great topic for our discussion this afternoon. *Nate Booth*: I'm going to talk about some of these issues tomorrow during the Subcommittee on Ground Water presentation.

*Bob Schreiber*: Regarding the modeling database that the subcommittee hosts, is it worth it to have ACWI approve a resolution saying that the work needs to go forward, or can we expect Texas A&M carry the ball? *Claudia Hoefft*: It would be great to have such a resolution because it's not clear that Texas A&M will continue indefinitely.

## **USGS Cooperative Water Program – Pixie Hamilton, USGS**

Thank you, ACWI, for being involved in the USGS Coop Program. ACWI actually wrote the mission statement for the program (see PowerPoint: [http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/05\\_pixie ACWI July12 2011.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/05_pixie_ACWI_July12_2011.pdf)). The Coop Program is Water's "bottom-up, on-the-ground" program. The bottom-up approach shows us the emerging issues that we need to pay attention to. And the Coop Program gives localities a national context for comparison that allows them to see how bad (or not) their water problems are, compared to the rest of the country.

We partner with nearly 1600 State, local, and Tribal agencies. In 2010, we have \$65.6 million in Federal appropriations and non-Federal matching funds of \$159.2 million, for a total program of \$224.8 million. Program funding has been fairly level for the past 10 years.

The program is like an elephant in a dark room – everybody views the program differently, depending on which part of the elephant they're touching.

As Mike Norris mentioned this morning, the Coop Program is a primary source of support for the national streamgaging network. The program also supports 10,000 groundwater wells, including many real-time wells.

Our goal is to get more parameters (pH, turbidity, dissolved oxygen, etc.) on each of our water-quality monitors. This is becoming extremely important to our non-Federal partners, as they use these parameters as surrogates or indicators to help quickly determine conditions that are more difficult and more time consuming to monitor using traditional methods (i.e., using turbidity as a surrogate for sediment).

The program also includes about 700 interpretive studies annually that support the USGS water mission.

Pixie outlined four Coop studies that showcase the way the study of local water issues is enhanced by other, national programs within USGS, and how there is a natural synergy between these two approaches (local and national) to the science.

Challenges and opportunities for growth: regional and national visibility; alignment of science priorities across USGS; balance between data and interpretive studies; flat funding on the Federal side, leading to increased State funding; avoiding competition with private sector.

*Doug McLaughlin:* Data collection and monitoring is science, as much as the interpretive studies are, and I'm wondering about the opportunity to help people understand the value of monitoring within a problem-solving context. *Pixie Hamilton:* Right, I think we can't do one without the other, and we all know that, so it's a matter of selling the concept to other people.

*Peter Evans:* One concern about focusing on the applications instead of the data is that USGS has gotten so good at extending the data that we already have, and sometimes it seems that we can do all these studies with the data we already have. This causes people to wonder why we need more data collection. My question relates to the 2006 ACWI Task Force on the Coop Program, and the various concerns raised by the National Research Council in 2009. What do these evaluations mean for the program, going forward? *Pixie Hamilton:* Many of ACWI's 59 recommendations have already been addressed, and the remaining ones are the focus of my activities right now. I would like to do a report-out to ACWI on the results of the evaluation, so ACWI can see what we have done.

*Bill Werkheiser:* You've heard several times about concerns on quantifying uncertainty. To me, that's the key to using our data to support decisions, and that's the rationale for why we need additional data collection. *Doug McLaughlin:* I agree completely. That question is very important to getting people to support the need for more data collection.

## **Report from the Sustainable Water Resources Roundtable – Bob Goldstein, Electric Power Research Institute**

Bob presented information on SWRR history, recent publications, and workshops.

There is growing participation of industrial groups within the Roundtable, especially in the Great Lakes region. SWRR held a workshop in Minnesota in October 2010.

SWRR Held an additional workshop in Washington D.C., in April 2011, which also had a large representation from industry.

SWRR sees Federal agencies shifting from a passive to active role in the area of sustainability. Now that industry involvement in this area is growing as well, we need more expertise in the communication of complex issues, increased engagement of public and decision makers, and utilization of new technologies for web conferences and visual media.

Next workshop will be in Sacramento in fall 2011. We are continuing outreach, building regional connections, refining the SWRR sample indicators, and collaborating with the Water Census effort.

## **Integrated Water Resources Science and Services (IWRSS) Update – Tom Graziano, NOAA**

Growing water challenges – there is a growing need for water resource forecasts, and water management decision-makers need expanded high resolution information, quantification of uncertainty to help manage risk, and enhanced communication of flood risk.

Some people say that water is “the new oil” or “blue gold.” We have lots of energy alternatives, but there is no alternative to clean water. Build strong collaborative relationships for a sustainable water resources future.

New and emerging water resources stakeholder needs – NWS has conducted extensive outreach to assess and prioritize stakeholder needs. *National Report: Responding to National Water Resources Challenges*, August 2010, published in response to a broadly recognized need for an integrative “Federal Tool Box.” The report recommended the NOAA-led IWRSS to prototype the Federal Tool Box.

Recent extreme events – Atlanta, Georgia, September 2009; Nashville, Tennessee, May 2010; South Texas, July 2010; record spring and summer flooding in 2011 in the Red, Ohio, Mississippi, Milk, and Souris Rivers. Every time we have one of these extreme flooding events, we assess our response and try to figure out what we can do better next time.

Communications among agencies, especially during flood events, need to be transparent. We can’t continue to rely on phone calls and emails between individuals. We need to have our *systems* linked. Facilitate improved access to data and ensure common operating practices. The challenge is to deliver enhanced water information to support a growing water economy, understand water availability, threats, and uncertainties, help decision makers understand and reduce risk (quantify uncertainty), improve social and economic security.

Federal Water Resources Consortium –

- IWRSS aligns multiple agencies with complimentary water related missions to integrate services, improve river and flood forecasts, provide new summit-to-sea water resources analyses and forecasts, and enable more effective use of resources.
- This is a new business model for interagency collaboration, sharing technology, information, models, and best practices. There is a joint governance structure and joint stakeholder outreach/education.
- IWRSS started with three agencies and was designed to expand; currently 11 agencies participate.

A Memorandum of Understanding (MOU) was signed May 2011 among NOAA, COE, and USGS. Team charters are being developed for the groups that will execute the MOU (see PowerPoint slides for MOU purpose statement and responsibilities: [http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/IWRSS\\_Graziano\\_Brief-July-12-2011.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/IWRSS_Graziano_Brief-July-12-2011.pdf)). Collaborative science, services, and tools to support integrated and adaptive water resources management.

IWRSS National Water Center – the 2009 and 2010 budgets included earmarks for establishing this center in the Southeast. The center will combine hydrologic forecasting operations, research and development, systems engineering, and national support facilities. Capabilities will include joint agency coordination and collaboration, 24x7 operations center, service backup for field units, and multi-agency operability. Completion of the center is expected in late 2013.

*Charlie Hunsicker:* Are you working on tidal influences in your inundation mapping? *Tom Graziano:* The short answer is yes.

## **Roundtable – Discussion of member agency budgets**

*Bill Werkheiser, USGS:* Our 2011 operating plan is about a 6% reduction from 2010. Water programs were cut about \$8.5M, mostly in the Ground Water Resources Program and Cooperative Water Program. In 2012, we have fared slightly better than we expected in the House Mark.

*Jerry Webb, COE:* Our outlook isn't quite as rosy as yours. This is probably our last "year of plenty." I don't have the 2012 numbers yet, but the lowest estimate for a decreased budget is about 4%, up to about 15%. We're really expecting a 5-10% cut. We historically have lots of earmarks, and this Congress doesn't know how they're going to handle earmarks, but we're not expecting any earmarks or additional funding for 2012.

*Gary Carter, NOAA:* NWS came out of 2011 CR pretty level, compared to 2010. We don't have a crystal ball for 2012. Right now NOAA is taking more of a hit, but NWS seems OK so far.

*Terry Cheek, TVA:* We don't get Federal appropriations any longer, so it's not really comparing apples and apples.

*Susan Holdsworth, EPA:* EPA has taken some hits. My program is mostly partnerships with States. Our State/Tribal assistance grants have actually gone up slightly. When the House mark came out for 2012, it looked like our impacts were not too bad, but we're still trying to figure out the impacts.

## **General Discussion and Wrap-up**

The group discussed generally the pros and cons of the wording of the RESSED resolution, which will be voted on tomorrow. The questions: who should be responsible for funding this effort, and is the wording of the resolution specific enough to cause somebody to fund the work? ACWI members were given homework – to think about this issue overnight so we can discuss it again tomorrow before we vote. Is Water SMART the correct home for the RESSED effort?

The group discussed the structure and charge for various ACWI subcommittees, to see if some are ready for sun-setting. Two topics not covered by existing workgroups are: data integration / portals to serve others' data, and climate adaptation.

**Perhaps periodic teleconferences for the various subcommittees starting in September (invite ACWI members to join the calls too) would be a good starting point for the discussion of how to tackle issues like data integration.**

## **Adjourn**

## **Advisory Committee on Water Information July 12-13, 2011**

USGS Auditorium, 12201 Sunrise Valley Drive, Reston, Virginia

### **Wednesday, July 13**

*Roll Call:* Wendy Norton, Bill Werkheiser, Don Cline, Jerry Webb, Steven Heiskary, Darryl Glover, Harry Zhang, Sue Lowry, Peter Evans, Robert Mace, John Vogel, Charlie Hunsicker, Doug McLaughlin, Bob Schreiber, Brandon Kernan, Terry Cheek, Tom Graziano, Cathy Tate, Bill Cunningham, Donna Myers, Mike Norris, Eric Evenson, Darwin Ockerman, Pixie Hamilton, Tim Smith, Dan Cavanaugh, Tod Dabolt, John Gray, Matt Römken, Meg Jonas, Judy Campbell-Bird, Claudia Hoeft, Eileen O'Neill, Nate Booth, Michele Cutrofello, Chris Reimer, Susan Holdsworth, Jon Jansen, John Miller, Joe Lee, Julie Kiang, Wilson Banner, Darrell Osterhoudt, Tom Dyke, Susan Wells, Matt Larsen, Tom Reilly, Al Wehrmann

*On the phone:* Jeff Deacon, Steve Moulton, Bill Wilber, Mike Yurewicz, Bob Marvinney, Dwane Young, Tony Willardson, Mary Musick, Elisabeth Jenicek, Jessica Lucido, Dan Sullivan, Kara Gillon, Bob Goldstein, Tom Patton (Note: there may have been more people on the phone, beyond those named here, since there were people joining and leaving and rejoining the call all day.)

### **Opening remarks and recap from previous day**

#### **Vote on two resolutions:**

- **Resolution to establish a network of reference watersheds and monitoring sites for freshwater streams**
- **Resolution in support of the Reservoir Sedimentation Database**

Background documents for these two resolutions are available online at:

[http://acwi.gov/acwi-minutes/acwi2011\\_14June-webex/](http://acwi.gov/acwi-minutes/acwi2011_14June-webex/)

Brief discussion of the RESSED resolution resulted in a revision: remove last paragraph of resolution and replace it with the following:

The ACWI encourages the USGS to incorporate the RESSED database into an appropriate ongoing program and to provide the requisite financial support to maintain the RESSED database in FY 2011 and thereafter.

Further, ACWI encourages the USGS to collaborate with ACWI's member agencies and organizations in developing and expanding the database.

*Charlie Hunsicker* moved to approve the resolution as amended. *Sue Lowry* seconded the motion, and the motion was approved unanimously.

After a brief presentation by Bill Wilber, *Steven Heiskary* made a motion to approve the Reference Network resolution presented by the National Water Quality Monitoring Council. *Doug McLaughlin* seconded the motion, and the motion passed unanimously.

## **WaterFALL™ Watershed Flow and Allocation Model – Michele Cutrofello and Bob Dykes, RTI International**

WaterFALL design objectives are to provide a flexible hydrologic modeling platform to support multiple applications, provide “on demand” results and facilitate “what if” analysis, be scalable, and provide portable state-of-the-art information technology.

See PowerPoint and video file.

*Doug McLaughlin:* What kind of computer resources are you using? *Michele Cutrofello:* We run it on servers at RTI. *Doug McLaughlin:* Do you have a way to quickly display relative contributions from various sub-basins? *Michele Cutrofello:* Yes, the results we give you are catchment by catchment.

*Brandon Kernan:* Would this be publically available or would there be a charge? *Bob Dykes:* We’re still working out our business model, but there would probably be some charge, at least for the foreseeable future, because we’re a non-profit and we have to recover our costs.

*Joe Lee:* Regarding the enhancements you’re planning, what source of data would you use? *Michele Cutrofello:* There is nothing consistent nationally, so we’re trying to find the best available sources.

*John Jansen:* You had a component for a saturated aquifer in your demo. Is there a way of getting aquifer recharge information? *Michele Cutrofello:* We don’t have that feature yet, but we want to add it in the future.

## **Report from the National Water Quality Monitoring Council (NWQMC) – Mike Yurewicz, NWQMC USGS Co-chair; Susan Holdsworth, NWQMC EPA Co-chair; Cathy Tate, NWQMC Executive Secretary; Nate Booth, USGS**

Susan Holdsworth gave updates on recent changes in Council leadership and membership.

Major activities during the past year:

- Gulf of Mexico – lessons learned from post-oil-spill monitoring and studies; tie-in with other environmental issues in the region such as hypoxia; possible role for NWQMC and State/regional/Tribal monitoring councils during and after future spills; discussion of NWQMC-sponsored tools and standards (NEMI, WQDE) and how to make more people aware of them so that responders can use these tools during natural disasters *and so the data can be shared*
- Water Information Strategies – development of the reference network resolution that was presented to ACWI July 13, 2011; discussion topics such as use of volunteer monitoring information, inventory of States’ monitoring data, and monitoring implications of proposed new pathogen criteria
- Methods and Data Comparability Board –
  - Aquatic Sensors Workgroup – USGS/CUAHSI workshop on optical sensors took place in June 2011; submitted a proposal to ASTM D-19 committee on specifications for optical monitors (next meeting January 2012); data elements work is being coordinated with EPA and the Open Geospatial Consortium; created a watersensors.org website; created a sensors web portal (Methods for Environmental Measurements and Observations)

- Statistical NEMI – a joint effort of Water Information Strategies workgroup and the Methods Board (demonstration may be ready by November 2011 NWQMC meeting)
- National Monitoring Network – the 3 pilot studies were reviewed in June and decided on next steps, including recommendations for top priority core monitoring elements that need to continue past this year's (2011) efforts; one or two new studies will begin in 2012, with candidate studies based on five previous proposals that were ranked but not selected for funding during the initial round of pilot studies
- Collaboration and Outreach workgroup activities, including preparation for the 2012 National Monitoring Conference – held 4 web seminars so far during 2011; in the process of establishing a blog to help follow up on webinars; *National Water Monitoring News* online newsletter will issue its fourth edition in autumn 2011; inventory of water monitoring councils (five monitoring groups have completed the inventory to date); the 8<sup>th</sup> National Monitoring Conference in Portland, Oregon, April 30 – May 4, 2012, is being coordinated with River Network's National River Rally, which will overlap with the Conference on May 4
- EPA-USGS Water Quality Portal – see notes on Nate Booth's presentation, below.

Nate Booth gave a presentation on the status of water-quality data exchange efforts that USGS and EPA are collaborating on. Web services are now available for accessing USGS and EPA data in common formats derived from NWQMC data elements. More than 30 States and 150 Tribes have adopted the data exchange through the EPA Exchange Network; all USGS water science centers are providing data also. Future efforts will include a common spatial platform (NHD+), common analytical method metadata (NEMI), continued coordination with CUAHESI and NOAA IOOS, and development of a map based search interface for the portal.

*Donna Myers:* I want to commend Pixie, Cathy Tate, Nate Booth, Susan Holdsworth, Dan Sullivan, and all the others who have worked so hard on the Council during the past 2 years.

*Doug McLaughlin:* Can you say more about efforts to coordinate with CUAHESI and others? *Nate Booth:* CUAHESI work to date has mostly focused on streamflow, and they accept that the WQX is the standard for USGS for water quality data, but we both acknowledge that moving into international data exchange is the best way to proceed. The standards of the Open Geospatial Consortium may be the way we need to proceed.

*Doug McLaughlin:* Is EPA's STORET still the preferred way to get State data into the system? *Nate Booth:* From my perspective, yes.

## **Report from the National Water Quality Assessment (NAWQA) Liaison – Donna Myers, USGS**

Donna Myers reviewed the planning timeline for NAWQA, including stakeholder meetings and numerous reviews by the National Research Council and other groups.

Critical issues being addressed by the program include excess nutrients, contaminants, sediment, and streamflow alteration. Design allows integration with the Ground Water Resources Program (GWRP).

Transition from Cycle 1 to Cycle 2: from study units to regional assessments; from status to trends and understanding; from monitoring to monitoring and modeling.

Cycle 3 design framework: environmental drivers (climate, land and water use), stressors (contaminants, excessive nutrients, sediment, streamflow alteration), receptors. Data will be put in the context of human health assessment. Moving toward decision models and support tools.

Emphasis is on trend analysis that can be used by managers who need to make decisions.

### **Remarks by Anne Castle, Assistant Secretary for Water and Science, ACWI Chair – followed by general discussion**

Thank you to all organizations for your participation on ACWI. I want to learn from the group how to improve dissemination of water information for the management of water resources.

You've heard a lot about USGS programs, and about the Department of the Interior Water SMART initiative, but I'm going to try to fill in some of the gaps, particularly the Bureau of Reclamation's Water SMART efforts.

The Water SMART implementation plan has been published for public comment, with comments due August 1. The comments ACWI made previously have been incorporated, and I invite you to look at the current version, to see *how* your comments were incorporated.

[www.watersmart.gov](http://www.watersmart.gov) is the water SMART clearinghouse of best practices and links to websites where water information is available. Please take a look at that website and let us know if you have comments.

Bureau of Reclamation program has three parts:

- cost-share Water SMART grants – aimed at incentivizing water and energy conservation, developing climate analysis tools, developing treatment techniques for impaired waters, funding projects on agricultural water conservation and efficiency – the 2012 announcement should go out in September 2011
- Title XVI program – cost-share program for funding water recycling and reclamation projects that are individually authorized by Congress (usually these are fairly expensive municipal supply projects)
- Basin Studies program – these are particularly relevant to the ACWI member organizations – BOR cost shares these 50:50 with States/localities, watershed associations, etc. The next report coming out will quantify the demand scenarios. The basins being studied are the Colorado, Milk / St Mary, and Yakima.

One other Reclamation-related project is the report that was mandated by section 9503 of the SECURE Water Act. The report looks at climate change impacts on eight basins where Reclamation water projects exist. I urge you to look at this report because it's very good. The report identifies where there is more consensus or less consensus regarding climate issues such as temperature, rainfall, runoff. You can find the report at [www.usbr.gov](http://www.usbr.gov).

The recent draft reports from CEQ and USGS both refer to a role for ACWI in responding to the provisions of the SECURE Water Act and providing input to the Federal agencies on the climate change impacts on water.

On June 2, the Interagency Climate Change Adaptation Task Force released the *National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate*. Public comment period on this report ends July 15. One of the recommendations in this report is that ACWI establish a new working group to address climate issues.

The section 9506 SWAQ report also calls for ACWI to establish a mechanism for responding to freshwater impacts under climate change.

I would like to get your input on the formation of a workgroup within ACWI to figure out where is the hole that this group could fill. We don't want to duplicate efforts, but these other groups have identified holes in the body of knowledge we currently possess, and they are specifically asking ACWI to step up and fill those holes.

ACWI could contribute in the following areas:

- More specificity about the data gaps
- Accessibility of existing data
- Development of measurements to assess the benefit of different climate change adaptation efforts (metrics)

These are the kind of things I've been thinking about, and now I would like to hear your thoughts.

*Bob Schreiber:* In our SOGW presentation, we will address some of the key items you just mentioned as items that ACWI could contribute. Also, each one of the ACWI member organizations probably includes a group that deals with climate change issues, and we can probably bring those to bear pretty effectively. Also, to move things quickly, we could use teleconference and webinar capabilities.

*Sue Lowry:* People already put in a lot of time in other ACWI activities, so we have a resource question. From the Federal family, we need to understand what all the various climate adaptation organizations across the country do, and how they fit together. That might be a good first task for us.

*Anne Castle:* We've tried to give some thought about how all this fits with efforts that are already underway. None of the existing groups are Federal advisory committees. To the extent that ACWI has as its charter the role of providing advice to the Secretary and other Federal water managers, you are the only group that has the mechanisms for advising people at the Federal level who make decisions. I think there is a different role for ACWI (as distinguished from the Landscape Conservation Cooperatives and the Climate Centers), in that ACWI has the ability to reach out to the general public and local watershed groups.

*Bill Werkheiser:* Yes, there is a legitimate need for what ACWI can provide, and there is a specific role for ACWI, especially in reaching out to the non-Federal community and moving information back and forth between the Federal/non-Federal sectors.

*Wendy Norton:* We can start by devoting the next ACWI teleconference (in a month or so) to this issue – figuring out what we can contribute and who might be available to participate. Many of the issues Anne spoke about have already been addressed to some degree by various ACWI subcommittees and workgroups.

*Doug McLaughlin:* As a group, we have the benefit of receiving direct report-outs from the ACWI subcommittees, and we have good access to the people who are doing the subcommittee work. Also, much of the work that has already been done can answer the needs that Anne articulated. We just need to connect a lot of that work back to climate issues explicitly.

*Robert Mace:* I would like to see an org chart that shows what various Federal agencies are doing with respect to climate change and what resources are available for the States to make use of.

*Peter Evans:* The subcommittee that was set up to design a Ground Water Monitoring Network provides a really good example of how the climate science could best be treated by ACWI. I think we're going to see a lot in the appendices of these reports about which agencies are doing what. It might be interesting to ask OMB for a budget crosscut to show who is being *funded* to do what; that may have some value beyond the information on *what* the agencies are doing. I also think the conference calls give us a good way of moving forward at lower cost. Having a very clear charter is really important. SOGW used teleconferences (every two weeks) to design their ground water network, and that frequency of meetings and clear charter really drove the process and kept things moving

*Anne Castle:* I think the information in the appendices may prove more useful than a budget crosscut.

*Peter Evans:* The set of sentinel gages within the National Streamflow Information Program really serves this climate science need very ably. We've been convinced for some time that NSIP is designed to get the type of information you want, and the implementation should be completed.

*Matt Larsen:* If you want to know who is doing what in the Federal sector related to climate, the appendices of these reports are probably the best information resource we have right now.

*Anne Castle:* I would like to thank Matt Larsen and give him credit for the National Action Plan. It's very specific and very clear, so thank you.

*Bob Schreiber:* Can we fill some of the open slots on ACWI with climate-related stakeholders. Council of Mayors or Council of Governors might be good organizations to involve in this process.

*Anne Castle:* I would suggest the Bureau of Reclamation. And I might be able to do something about that. And the Western Governors' Association would certainly be good to include.

*Susan Holdsworth:* Other partners might be NALMS, the Organization of Coastal States, and maybe the Association of State Wetland Managers, to broaden the water resources scope of the organization.

*Anne Castle:* Are people more amenable on setting up a working group and designating a chair?

*Sue Lowry:* Can you give us some type of timeline? Is there a specific date in the future when you would like to have this group put together?

*Anne Castle:* it would be good for ACWI to have a workgroup charter and action plan fleshed out for approval by the membership by mid September.

*Peter Evans:* How much longer will it be before we see the final section 9506 report? Knowing that would help.

*Doug McLaughlin:* Can you speak to what you envision the product to be?

*Anne Castle:* It would be good to hearken back to the reports that suggest ACWI be involved. Both reports express the need for better input to Federal agencies – designate ACWI as the vehicle to achieve this. This is the end product. The focus should be on water information.

*Bill Werkheiser:* I think we're within weeks of the final report, and there aren't a lot of surprises in the final report.

*Matt Larsen:* The CEQ report will be probably be released by September.

*Anne Castle:* Seeing general assent around the table, I would like to set up a group to define a charter and action plan, and bring those documents back to ACWI. If you're interested in participating, get back to Wendy Norton. The final product would be for ACWI to serve as a conduit for advice and information and needs between the Federal agencies and non-Federal stakeholders.

**Report from the Subcommittee on Ground Water –  
Bob Schreiber, ASCE; Bill Cunningham, USGS; Allen Wehrmann, Illinois State Water Survey; Nate Booth, USGS**

Bob Schreiber gave a brief history of the National Ground Water Monitoring Network and the workgroup that was formed to design this network, in response to a charge from ACWI. He also described the process for the network design and implementation of the pilot studies. (See PowerPoint: [http://acwi.gov/acwi-minutes/acwi2011\\_july\\_webex/slide.lib/11\\_SOGW\\_ACWI\\_071311.final.pdf](http://acwi.gov/acwi-minutes/acwi2011_july_webex/slide.lib/11_SOGW_ACWI_071311.final.pdf))

Bill Cunningham gave a summary of the National Ground Water Monitoring Network pilot projects. He also outlined the benefits of the pilot studies, which involve consistent datasets, data sharing among State agencies, critical review of field procedures and data management procedures, public education, and new ways of getting information to the public.

Allen Wehrmann outlined the results of the Illinois-Indiana pilot study. The pilot did not include the entirety of these States but only a narrow sliver where one aquifer crosses both States. No one agency is collecting all the data in either State, so the work involved talking to many agencies, in order to figure out what data were available and where the geographic and temporal data gaps were. Benefits of the pilot included interstate communication, interagency communication, critical review and methods and data management, and public education and a sense of pride in being part of the NGWMN.

Nate Booth outlined efforts to build a NGWMN web data portal. This portal is a living, changing entity. Pilot portal capabilities: NGWMN well registry, translating heterogeneous State data formats to common standard formats, display real-time or nearly-real-time data, acceptable data download performance, map-based interface. Study of the U.S./Canadian Groundwater Data Exchange Experiment helped to inform the process of building a portal. In the web data portal pilot, 5 pilots provided data (from 6 States), 9 agencies provided data, and 17 web services were created to serve the data. Nate concluded his presentation with a demonstration of the map interface for the portal.

Bob Schreiber outlined next steps and presented "A Resolution Approving the Synthesis Report on Pilot Testing the National Ground-Water Monitoring Network and Adopting a Conceptual Plan for Facilitating Full-Scale Implementation of a National Ground Water Monitoring Network for the U.S." The Subcommittee on Ground Water is asking ACWI to approve this resolution.

*Steve Heiskary:* I want to complement you on this effort. I have looked at the five pilot reports, and I was quite impressed. I saw the overall acceptance of the States who participated in the pilots.

*Robert Mace:* Is the synthesis report final? *Bob Schreiber:* No, we're open to comments.

*Brandon Kernan:* Very good work. One thing you might consider down the line is States who don't have the IT support needed. Your portal is valuable to States that don't have the IT support to build their own databases.

*Bill Werkheiser:* The 2012 House mark language includes a directive for USGS to include a proposal for a NGWMN in its 2013 budget. Your pilots and plans for the future dovetail nicely with that directive. So we probably want to talk about SOGW's resolution on a conference call, instead of voting on it right now, when no one has had a chance to look at it.

All the reports from the NGWMN pilots are available on the ACWI website at this url:

[http://cida.usgs.gov/gw\\_data\\_portal/](http://cida.usgs.gov/gw_data_portal/).

### **Discussion: SECURE Water Act and the draft *National action plan: Priorities for managing freshwater resources in a changing climate* – Implications for ACWI**

This discussion took place immediately after lunch, as part of the conversation with Anne Castle.

### **Public Comment Period**

No comments from the public.

### **Review of Action Items, Wrap-up**

- Starting in September, we will begin to have regular teleconferences among the various ACWI subcommittees, as a formal mechanism to help them coordinate with each other. This should help us decide whether/how to form a new subcommittee or workgroup to deal with data integration issues.
- Peter Evans suggests that the ACWI charter may need to be amended, so we can engage all the appropriate Federal agencies; right now we only have one Federal vacancy, but we need more than one additional Federal agency at the table.
- In August, Wendy Norton will convene a teleconference of people who are interested in being involved in a climate work group. ACWI member organizations are requested to send expressions of interest to Wendy in the next few weeks, along with names and contact information for likely candidates to serve on this group.
- SOGW Resolution – ACWI needs to review and vote on this resolution, and figure out how it meshes the directive in the 2012 House Mark for USGS to establish a NGWMN.
- ACWI members are charged to look at the Water SMART implementation plan, per Anne Castle, to see how ACWI's recommendations were written into the plan.
- ACWI Executive Secretary will provide meeting attendees a link to the National Action Plan and a copy of the draft notes from the meeting.

### **Adjourn**