



Advisory Committee on Water Information (ACWI) Annual Meeting — July 10-11, 2012

Roll Call: 21 of the 26 ACWI member organizations participated in the meeting.

Introductions around the table: Bill Werkheiser (USGS), Jerad Bales (USGS), Don Cline (substituting for Gary Carter, NOAA), Mike Shapiro (EPA), Chandra Pathak (USACE), Robert Mace (WSWC), Dave Wunsch (AASG), Steve Heiskary (NALMS), Fred Bloetscher (AWWA), Tim Williams (WEF), Harry Zhang (AWRA), John Jansen (NGWA), Joe Lee (GWPC), Mike Paque (GWPC), Kim Martz (USGS), Susan Holdsworth (EPA), Mike Yurewicz (USGS), Doug McLaughlin (NCASI), Charlie Hunsicker (NACP), Peter Evans (ICWP), Sue Lowry (ICWP), Brandon Kernan (ASDWA), Darrell Osterhoudt (ASDWA), Bob Schreiber (ASCE), Terry Cheek (TVA), Wendy Norton (USGS)

On the phone: Sally McConkey (ASFPM), Jim Pletl (NACWA), Cathy Tate (USGS), Dan Sullivan (USGS), Bernice Smith (EPA), Kristan Cockerill, Paul Koch, Chris Hornback (NACWA), Mary Musick (GWPC), Larry Kobayashi (LMI)

Tuesday, July 10

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

Bill Werkheiser welcomed everyone to the ACWI meeting. Bill noted that ACWI is an advisory committee to the Federal government. Its goals are to identify needs of the water community. Introductions were made around the table.

Update from National Water Quality Monitoring Council – Mike Yurewicz, USGS; Susan Holdsworth, EPA; Bernice Smith, EPA; Dan Sullivan, USGS ([PDF 3,709 KB](#))

- **Update on the 8th National Monitoring Conference –**
 - 1,053 attendees
 - Mike commended the efforts of Jeff Schloss.
 - There was a lot of diversity in attendees.
 - Many aquatic sensors sessions pertaining – high level of attendance. These sessions were good to demonstrate advances in technology.
 - For the first time at the conference, there was a “Bridge Day.” The day was designed to integrate the monitoring conference with the 2012 River Rally. The River Rally was successful – had to shut down registration at 750 people.

- **New Council Representatives –**
 - Andy Fayram (WI DNR), Shaun McKinney (NRCS), Martha Clark Mettler (ACWA), Dave Neils (NH DES), Jeff Thomas (ORSANCO)

- **Selected outcomes –**
 - Session on activities and plans of the Council was designed to provide an overview of what the Council does.
 - The new integrated Water Quality Portal was launched at the conference – included a news release, email blast, sessions on the portal, and live demonstrations.
 - EPA NARS program held a national meeting in conjunction with the conference providing an opportunity to hold sessions and workshops on NARS as well as hold a key planning meeting.
 - Provided an opportunity to launch a prototype of statistical NEMI. Several demos were held.
 - Highlighted the Council’s plans to implement the National Network of Water Quality Reference Sites. The Network was highlighted in a panel session chaired by Bernice Smith of EPA.

- **Update from the Water Information Strategies (WIS) workgroup –**

- Involved with coordination of water-quality sampling during flood events (requires quick reaction and a high degree of communication). WIS will begin discussions on how can we further develop coordination during flood events.
 - Water-Quality Indices – compilation of indices meant to summarize the various indices being used. Includes chemical, physical, microbiological, biological, eutrophic condition, sediment quality, and overall condition indices. Leslie McGeorge is making initial contacts.
 - Integration of monitoring programs.
- **Communication and Outreach (C&O) workgroup activities–**
Susan Holdsworth gave an update on C&O activities.
 - The National Monitoring Conference is a primary activity for the group.
 - Webinars – several held with more through summer and fall.
 - Newsletter produced twice a year
 - Conference session on building, empowering, and sustaining State, regional, and tribal councils and water monitoring partnerships
 - Characterize key structural and functional aspects of existing councils/networks.
 - Assist forward progress of newly forming councils/networks or the evolution of existing groups.
 - New Volunteer Monitoring web page. Susan highlighted the new interactive map that provides information for specific volunteer monitoring groups. She commented that she hopes others will find this to be a useful tool.
- **National Network of Water Quality Reference Sites–**
 - National network of pristine and minimally disturbed watersheds to provide reliable long-term data and information.
 - Will emphasize chemical, physical, and biological aspects of water quality and integrate with existing networks.
 - Membership is voluntary and open to interested individuals and institutions.
 - **Next steps...**
 - Continue developing collaborative support
 - Continue developing inventory and catalog
 - Acknowledge and address challenges
 - Build off new water quality data portal
- **USGS/EPA Water Quality Portal – www.waterqualitydata.us**
Susan gave a brief overview and demonstration of the water quality portal website.
 - Using a common data standard – national results coverage; data query form

Q: When an external party uploads data, does it get marked?

R: Yes, can get agency ID.

Q: Peter Evans – On the map, why is there so much variation?

R: Susan – Some States have not made the transition – there @ 14 States that are not doing so yet. There are multiple data flows in States.

Mike commented that data availability is always an issue that comes up.

- **National Monitoring Network / Coastal Water Quality –**
We put together a design and conducted pilot studies; now implementation is evolving, due to there being no targeted funds available to continue beyond the pilot phase. Draft National Ocean Policy Implementation Plan mentions that NWQMC is one of the bodies that are intended to further the goals of this plan, with respect to coastal water quality. Elements of an action plan are to inventory current monitoring, implement communication plan, implement elements of the Network design, and increase collaboration across

agencies. Slides show an example restoration approach for total nitrogen delivered from agricultural sources: Chesapeake Bay sample using SPARROW predictions to a scale that is meaningful to the States (HUC-12 scale).

Status – integrated land-to-sea assessments – San Francisco Bay, Lake Michigan, Delaware estuary, Puget Sound, Albemarle Sound

- Monitoring – traditional techniques, RT, continuous w/ sensors, autonomous underwater vehicles (AUVs)

New studies are in progress, now, in the Puget and Albemarle sounds. Original studies have wrapped up, and reports have been produced.

Work with new groups to determine how the Council can contribute. How can the best contribution be made without the availability of new funds. How do we make the best use of what agencies have to offer? This is an important issue to NOAA's programs. What connections can be made to address this issue? How do we improve and protect water quality?

Helps identify where there can be watershed restoration programs.

Charlie Hunsicker commented on a small watershed in Florida. He noted that as of this year, the local strategy in counties around those dots on the map – banning the application of fertilizer in summer months – is proving to be successful. This is part of the effort that Mike is discussing.

Mike Yurewicz noted that we wanted to try and have NOAA, EPA, USGS work together on this. The conference provided a great opportunity to walk away with names of folks interested in working toward these goals.

- Methods and Data Comparability Board / National Environmental Methods Index / Sensors (Dan Sullivan)

Dan gave an update on Methods Board activities –

NEMI – <http://www.nemi.gov>

- Web-based source for environmental methods – early product of the council
- Full methods are available for download (PDF format usually)
- Almost 1200 methods – mostly for water – some tissue, sample analysis makes up methods
- Green methods/obsolete methods- short-term –update greenness rating, long-term, pathway for recommending newer technologies, approval
- Current activities
 - Statistical methods – NEMI-SAMs
 - Green methods
 - Water-Quality portal integration
 - Sensors web portal NEMI-MEMO
- Also working behind the scenes to visually pull together web sites for a common look and feel.
- Need a position paper from the Council that:
 - Sets timelines
 - Set criteria to show if the new method is at least as good as the one it replaces
 - Shows how to remove barriers to implementation/speed promulgation
 - Provides guidance on how the new method would be approved for general use

- Steps – Green methods
 - Identify the appropriate contacts at each agency for review and approval
 - Utilize NEMI as a clearinghouse of related information to assist users in determining a method's status.
 - If industry consensus can be reached, the savings from not maintaining and operating less efficient, wasteful methods would be significant
 - Speed acceptance of greener methodology
 - Provide improved results for more projects and may allow greater comparability of results across projects
- Working with the Center for Integrated Data Analytics (CIDA) to integrate NEMI with the USGS/EPA water quality data portal.

Other efforts –

- QW Portal
 - Link methods into portal
 - Start with NWIS
 - Discussing with CIDA – co-located with WI WSC (USGS Wisconsin Water Science Center) – can extend vision outward
- USGS “protocol registry”
 - Kevin Gallagher leading this effort
 - Community for data integration (CDI)
- NEMI_MEMO (Methods for Environmental Measurements and Observations) – brings together information on sensors from NOAA’s Alliance for Coastal Technology (ACT) and “traditional” methods from NEMI. Dan discussed next steps including integration of information, using NEMI-MEMO as a platform to distribute current and future products of the ASW, information on latest sensors, and set common SOPs through a rating process.
- Sensors data elements SOPs were complete as of the Conference. A draft list has been broken down to 3 categories – essential, recommended, conditional.
 - Next steps –
 - Submit to ACWI for approval, Fall, 2012
 - Continue interactions with WQX, OGC (Open Geospatial Consortium) WaterML
- Dan commented that the MB is interested in feedback.

Doug McLaughlin asked Dan to say something about what he sees in the growth of sensors. Are there new sensors technologies being developed? Dan responded that the use of these technologies is growing. The potential utility of sensors technologies is growing. Dan is hoping that we can make information available to users that will help grow use.

Bill Werkheiser commented that the annual meeting, in conjunction with the River Rally, looks like it increased attendance for both conferences. Is there a plan to do this again? *Mike Yurewicz* responded that there is no plan in place to do so. The Council has always emphasized volunteer monitoring, and this is what the River Rally is all about. Both groups had already identified Portland as their meeting site. It was a coincidence that the meetings were back to back. They already have their 2013/2014 locations.

Susan Holdsworth noted that the National Aquatic Resources Survey (NARS) meeting was co-located with the National Monitoring Conference (NMC), and that brought in a lot of additional State people, Tribal people, and vendors. We will look to have NARS meeting in conjunction with the National Conference in the future.

Mike Paque commented that GWPC participated in the first three NMCs, and one of them we combined with our annual meeting, which increased our attendance almost exponentially. Since then, State staff travel has diminished substantially due to budget considerations, so co-locating meetings like this in the future will be extremely important. Mike suggested looking out a year or two for meeting co-location opportunities. Gather a pool of organizations that can coordinate together.

Harry Zhang – Harry asked a question regarding one of Suzanne Bricker slides. *Mike Yurewicz* – They put as much work as possible into key factors that were causing eutrophication, but the work has been done to identify sources of nitrogen/phosphorous.

Bill Werkheiser – National Monitoring Network Reference Watersheds is using NADP model. How about the National Monitoring Network model? How do you keep it going and decide on where to go next?

Mike Yurewicz responded that this has been the key question since 2009. The National Monitoring Network (NMN) is meant to be a network of networks. If the data from various networks can be shared effectively, that's the way to go. There is so much variation by estuary that using a single approach/model is not possible.

Remarks by Anne Castle, Assistant Secretary for Water and Science, ACWI Chair

Anne opened with a thank you to members for their participation in one of the most valuable advisory committees we have. We know that you can't manage it if you don't measure it, so this committee helps us know what to measure and how to measure it. Anne commented that she is a water geek, like all of ACWI.

Anne commented that this is a great meeting with a wonderful agenda, but we can do more - ensure that we use ACWI in the most productive ways possible. Anne referenced NEMI, WaterSMART, demo of Envision, and formation an ACWI Climate Workgroup. Formation of a Climate Workgroup is an especially timely activity because there are lots of recommendations by various groups that ACWI establish a group to deal with climate impacts on water resources.

Anne noted that ACWI is assembled to provide advice and recommendations to the Secretary. She wants to engage ACWI in some of our most pressing problems. One of those problems is how we deal with the shrinking budgets that have become our new reality. We've had huge pressure on the USGS budget, and particularly on monitoring. There is a lot of support for water monitoring, but it doesn't make a lot of peoples' priority list, so we have struggled to keep streamgaging funding just even, which doesn't keep pace with inflation. Anne would like ACWI's advice on how to deal with the streamgaging network problem in the context of shrinking budgets. Can we get better bang for our buck? Can we engage new sensor technology like the technology that was just being discussed? Can we change the way we think about and manage our network, to get the kind of coverage we need and can afford? Can we use modeling to get data at ungaged streams? Anne would like to work with ACWI to formulate the question that the Secretary would ask ACWI's advice on.

Anne also asked ACWI to provide comments on USGS Strategic Science Plans. The comment period is open until August 1. The plans can be found on the USGS website at "Start with Science."

Anne noted that the hope is to accelerate progress of the groundwater monitoring network during the next year; noting that ACWI will hear more about the network later in meeting.

Hydrologic Frequency Analysis Work Group of SOH will brief ACWI on efforts underway to update Bulletin 17B. This update has huge implications nationwide.

Regarding the budget, the House mark 2013 includes an almost 10% cut to USGS funding. This has implications for what science we can provide. Water Program funding is preserved for the most part. We cannot remain complacent because there are many other activities under the USGS umbrella that face very significant cuts of the House mark stands: Natural Hazards (cut 20%, including earthquake monitoring and notifications), ecosystems research, climate change. We will be providing factual information on the implications of these cuts. We cannot expect water programs to remain unscathed when we get a final appropriation for 2013. Other agencies in the bill (EPA and FWS) are cut hugely, so we need to make sure USGS cuts don't get lost in the shuffle.

Anne gave thanks to Bill, Jerad, and Wendy for the successes of ACWI and its subcommittees and thanked ACWI for their dedication to this work.

Comments/Questions –

- *Chandra Pathak* – I’m glad you brought up streamgaging funding. Everyone knows that COE provides about \$18 million a year toward streamgaging, and most of the data are used for operating flood systems, dams, etc. Any significant cuts to USGS streamgaging would impact COE activities. *Anne Castle* – Yes, I’m glad you mentioned that. COE may be the largest funding partner the streamgaging program has, but that same situation plays out all across the country, where others are hurt by reductions to streamgages. I don’t think I ever visit a congressional office where streamgage funding doesn’t come up; the members are very aware of the value of your network.
- *Charlie Hunsicker* – As NPDES permit holders, we rely on USGS streamgaging data to ensure we are complying with TMDL targets. I hope you can continue to engage States and localities on this issue. *Anne Castle* – We need to think about additional organizations to include in ACWI, to make sure we have the broadest base of support and knowledge possible. We can’t count on increased funding, so we need to do what we can with a stable/declining budget.
- *Dave Wunsch* – We’ve been talking more and more to local governments who are helping to fund some monitoring, but additional opportunities for support could be sought from FEMA. Congress seems to look favorably on FEMA during emergency management times and issues. FEMA would be good group to engage in ACWI. *Bill Werkheiser* – We’ve had a better conversation with FEMA in the last couple of years, as they’re changing to have a more natural-disaster focus, and we’re hoping that trend will continue.
- *Robert Mace* – In Texas, we are making decisions between studies versus data. So far we have been preserving data. The emphasis has been on data – if the data are lost, we cannot get it back. Dave commented that in his experience, there is no negotiation room –We’re open to additional discussions regarding reducing costs. *Anne Castle* – We’ve had the same internal debates on monitoring versus analysis, and we have mostly tried to preserve monitoring too. We’re always looking for efficiencies, and when we do, we need to also look at issues of data accuracy and quality. Ann commented that USGS has guarded the data quality for the benefit of all of us.
- *Peter Evans* – We’ve talked for a long time of the Federal agencies in relation to all the stakeholders, and needing to redefine that role. ACWI is the perfect place for that discussion to occur because it’s an open process where everyone is welcome to participate. The issue isn’t just surface-water quantity. We have to take water quality monitoring and groundwater monitoring into account as well. This is an excellent place to start this discussion and is good in terms of where we should be going in terms of science strategic direction. ACWI cannot answer the challenge if we only met once a year.
- *Doug McLaughlin* – Emphasis on gages is appropriate. It is critically important that we consider what we do with the data. We need to understand the implications of monitoring results, as well as monitoring costs; for example, what additional value do we get if we collect 15 samples instead of 10, and what is the monetary cost of those additional 5 samples? ACWI is a perfect organization to spearhead this type of discussion. *Anne Castle* – Good point. We’ve certainly seen quantitative information on budget, but have we done the cost of uncertainty? *Bill Werkheiser* – We’re beginning to analyze the cost of uncertainty now within NSIP.
- *Sue Lowry* – We’re hearing a lot about the “appropriate Federal role” and we need to keep that role in mind as we discuss this issue. Does this put the USGS Coop Program at more risk? Are we not doing a good job of advertising the Federal value of the Coop studies, which tend to be local in nature? Do you think the Coop Program is more at risk, if the “Federal role” is the decision metric? *Anne Castle* – It is more difficult to describe the Federal impact of the Coop studies, but that’s not to say we shouldn’t be making the effort. We’re already seeing record low water levels, an imbalance between supply and demand, and other climate change impacts. We do need to do a better job of describing the value of this work. *Bill Werkheiser* – It’s a complicated story we tell with the streamgaging program because of the dispersed funding model and the continuum of purposes for streamgaging activities. In the Coop Program, we’ve made decisions in the past to preserve monitoring at all

costs, but we can only do that to a certain extent before we throw the data/studies balance out of whack and hurt the whole program.

- *Richard Raione* – Water resources and hydrology are critical for our country. NRC has 15 locations as part of new reactor program – Nuclear Renaissance. I heard you mention the cuts to the USGS seismic program. This could be a problem for NRC. We all know the impact seismic activity had at Fukushima, and NRC has been directed to reassess conditions/risks in the U.S. as a result. Maybe we need to repackage the EQ activities at USGS, to keep the funding levels from dropping any further. Otherwise, we won't be able to operate our own reactors safely. *Anne Castle* – We need to put you in contact with our Hazards group, your ideas are very good and valid. [Note: this has been done.]
- *Bob Schreiber* – ASCE would characterize this in terms of a report card, and who is failing. There are some fairly large actors who are not in this room (DOE, Forest Service, NRC) so we need to bring in more of the Federal stakeholders to ACWI. The water industry is also fractionated in terms of the message they're sending to government and the public. We need to look at who is going to be hurt as a result of losing the science.
- *Mike Paque* – The USGS WSCs have close partnerships with local groups, and they are a good conduit of information from that sector. Marcellus Shale Foundation is spending money for real-time water monitoring, and there may be other private partnerships that could be tapped for ideas and assistance in preserving our data networks. We have a critical job to do – expand the market to non-traditional sources. *Bill Werkheiser* – We have expanded to public/private partnerships recently.
- *Steven Heiskary* – I'll use MN as my example; there's a lot of streamgaging and watershed activity occurring there. It's important that there is adequate coordination among local efforts (I suspect that's already happening), and when you have to close down individual data collection sites, it's important to have a conversation with the local interests, to ensure that the priority sites are preserved. *Anne Castle* – It may not happen in every case, but before USGS abandons a gage, there is usually broad outreach to water data users, to solicit continued funding support to keep the gage going. WSCs are very entrepreneurial – they make a good effort to mine all sources of funding before they close down a gage. The problem is that partners have been State and local government entities for the most part, and their budgets are strapped too. They can no longer continue funding gages that USGS has to discontinue. Your ideas are timely.
- *Chandra Pathak* – Maybe we should establish a blue ribbon panel to look at how critical the data is to the Nation, and how new technologies and efficiencies can help reduce costs.
- *Dave Wunsch* – We're right to be especially concerned about the budget outlook now, and we should be looking at getting the biggest bang for our buck. We have in the past discussed measures like using volunteers, but we keep coming back to the issue of data quality. In looking at "out of the box" ways to cope with rising costs, we might consider having USGS training and certifying people to take care of data collection at some sites. This will give you buy-in from a larger community.
- *Beth Moore (DOE)* – All of the Federal agencies are looking at significant budget cuts, and DOE has many sites across the U.S. that are managing budgets to "minimum safe levels." One of the challenges facing Federal agencies now is the need to collaborate with each other to get results on a regional basis. If we can collaborate more closely across Federal agencies, we may be able to help each other, as well as reduce duplication.
- *Joe Lee* – Cost must be balanced with quality. There is no sense collecting data that is not of high quality. I don't know when the last USGS analysis of the streamgaging network design and technology was done. Have these issues been explored recently? *Bill Werkheiser* – Technology advancements do reduce costs, but we also need to maintain data quality. We're looking at data optimization right now, within the program. Requirement for precision and accuracy has become more important. We're looking at what our core level of gages we need to support is. Using cost recovery when we can. *Wendy Norton* – There was a temporary subcommittee that sunset in 2003 that looked at this. That would be a good place to get an idea of what issues have been looked at and

what has changed in the past 9 years. *Ann Castle* – This was a good idea. Ten years is a good time to revisit. There have been a lot of advances in technology.

- *Peter Evans* – You said ACWI may be able to help frame the pertinent questions on this issue. Can you elaborate? *Anne Castle* – I would like to have you all formulate the question that the Secretary would articulate to ask you for advice. If you help formulate the question, your answer/advice can be more useful. The Cooperative Water Program website is a great place to look.
- *Cat Shrier* – What processes have the agencies gone through to determine who is using the information and how it's being used at the local level? Also, what is the impact of the travel cuts, in terms of getting out on the landscape to get stakeholder involvement? *Anne Castle* – The travel restrictions are large in the 2014 budget, but we are trying hard to obtain exemptions for essential travel like going out to check a streamgage. In terms of capturing the stories about how our data are used, we have lots of stories to tell about use of inundation data during floods, use of water data in fire areas and drought areas, etc. *Bill Werkheiser* – Yes, the USGS WSCs do a pretty good job of capturing those stories and publicizing them. I should especially give a nod to Pixie Hamilton, Coop Program manager on this story-telling effort. A lot of the stories are collected on the Coop website.
- *Victor Hom* question to Norton during lunch break – should SOH take the lead on reexamining recommendations in the Coop Task Force report from 2003 and how we have lived up to them?

Update on Formation of an ACWI Climate Group – Jerad Bales, USGS ([PDF 162 KB](#))

Jerad Bales gave some background and an update on recent activities concerning the formation of a Climate Workgroup, and asked for ACWI's endorsement of the draft Terms of Reference and suggested members' list for the group. He outlined the purpose statement and functions enumerated in the TOR and talked about the proposed membership and operation of the group (i.e., annual operating plan with milestones and deliverables, holding at least 2 meetings a year).

- *Dave Wunsch* – In your mission statement you talk about disseminating information about water resources as affected by climate change. Does that include all information, or just ACWI groups' information? How do you see your role in interacting with other groups? *Jerad Bales* – This should cut across all sectors. This group could serve as a focal point for information exchange.
- *Sue Lowry* – When you first get started, 2 meetings a year doesn't seem like enough. *Jerad Bales* – The co-chairs would actually determine the meeting schedule, but I agree that it will probably take a lot more interaction than a couple of meetings a year. The workplan will ultimately determine frequency of meetings.
- *Richard Raione* – The Federal agencies listed are mostly scientific and technical; has there been any effort to link in organizations that look at the economic and socioeconomic impacts of climate? Someone to bridge the gap on hard science with business/economic folks to address the other part of that equation? *Jerad Bales* – This is a great point and needs to be part of the conversation. This list of agencies is not necessarily exhaustive. We could invite additional organizations to participate later, either as voting members or ad hoc members.

ACWI Vote on Approval of Climate Workgroup's proposed Terms of Reference (TOR) and Members List

Bill Werkheiser –We are asking for approval of the TOR and membership list that were sent to ACWI members last week.

Mike Shapiro offered a motion that the group vote on the issue, and *Charlie Hunsicker* and *Chandra Pathak* seconded that ACWI vote on the TOR and membership list. The motion was carried unanimously.

The adopted Terms of Reference is available at:

http://acwi.gov/acwi-minutes/acwi2012/approval/01_ACWI_WRCCA_Workgroup_TOR_06_29_12.pdf

Next steps will be to identify Federal and non-Federal co-chairs, and we will do so quickly.

Report from the Sustainable Water Resources Roundtable – John Wells, Minnesota Environmental Quality Board (PDF 3,224 KB)

John Wells gave a quick description of the SWRR composition, outreach, reports, and activities. He described the idea of capital and system capacities; we achieve sustainability by preserving capital (capital = the capacity to produce value over time). Stories are very important – in order to get people to change behavior, you have to tell them a compelling story about why they *should* change.

- For the last year have been involved with Water Census activities.
- 600 participants from Fed, State, and local governments, corporations, nonprofits, and academia.
- Meetings in CA, CO, MD, MI, MN, VA, Washington DC

California Water Plan – A blueprint for integrated water management and sustainability. In California, the greatest population density is in areas where there's no natural water supply. They are now looking at which areas are net exporters of water and which are net importers. This detailed look at water use has led them to conclude that the entire system within the State has lost resilience. It is imperative to act to keep pace with changes. This need is recognized in their State water plan.

The SWRR May 2012 meeting featured talks by several ACWI subcommittees. Subsequent discussion raised the following ideas:

- ACWI's mission of collaboration is not focused on public education, but people are feeling a real need for a public outreach and education campaign that could ultimately help us do our work.
- Technology allows a one-stop shop for data; water quality portal is now available.
- Sedimentation and the National Fish Habitat Partnership.
- Google Earth opportunities.
- Amazed at the number of interesting and important tasks of ACWI subcommittees.

Next steps for SWRR:

- Continue outreach (building regional connections and adding new private, nonprofit, and public sector partners).
- Assist agencies in developing programs and in describing the need for programs to collect indicator information.
- Develop ideas such as: handbook for sustainable watershed management; framework for indicators that could be used in any watershed at any scale by any organization; and evaluation of watershed footprint tools to help organizations understand water sustainability.

Doug McLaughlin – I'm curious about water quality criteria for standards and how that plugs into a world of indicators for watershed sustainability. Since CWA drives so much activity for so many stakeholders, how does that plug into the idea of sustainability? *John Wells* – Minnesota looked at waters that are considered impaired under CWA, and they

decided they didn't want to just comply with Federal requirements; they wanted to go further. In the SWRR framework, we try to set aside the political and policy requirements; we focus on the resource, rather than the regulations and policy.

NWIS Web Demonstration – Gary Fisher, USGS ([PDF 7,581 KB](#))

Gary Fisher gave an overview of NWIS and NWIS Web history, operational model, and data holdings, then demonstrated some ways that NWIS Web can be used, including a demo of NWIS Mapper's beta version. Gary stressed that the best way to really learn the system is to jump in and use it. One new feature that will be released this fall is water use data. The help system also is being improved.

- Gary chairs the NWISWeb Users group (NWUG) – the group collects, evaluates, and prioritizes requests for enhancements, bug fixes, and recommends overall improvements to the NWIS Web Interface. The group represents all users and solicits any suggestions or ideas that may help USGS improve water data dissemination.
- WSCs do the data collection in the field. Servers are distributed across the US. Data is aggregated into NWISWeb. Over the next 5 years, NWIS will migrate to a national system.
- How much data is in there?
 - 1.57 million sites
- Gary gave a demo of the NWIS Mapper – previously based on Google. Issues with Google – have to pay for it. USGS looked into already licensed ESRI technology. We are converting to ESRI maps, and this will be part of summer release. The mapper will look a little different, but has same functionality. This will allow us a more robust interface based on true GIS.
- Web data services – waterservices.usgs.gov
 - Site service
 - Daily values service
 - Instantaneous values service
 - Groundwater levels service – available in 2 weeks
 - Water-quality data service – <http://qwwebservices.usgs.gov>

Beth Moore (DOE) – How much does it cost to maintain this database? *Gary Fisher* - It's in the millions of dollars, and the web interface is part of that.

Beth Moore (DOE) – How/Are you likely to go in and capture other Federal water quality and hydrologic data points in NWIS? How readily do you have access to other agencies' data and how often do you aggregate it? *Gary Fisher* – In general it's only in NWIS if the other agency has chosen to put their data in.

Beth Moore (DOE) – Since moving to ESRI/ARC-GIS, does that allow you to use some of their capabilities for geospatial analysis? *Gary Fisher* – Regarding your ESRI questions, users can download. Beth commented that it is an amazing resource.

Brendan Kernan – It would be nice if this data could be linked to meteorological data. How do you decide what types of data or trends you're going to show, and is there opportunity for public input? *Gary Fisher* - The purpose of the Web interface is, at the base level, to supply data. The USGS water research programs are the ones who do trend analysis and we don't supply that through NWISWeb. Where appropriate, we try to link to that information (for example, WaterWatch). We are trying to use <http://water.usgs.gov/data> as a one-stop shop to get to data.

Bill Werkheiser – As people have input, how do users get input to NWUG? *Gary Fisher* – There is contact information listed on the website – through the help page and contact link – that allows input to be sent to the NWUG. responded through the help page and contact link.

Harry Zhang – Does your data link to information regarding Corps of Engineers monitoring sites? *Gary Fisher* – Yes, in many cases the data goes into the system because USGS operates those streamgaging stations – such as any time there is a cooperative arrangement. The data may go into both the USGS system and the COE system.

John Jansen – Kudos for the map interface. Thanks for the demonstration. This looks much more accessible and easier to use than the old NWIS. Data will be more appreciated.

Doug McLaughlin – The capability to make KML files that can be brought into Google Earth is useful in helping figure out spatial relationships. Is KML something that you think will be around for a while? *Gary Fisher* – KML has been around for a while. It may evolve to another standard, but we think it will be around for a while. You can get this from web services as well ... not just via the Mapper.

WaterSMART Update – Eric Evenson, USGS ([PDF](#) 104 KB)

We will be producing a report to the U.S. Congress on Water Census activities, which originate in the SECURE Water Act. Section 9508 of the Act requires a report to Congress every 5 years, including: current availability; significant trends affecting availability; withdrawal and use of water by various sectors; significant trends relating to each water sector; significant water use conflicts or shortages; each factor that has caused or is causing a conflict or shortage.

We have begun work on the report, which will be relatively brief, is scheduled to be submitted to Congress by December 31, 2012. (August 31, 2012, begins the external and peer review process.)

The SECURE Water Act authorized about \$20 million a year, and we got our first money (\$4 million) in 2009. The Census doesn't currently include water quality, but we are working on plans to implement a water quality component in future years.

Under the auspices of SWRR we have formed an ad hoc advisory committee to provide counsel on how to best move forward in the Water Census. It includes representatives from 27 agencies and organizations and has been very proactive in working with USGS and providing guidance. USGS will solicit volunteers from this ad hoc committee to provide peer review of the draft report. Email was sent out yesterday evening and some responses have been received already. The goal is to have the report submitted for Bureau approval by October 1 and submitted to appropriate committees at Congress by December 31.

Roundtable Discussion – Outlook for member agency budgets; further discussion of Climate Workgroup (if necessary); other concerns

- *Bill Werkheiser, USGS* – You heard Anne mention the budget outlook for USGS. For 2013 we're looking at a 10% cut overall, but Water programs are up a few million dollars above 2012 levels. We have worked hard to integrate our programs. Impacts to other USGS programs will have an effect on the water programs, however. We're formulating the 2014 budget now, and we are operating under same guidance as 2013. We expect it to be as bad as 2013.
- *Don Cline, NOAA-NWS* – "Ditto." The Weather Service is looking at the same situation as all the other Federal agencies. The water program has fared slightly better than other parts of NWS, but we don't know if that trend will continue, so we're focusing on our highest priorities and anticipating a few years of rough sledding.
- *Mike Shapiro, EPA* – "Ditto 3." We have no idea where EPA is going to come out in 2013, though the House mark was pretty bad for us. The water program infrastructure and State grant programs are large and a very significant part of our budget, so any budget cuts will have a negative impact on the States. We are preparing contingency plans. On the downward slope for the foreseeable future.

- *Chandra Pathak, Corps of Engineers* – USACE is not immune to the current conditions. In O&M we have not been able to make the required level of funding, and we have aging infrastructure that has already outlasted its planned lifespan. We are being pushed to reduce the number of projects we have underway (currently about 600), and we're being pushed to complete projects more quickly.
- *Terry Cheek, Tennessee Valley Authority* – TVA receives no Federal appropriations, but we're looking at a budget shortfall for this year. We are critiquing costs and have had a functional reorganization to better address our mission.

General Discussion and Wrap-up

Bill Werkheiser – Let's continue the discussion we had with Anne this morning. How can we leverage our meager resources to meet our monitoring goals and needs? I am interested in ACWI's ideas.

Peter Evans – Do you have any sense for the type of timeframe that you, Anne, and the Secretary are looking at for ACWI to provide advice? *Bill Werkheiser* – Anne wants to take a long-term perspective, rather than rush to judgment on a solution that is not fully thought out. Two years is obviously too long, but there's no need to have a product before January. *Peter Evans* – I'm imagining that recommendations from ACWI wouldn't necessarily be oriented toward the budget, so that frees us from the normal budget formulation schedule. *Bill Werkheiser* – Yes, I agree with that. This is a parallel track that will not directly affect our budget formulation.

Doug McLaughlin – Would you explain further more about Anne's request for ACWI formulation of the question? Is the question to be asked of Congress? *Bill Werkheiser* – No, the question would be posed to ACWI; thus, ACWI should help formulate the question, to ensure both the question and the answer are pertinent and valuable.

Chandra Pathak – Should one of ACWI's existing subcommittees (or a new workgroup) begin the process of formulating this question? Nobody here is going to argue that we shouldn't be doing this. It's more a question of what we need to do and how much money we need to do it.

Sue Lowry – We've held roundtables the past several years with stakeholders to determine what we need and how much it would cost. The roundtable summaries would help to inform the process that Anne has requested us to undertake. This may be a good starting point. We also need to look at options like having one State maintain another State's streamgages, depending on whose office is closer.

Steven Heiskary – Do you think USGS is at a point where there would be merit in looking at all the long-term streamgages and put some prioritization in place? How many long-term sites are there? For high priority sites, do you have some concise description of how these sites are ranked? That would help, when sites need to be eliminated, in evaluating each site objectively. *Bill Werkheiser* and – We have that analysis – through NSIP, although it's not comprehensive. *Jerad Bales* – The NSIP design is 10-years old, it's time to take a look at this. There are 7500 gages that we hope to become long-term sites. We have looked at primary uses and relative importance of gages on a broad scale, and we're taking another look at that now, through the recently begun NSIP evaluation. *Steven Heiskary* – As we call up data in NWIS, it would be nice if there was a brief descriptor about the uses and ranking of each site. As you conduct your new evaluation of NSIP, make sure that it's in a language that speaks more broadly to users at large.

Brendan Kernan – Obviously we have to continue to promote the value of streamgaging, but we also have to make sure that we make funding options for the Coop Program as liberal as possible, so that direct matches can be made or in-kind services can be provided instead of matching funds. If the contracting process could be streamlined, that would help the States a great deal. Also, we need to use a few WSCs to do case studies that would look at the impacts on cost-reduction and quality control that come with using better technology, volunteers, etc. We also need to make sure that the story of each streamgage is understood clearly because the funding, uses, and customer base for each gage can be extremely complex. *Bill Werkheiser* – Yes, especially in this process of prioritizing gages, we need to take a look at that.

Doug McLaughlin – In terms of the reanalysis you're doing, I would encourage broad thinking early on, in terms of the criteria and user base. A fishing/boating outfitter who uses streamgage data may not figure very large in the national scheme, but collectively the gages used for that purpose provide value to many taxpayers.

Chris Carlson (USFS) – About 25 years ago, FS had several hundred gages that they funded themselves; now they have virtually no gages they monitor due to fiscal constraints. FS is having to cut back the funding we give to USGS to operate gages. One thing they are doing is a region by region gap analysis of where gages are versus where gages were, so they can figure out the most important locations for us to support gages. I would really encourage a gap analysis (and maybe it has been done already), to figure out where we have holes in the network. In the end, this is a national security issue, and we'd better have a good system out there to tell us where the water is and what the impacts of those resources are on the human community.

Bob Schreiber – I agree that it is valuable to go through an exercise regarding what buzz words will resonate with budget and policy decision makers, as well as with potential stakeholders and funding partners. These buzz words include "national security," "increasing employment," "small businesses," "international competition," etc. Can we attract private industry to help us since they have some pretty vibrant R&D capabilities? What can we learn from the international community?

Peter Evans – The suggestions you are getting are helpful, supportive, and not surprising. I am hearing a tendency toward the thinking that most of us have been doing for a while, in terms of better marketing the value of what we're doing. Anne told us that the advice they need looks toward the probability that the budget will be cut. Better marketing is not necessarily the answer, at this point. I like the idea of using ACWI directly for providing advice to Anne, rather than forming a new group. A year should be the longest timeframe we're thinking about now; 6 months is probably too short. You don't have to finish the NSIP review in this timeframe. ACWI needs to meet as often as possible during the next year, to discuss this issue. Also, there is value in that meeting notices appear in the Federal Register so that anyone can comment. I hope we can include groundwater and water quality elements, as well as streamgaging, in this effort. We need to focus on the smallest backbone (core network) we can justify. Maybe shift some responsibility to States and bring in the private sector to help, or use training, or charge a fee for data access.

Charlie Hunsicker – Would USGS consider if any ACWI members might consult with you on reducing the cost per effort that USGS puts into each individual streamgaging station? Can the network become more economical? I'm sure you've asked that question a thousand times, but more dialogue may be helpful. *Bill Werkheiser* – If we were using the same standards we used 10 years ago, our costs today would be lower; instead we have tried to keep our costs the same while providing more value/services.

Doug McLaughlin – Regarding the idea that part of what's needed is a more positive message, ACWI and its subgroups have a pretty remarkable body of work and products – there is a long list of subcommittee accomplishments that have occurred in hard budget times. Maybe part of the question back to ACWI is "can ACWI synthesize information from its own work to tell the stories of some specific efforts and how they make a difference?" We need to stress the things we've completed (like the data portal) that provide large value for very little funding.

Chandra Pathak – If you're going to explain to a layman why we need the data, you need to be able to explain the value of long-term records in looking at effects of climate change, frequency of floods and droughts, etc.

Bill Werkheiser – A related point that is related is "how much volatility can we tolerate in the network?"

Robert Mace – When USGS steps back to look at the bigger picture and prioritize, it shouldn't be limited to the streamgaging network. The analysis should encompass the whole water program and take a strategic view of the whole.

Sue Lowry – Assuming that by early August, these questions will be articulated, is it helpful if people who want to work on it can express their interest by the end of tomorrow?

Bill Werkheiser – Based on input from today and tomorrow’s discussion, we can put together a draft over the next few days and send it to ACWI members in another week or two, for their approval before sending a proposed question/letter to the Secretary. Let’s have people sign up on the flip chart at the front of the room, and we’ll see where we are at the end of tomorrow.

Wendy Norton – I presume that everyone at the table would be involved in some way. Let me know if you have a particular interest. Put your name on the flip chart and I can contact for additional input.

Adjourn Day 1

Day 2 – Wednesday, July 11

Opening remarks and recap from previous day

Introductions around the table: Bill Werkheiser (USGS), Jerad Bales (USGS), Mike Shapiro (EPA), Chandra Pathak (USACE), Dave Wunsch (AASG), Steve Heiskary (NALMS), Fred Bloetscher (AWWA), Jim Koch (WEF), John Jansen, Joe Lee (GWPC), Mike Paque (GWPC), Kim Martz (USGS), Mike Yurewicz (USGS), Doug McLaughlin (NCASI), Peter Evans (ICWP), Sue Lowry (ICWP), Brandon Kernen (ASDWA), Darrell Osterhoudt (ASDWA), Bob Schreiber (ASCE), Terry Cheek (TVA), Wendy Norton (USGS)

On the phone: Cary Betz (TCEQ), Mary Musick (GWPC), Paul Koch, Cathy Tate (USGS), Kristan Cockerill, Bonnie Wyatt (USFS), Larry Kobayashi (LMI), Kevin Dennehy (USGS), Dan Sullivan (USGS), Gary Carter (NOAA), Sally McConkey (ASFPM), Mike Eberle (USFS), Marie Pepler (USGS), Nancy Barth

Update from Subcommittee on Ground Water – Robert Schreiber, CDM Smith, Inc.; Bill Cunningham, USGS; Mike Wireman, EPA ([PDF 7,043 KB](#))

Bob Schreiber began the presentation with acknowledgements and an overview of what SOGW has been doing for the past year. He reviewed the SOGW Terms of Reference to demonstrate the group’s purpose and scope, as well as the group’s mantra of “walk before running” – respect for local knowledge and expertise, data ownership, data providers’ constraints; collaboration and interaction. Bob reviewed SOGW’s composition (members and supporters) to show the broad base of constituents who have contributed to the Groundwater Framework.

Bob Schreiber overviewed the original SOGW Framework report: *A National Framework for Ground-Water Monitoring in the United States, 2009*. He reviewed the pilots that were conducted based on the Framework report, and the conclusions resulting from those pilots. In summary:

- A collaborative NGWMN is feasible
- Pilot States record data differently and use different database platforms,
- Incremental costs of incorporating data from existing State monitoring systems are low. Existing monitoring will not fill all data gaps,
- The NGWMN Internet data portal is a key element to the success of a NGWMN.

Mike Wireman reviewed the changes that were made in the Framework, based on lessons learned from the pilot studies. Changes were also made to remove redundancy, make necessary corrections, and address concerns of SOGW members. He outlined the pilot costs: (1) \$32,000 average cost to evaluate network, select wells, and set up portal communication, and (2) monitoring costs vary widely, depending on aquifer system complexity, demands on the groundwater resource, threats to the groundwater resource, level of data provider expertise, history of monitoring, existing network, and legal or regulatory framework. He reviewed new well capital costs, average cost per new well, operation and maintenance costs, etc. In summary – lessons learned:

- There is a very wide range in costs from one pilot to another,
- SOGW expects limited Federal dollars,
- Some decisions remain, including funding models and equitable distribution of funds among data providers, and

- Establishing an oversight board (USGS will be the day-to-day operator) to help address these decisions and guide the network into the future.

New framework document (July or August)

- Provides more flexibility (re: sampling frequency and well distribution)
- Adds new appendix
- Adds appendix with definition of terms

There is a copy of the new (June 2012) draft Framework document on the resource table, and people are welcome to look at it. We expect it to be released publically in the next month or two.

Chris Reimer (NGWA) updated the group on recent congressional activity that is related to SOGW and the National Ground Water Monitoring Network (NGWMN). NGWA is pleased to see that the USGS budget request for 2013 requested additional funds for groundwater (\$2.5 million for WaterSMART). NGWA is getting feedback from the Hill indicating appreciation for SOGW efforts and appreciation for the way the project has leveraged funds and been supportive of cooperative efforts.

- Expectation is that there won't be final action until after the election – December timeframe
 - 5 standalone appropriation bills
- Enhance climate response network, begin efforts for brackish water assessment
- Page 31 of the report provides information
- NGWA and others – cooperation and flexibility – have been talking about the importance of this network
- Flexibility needed for grants to Tribes, State governments.
- Support for USGS as managers of network and host of the data portal

Bob Schreiber asked for input and comments from ACWI members who have a particular interest in the NGWMN and the associated portal:

- *Mike Paque, GWPC* – We have a very direct interest in this project, and I want to thank SOGW for the work they've done. We all really needed for this NGWMN framework and pilots to be done, and now that it *is* done, we can move ahead with opportunities we would not have been able to take if this NGWMN work had not been done. States have a growing need for groundwater monitoring data, especially in their regulatory programs. I
- *Joe Lee, GWPC* – I'm from a non-pilot State that wishes we had been a pilot State. The State funding for groundwater monitoring remains scarce; the fact that SOGW has analyzed the costs and ease of implementation of this effort makes it easier for States to understand what's needed, financially as well as technically. The Framework represents flexibility. The energy movement/revolution in our country has brought a lot of potential to groundwater and drinking water as vulnerable to these types of activities – grows support for monitoring. I am excited about where the Subcommittee has brought us – the report is an excellent document.
- *Cary Betz, Texas Groundwater Protection Council* – I echo the comments regarding the leadership of the SOGW. We especially appreciate the data portal because it allows us to share groundwater information with our neighboring States; this is important because our aquifers cross State boundaries.
- *Dave Wunsch, AASG* – I was involved with this from the very beginning, and we had really great leadership on this effort. A lot of State employees participated on this effort as workgroup members. There is room for cooperation between the National Monitoring Network and the SOGW. Having the background sites established now will be extremely valuable as we move forward.

Bill Cunningham briefed the group on recent outreach presentations given to educate professional groups about the NGWMN and the groundwater data portal. Work has been highly coordinated within the U.S. and with Canada and other nations, to ensure that the portal and other products are useful. Coordination has also taken place between SOGW and the other ACWI subcommittees, especially the National Water Quality Monitoring Council (best fit of SOGW is with the NMN – we are an outgrowth of that group) and the Sustainable Water Resources Roundtable. They are exploring Tribal participation now with a Tribe in North Dakota. The SOGW is determining next steps.

Bill Cunningham demonstrated the groundwater portal, linking to it from the SOGW website. The portal provides a mapping interface to display and search the network, a well registry to harvest metadata, and a data mediator. He demonstrated some new features and capabilities of the portal that users requested after early demonstrations (such as the ability to download data for more than one site at once). Upon implementation of new features, the portal will become more robust.

Sue Lowry – As you begin inventories in the States, are you looking to each State to do their own clearinghouse method first? How do you decide who to inventory? In my State, we have many different agencies that collect water data.

Bob Schreiber – Yes and yes – Flexibility is built into the system, so that any data source can participate in this system, if they are willing. *Bill Cunningham* – Most States have more than one agency whose data we would like to include, so that situation is not unique. That’s why we designed the system with such flexibility. The system isn’t based on 50 States; it’s based on 180 agencies.

Mike Shapiro – Congratulations and thank you to the group on the work they have done. This is definitely one of those “exceeding expectations” efforts that ACWI has become known for. I have one question on the portal. It sounds like it’s up to the portal manager to write the software and get the data from each individual provider. At EPA we’ve had some efforts like that, and they have been extremely labor intensive. Have you worked out a way to streamline that?

Bob Schreiber – Yes, there’s a standard set of data elements and standard way for data to flow to the portal, but software does need to be written. Most of the software-writing effort is on the Federal side, and that has been very expensive in the past; but because of common formats, data exchange mechanisms, and other new technologies, even though it will be labor intensive, it’s far less of a burden that it would have been a few years ago. Also, the burden will fall on the Federal agencies, rather than falling on the States.

Dave Wunsch – Speaking from the State survey side, there are a couple programs going on now, including efforts that make State data bases more compatible and easier to extract. These efforts are allowing us to optimize data exchange, so Bill Cunningham is correct when he says that the technology is moving in a direction that will make maintenance of the groundwater portal more manageable.

John Jansen – An hour ago I was on the phone with a client trying to assess their water vulnerability, and when I told him where I was today and what we were discussing, he was very excited by the news. The data portal is a great tool; it makes data more accessible.

Chris Carlson (USFS) – It’s a wonderful outcome and opportunity for multiple agencies to contribute to this access point – good to carry ball forward. This will allow us to leverage our resources, and is expanding the awareness and viability of groundwater by making data more accessible. Push forward and expand engagement.

Doug McLaughlin – It adds an emphasis on the value of the portal – in making the info more available on groundwater. There is a trend which increases the opportunity for understanding the interactions between groundwater and surface water – bringing those datasets together to get a watershed perspective. This is very important for organizations like NCASI. This will continue to be valuable for some time to come.

Bob Schreiber – As this goes forward, there will be challenges to face. *Doug McLaughlin* responded that more people understand those challenges more directly. Awareness across a broader community will be elevated.

Voting on SOGW resolution that was presented to ACWI last year

Bill Werkheiser – There is a resolution in your packet which ACWI is being requested to vote on (this is essentially the same resolution that the SOGW presented last year, in draft form). The resolution is asking for approval to approve the final report for pilot studies, recognition of significant work by volunteers in pilot, approval for implementation, and approval to continue the work of subgroups.

John Jansen made a motion to approve the resolution. *Joe Lee* seconded the motion. The resolution was adopted by unanimous vote.

The adopted resolution is available at:

http://acwi.gov/acwi-minutes/acwi2012/approval/03_ACWI_NGWMN_Resolution.pdf

Report from the Subcommittee on Hydrology – Richard Raione, Nuclear Regulatory Commission, and Victor Hom, NOAA

Richard Raione – We all heard Anne Castle yesterday talk about the Bulletin 17B update. There is a lot of excitement within SOH about this effort, and shortly you'll hear about all the work that's been done in that area. The Extreme Storms workgroup, which was formed a few years ago, will give their report; a lot of their work has been funded to date by NRC, which will probably stop providing funding support in another year or two. The Hydrologic and Hydraulics GIS Applications workgroup has issued a draft final report, which has been posted on the website, and which Bill Merkel will talk about later on. Bonnie Wyatt is going to report on the Satellite Telemetry Interagency Work Group, and Chandra Pathak will talk about the activities of the Hydrologic Modeling Work group.

Hydrologic Frequency Analysis Workgroup (HFAWG) – Will Thomas, Michael Baker Corporation

- History of the work group – The work group was established in 1999 and has representatives from Federal government, private consultants, academia, and water-management agencies. The purpose of the HFAWG is to recommend improvements for flood frequency guidelines. Since the 1960s, our work is primarily oriented toward flood frequency analysis and.
- The current guideline for flood frequency analysis is Bulletin 17B, which was produced in 1982 and has not been updated. Starting in November 2005, we began working to revise the Bulletin, to take account of new knowledge and techniques that have developed in the last 30 years for analyzing flood frequency.
 - Bulletin 17B is not efficient with respect to utilizing historical information and regional skew information
 - Bulletin 17B confidence limits do not consider all the uncertainty in the flood estimates
 - EMA will provide improved procedures but still utilizes the Pearson Type III distribution and the method of moments.
- Test results for updating 17B are summarized in a report (*Updating Bulletin 17B for the 21st Century*) that is available on the SOH website.
- See presentation slides for a point-by-point description of the changes HFAWG is recommending for Bulletin 17B. HFAWG has discussed the impact of climate change on flood frequency and is proposing to put a statement about climate change in the revised 17B, but they are not really factoring climate change into the 17B update; most of the non-stationarity we're seeing these days is related to land-use change, not climate change.
- HFAWG plans to request full Subcommittee on Hydrology approval on revision recommendations in October 2012, and then begin drafting Bulletin 17C based on the recommended changes (complete draft and obtain approval of SOH by spring 2013; public comment period through Federal Register by summer 2013), so it can be published by the end of 2013.
- *Charlie Hunsicker* – Using 17B to forecast flood flow, the accuracy of flood prediction must be dependent on the size of the contributing watershed. The model is probably beyond the capability of many local government agencies; as agencies make decisions based on 17B or C, is there a qualifier document that specifies the amount of uncertainty inherent in the estimates, depending on site characteristics? *Will Thomas* – The longer the length of record, the more certain your estimates can be, so the comments section of the report does deal with confidence intervals. Keep in mind that this is only for data at an observed location.
- *Brendan Kernan* – In the northeast, we have had several 100-year storms. I'm not sure the streamgaging network would reflect these storms – very localized areas. Not sure it would jump out that would see these types of storms. *Will Thomas* - Yes, that's correct. 17B, itself, is not for modeling precipitation.

Harry Zhang – In the Worldwide, are other countries using this “expect moment” algorithm that you're using? *Thomas* – to my knowledge, no; other countries use other methods. ([PDF 79 KB](#))

Extreme Storms Workgroup activities and recommendations – Tom Nicholson, Nuclear Regulatory Commission

[\(PDF 5,332 KB\)](#)

- In 2008, ACWI chartered this group. Initial activities include: (1) a pilot extreme storm study in the Southeast by BOR/NRC, (2) discussion of ways to update generalized HMRs and PMP estimates, (3) compare recent storm data, (4) review and analysis of depth-area-duration (DAD) data sets used to develop generalized PMP estimates, and (4) analyzing upper Missouri pilot storm data for use in future storm transposition studies and HMR updates.
- Task status
 - Solicit work group membership – completed.
 - Literature review – completed; reference U.S. BOR reports to NRC.
 - Long-term plan to update extreme storm catalog – under development; incomplete data due to lack of staff resources.
 - List of individual Federal agency needs – incomplete; limited information from a few agencies on their needs for new activities and objectives for flood assessments and risk (workshop).
 - Inform SOH/ACWI on Federal funding support – ongoing; critical shortage of staff resources to estimate costs.
 - Conference calls, workshops, correspondence – ongoing through initiatives by NRC, U.S. BOR, and USACE staff.
- We're looking at southeast storms right now with a pilot study in the Carolinas, but are thinking about applying the same methods in a new study in the Tennessee River Valley.
- Major efforts, progress, and accomplishments:
 - Reclamation pilot study funded by NRC for assessing PMP estimates for North and South Carolina – completed.
 - USACE storm data collection data base – initial pilot database for Upper Missouri River Basin, ongoing data collection.
 - Reclamation extreme storm research and climate change – initial efforts funded by Reclamation S&T, collaboration with NOAA and Cooperative Institute for Research in Environmental Sciences, just beginning work.
- Ongoing activities and challenges: extreme storm data base, PMP updates, storm probabilities
- Major issues needing resolution:
 - Who should take the lead on coordinating the data analysis and repository?
 - There is a lack of technical resources, organization, and community.
 - Lack of funding. Coordination of financial and technical resources is posing significant challenges.
- SOH Extreme Storm Work Group would like ACWI to recommend to WICP that: (1) there is a critical need for developing resources to analyze Extreme Storm Data; (2) reviews of data and estimates every 10 years; (3) designate a lead agency to accomplish the work; (4) identify/develop funding to support these activities that are critical to flood assessments of dams and nuclear power stations, and for environmental assessments.
- Major deliverables – 3 reports produced by BOR this year – <ftp://ftp.usbr.gov/jengland/NRC/reports>

Hydrologic and Hydraulics GIS Applications Work Group – William Merkel, Natural Resources Conservation Service
[\(PDF 398 KB\)](#)

- Accomplishments
 - Presentation of two papers at professional conferences
 - Demonstration of GIS applications
 - Distributed questionnaire to Federal agencies and others
 - Developed page with Web links to major applications
 - <http://hydrologicmodels.tamu.edu>
- Both the quantity and the quality of GIS data are increasing greatly, and we are examining how this data can be used in hydrologic applications.
- The group is working to coordinate more with Federal and academic committees, including ACWI's own Subcommittee on Spatial Water Data.
- Hoping to wrap up work of the group by the end of the year

Satellite Telemetry Interagency Work Group (STIWG) – Bonnie Wyatt and Linnea Keating, USFS

[\(PDF 15 KB\)](#)

- STIWG is a user group for the GOES DCS.
- We are an interagency working group of Federal and State agencies. STIWG has two officers, a Chairperson and a Secretary. Officers rotate annually.
- We meet two times a year. Minutes are posted on the ACWI website.
- STIWG advises the manager of the NESDIS DCS on matters concerning satellite data relay user requirements as they relate to hydrologic, meteorological, oceanic, and other environmental data;
- Promotes data exchange and data sharing, research and development results;
- Undertakes projects to benefit the GOES community.
- STIWG is subject to the direction of and will report activities to the CESORN and the SOH of ACWI.
- Among the projects underway are the Emergency Data Distribution Network (EDDN) and LRIT Low-Rate Information Transmission
- Shrinking budgets and bandwidth intrusion are over-arching challenges for all STIWG members.

Hydrologic Modeling Work Group – Chandra Pathak, U.S. Army Corps of Engineers

[\(PDF 482 KB\)](#)

- Update on the planning process for the 2014 Sediment/Hydrology conference.
- The last conference had about 1800 attendees, but fewer are expected for the next one. There is a proposal to postpone the conference until 2015 if travel constraints remain an issue.

Report from the National Water-Quality Assessment Liaison Committee – Mike Yurewicz, USGS

[\(PDF 2,313 KB\)](#)

Mike Yurewicz gave a brief update on the NAWQA program's recent activities, including all the stakeholder communication soliciting input on Cycle 3 design and implementation. Mike noted that the USGS has taken deliberate steps to seek external stakeholder input on the design of future activities of the NAWQA Program. The NAWQA Liaison Committee has met 3 times to review and provide advice on priority issues that should be addressed during Cycle 3.

- The National Research Council review of Cycle 3 gave recommendations in two interim reports issued in 2010 and 2011, and their final report is scheduled to be released by early August 2012.
- He summarized the major goals of NAWQA for the next 10-year period, two of which are new: status and trends, understanding causes, assessing effects (new), and forecasting (new). The first two goals won't change much from what has been done in the past.
- He outlined expected outcomes for the program – restoration of monitoring networks, reliable and timely trend analyses, models and decision-support tools, understanding relation between critical stressors and stream ecosystem condition, and forecasts of future conditions. We want to be able to turn data around more quickly, to better and more quickly answer what the trends are.
- Part of the science plan is to say to Congress that we heard what you said. We would reduce the number of NAWQA surface-water-quality sites from 313 to 85 in FY 2013 if the \$6.5 million reduction proposed in the President's budget is enacted.
- Want to beef up monitoring networks more toward our original programs.
- *Mike Yurewicz* reviewed some modeling results for total nitrogen; gave an update on ongoing, planned, and possible products for the national synthesis for suspended sediment; and described the regional water-quality studies.
- Integration and partnering are critical in all of this work. An important outcome has been using NAWQA data + data from STORET and State, Fed, regional, etc... agencies that are not in STORET or NWIS. We want to be able to build good models.
- Asked by ORSANCO about a month ago to help plan a meeting – they will propose a nutrient trading program.
- *Doug McLaughlin* – The NAWQA program represents a valuable program because of the way it pulls together information. I would continue to encourage the development of uncertainty analysis. More can be done.

Decision makers need to know something about the uncertainty – encourage expanding this to all SPARROW models that exist.

- *Steven Heiskary* – You have a recommendation to ramp up the stream monitoring network to about 300 sites. Will that just be getting back to sites you have lost, or will they be new sites? *Mike Yurewicz* – Most will be sites we have sampled before because we have existing data to use for comparison, but there will be some new sites as well. *Steven Heiskary* – Will this take into account any State and local monitoring that may be going on in some of these locations? *Mike Yurewicz* – Yes, it will. We now have a growing database of all the sites where any type of significant water-quality monitoring is already occurring.
- *Fred Bloetscher* – Are these separate from the sites that appear in NWIS? *Mike Yurewicz* – They sites are part of NWIS, and the new ones would also be included in NWIS.

Statistical NEMI demonstration – Doug McLaughlin, National Council for Air and Stream Improvement **(PDF 1,385 KB)**

Doug McLaughlin demonstrated NEMI-SAMS – a new component of the National Environmental Methods Index (NEMI) that allows users to conduct a “statistical assessment methods search” (SAMS), to find the most appropriate/useful assessment method.

- Background on development of the NEMI-SAMS tool and how it relates to the mission of ACWI’s National Water Quality Monitoring Council and the Council’s Water Quality Statistics and Assessment workgroup.
- This tool relates especially to two elements of the Council’s Framework “wheel” logo: (1) design the monitoring program and (2) assess and interpret data.
 - Need identified by the NWQMC – Develop a toolbox to support assessment and interpretation of data and link to various monitoring designs
- Response to need
 - Water Quality Statistics and Assessments (WQSA) workgroup – white paper available on-line
- By adding this to the existing NEMI, we were able to capitalize on the similar database structure and a sizeable user community that is already familiar with NEMI.
- What can ACWI member organizations do?
 - Try the prototype –
 - Conduct a query – http://cida.usgs.gov/nemi/search/statistic_search/
 - Add a method – contact Doug, Dan, or Leslie
 - Become involved in developing/implementing NEMI-SAMS – contact Doug, Dan, or Leslie
- There is a way to add new methods online so users can contribute new material to the site. The system currently includes only 40 methods, and we hope to grow that number considerably.
- The Council sponsored a webinar demonstration of this tool a few weeks ago, and there were 150+ people logged in to the presentation, making it the most successful session thus far in the Council’s webinar series.
- Requesting input from ACWI member organizations –
 - Does the query format work for you?
 - Are the results useful to you?
 - Does the entry form work for you?
 - Can you review candidate methods?
 - Would you like to participate on the WQSA workgroup
- Conclusions and Next Steps
 - “Communicate, Collaborate, Coordinate” applies to statistical and assessment methods too
 - NEMI-SAMS prototype is an opportunity to fill this gap
 - Full implementation will depend on user interest and participation

Bill Werkheiser – We should note as an action item to provide input on NEMI-SAMS.

Envision™ – Evaluating the benefits of infrastructure projects – William Bertera, Institute for Sustainable Infrastructure (PDF 3,192 KB)

- The Institute for Sustainable Infrastructure (ISI) is a non-profit education and research organization founded by the American Public Works Association, American Society of Civil Engineers, and American Council of Engineering Companies. Envision™ is a tool developed collaboratively by the Harvard University Graduate School of Design and ISS, to assist in evaluating the sustainability of civil infrastructure. It is available in the public domain – it is there to be used. We hope that it will be embraced by the public sector.
- William Bertera was executive director of WEF prior to heading ISI.
- Everything we care about is dependent on our physical infrastructure, which is largely the responsibility of the public sector. Infrastructure today is especially problematic, due to diminishing resources, increasing population, climate adaptation, and other complex factors – we are operating in a difficult environment.
- Sustainability: “to meet the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987).
- Envision™ is unique among the approximately 900 systems that exist to serve a similar purpose. It is unique in that it applies to civil infrastructure; it includes design, planning, construction, and maintenance elements; it is applicable at any point in an infrastructure project’s life cycle; it speaks to social, economic, and environmental goals; it is designed to keep pace with a changing concept of sustainability.
- Metrics matter – Envision™ measures outcomes, not intentions. It’s a tool that is designed to encourage people to think about sustainability. Intentions are important, but results are more important. It is important to be able to make a business case for sustainability. The public wants quality services and want to know what they are getting. Measuring stuff is important. It’s important to demonstrate that the infrastructure does what it is supposed to do and that it does it well. Metrics will be added as the year goes on.
- Major rating categories (with many subcategories) are quality of life, leadership, resource allocation, natural world, and climate and risk.
- Most interest in the tool at this point is by planners, developers, and engineers. We believe the real value of the tool is in the latter stages of infrastructure projects, rather than the initial planning and building. The idea of the tool is to encourage communities to attain higher levels of sustainability over time. Criteria are designed to get planners to think about how want things.
- *Bill Bertera* gave a demonstration of the ISI Envision tool – showing ACWI what is available through the portal. <http://sustainableinfrastructure.org>
- Tool was up for public comment. We had over 800 comments/suggestions/criticisms. The tool you see includes these comments and suggestions.
- We have not accepted application of third-party verification yet. Maybe in September. @ 300 people in the program now. On-line open book examination.
- The tool, at present, is light on the metrics and construction material. This will be corrected by year’s end. Over time, we feel the real value of the tool will be in the latter stages of a programs life. The tool will always be changing. Comments section is always available. Sustainability changes over time, so the product should too. Periodically, they will readjust starting point and values. The tool should reflect that changing marketplace.
- Tool is meant to be an umbrella – not just addressing sustainability, but whole systems of infrastructure across a community.
- We are anticipating that systems meeting minimum requirements will just “click in” and will fulfill ISI requirements. Meant to be inclusive, not meant to be competitive, meant to develop a picture of sustainability in a whole system.
- *Charlie Hunsicker* – Can you take an example of repairing a bridge over a waterway? How would a project such as a proposal to build a bridge be evaluated under this program? *Bill Bertera* – Remember, this is a sustainability rating, not an engineering study. So we would look at the physical environment, watershed and transportation implications, resources expended to build it and resources *not* expended to build it, etc. This system is designed to make you think about the bridge – not just as a piece of steel and asphalt – but as a part of the community. Envision™ makes you ask questions – believe it will change the quality of decision making and maybe the decisions themselves.
- *Raione* – Do you see a time in the future when this type of holistic approach could be used to support NEPA and similar activities? *Bill Bertera* – Yes, it’s complementary to those activities.

- *Jim Cox* – I wonder about the application to get closer to a means of qualifying values. *Bill Bertera* – Depending on the community, resources, politics, the same conversation will look different depending on where you are. This is the flexibility of the tool.
- *Chandra Pathak* – asked a question about infrastructure. *Bill Bertera* – The tool does not answer anything. It provides tools by which you can have a conversation. One of the problems with infrastructure investment is that we haven't found a way to talk to people who understand how infrastructure connects things.
- *Wells* – How do you address the issue of spatial and temporal boundaries? *Bill Bertera* – This is a sophisticated tool, but it may never be as sophisticated as your question suggests it needs to be. We can't improve the tool to address issues like that until we understand how people are using the tool.

Report from the Subcommittee on Sedimentation – Marie Garsjo, NRCS (retired)

[\(PDF 4,139 KB\)](#)

- *Marie Garsjo* outlined recent SOS efforts: various workshops, Reservoir Sedimentation “RESSED” database, National Stream Morphology Database, SOS 2007-2012 prospectus (needs to be updated for the next 5-year period).
 - Next SOS meeting is in Fort Worth
 - Average attendance in meetings has been more than 10 people.
 - Mark Landers, new Chief, FISC, was at the last meeting and would like a spot on the calendar
- A joint USGS/CUAHSI workshop on sediment hydroacoustic techniques and a workshop on reservoir sustainability have been held this year to transfer knowledge.
 - A white paper will be produced from the workshop that summarizes discussions, conclusions, and recommendations
 - Expected to help raise awareness of reservoir sedimentation issues and present ideas for achieving reservoir sustainability.
- The Joint Federal Interagency Sedimentation and Hydrology Modeling (SEDHYD) conference will be held the last week of March 2014.
 - Key positions (Conference chair, technical program chairs, and other positions) filled by SOS volunteers. Additional volunteers are welcome.
- Two big projects
 - National Stream Morphology Database (NSMD)
 - April 2011 workshop of the NSMD workgroup to develop a set of recommendations to the SOS on conceptualization and development of an NSMD
 - Developing national common reporting standards and a strategy for exchanging consistent stream morphology observations as recommended at the 2011 workshop.
 - RESSED – have worked on this for 2 ½ years. Formatting and input are almost complete. It is important to keep momentum and add information. Ensure it can be used by those who need to use the database. Can now be ported to Filemaker Pro and reports produced.
- Slides showing societal relevance of sediment (an overriding theme of this effort) from a funding perspective and uses of reservoir sedimentation data.
- Reservoir sedimentation is a special concern in western States – less information available and higher stakes than in the eastern U.S.
 - Sedimentation problems – high loads, wildfires, debris flows, erosion
 - Water scarcity issues
 - Fewer sediment gages
- RESSED database – Represents ~2% of dams in the National Inventory of Dams, 0.03% of U.S. impoundments. The database will provide:
 - Unrestricted/free access and use
 - Update capability by any user
 - A flexible, robust product
 - Links to key databases such as NID, NHD, StreamStats, NWIS, and others
 - Quality-control data – a first for reservoir database
 - Capability for local, regional, and national-scale spatial/temporal analyses by anyone

- RESSED is no longer funded after this summer. It will remain in stasis and will not receive any new data or any maintenance until funding can be found. It could possibly find some support from WaterSMART because there is a natural connection.

Chandra Pathak – How much money is needed for full support of RESSED? *Marie Garsjo* - \$80,000.

Doug McLaughlin – Filling up of reservoirs is an important local concern for communities. What is the local interest in RESSED? *Marie Garsjo* –I am not sure how those connections will be made. Regarding local scale... in looking at the Missouri River, it is large, does not affect a single community, but many communities.

Public Comment Period

There were no public comments.

Review of Action Items, Wrap-up

ACTION - *Wendy Norton/Carol Lewis* will get presentations and have Carol post them on the ACWI website.
(COMPLETED)

ACTION – *Wendy Norton* will initiate a conference call for everyone who is interested in working on the question Anne Castle requested. The group will work on refining the question that was drafted by Peter Evans.

- Status: This will involve convening ACWI (or a subset of ACWI) several times via conference call. The group's first meeting (via conference call) will take place August 16, 2012, at 1:00 p.m. Eastern time.

ACTION – *ACWI Members* should provide input to the Methods and Data Comparability Board on the National Environmental Methods Index and its new SAMS component, which we heard a briefing on earlier today. If you have comments, send them to Wendy Norton.

Bill Werkheiser – I am impressed by the amount of work that has been done by the subcommittees. This is great to see and I look forward to ACWI's engagement on an ongoing basis and the expertise the members bring to the table.

Bob Schreiber – Are there open slots? We need to get key players involved – a fish/water organization, USDA – in between members. *Wendy Norton* has fresh leads. Perhaps there are other organizations.

Is EPRI is still a member? *Wendy Norton* - Yes, Bob Goldstein was not able to attend this meeting and was unable to send someone in his place.

Doug McLaughlin – Just some quick food for thought regarding more frequent ACWI meetings by phone. Given the number of accomplishments and their magnitude, and the history, what is the potential to describe, in written succinct form, some of those accomplishments and how they relate to improved communication and collaboration? Identify issues that are relevant when folks are looking for where they want to spend their money.

- *Bill Werkheiser* – Why does ACWI matter? Is there such a document? *Wendy Norton* – There is no synthesized document. Material is on the Web.

Peter Evans – The volume of material to discuss does a disservice to the last presenters. I am not sure we can get this much information into a 2-day meeting. Meeting more frequently may provide more time for discussions and we would not have to pack so much into a 2-day meeting.

There was a suggestion to provide guidance to presenters for what they should include. There is not as much to cover in a short time if we meet more than just once a year.

Peter Evans – It would help to have more advance notice on the agenda, and advance meeting materials; this would assist members in preparing better to speak knowledgeably on behalf of their organizations. *Bill Werkheiser* – Would it

be helpful to have meeting materials in advance to send out to your constituents? *Peter Evans* – Yes, I am not sure there is an ideal solution. *Bill Werkheiser* – We will see what we can do to try and improve this process.

Brendan Kernan suggested future discussion

- Adequacy and stability of soil moisture data
- US Drought Monitor activities
- What role should State climatologists play in ACWI and its subcommittees' activities?

Chandra Pathak – You may want to take a look to determine whether the level of detail presented in subcommittee reports is appropriate. This may be a way to allow for more discussion time. What do participants look for? Is a broader viewpoint and discussion better? Maybe we should have 2 meetings – 1 technical, one general. *Bill Werkheiser* – We may need some level of guidance to presenters in the future, so they don't include so much detail. *Doug McLaughlin* – Some of these concerns can benefit from more frequent ACWI meetings. Perhaps, have a topical meeting for those subjects that require more detail to be discussed.

A comment was made that subgroup meetings are always open to any member. Just be sure to contact the Chairs of the subcommittee to make sure you have any necessary information for participation.

Meeting Adjourned