

ACWI Teleconference and Webinar February 22-23, 2017

Don Cline, AD Water, USGS, opened the meeting with an overview of the agenda and actions to be addressed over the course of the meeting.

Roll Call – Reference Attendees list at the end of this document.

Changes at USGS: Reorganization of the Water Mission Area – Don Cline (USGS)

Don began the meeting noting that it has been an interesting autumn. We are awaiting confirmation of our new Secretary, Ryan Zinke. It is expected that this may happen as early as next week. Bill Werkheiser has been serving as acting Director and Dave Applegate as acting Deputy Director. In 2016, the Water Mission Area (WMA) budget was restructured to four programs, down from the previous seven in an effort to improve transparency of our budget program. The restructure was done at the request of OMB and Congress. This restructure was complete before his arrival.

We are now in the process of restructuring the organization of the WMA. Don discussed why we are doing this, noting that our buying power has decreased over time (approximately 30 percent). Our staff numbers have also decreased by approximately 25 percent. We cannot afford to add staff, and we cannot do all that we used to do in the same way we are accustomed to doing in the past. Our organizational structure – which is structured around sub-disciplines - has been the same for about 130 years. Each of these sub-disciplines share a set of core functions. With this reorganization (October 2017), we are collapsing our structure into these five core areas in an attempt to become more lean and robust. We are anticipating what could be significant budget cuts, and we are preparing for that as well. A structural reorganization enables us to take a hard look at everything we do, identify priorities, and determine how to more effectively deliver water information.

This brings us to ACWI. The upcoming 2017 meeting brings us to the 25th anniversary of ACWI. We will take stock of what we have done and what we need to do. Looking back at the OMB memo creating ACWI, there were a number of things important for creation of ACWI. Some of these things are still applicable while some may not be as relevant as before. As a country, we have significant water issues. As we look forward to the next 25 years, what will we do differently to address our water challenges? In the WMA, we are asking questions about what will the next 20 years of observation look like, and what should we be doing with modeling? As we move forward, we will be tackling these systematically. We are changing at our foundation. Implementation of the reorganization begins in FY 2018.

Questions:

Doug McLaughlin – I am wondering what your sense is for increased interactions between USGS and State/local entities. Do you have any thoughts on maybe shifting some information challenges/burdens/opportunities to regional or local resources? What about interactions with other Federal agencies?

Don Cline – I do not have any thoughts on that specifically. We have a responsibility to provide data. We are trying to strengthen our connections with State Water Science Centers (WSCs) so they can better interact with local and regional groups. It will take stronger partnerships and better division of labor in order to be successful. We will work through our State WSCs regarding this.

Judy Beck – it is almost impossible to do the type of partnership envisioned by many due to structures, etc. Flexibility and the need for partnership are encouraged. It is important to share resources more quickly and in a less costly manner.

Don Cline – There is definitely a need, but this is a challenge. We have gotten past the point where we can all do our own things. We need to work together.

Bob Schreiber – I would like your thoughts in terms of partnering and collaborating with the private sector. What are restrictions on this? I am also curious about international scene. I realize we have to take care of domestic issues first, but it has been beneficial to collaborate with others internationally.

Don Cline – There are opportunities for private sector collaboration; we are not limited there. These can be challenging, but we are open to entertaining the idea of collaboration. Some things are inherently governmental and we must continue to do these things. Regarding other partnerships, for example ESRI, it comes down to the right partnership. On the international front, we have to be clear that the USGS typically does not have an international mission as compared to State Department. We do, however have a number of international issues, for example transboundary issues with Canada and Mexico. We are also involved at times when there is a specific benefit to the government. From an intellectual and science perspective, there is tremendous benefit; however, we do have limitations working across borders.

Bob Schreiber – One idea regarding collaboration with the private sector is testing nitrate sensors. I would encourage working with AWWA, WEF, and ASCE. Thank you very much.

Subcommittee on Ground Water (SOGW) – Bob Schreiber (ASCE) and Bill Cunningham (USGS)

Bill Cunningham opened the SOGW discussion by thanking the group for the opportunity to present to ACWI and noting that it has been a busy year for the SOGW.

Bob Schreiber opened the presentation acknowledging the strong collaboration between SOGW members and contributors who represent a wide range of agencies and backgrounds. Bob thanked ACWI, Wendy, and the [National Water Quality Monitoring Council \(NWQMC\)](#) for their support and collaboration. Additionally, Bob thanked Lauren Schapker for her support as Executive Secretary. Bob also thanked State agency data providers and many others who have contributed to the success of the SOGW.

Continuing, he gave an overview of what the National Groundwater Monitoring Network (NGWMN) is for new members of why we need a groundwater monitoring network citing support from the 2006 Heinz report and the 2009 SECURE Act (legal requirement) which authorizes the national network. Prior efforts were leveraged to get the effort started, and through efforts of our NGOS, we have managed to get budget appropriations during the past 2-3 years.

Bob referenced the SOGW's Terms of Reference (TOR) document and noted that the SOGW would like to extend their TOR past its original purpose: monitoring and collaboration to assist in assessing **quantity** of U.S. groundwater reserves as **constrained by groundwater quality**. The focus has been on quantity. Bob commented "Our mantra has been to walk before we run." We have been walking for a while now and have been successful, but we need to go beyond this. The purpose of the network was framed by questions that can be addressed using NGWMN data plus supplemental data – you can't monitor what you don't manage.

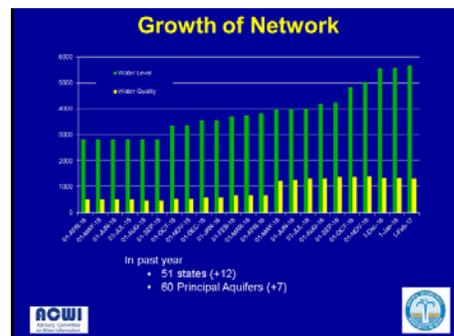
January	2007	SOGW formed by ACWI
February	2009	Framework Document approved
December	2009	Five pilot projects selected
January	2011	Pilot projects report results
July	2011	Web portal version 1 public release
September	2011	Pilot project synthesis report
Summer	2013	Framework Document revisions
Fall	2013	Web portal updated version
	2014	WQ piloting – 2 States
Fall	2015	\$\$ and Begin full-scale implementation
	2016	23 states on board via 3 PA's

ACWI logo and globe icon are visible at the bottom of the timeline graphic.

Daryll Pope continued the presentation with an overview of progress since the last meeting.

Governance is carried out by the NGWMN Program Board which represents NGWMN data providers and provides input on issues related to network growth, development and operation. The program board also assists in evaluating proposals submitted for cooperative funding. Additional information is available on the SOGW website – acwi.gov/sogw/.

- *Cooperative Agreement Status* – program board was involved in evaluation of two rounds of funding in 2016 and with the program announcement for 2017; this is the third program announcement we have done.
- 2017 plans – 2017 funding opportunity proposal review in progress (21 being evaluated). We will be meeting in early March in Denver and will provide guidance on the FY 2018 program announcement.
- Looking for new / alternate data providers.



The NGWMN is growing and making progress.

Lauren Schapker continued the presentation with a discussion of funding and feedback. Funding increased to \$3.6 million in FY 2016 from \$2.6 million in FY 2015. Funding is continued through April through the Continuing Resolution (CR); however, there is some uncertainty as we move toward the end of the CR. We are hopeful for continued funding. There is plenty of room to grow, and Congressional staff has been interested in the growth of the map over time. The map has been a useful tool for support of the network. They are also interested in growth of the water quality network.

This begs the question “what does a fully funded network look like?” We are not sure what this looks like. It costs approximately \$100K to become a data provider. Ongoing maintenance is \$2 million, and so forth.

Rick Hooper - The subnetwork classification (i.e., background/suspected change/documentated change) is very important. How often will the classification be reviewed and updated?

Daryll Pope – We haven’t addressed this yet; we will look at this ad hoc as needed. We have not had comments. *Bill Cunningham* added that the framework document addresses this. It is part of the process. A site can be moved among the different sub networks.

Data Portal – integrates national, State, and local groundwater data and makes it available through a single web portal. The data provider is the owner of the data. An overview of how the portal works was given. New features include water level summary statistics, attribution of agencies with USGS cooperative matching funds, improved handling of significant figures, and enhanced web analytics to determine how the network is being used.

Current efforts are focused on data provider support connecting data provider web services - rather than new feature development. We plan to add a feature to allow data providers to bulk load their sites (commonly requested feature), and we plan to develop “data provider pages” to share details on methods, quality assurance (QA) / quality control (QC) procedure and other NGWMN information.

SOGW Annual Meeting – Bill Cunningham

Bill began his presentation with a “thank you” to Jessica Lucido and OWI for getting the portal up and running.

SOGW held a productive face-to-face meeting December 5-8, 2016 in partnership with NGWA Groundwater Week in Las Vegas. The SOGW business meeting was combined with our first NGWMN data provider meeting (data

provider technical leads professionals). This was a major milestone for the nascent NGWMN (SOGW and 23 State data providers). Bill commented that the meeting had amazing energy, a lot of learning opportunities, and he shared photos from the meeting. Progress on implementation was discussed and IT staff learned what it takes to share their data on the portal. Bill added that the meeting notes are in review and will be made available soon.

Darryl Pope noted it was good to get the community of practice together and gave specific examples.

Dave Langseth (NGWA) noted the importance of this effort for others – increased use of the NGWMN on a smaller scale. Interaction with vendors of latest technologies was important. This could be viewed as an example of USGS/private sector collaboration noted earlier. We look forward to continuing with collaboration and support of the development of this network.

Bob Schreiber commented on the importance of other involved agencies as well. Being able to get State agency folks to come with budget issues was important. The SOGW is pleased with NGWMN progress to date, but we strive to improve outreach – continue to advertise to data providers and data users; State agency recruitment, engagement with tribes, data quality. As data starts coming in, we have work to do to keep an eye on this. Interaction with other ACWI groups is also important.

Bill Cunningham added that tribes are welcome and encouraged to participate. We are not able to provide funds based on language from Congress in the USGS appropriation. We are working on changing this, but we encourage participation. There is flexible networking in terms of those who can participate. As data continues to come in, we'll need to work on the quality of the data.

Questions / Discussion –

Robert Mace commended the group on this effort and commented that his staff is happy with this effort. It is good for USGS to receive State data where appropriate. Robert asked for an explanation of the term “reserves.”

After discussion, Bob Schreiber and Bill Cunningham responded that this is a consensus document and welcome suggestions for a different word.

Tom Nicholson commented that the U.S. Nuclear Regulatory Commission (USNRC) wants to be a member of SOGW. Tom noted that the USNRC works closely with States. Tom will send his contact information to Bob Schreiber and Bill Cunningham.

Doug McLaughlin thanked everyone for the presentation and commended them on the success achieved thus far. Can you share any wisdom you've gained over the years – especially when talking with Congressmen.... What alternative message is there that helps non-groundwater folks understand what is at risk?

Lauren Schapker responded with the caveat that she is not a groundwater person. She noted that she can talk about the portal in a way that will appeal to Congress. At a base level, making sure they are getting enough for their State resonates well.... All States have major water issues that we can use the portal to demonstrate how to be more informed regarding these issues - relate back to specific State issues.

Dave Wunsch – When working with NGWA, we found that they were interested and enthused about the graphics. The modern age of technology allows for good graphics. Most people can understand this. The portal has a user friendly interface and users can see the transboundary benefit. There is power in the way the portal's design allows folks to understand the data.

Bob Schreiber added that NGWA provides fact sheets and graphic and text information on the importance of groundwater. This is a good place to look for collaboration.

Paul Freedman reinforced the comments on how important the work is and commended the SOGW on the progress they have made.

Judy Beck asked if the meetings of the SOGW will be open to all interested parties. Will these be posted somewhere? Will they be included in the TOR?

Bill Cunningham responded that SOGW meetings are one hour calls on the 3rd Monday of every month at 12:00 PM EST. Minutes are posted publicly on ACWI/SOGW website. Annual meetings will be posted on the web as well. Monthly calls are not on the main page, but are on the SOGW.

From Bill Cunningham in chat - For those who would like to join any of our monthly calls, we meet by phone monthly from 12:00 - 1:00 pm ET. Webinar and phone info: Click the following link to view or edit your meeting information, or to start your meeting.

<https://usgs.webex.com/usgs/j.php?MTID=md4a6214679d0025afdbd6e2fd3fa53cd>

Teleconference: 1-855-547-8255, Access Code 27422# or 703-648-4848, Access Code 27422#

Dave Wunsch continued the presentation with a review of the SOGW TOR document. Dave chaired a SOGW work group that carefully reviewed the TOR and recommended updates. He commented that the SOGW is requesting changes to the TOR to reflect the progress that has been made with an acknowledgement of the SOGW's continued role in implementation. The SOGW is interested in expanding activities beyond the NGWMN. Dave explained the proposed TOR changes to ACWI (Reference SOGW presentation).

Questions regarding Proposed TOR changes –

Rick Hooper commented that he has no questions and supports the changes.

Wendy Norton- Does anybody have objections to changes to TOR?

- GWPC commented that they are okay with the changes.
- Wendy commented that she has several chat comments indicating no objections and support for the changes.

Bob Schreiber thanked ACWI for their support.

Motion to approve revised TOR for SOGW –

- **Meg Jonas** (substituting for Corps of Engineers representative) made a motion to accept the revised TOR.
- **Paul Freedman** (representing WEF) seconded the motion.
- The revised TOR is approved.

Bill Cunningham thanked Wendy and ACWI. He commented that the SOGW will address *Judy Beck's* comment about SOGW meetings. This will be the only change. There was comment made that in the TOR it notes that the Executive Secretary will coordinate web postings. Bill reiterated SOGW's commitment to *Judy* to ensure meeting information is posted on the Web.

Water Resources Adaptation to Climate Change Workgroup (WRACC) – Paul Freedman (WEF)

Paul Freedman gave an overview of the [WRACC Workgroup](#) noting that the workgroup was chartered in 2012 and formed by invitation only. The group consists of 40 members over 3 sectors (Federal, State, and local government organizations, non-profit, and academic organizations). The WRACC meets monthly to review science, policy, and program developments. The WRACC developed a recommendations and “next steps” report based on a 2-day meeting in 2014.

This January, a 2-day meeting was held to discuss recommended next steps that feds might take. The meeting addressed five “policy challenges” related to climate change and water which were addressed by expert panels at the meeting. Open workgroup discussion of needs was also involved. Ideas were discussed, massaged, and debated. The group came to a loose consensus. Short summaries went through review. Recommendations for next steps were developed as well as a report to ACWI summarizing the meeting and resulting recommendations. This is the report that was sent out for ACWI review.

Policy Challenges

1. Promoting State Water Resources Planning for Climate Resilience
2. Defining Incentives and Support for Corporate Water Resilience
3. Strengthening State and Local Flood Risk Reduction Planning, Practices and Measures
4. Promoting Climate Resilience of New Federal Water Infrastructure Investments
5. Improving Planning and Financing of Natural Infrastructure for Climate Resilience

Paul summarized each policy challenge for the group. Comments included:

- States need more avenues to access information and learn what other organizations do.
- A recurring theme is more and better data.
- The Federal government could provide a role in facilitating and promoting opportunities for partnerships and collaboration to solve water resource challenges.
- There is a strong need to support mapping efforts to reduce flooding risks. Fully implement Federal flood risk management standard.
- Policies and priorities are better focused on building more resilient structures or relocating and not rebuilding in flood-prone / at risk locations.
- Promoting climate resilience of new Federal water infrastructure investments is relevant in terms of the current administration emphasis on the need to improve Federal infrastructure. Look at the holistic picture – a systems approach for infrastructure. The new administration has a desire to move infrastructure projects forward.

A wide range of topics germane to the current administration were covered.

Status – The meeting summary and recommendations report was approved by the WRACC Workgroup at their February 9, 2017, meeting. That report is being presented today to the full ACWI. The WRACC Workgroup is requesting approval to post the report on the ACWI/WRACC website.

Questions:

Jim Pletl (NACWA) – Going through the report, there are a couple of things I have been dealing with on a national basis... regarding recommendation 5 #19, I feel that it is impossible to make this recommendation. You may come to the conclusion that you are going to damage a natural system in some way. I am not sure how we can have this recommendation worded this way.

Response – There is language in the document that addresses this – man’s existence in the world creates some impact. In retrospect, maybe we could have refined and clarified this wording better. Do the descriptors help comfort you with this?

Jim Pletl –The way I read it is that there are two different statements – one about what you are going to do and one about how you’re going to do it. I don’t see how you are going to do this. Jim referenced #18 – holistic approach. When you prioritize, it starts to give a weight to the process that may not meet the need of a particular community, State, or region. We saw quite a bit of this with integrated planning where there was an emphasis on green infrastructure. I am concerned about the emphasis on green infrastructure if it doesn’t matter. Emphasis on a holistic approach is better.

Paul Freedman – We had a 2-day meeting where the workgroup as a whole worked to summarize what occurred. The group does not state these as endorsements. This is a *summary* of the discussion; group wordsmithing did not address this issue, but might have if endorsement was intended as the outcome, which it is not. The language may be stronger than some would like, but the document was approved as a group, it was not written by a single individual. Paul asked Wendy what the process is for tweaking the document.

Wendy replied that Paul can take today’s comments back to the workgroup for wordsmithing. If the workgroup feels urgency to post the document online as soon as possible, you can ask for approval to post as a draft undergoing revision, or we can wait until issue is resolved.

It was asked if a third option is for the Chairs to undertake editing and then post or post as is. Paul commented that he has some thoughts in mind that would address the concerns brought up.

Doug McLaughlin commented that this is an appropriate way to proceed. The question in front of ACWI is whether this document can be posted? The goal is to try and get this out to a wider more publicly available audience if the document reflects the nature of the discussion with the caveat that we do not to endorse everything in there. I agree with the comment made. Doug questions what the goal is for ACWI.

Wendy added that the second option hits the nail on the head. She suggested posting the document with a statement noting that this document is not a wholesale endorsement by ACWI member organizations or ACWI as a whole.

What is the purpose of posting this? If the purpose of posting is to gather comments into a position report, then.... Paul responded that he does not think this is the purpose. The report is more of a summary of the meeting. Responding to Jim’s comment, it wasn’t as if there is 100 percent buy-in of the whole document. There is probably some leeway in tweaking the language. Paul commented that the group is happy to accommodate to meet the process. Paul noted that he would like to get something posted as a lot of time was spent on this at the meeting. It is important to recognize the group’s efforts.

Comment – It’s a good document for people to look at... terminology is working draft. By posting the document, more people will look at it and provide comments. Address areas of concern or pick up endorsements.

Wendy commented that we could post the document and invite people to comment. We could then post those comments along with the document. There are a variety of options.

Comment – This goes along with us looking forward. It’s not just about us coming to agreement on words, but to bring other up to date. This is an opportunity to get other people involved. This might help the ACWI profile.

Wendy – Let’s discuss how to proceed tomorrow. ACWI will hold the vote until tomorrow. This will give the WRACC co-chairs a chance to discuss which option best suits the original purpose of the report.

Paul commented that if ACWI gives a lot of feedback and modifies the report language, it may imply that ACWI is endorsing the report and giving the appearance that ACWI is wordsmithing all recommendations. This changes the context of the purpose for the meeting and report.

Transcript of WebEx chat log for the Climate report discussion:

- David Berry: The comments by Jim are worth noting. A few tweaks by the co-chairs of the climate group should be sufficient.
- David Langseth: I agree with the concerns raised by Jim Pletl's comments, but would still be OK with posting as long as it is very clear that this is the report of a meeting, not something that has been approved by ACWI.
- David Berry: I agree that a summary of the discussions of a subgroup are just that and posting them on their part of the ACWI does not indicate a position or recommendation of all of ACWI.
- David Berry: Calling it a draft and getting comments opens us up to input from folks that were not part of the discussions and the result would not reflect what happened. Your idea of posting comments is great.
- David Langseth: If this document is essentially just meeting minutes, why is ACWI membership approval need to post the document? Other subcommittees post minutes of meetings without running those minutes through a formal ACWI process. Does this discussion mean that this document is something more than just a report of the discussion at a meeting (i.e., meeting minutes)?

Member Roundtable –

NOAA (Tom Graziano) – We constructed a new water center in Tuscaloosa, AL (May 2015) – It has 65 staff and growing. The USGS is represented. The center is meant to be an incubator. It houses an operations center for which we do not yet have staff. There are resources for 14 new FTE to staff water intelligence and predictive capabilities. This will be NOAA’s first foray into water prediction capability, and enhances capability at 4000 stations. There are many enhancements that need to be made, but it’s a huge step forward in predicting how we forecast water. Tom commented that Don Cline had a significant hand in implementing stand up of the center. The [NOAA Water Initiative](#) (published 12/16/2016) is a cross agency plan in partnership with other Federal water agencies including USGS to create and deliver water information to meet the needs of the 21st century.

NALMS (Steve Heiskary) – NALMS has begun planning for next National Monitoring Conference but we do not yet have a date or venue (NMC, sponsored by ACWI’s National Water Quality Monitoring Council, with meeting venue logistics facilitated by NALMS). Next NALMS meeting will be held in Denver, Colorado.

WEF (Paul Freedman) – WEF is a non-profit organization of water professionals focused on water issues including using sound science for management and climate resilience. LimnoTech is a water resource consultancy. LimnoTech is involved with integrated models and operational forecasting. Both WEF and LimnoTech are involved in urban flood and resilience planning. WEF is also in collaboration with others on a variety of issues including water re-use, stormwater management and operational forecasting. Paul suggestion that this is something ACWI might consider. WEF and LimnoTech are also involved with development of sensor networks and big data. These are areas where we find a need.

AASG (Dave Wunsch) – AASG represents the State Geologists in each State. Water resource issues are included in our mission. AASG is involved with the SOGW. Roughly one-third of groundwater networks are managed by AASG.

Our annual meeting is coming up in June in Branson, Missouri. There is always a session on water resources. We will also be in Washington, D.C., in early March, where we meet with USGS and others on the Hill.

NGWA (David Langseth) – Activities were talked about earlier, so I will give a quick summary of who we are. We are groundwater officials covering well drillers to equipment vendors to engineers. We sponsor a variety of meetings. Our meetings are focused on equipment and the vendor side as well as engineers. We are a research and education foundation - publishing several journals, among these, Groundwater, Water Well Journal, and others which have specific audiences. We actively cooperate with other organizations. Groundwater Week was held in cooperation with the Irrigation Association. While our primary activity has been with the NGWMN, under the new TOR, it is conceivable that our interaction may increase with new topics.

GWPC (John Barndt) – GWPC is still highly supportive of ACWI's efforts, particularly the NGWMN efforts. We have a stake in that. GWPC is happy to see the addition of the water quantity aspect of the program. Recently, GWPC has been focused on a risk-based data management system that has been adopted by many States. We have been trying to have some State water programs use it. The next GWPC technical conference is in Boston in the autumn.

ASDWA (Darrell Osterhoudt) – We represent State drinking water programs administering drinking water programs in States. Source water protection is an important area. Three committees meet regularly to discuss resiliency and other relevant issues. There is going to be a workshop in March in Washington. ASDWA is involved with entities who participate in ACWI with source water collaborative. ASDWA hosts a webinar series on a quarterly basis – tools on collaborative site will be offered. There were a number of presentations from USGS at our meeting. We would be glad to have additional presentations from USGS or others. Annual conference will be in Norfolk, Virginia, and the Call for Papers will be coming out soon. See asdwa.org for more information. Regarding data, we are working with EPA on Safe Drinking Water Information System (SDWIS) Prime – monitoring data for States to replace SDWIS. One part, the compliance monitoring data portal is active in pilot States. This will have the potential to report more data. No specific ACWI projects at this time, but very interested in the work of the ACWI and its subgroups. ASDWA is glad to be a part of the group and is happy to support ACWI.

New Faces on Capitol Hill and in the Cabinet – Julia Jester (USGS Office of Communications and Publishing)

Julia is new to USGS. Elizabeth Goldbaum is the USGS Water Liaison. They are a team of four working on congressional outreach and growing champions of USGS science.

Julia noted that there are no changes in full committee chairs – or in areas WMA is involved with. We are working on building and maintaining relationships. There are 60'ish new members, and our team is working to introduce ourselves and what we do.

Elizabeth updated ACWI on a few items – We are working with Congress, and these meetings have been going well. It has been great to give concrete examples of what we are doing in their States. We are sharing information on upcoming events. There is a Harmful Algal Bloom (HAB) Event upcoming, and a briefing on brackish groundwater in March. Elizabeth mentioned the NAWQA report. We also have a trip to Rock Creek Park coming soon. Additionally, we have a new Instagram expected to go live during March's Water Month – USGS engages streamgages – emphasis is on endangered gages. California, Missouri, and New Mexico will share information on this.

Julia continued, commenting that there are multiple organizations represented on ACWI. We would love to engage and share information with Congressional staff in your organizations. If there are opportunities of interest, we are a phone call away.

Questions / Comments:

Bob Schreiber – I am a consulting engineer and wanted to put in a word to ensure you touch base with the [American Council of Engineers Companies](#). From a positive side, we may be tied into the brackish water event. There may be interest from ASCE as well. There are ways to participate that would be mutually beneficial. Elizabeth indicated that she will reach out as there is interest in having moderators.

David Wunsch – State geologists run a biannual liaison where they meet with staffers. The first day is a half-day with USGS. Is this meeting on your calendar? There are some legislative issues involved. Twenty State geologists are there. An introduction would be great. *Julia* commented that Chris Trent will be attending the USGS portion of the meeting. *Julia* added that it would be great to participate either formally or informally. She noted that Tim West (USGS retired congressional liaison officer) used to come to some of these meetings, and it would be good to have a closer relationship. *Julia* is the new Tim West.

Meg Jonas asked how ACWI members can keep up to date on Office of Communications briefings. *Julia* replied that she is not sure. Elizabeth commented that they have a website, but it hasn't been used in a while. Elizabeth will look into revival of this site.

Steve Heiskary referenced the HABs event and commented that this is an area where we have extensively worked. He added that *Julia* might be interested in their position statement on this and will email her that information.

Judy Beck – March 15-16 is the annual [Great Lakes Day](#) in Washington, D.C. Approximately 200 people will be there to talk about continued funding for the Great Lakes initiative.

Julia continued the presentation. Regarding the administration side, there are a lot of unknowns. On February 2, 2017, Ryan Zinke's nomination as Secretary is up for debate. As early as Tuesday, he could be approved. There is hope that we will have a Secretary next week. This will hopefully help speed up some things, for example, staffing, where he will want to travel first, and what he will learn about. USGS is encouraged by those currently in place. There have been numerous briefings over the past six weeks, and we are encouraged by the level of engagement. Every year, we take a group of Congressional staffers on a field trip to demonstrate what USGS is doing. There are a lot of familiar names that have worked for USGS who are now at the Department. *Julia* added that USGS came up a handful of times (in a positive way) when the Secretary nominee was up before the Committee on Energy and Natural Resources.

Questions / Comments:

Bob Schreiber – Regarding information coming out of the OSTP, in terms of offices within the White House, what can we expect coming up? In the past, ACWI was directed by OSTP to come up with a design of an ocean water monitoring network... USGS had OSTP support. What are your thoughts? Can we expect support from the White House?

Julia responded that she is not sure what to tell Bob on this as she is still learning. She added that she worked closer with OSTP in her private job. Not many are working closely with OSTP.

Doug McLaughlin – Regarding commitment to long-term monitoring – these activities are hard to continue to fund... To the extent that you have been able to figure this out, is there any reason for encouragement that these longer term efforts will continue to be funded along with short-term things.

Julia responded that she wishes she could provide a better answer. It is premature, but nothing indicates, so far, that those types of databases are threatened.

John Bartlewitz – Is there an appreciation regarding the strong reliance States have on USGS data, for example, streamgaging stations; particularly with drought planning? I am hoping there is a strong appreciation.

Julia commented that she is pleased that folks who know USGS well are in some good positions. We hope they are carrying this message to the Hill.

Wendy thanked Julia and Elizabeth for their participation, and Julia encouraged ACWI follow-up.

Watershed Literacy Project – Judy Beck (League of Women Voters)

Judy gave an overview to ACWI explaining the project. Change equals opportunity – sustainable stewardship.

History of capacity support – The Great Lakes water quality agreement had “areas of concern.” It was an annual issue on what we were going to do and where we were going to get money to support efforts in this area. This changed during the Obama administration. We had a generous opportunity - Great Lakes Monitoring Initiative. We do not know how long this will continue; it is authorized in the CR we have now. The future is uncertain, however.

There is no downside to organizing ourselves around watershed and function. We talk about knowing your zip code... your area code... Your HUC is your password to understanding and sustaining Lake Michigan’s watersheds. Our vision is a sustainable Lake Michigan ecosystem that ensures environmental integrity and is supported by economically viable healthy human communities.

Do we have enough data, information, and understanding to inform the decision-making process? We found that we were overwhelming folks with a lot of information and suggestions. It was difficult for them to know how to target a specific area, so we came up with watershed fact sheets to combine information on 33 eight-digit watersheds. Additionally, we set up partnerships with regional planning commissions in each State. These were not beautiful fact sheets, but they were succinct. Folks were able to get more information from these fact sheets. At meetings, we blew the fact sheets up to poster size and had folks use sticky notes to provide feedback. We found that people didn’t work at the eight-digit level; they needed the 12-digit level. We would need to look for a way to have an online site (wiki), but funding was capping the ability. Funding is needed this to sustain the activity.

Next steps and challenges included using the fact sheets to recruit local watershed groups. Many found these useful and wanted the 12-digit level. We found this was a way to develop sustainable stewardship at the local level. States helped get some of the fact sheets online. We needed to develop a business plan and have a grant application process and good partners.

In autumn 2015, Judy was successful in getting people interested in watershed literacy. The LWV is celebrating 100 years, and Judy proposed hosting 100 meetings to honor that accomplishment. They are at the halfway mark to reach that goal.

A sustainable Lake Michigan requires a sustainable stewardship network. It is important to become rooted in our school curriculums. Judy commented that we have talked at a higher level today regarding the need to bring

people together. It is important to turn data into information that is portable and understandable – something that provides a quick reference of what we are up to. This will become more challenging as funds dry up and grants are harder to get.

Judy noted that this will fulfill her contribution to the roundtable as well.

Questions:

Meg Jonas commented that this was a great presentation. One thing that cuts across is the need for information that is portable and understandable. What is the contribution of government agencies? What we can do? What are the limitations?

Doug McLaughlin thanked Judy for her presentation and the emphasis on linking data to watershed level action and decisions. Can you say something about the potential bottleneck between data availability and the tools that can be used to help inform decisions? Having enough individuals familiar with tools and data to make this happen seems like another challenge.

Judy Beck responded that this is very important. It doesn't happen automatically. How data gets out to the public is another issue. We have to develop the necessary tools. LMMC used to hold their meetings around the lake. Citizen science is important. One thing that is important is to figure out how to get this information out and in what format. Is there an opportunity for citizen science?

Regarding industry involvement, are there programs we can grow where there are scientists on board who can get kids out to do monitoring in the field? This can be life changing for students and reaps rewards for everyone.

National Water Quality Monitoring Council (NWQMC) –

Water Quality Portal (WQP) Strategic Plan for 2017-2021 – Jim Kreft (USGS)

Gary Rowe provided introductory remarks putting the WQP in context with the NSWMN. The Portal has been very successful in making water quality data available from a variety of sources in one place. This has been more of a volunteer effort. Operation and maintenance is supported by funds and in-kind services from USGS and EPA. The Council oversees direction for the Portal. We do not have criteria for data that comes into these sites. If data are entered in WQX or USGS, those datasets are queried and made available in the Portal. We are working to address issues with missing or insufficient metadata. The bottom line is that the Portal has been successful. We have asked the Water Information Strategies (WIS) Workgroup and Portal working group to come up with a 5-year plan to make it a more effective tool for disseminating water quality data.

Charles Kovatch discussed background information; the Portal stems from a 2003 Memorandum of Understanding. Early success demonstrated since 2012 launch.

- 3,000,000 hits.
- Success is in receiving and delivery of data.
- Provide various tools for delivering water quality data.

Support NWQMC goals of collaborative monitoring and outreach, serving reliable and comparable data, best practices for data management and sharing, and implementation of a national monitoring network.

The Portal includes water quality data from Federal, State, and tribal partners through the USGS NWIS and EPA STORET systems. Data input is based on the WQX data standard – a metadata profile to communicate fitness for use. The Portal is updated nightly by USGS and weekly by EPA. The Portal increases access to data and integrates publicly available water quality data through WQX. Portal usage continues to increase (reference screenshot). The expectation for quality data has driven the creation of a strategic plan.

Portal usage continues to rise

Weekly Portal Visits,
November 2013 to February 2017



- We have worked over the past 2 years to define needs.
- Vision – be the premiere source for water quality data for everyone, everywhere.
- Seeking assistance to carry this brand forward and attract more data.
- Mission – provide easy access to all water quality data and facilitate improvements in data.
- Scope – water quality data collected from discrete samples of ambient surface water and groundwater in the U.S.
- At this time, there is no plan to include continuous sensors data. We are discussing a separate track to house this data at some point in the future.

Jim Kreft discussed the portal strategy pyramid commenting that each level depends on the next.

The core of the Portal is system performance. Strategy success is to deliver high quality data quickly and reliably. Short-term, the goal is to improve data loading and system stability. Long-term, the goal is to develop an infrastructure approach to support future data access and storage needs.

Users depend on Portal data. There have been more downloads via automated tools – 1.8 million total downloads in the last calendar year – compared to manual downloads – 49,500 total downloads in the last calendar year. These are big numbers. We have a lot of people coming back to the Portal to get more data.



Beyond system performance, system quality is important. Increasing data quantity makes the Portal more useful, while increasing data quality makes data more valuable for reuse. In the short-term, we are working with partners to get more data into the Portal and improve the quality of that data. Additionally, displaying data in the Portal makes data more discoverable. In the short-term, the goal is to develop new tools to aid in data display and discovery. Long-term, we want to support a community of practice to develop new tools and share these across that community. We know we cannot meet all needs, but we want to play a role in facilitating others do Portal outreach. A broader, more educated community leads to greater awareness and usage of the Portal

Strategy and status goals are to support the NWQMC in setting goals, reporting progress, and identifying new opportunities. In the short-term, goals are to support new discovery tools, develop water quality networks, and identify collaborative opportunities. Long-term, Portal data supports NWQMC prioritization, collaboration, and decision making.

These are lofty goals, and how to make that happen is still to be worked out.

Actions:

- ACWI – decision to accept the Portal Strategic Plan.
- Portal Team and WIS – continue to report status of short-term goals, determine next steps for achieving long-term goals, and work with project sponsors to balance strategy implementation with funding realities.

Questions:

Judy Beck asked about biological data. Have you discussed who you are going to approach?

Jim Kreft replied that there is a procedure to determine who the next candidate to submit biological data is. We will soon have habitat and indices data as well.

Judy Beck – Is this going to be mostly agency data? Are you going to consider working with The Nature Conservancy? How will you determine the quality data you are going for?

Jim Kreft responded that it is not just agency data. The portal already presents citizen science data. We are working to get non-agency and citizen science data in portal. This vision is shared with EPA and the WQX system. If data can be fit to WQX, we want it in the Portal.

John Barndt – In our biological department, there are certain types of information that are confidential (for example, endangered species). I'm assuming there is a way to handle this.

Jim Kreft responded that this is a challenge we need to address. We depend on partner agencies to make that determination at this time. This issue has been brought up before.

Judy Beck asked who the contact is if think data should go into the Portal. *Susan Holdsworth* responded by instructing users to go to the Portal and use the [link for putting data into the Portal](#). There is additional information on help desk there as well. Jim or Charles can also help connect those interested with the appropriate contacts.

ACWI Action – Approval of the Strategic Plan for the Water Quality Portal –

- **Steve Heiskary** (representing North American Lake Management Society) made a motion to give ACWI approval for the 2017-2021 Water Quality Portal Strategic Plan.
- **Paul Freedman** (representing Water Environment Federation) seconded the motion.
- The Water Quality Portal Strategic Plan is approved.

Transcript of chat log for Portal discussion:

David Berry (via chat) - The level of usage of the Portal is very impressive. Congratulations! At that level, a mechanism for voluntary small payments could raise significant funds. Could that be done through a non-profit partner on the National Water Quality Monitoring Council?

Doug McLaughlin commented that the commitment to pushing this forward has been good. He has watched this unfold over time.

Recent Activities and Future Plans – Susan Holdsworth (U.S. EPA)

Susan gave an overview of the Council, its workgroups, activities and future plans. She reviewed the strategy for monitoring and the purpose of the National Water Quality Monitoring Council, referencing the TOR for the ACWI and Council, and the 1995 ITFM final report. Susan reviewed progress and gaps and informed the group of FY 2017 planning.

Council Workgroups

Working together for clean water

- > Methods and Data Comparability Board
 - > Aquatic Sensor Workgroup
- > Water Information Strategies Workgroup
 - > Water Quality Portal Workgroup
- > Collaboration and Outreach Workgroup
 - > Conference Committee
- > National Network of Reference Watersheds
- > Volunteer Monitoring Working Group



Workgroup Activities:

[Methods and Data Comparability Board](#) – Dan Sullivan, Chair, USGS

Recent Activities -

- [Sensors deployment guide](#) – In 2016, the water quality monitor guide was expanded with examples of installations in a variety of settings. These pages will be updated as other examples are received.
- [National Environmental Methods Index \(NEMI\)](#) continues as a flagship product and is now connected to the Water Quality Portal.
- Collaborate on EPA Sensor Challenges (nutrients and arsenic).
- Collaborate on EPA Inoperable Watershed Network.
- JAWRA article.

2017-18 Plans

- Training for sensors use, maintenance, deployment, data analysis, and more. Bi-monthly webinars will be held on topics related to continuous monitoring.
- NEMI – In conjunction with Portal metadata review, will review NEMI metadata to determine if it can be simplified in order to streamline new method entry.
- Decontamination protocols for sensors regarding aquatic nuisance species. Decontamination of sampling gear to minimize transport of aquatic nuisance species is a hot topic, but it is still unclear how decontamination procedures affect sensors.
- Biological Assessment Comparability subgroup is starting work.

[Collaboration and Outreach Workgroup](#) – Co-chairs Candice Hopkins, USGS, and Danielle Donkersloot, Izaak Walton League

Recent Activities and Future Plans –

- Ongoing communication and outreach includes review of social media accounts ([YouTube](#) and [Website](#)), biannual [newsletter](#) distributed to over 7,000 subscribers, [webinar hosting](#) with attendance increasing to exceed 500 participants, expanding communication to State, tribal, and local monitoring councils, reach out to the international community.
- Trainings and Certification – group will identify core competencies desired by the monitoring community, identify existing training and certification programs, and explore options to fill gaps.
- National Assessment – promote collaboration among Federal, State, tribal, and other organizations engaged in monitoring and assessment, highlight findings from complementary national assessments, develop key messages on topics of national interest such as nutrients, algal blooms, and human health issues.

Conference Planning Committee – Co-chairs Alice Mayo, USEPA, and Tim Oden, USGS

Recent Activities –

- 10th National Monitoring Conference held in Tampa, Florida, in 2016.
 - Over 700 participants.
 - 300 presentations, 70 posters, 20 workshops, short courses and panel discussions addressing topics of local and national interest (for example, continuous monitoring, algal blooms, and building and sustaining monitoring collaborations).
 - Awards to recognize outstanding contributions to monitoring:
 - Elizabeth Jester Fellows Award – Bill Wilber, USGS (retired)
 - Barry Alan Long Award – Faith Zerbe, Delaware Riverkeeper
 - Vision Award – Georgia Adopt-A-Stream

Future plans –

- 11th [National Monitoring Conference](#) will be held in 2018
 - Location TBD – Kansas City or Albuquerque.
 - NALMS (conference co-sponsor) is negotiating with venues.
 - Concerns about Federal resources for travel and limited logistical support.

[Water Information Strategies Workgroup \(WIS\)](#) – Co-chairs Mary Skopec, University of Iowa, and Aaron Borisenko, Oregon DEQ

Recent Activities and plans –

- Fact sheet series – “What your manager needs to know about monitoring” will be posted to the Web soon.
- Implement Water Data Portal strategy – increase data submission (Marketing and Training Subgroup) and increase data quality (Metadata Standards Subgroup).
- Water Quality Standards Subgroup – compile inventory of water quality standards, building on existing efforts and facilitate increased collaboration among standards, monitoring, and assessment efforts.
- Evaluate Progress Subgroup – explore metrics of progress in monitoring, council contributions.

[Volunteer Monitoring](#) – Co-chairs Danielle Donkersloot, Izaak Walton League, and Julie Vastine, Dickinson College

Partnership activities with the C&O Workgroup include providing web resources for volunteer monitoring, webinars directed at volunteer monitoring and the citizen science community, and submittal of newsletter articles for bi-annual newsletter. Regarding the National Monitoring Conference, we explore ways to assist volunteer monitoring participation in the conference through a scholarship fund, and we partner with the WIS and Water Quality Portal Workgroups to leverage and improve EPA tools for small data owners to use the Portal and develop simplified training and assistance.

[National Network of Reference Watersheds \(NNRW\)](#) – Mike McHale, Chair, USGS

[Current status of the NNRW](#) is available online – over 2500 watershed with more than 10 years of flow data. Users can download data for up to 50 watersheds at a time. In 2017, the focus will be on looking for new users and data contributors and exploring the use of open source tools, data discovery tool and R analytical tools.

Member Roundtable continued

AWRA (Harry Zhang) –

- [Summer AWRA Conference](#) on climate change solutions in Tysons, Virginia, June 25-28, 2017.
- [2017 Annual AWRA Conference](#) - November 5-9, 2017; partnering with Oregon State University Oregon Water Resources Department.
- In late January, the AWRA Board of Directors approved a [policy statement regarding flood and drought](#).

AWWA (Greg Prelewicz) – AWWA is closely tracking revisions to lead and copper rules, which are expected to change in 2017. [AWWA Annual Conference](#) in Philadelphia, Pennsylvania, June 11-14, 2017.

NCASI (Doug McLaughlin) – NCASI is a non-profit environmental research agency whose work focuses on things of importance to pulp and paper mills and forestry operations. The comments I want to make relate to the value of effort in things like reference watersheds, the Portal, among others. I think the reason those are such valuable tools is because they bring together data from different sources in order to make better decisions for water resources.

ASFPM (Bill Brown) – ASFPM has reorganized internally. We have engaged in science-based research for over a decade regarding ways to reduce flood risks. ASFPM recently established the Flood Science Center to collaborate with government and academia. They are expanding beyond their traditional mitigation realm. The National Flood Insurance Program expires on September 30, 2017, and ASFPM is involved in efforts to reauthorize, fund, and enhance the program, including flood mapping. [Get more information](#).

Bob Schreiber commented the he wants to put in a good word for the Water Census. ASCE would support this effort; we can offer stakeholder viewpoints and help show what reaction you can expect. We bring a wide range of experience to the table.

Gary Rowe will follow up with Dan on membership on sensors. Regarding national assessments, we have a separate liaison committee. We are looking from the Council perspective to bring State and national efforts together.

Adjourn Day 1

DAY 2 – Thursday, February 23, 2017

Opening Remarks – Wendy Norton (USGS)

Wendy opened Day 2 with a brief overview of Day 1 and an overview of today's agenda. Wendy thanked everyone for their participation. She reminded everyone that there will be a face-to-face meeting in late summer/early autumn. We'll know more about DOI leadership at that point, and the WMA reorganization will be in effect.

Subcommittee on Hydrology (SOH) – Siamak Esfandiary (FEMA)

Siamak noted that the goal today is to give an overview of the SOH, its activities, and future plans. He gave an overview of the purpose of the SOH. Activities include quarterly meetings, workgroup meetings, web activities, announcements, and conferences. A review of SOH member organizations was shown in a slide. The SOH has four active workgroups – the Hydrologic Frequency Analysis Work Group (HFAWG), Extreme Storm Events Work Group (ESEWG), the Hydrologic Modeling Work Group (HMWG), and the Satellite Telemetry Interagency Work Group (STIWG); also, initiation of a Streamflow Information Collaborative and a proposed work group on filling “data gaps.”

Satellite Telemetry Interagency Work Group (STIWG) – LySanias Broyles, Chair (USACE)

- User group for the GOES DCS.
- Advises NOAA NESDIS on matters concerning satellite data relay user requirements.
- Projects benefit the GOES DCS community.
- New TOR in 2017.
- Clearinghouse on values of GOES and radio spectrum issues.

Hydrologic Modeling Work Group (HMWG) – Jerry Webb, Chair (USACE) and Claudia Hoeft (USDA NRCS)

- Promotes sharing information on modeling tools and systems in hydrology and water resources.
- Plans, organizes, and promotes the Federal Interagency Hydrologic Modeling Conference every 4-5 years.
- Engages in other modeling-related activities.
- Held the 15th Federal SED-HYD Conference 4/19-20, 2015 – 350 in attendance, 240 technical papers and extended abstracts, 11 short courses.

Hydrologic Frequency Analysis Work Group (HFAWG) – Will Thomas, Chair (Michael Baker International/ASFP) and John England, Vice-Chair (USACE)

HFAWG was formed in 2000 with the purpose of improving [Bulletin 17B](#). Most of our time has been spent working on flood frequency. The current guidelines (Bulletin 17B) were published in 1982. Based on research from the 1960s and 1970s, these guidelines can be improved. We are in the process of updating the guidelines using research since 1982. New statistical procedures for analyzing historical floods and non-standard flood data are being incorporated as well as adjusting for low floods. The new guidelines will be published as [Bulletin 17C](#) by the USGS as a USGS Techniques and Methods Report. The document is considered “highly influential science” and involved preparation of a communication plan.

Since the last meeting in October 2015, the SOH approved five external peer reviewers for USGS review of Bulletin 17C. A public comment period was held from February to April of 2016 with 50 comments (mostly positive) being received. The co-authors of Bulletin 17C drafted responses to these comments. A revised draft document was

prepared based on comments from HFAWG and SOH members. As of February 2017, one set of peer review comments is outstanding.

- Will recognized Tim Cohen's significant contributions to this effort. Tim passed away on Monday, February 20, 2017.

We are improving the 8/26/16 draft document. Bulletin 17C will be revised based on peer review comments and will be published once these comments have been addressed. More information will be posted on the [HFAWG website](#).

Software, examples, and training materials can be found on the HFQWG website, and training courses will be offered through Federal agencies and technical conferences.

Extreme Storm Events Work Group (ESEWG) – Thomas Nicholson, Chair (USNRC) and William Otero, Vice-Chair (USACE)

Since the last meeting, we have a new Vice-Chair, William Otero (USACE). The ESEWG's main goal is to coordinate studies and databases for reviewing and improving methodologies and data collection techniques used to develop design precipitation estimates of large storm events. A detailed work plan has been developed. We are working to determine the necessary funding requirements to update the Catalog of Extreme Storms and Hydrometeorological Reports (HMR) for estimating PMP.

Since the last ACWI meeting, we have had a series of workshops.

Key Activities:

- Broad recommendations from scientists, regulatory agencies, and dam owners including 21 States and eight Federal agencies to address needs:
 - Update NOAA HMRs using recent storm data
 - Develop guidance to review regional and site-specific PMP estimates
 - NOAA Atlas 14 completion and future updates
 - U.S. Extreme Precipitation Database
 - Guidance for using statistical approaches to update PMP estimates
- Briefing on USACE's HEC – MetVue: A Tool to Analyze Rainfall Data from Storm Events by Charles McWilliams (USACE).
- Meeting on NASA's Precipitation Monitoring Program by Dr. George Huffman (NASA – Goddard Space Flight Center).

Proposal for Streamflow Information Collaborative Work Group – Doug Yeskis (USGS)

The USGS reorganized their program funding mechanism last year. I am the coordinator for the Groundwater and Streamflow Information Program. Goals of the work group would be to:

- Coordinate national streamflow information network priorities.
- Identify opportunities for coordination, innovation, technical transfer, training, and leveraging of resources (including foundational datasets, data management systems, and scientific tools).
- Create cohesive strategies which address the value, uses, economic benefits, and critical gaps in our Nation's streamflow network.
- Develop effective mechanisms to "get the word out" (telling "our" story).

- Increase engagement and knowledge with the data partners and stakeholders of streamflow information.
- Develop issues for future priorities.
- Develop recommendations for future SOH consideration in supporting the national streamflow information network.

Key activities to date include approximate monthly call since May 2016, development and finalization of Streamflow Information Collaborative Charter which we will present at the next SOH meeting, and exchange of information on previous committees, identifying information needs of this work group, previous streamgage network evaluations, and network gap analysis.

Upcoming Activities will include looking at integration of data. We will be convening an internal USGS work group to look at our internal networks as well. We hope to have a joint meeting between these groups. This is a good opportunity to look toward the 21st Century and beyond.

Questions / Comments:

Bob Schreiber commented about monitoring groundwater.

Judy Beck commented that there is the possibility we might get funding for infrastructure, and it seems there is important information to be shared. This is important as we move forward. There are footnotes about standards. This is something that could easily get lost in the rush to do infrastructure projects. Have you thought about this?

Doug Yeskis – We have had infrastructure discussions and have raised this up as something to be considered. We recognize this might be beyond USGS/DOI., and need to look at this from a more holistic outlook. This is a process we are just starting. Look beyond traditional approaches.

Susan Holdsworth asked if Doug talked about how they are incorporating lakes into this network.

Doug Yeskis responded that he did not mention lakes. This is something we will have to talk about as a group. Doug will make note of this and also asked Susan to send him an email to ensure he brings it up to the group.

Tom Nicholson commented that States have been very involved. There is a national need that we are trying to identify in a collegial sense. He is very interested in how we capture this new information.

Proposal for Work Group on Observational needs and filling data gaps – Ted Engman (SOH)

The proposed workgroup would report on current procedures for dealing with missing or non-existent spatial and temporal hydrologic data and identify and describe new technologies for dealing with missing data. A proposed report outline was discussed.

Questions / Comments:

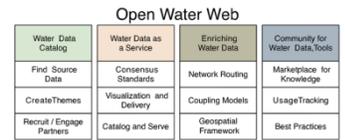
Will Thomas commented that the work being proposed is consistent with and could enhance and be what Doug was talking about. This could be useful as it is more comprehensive than previous USGS network analysis.

Tom Nicholson commented this will help our effort with extreme storms and supports Ted's proposal.

Subcommittee on Spatial Water Data (SSWD) – Ed Clark (NOAA) and Al Rea (USGS)

An overview of the subcommittee and its structure was given. We started as co-chairs of the SSWD about 2.5 years ago. The subcommittee had low activity, and we are trying to revitalize it. The SSWD was asked to plan the Open Water Data Initiative (OWDI) – Open Water Web effort and move it forward. The Open Water Web framework was reviewed and explained. It serves as a “roadmap.” Al encourages anyone working with water data to tie it to a common geospatial framework. We are building a community for water data tools where best practices, code, and more can be shared. Al reviewed various use cases. We are not tasked to come up with a solution to all problems, but to identify the datasets needed for these types of applications to be built and work towards getting these out in public domain in an interoperable format. Al commented there has been good progress on these.

Open Water Data Initiative (OWDI) Roadmap

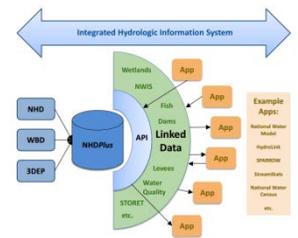


Subcommittee on Spatial Water Data



Ed Clark continued, discussing flood interoperability. Work with academics to demonstrate computational resources and maturation of models were able to do hydrologic predictions. Key determinations – leverage NHD with core science and EPA. Flow continuum model – a national stream network, atmosphere to oceans, coast to coast, 1 km grid across the Nation. This is our first foray into high performance computing.

The importance of this experiment was not just demonstrating in an academic setting. The experiment was one of the major contributing factors to NOAA’s National Water Model v. 1.0. Leverage best of geospatial hydrology community. Leveraging the community to determine the framework steered us into high performance computing. This is a backbone for NOAA’s integrated water information services, and is an exciting group to work with.



The system is based on a core framework of geospatial data – 3 datasets (WBD, NHD, 3DEP) (USGS) are used. These are integrated into the NHPlus dataset (an integrated suite of geospatial flow volume and velocity data to support modeling) which becomes the framework that the rest of the data link to. Through APIs, other datasets are linked to NHPlus. This is how we reference data to the surface water stream network. We are trying to formalize our ideas and move to the next step.

Al provided background on the evolution of this in order to understand where we are in the framework.

NHPlus HiRes Development – Addresses the need for a single hydrographic frame of reference. Link data to one network and generalize to many scales.

There were precursors to NHD – a couple of groups went in different directions. One direction was to local/State applications and the other to regional/national applications. Most of the US is 1:24000 scale. There is a hybrid of different scales and resolutions. We have put a lot of work into joint maintenance of the dataset with others. We need to get the community back from being split into two groups, and focus efforts and resources on building one standardized network that we hope will meet everyone’s needs.

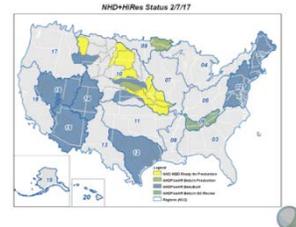
Referencing the map, our goal is to complete the shaded areas this year. We began 2 years ago.

Current status – reference map.

Our strategy going forward with HiRes – we are hoping to get this out in the next few weeks. We will refresh the data product as we work with others to identify errors.

Other activities with OWDI and SSWD –

Data inventory dashboard – Developed by TNM group to showcase the inventory of data resources compiled by the SSWD Water User Workgroup. The inventory is registered in ScienceBase and categorized by whether data are openly accessible. We are hoping to use this as a template for other work groups and have them build similar dashboards for community use. This will be a curation of our most valuable data resources.



Network Linked Data Index (NLDI) – Developed by USGS, in collaboration with EPA, the NLDI is a search engine for hydro network-linked data that understands how data points are related to each other due to the underlying geospatial framework. It queries using NHDPlus. The application is designed so that any surface-water data can be linked and shared via web services. ([Open Source](#)) There is almost no limit to what we can do with the system.

One possible new use case is an aquatic ecology use case. We have had discussions as part of SSWD meetings, and we are forming an exploratory working group.

OWDI resources:

- National seamless NHDPlus V2.1 download: <https://www.epa.gov/waterdata/nhdplus-national-data>
- Water Use Datasets Inventory: <http://viewer.nationalmap.gov/apps/owdi/>
- ArcGIS Online web map showcasing some OWDI data services: <http://arcg.is/2cRsJgK>

Questions:

Susan Holdsworth – Can you provide more information on the aquatic ecology group? What technical experience is needed?

Al Rea responded that the idea was proposed by Sandra Fox. She suggested looking at flow and flow duration and wetlands. Al suggested that the group make the use case broader, but it will be up to the group to decide what the scope will be. They are open to discussion. Let Al know if you know of interested folks and he will facilitate contact with Sandra.

Susan Holdsworth – Regarding the discussion about value added attributes with different groups looking at things. How do you foresee these efforts being pulled together?

Al Rea responded that the concept is that the NLDI will be where you search for data of interest. It's very new and is evolving. Use the NLDI for data discovery. It only needs folks to add data to the framework and register it with NLDI. Dave's group has built major pieces, but there is more to be done. Registering a dataset is not available now. Email Dave about datasets. If it can be a web service, then it can be used.

Dave Blodgett added that Al's answer is spot on to our thinking. Remember, the NLDI is intended to be a search engine and index what is available. We are working with an initial set of characteristics that will

allow you to search for certain things. The set of characteristics will be driven by the set of use cases for research. I do see a time when NLDI has a set of characteristics it will link to. Governance can be established once things are more fleshed out. The number of characteristics is exploding, and we won't be able to bring them all in to the system.

Rick Hooper commented that he is glad to hear about the web service interface. In the context of ACWI, we'll need to get a subsurface geographic reference network too. Have you thought about continental scale geohydrology? It's something we've looked at in the academic community. Has this been discussed, and has SOGW been involved? CUAHSI can help facilitate connections.

Al Rea responded that they have discussed the issue, beginning with a group of users in the modeling community, and they agree this is needed. We're not currently including it in the geospatial framework described earlier. There are places where it is possible to hook in to NHDPlus, and we've been talking about how we might be able to incorporate these things. It is important, and yes, daunting, but we are in the beginning stages of discussion.

Bill Cunningham commented that SOGW can assist with this, and so can the USGS Office of Groundwater. We have several things in progress now which would be useful.

Dave Blodgett – There is also a project beginning that involves linking new surface water hydrologic features standard with existing observational time series and rating curve standards and international groundwater standards. How we use those standards together will give us some idea of how we need to proceed.

Bob Schreiber – NGWA has started groundwater monitoring advisory panels – this is a resource to draw upon. From an ASCE standpoint, groundwater/surface water interaction has always been important. ASCE is another resource.

Dave Wunsch – We should keep in mind that it's not just the aquifers we need to understand; the stuff between the aquifers is also important to understanding the flow. This is crucial for creating a national model.

Al Rea – It sounds like we have a lot to talk about. We should start talking between our subcommittees.

Bill Cunningham (via chat) – Here is a URL to the hydrogeologic framework data that I mentioned via telephone: <https://water.usgs.gov/ogw/gwrp/activities/HydBndsData.html>

Assessment and Regulation of Per- and Polyfluoroalkyl Substances in New Hampshire Drinking Water - Brandon Kernen (New Hampshire Department of Environmental Services)

Brandon noted that this is an issue everywhere. His presentation provided an overview of Per- and Polyfluoroalkyl substances (PFAs) – their sources, occurrence in the environment, and public health concerns. The presentation focused on New Hampshire's experience with PFAs. Additionally, he identified to ACWI, areas where more information and assistance are needed to address PFAs.

Highlights:

- Information on PFAs is rapidly evolving.
- PFAs are of concern in terms of health – measured in resident's blood.
 - Major Exposure through diet, drinking water, soil/dust ingestion.
 - Most people have been exposed to PFOA/PFOS through every day commercial products.

- PFOA and PFOS being replaced by other PFAS with no health information.
- PFAs are used in a wide variety of industries and commercial products for their properties (fire resistance, dust suppression, and oil, stain, grease and water repellence):
 - Fire-fighting foam
 - Teflon pans, pizza boxes, popcorn bags, food wrappers
 - Polishes, waxes, paints, stain repellents, and cleaning products

PFAS Information Needs:

- Drinking water quality guidance for PFAS
- Update Clean Air Act to address air emissions that may contaminate drinking water
- Standardized analytical techniques for PFAS to reflect current technology
- PFAS reporting so that entities know where these compounds are being stored and used
- Clean Water Act – surface water quality standards
- Soil/biosolids standards to protect water quality and food safety
- FDA market basket studies to assess levels in food/sources of PFAS in food
- PFOA and PFOS in imported products – not addressed by the EPA C8 phase out agreement
- Exposure pathways to PFAS other than drinking water and recommended mitigation measures
- Financial assistance to sample PFAS in small community water systems and private wells

Questions:

Judy Beck – This has been a major issue in the Great Lakes. You might want to contact Edwin Smith in the US EPA Great Lakes Program Office who has worked on this issue for many years.

Dave Wunsch – What are the health risks associated with these chemicals? For example, pregnant and nursing women are a concern. What are other concerns?

Brandon Kernen – Most of the toxicological studies are based on mice/rats and don't look at the human impact. The non-cancer effect is related to accelerated puberty, low birth weight and bone problems. There is long list of potential effects including some types of cancer.

Member Roundtable (Continued)

Erick Loucks (ASCE) – ASCE is the largest organization of civil engineering professions – 150,000, in 177 countries; comprised of 9 technical institutes. ACWI representative are representatives from the environmental and water resources institute. We will be offering 4 conferences this year:

- 9th International Perspective on Water Resources and the Environment – January 4-6, 2017, Wuhan, China
- EWRI Congress – May 21-25, 2017, Sacramento, California
- Hydraulic Measurements and Experimental Methods – July 9-12, 2017, Durham, New Hampshire
- O&M OF Stormwater Control Measures – November 6-9, 2017, Denver, Colorado

2018-2020 Conferences:

- EWRI Congress – June 3-7, 2018, Minneapolis, Minnesota
- Low Impact Development – Southern location TBD
- 10th International Perspective on Water Resources and the Environment – TBD

- EWRI Congress – May 19-23, 2019, Pittsburgh, Pennsylvania
- Watershed Management Conference – TBD (2020)

FY 2016/17 pubs –

Manuals of practice, tech reports, proceedings, standards – will post to ACWI web.

We have also published other guidelines, books, standards of practice, and have seven or eight in the pipeline for publication this year.

ASCE also has 30 journals – all are excellent with high impact factors. Encourage use of these.

Special initiatives –

- Input to ASCE Public Policy
- Partnership with WE&F on EPA CLASIC project
- Partnership with TNC on naturally resilient communities
- Partnerships with AWWA and WEF on joint Manuals of Practice
- World Water Council and the 2018 World Water Forum in Brasilia

Almost all are partners with agencies that are represented on ACWI.

ASCE put out resolution 550 – an official policy – role of science and engineering research in the government. This was put out shortly after the new administration came in.

ASCE is a board member of the World Water Forum.

Bob Schreiber – What does the policy document say?

Eric Loucks responded that it must be informed by the facts.

Eric (via chat): ASCE Policy 550: scientists and engineers employed or funded by government organizations must be permitted to communicate their unclassified findings and assessments not only to each other but also to policymakers and to the public in an unfettered and timely manner.

NACWA (Jim Pletl) – Represent public wastewater agencies... NACWA is spending a lot of time on nutrients and pathogens. EPA is working on recreational water quality for coliphage. There is not a lot of this monitoring going on, so any monitoring will be important. Nutrients still continue to be a challenge for surface water in the U.S. Affordability of customer rates is becoming a bigger and bigger issue. NACWA is also spending time on the concept of the water utility of the future (with WEF and others). There is a lot of interest and energy going into this concept. What will wastewater and storm water organizations look like in the future? We are focused on Water Week – March 19, and we are part of the national water policy fly-in. There is a lot of focus on Capitol Hill related to water issues. It is important to communicate the importance of water quality. This is the one time each year that we focus on the value of water in Washington, D.C. I find it beneficial.

USACE (Meg Jonas) – USACE is a large water resources organization so it is not easy to pick the most important things to talk about. Meg referenced the Federal Engineer of the Year and highlighted USGS support – we rely on your data and work with it. Meg discussed tools which allow ASCE to provide better support. River engineering – we created a Corps-wide working group.

CUAHSI (Rick Hooper) – Jerad Bales is the new CUAHSI Executive Director. Rick emphasized support for USGS. There is a question of reconsidering our strategy, and there are good opportunities there. We are working with Ed Clark and are helping with Summer Institute. CUAHSI is becoming more institutionalized and more structured. The National Science Foundation is very supportive. CUAHSI is interested in having the academic community explore the National Water Model.

Climate Adaptation Work Group (discussion continued from yesterday) –

In follow-up discussion from yesterday, Paul Freedman laid out potential solution regarding the group's report. We appreciate the suggestions on numbers 18 and 19. Paul agrees that the wording could have been better in addressing this issue. However, the document went through work group approval. Approaching this, Paul is concerned with it appearing that ACWI is meddling in subcommittee wording and publications. He has a handful of wording changes prepared, if that is the route taken. However, the preferred option would be to post, accept comments, and have comments formally added to the report as an addendum. This has been done before. Those would become part of the document and would serve to clarify what is better recommended. The document should have had a statement to "minimize where practical." Paul encouraged each ACWI member to send one or two sentences that state better wording would be such and such or express concern about how the wording could be misinterpreted.

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Questions / Comments:

Why can the document not be posted as meeting minutes?

Wendy Norton – The document is not exactly meeting minutes. It is an appendix. It is a result of the discussions from the meeting. Working groups that talked and the full subcommittee came together with a vetted product during a teleconference.

Paul Freedman – It is a synthesis of the discussion. If ACWI wants us to change the wording, this elevates it to a higher status. We are content to post as a synthesis of discussions.

Dave Wunsch – As a work group, it makes sense to post this as a synthesis. It becomes a different process once ACWI vetting is requested.

Wendy Norton asked if this approach works for others on the call.

Steve Heiskary – Yes, this should get out there, don't let it get buried. It is an important discussion at the national level. This committee should be able to get their thinking out on this.

Paul Freedman commented that timeliness was an issue with this, so we could get it this meeting completed and discussions posted. The report synthesizes the discussion.

Doug McLaughlin – The only hesitation I have is that the bullet points don't best reflect the text. The document goes back for cleanup and comes back to ACWI. We don't have to agree with everything. It can then be posted as an addendum to the minutes.

Paul Freedman – Concern with modification is that this delays the document too long, and it looks as if ACWI is meddling.

Doug McLaughlin – We want to avoid the latter. If the subcommittee is sufficiently happy, then I'm comfortable moving this forward for posting with the mentioned caveat.

Wendy Norton asked for comments or objections to this approach.

Jim Pletl – When I looked at this, it's got ACWI at the top of the first page. It is a report of recommendations, and this is what ACWI does. My concern was that this document would be interpreted as a recommendation of the Federal Advisory Committee. If the title needs to be changed to better reflect what it really is, then maybe this addresses the issue. I am not comfortable that it appears to have ACWI's stamp of approval.

Wendy Norton – A title change is not difficult, and a clarifying statement works. We can make a note that it is not an official product of the ACWI. The document does not include ACWI recommendations.

Jim Pletl commented that in this way, you approve the spirit of the workgroup.

Judy Beck suggested coming back with a full recommendation at a later date. This is the power of the process -- how we are moving forward with the work done by the work group.

A comment was made that there is a lot of good work here to move forward as a set of ACWI recommendations.

Paul Freedman – Then our course sounds like we will modify the title accordingly and then we will post the document, without comment. I will then take the idea of formal recommendations back to the work group for consideration as a worthwhile and practical effort. This would require more examination of the issues, more exact editorial composition and more thorough consensus. Paul will bring this up on a future workgroup agenda.

Wendy Norton commented that this sounds like a good approach. John McShane concurred.

Sustainable Water Resources Roundtable (SWRR) – David Berry

We are mainly a forum. David provided a brief summary of the groups meetings.

SWRR meetings are open to the public. We have a lot of co-hosting organizations and use this as a constant opportunity for outreach. We are constantly getting the word out to new people.

Since we last reported to ACWI:

- SWRR at National Renewal Energy Laboratory (NREL) – Water and Energy issues in the West – July 19, 2016, Golden, Colorado.
 - The meeting focused on issues in the west. There was a lunch speaker from USBR.
 - This is the beginning of where we have to start thinking about whether we'll have to change the "climate change" name.
- Sustaining Water Resources in the Mid Atlantic – Issues, Information, and Innovation – December 6, 2016, University of the District of Columbia, Washington, D.C.
 - The University of the District of Columbia is an urban land grant university (an urban agricultural university).
 - Good overarching talk about managing water risk and resilience in a changing climate; panel on regional issues.

- SWRR at Florida Gulf Coast University – December 14-15, 2016.

Next Meeting –

New Orleans; co-sponsored by the Water Institute for the Gulf (TWIG) and the Florida Earth Foundation.

- Tentative date is May 25-26, 2017.
- This will be SWRR's first time in New Orleans.
- Anticipate this will involve a lot of participation.

We meet new people at new organizations at all of our meetings. There are amazing things these subgroups are doing. It's clear that we need to let you know where SWRR is going to be so that you can be involved. One of our better meetings was when ACWI subgroups were at our meeting. This may enhance the richness of what ACWI's subgroups are doing.

Questions:

Susan Holdsworth – This sounds great. We appreciate your running through the meetings and the conversation and feedback generated. I am curious about the next meeting and want to be sure that EPA is plugged into that meeting. How do I get information on the meeting agenda?

David Berry commented that Susan is on the SWRR email and should receive that information. For those not on the list, part of our step up will be to ask Wendy to send notification out to ACWI co-chairs. David added that he is sure SWRR is missing people.

Wendy Norton responded that she can forward relevant information to chairs, and members.

David Berry – We will be going to New Orleans early to network before the meeting. We'll have more firm information and dates for planning the meeting. This will allow us to get to the right topics for that part of the world.

Bob Schreiber commented that he forwards the emails sent by Tim Smith to a wide distribution in his company. These are a great communication tool. More specifically, do you have anyone from ISI – the [Institute for Sustainable Infrastructure](#) as a contact?

David Berry responded that no one comes to mind. David asked Bob to send him an email to remind him to bring this up at tomorrow's steering committee.

Paul Freedman commented that years ago he was active in the SWRR. He commends David's leadership in exposing new information and educating others by moving meetings to different regions.

Stan Bronson – Florida Earth Foundation

Stan discussed a program between the [Florida Earth Foundation](#) and the Netherlands where they take approximately 130 people to the Netherlands to explore infrastructure. In the last couple of years, we have focused on resiliency issues. This year marks our tenth anniversary. Robert Wilkerson got the idea to have SWRR workgroup representation on the next delegation. We are extending this offer to all of ACWI. Additionally, in this next delegation, we are going to have a subgroup of national labs. One of the goals of the group is to develop a partnership between global labs and earth sciences. Labs will be coming from the United Kingdom, Australia, U.S., and Germany. There will be a day and half of formal program.

- June 19-23, 2017
- Operate at UN University

This is a good opportunity to meet worldwide water experts.

Action: Wendy will forward information on upcoming SWRR meetings to ACWI members and chairs of ACWI subgroups.

Subcommittee on Sedimentation (SOS) – Meg Jonas (USACE)

Meg gave an overview of the SOS noting that it promotes collaboration on sediment issues, advances in information gathering, storing, and sharing, and decision making about natural resources management and environmental protection.

SOS efforts:

- The National Stream Morphology Database (NSMD) – Matt Collins (NOAA)
 - Convened an ad hoc subcommittee to make specific recommendations for advancing a national stream morphology data exchange.
 - Pursuing a fully-funded study to more deeply examine the data needs of the community and existing databases.
 - Several proposals have been submitted and the subcommittee is considering responding to other solicitations.
- *Joint Federal Interagency Sedimentation and Hydrologic Modeling (SEDHYD) Conference* – planning for 2019 – Tim Randle (USBR) lead; SOH committee
 - Last SEDHYD was April 19-25, 2015, in Reno, Nevada.
 - Next SEDHYD will be held in 2019.
 - Tim Randle is the lead for the planning committee.
 - Goal is to have a hotel selected and contract signed by July 2017.
- *Climate and Sediment Work Group* – **NEW** – Matt Collins (NOAA-NMFS)
 - A charter statement has been drafted and approved by the SOS.
 - Objectives:
 - Develop briefing papers on relevant issues in climate/sediment organized by region since issues/impacts will vary by region.
 - Facilitate communications about climate/sediment issues between SOS task committees and the research community, practitioner communities, and general public. Activities could include convening topical sessions at SEDHYD and a one-page primer posted on the SOS web page.
 - Identify where climate change should be considered in the deliverables of other work groups and bring relevant science to the development of those products.
- *Environment and Infrastructure Work Group* – **NEW** – Tim Randle (USBR)
 - Outline developed and writing assignments have been made.

- Goal is to produce a 15-20 page white paper describing how to make infrastructure more resilient to changing river conditions and compatible with the environment with respect to sediment.
- *Dam Removal Analysis Guidelines for Sediment* – Tim Randle (USBR)
 - Guidelines are in peer review as they incorporate new information learned from the Elwha River Restoration Project.
- *Reservoir Sedimentation Database (RESSED/RSI)* – USACE, USBR collaboration
 - Original reservoir sedimentation database – 6,618 surveys of 1,824 reservoirs. This was based on a paper form from the Soil Conservation Service with data released in periodic reports.
 - RESSED is online and available in three formats.
 - RSI – Oracle database; USACE – the majority of reservoir sedimentation data is in RSI for 800 reservoirs; USBR – 237 out of 238 dams have been entered in RSI and reservoir sedimentation data is being added. The hurdle of access has been resolved.
 - Meg reviewed some of the uses of sedimentation data.
- *National Reservoir Sustainability and Sedimentation Team (NRSST)* – Tim Randle (USBR)
 - **ACWI approval sought for position paper.**
 - Approximately 20 members representing Federal, State, and academic entities.
 - Goal is to develop and describe practical options for managing sediment for long-term reservoir sustainability in the U.S.
 - Raise awareness of reservoir sedimentation issues and present ideas for achieving reservoir sustainability.
 - Reservoir sustainability resolution approved by ACWI after the 2015 meeting.

Tasks:

- Provide training on reservoir sedimentation and sustainability.
 - SEDHYD - Short course on reservoir sustainability, technical sessions
 - Planning for future training webinars
- Provide a web-based resource to help answer questions from agencies and the public.
 - Developed a list of FAQs and answers
- White paper on reservoir sedimentation and sustainability is a high priority.
- Develop interagency protocols for web-based storage and retrieval of reservoir survey datasets.
- Encourage storage of existing and newly acquired capacity information in the national reservoir database.

Activities:

- Workshop at the Denver Federal Center, October 18-19, 2016.
- Continued work on the white paper which will address the importance of sustainable reservoir sediment management and implementation methods.
- Approval of one page position paper.

Management of Reservoir Sedimentation for Long-Term Sustainability

- Position paper for ACWI concurrence and approval.

- Reservoir sustainability = sediment continuity NOW rather than LATER!
- Meg discussed the position paper and noted that the SOS is seeking ACWI approval.

Questions / Comments:

Following the presentation, there was discussion regarding language in the document with comments from several members over concern about there being a libel issue. There was a suggestion to strike the sentence in question.

Wendy Norton suggested adding a sentence near the beginning – “sediment.... Are to be encouraged, but we must recognize that there will always be some amount of sediment that flows into a reservoir....”

David Langseth provided an alternate suggestion. “Basin wide management plans should be considered as one of the tools....” The rest of the document focuses on the sediments passing through.

Doug McLaughlin – My question comes from the fact that I don’t know anything about the regulatory impediments. I’m uncomfortable weighing in without more knowledge. The objective is well placed, but I am not good at endorsing things I don’t know much about.

Wendy Norton – What is your solution? Would you like a more in-depth briefing? Or, do you want to go back to your colleagues and research on your own? What would satisfy your questions?

Doug McLaughlin replied that a more in depth briefing would work – even a document that already exists would suffice.

A comment was made that there needs to be a statement about more holistic management and consideration of basin characteristics.

Judy Beck suggested that what is here needs to be hooked onto some other things. The last sentence is weak in making this make a difference. Calling upon local and State agencies is a nice thought, but that’s all it is. Is the subcommittee willing to facilitate some discussions? If it’s a problem we know will get worse, we should be more specific on the action.

Meg Jonas – This is the same language that we used in other things. This encourages Federal agencies to incorporate the known facts to plan for the future and evaluate future outcomes. This is the initiation of this. It would be enormously helpful to take the conversation off the grid.

John McShane – I agree with the other comments and agree this issue needs to be addressed. Encourage OGC and BOR to take a look.

Wendy Norton commented that we’re not at a point where ACWI members are comfortable voting on this today. We will send this back to the SOS and have more conversation about it. Perhaps those who have concerns can get in touch with me, and I will connect you with the SOS to resolve your questions. Is this reasonable?

- Yes send back to SOS with strong support for the concept. The devil is in the details of the language.
- Wendy will send out a marked up copy. She is hopeful we’ll resolve this soon. When we are ready for a second try at a vote, we can do an email vote.

Summary of discussion: Some ACWI members felt they don’t know enough about the issue of sediment management in reservoirs to vote on the resolution. The members requested that SOS rework some of the language in the resolution and then schedule a more in-depth briefing for interested ACWI members during March

or April. After that briefing, the resolution will be resubmitted to the full ACWI for a vote (which will be conducted by email).

Review of Action Items and Closing Remarks – Wendy Norton (USGS)

- It has been a productive meeting. Thank you all for staying on the phone for 2 days.
- Wendy reviewed actions from the meeting.
- Wendy will stay on the line for the public comment period.
- Presentations will be available online next week.

Comment - Thank you to Wendy for keeping things moving. It has been an interesting 2 days.

Public Comment Period

No public comments were received.

Meeting Adjourned

Attendees

Adam Carpenter, AWWA
Al Rea, USGS
Bill Brown, ASFPM
Bill Cunningham, USGS
Bob Schreiber, ASCE
Brandon Kernen, ASDWA
Candice Hopkins, USGS
Caty Clifton, USFS
Chandra Pathak, COE
Charles Kovatch, EPA
Darrell Osterhoudt, ASDWA
Daryll Pope, USGS
Dave Blodgett, USGS
David Berry, ACWI-SWRR
David Langseth, NGWA
David Wunsch, AASG
Deirdre Mason, ASDWA
Don Cline, USGS
Doug Curtis, BLM
Doug McLaughlin, NCASI
Doug Yeskis, USGS
Edward Clark, NOAA
Elin Betanzo, Northeast-Midwest Institute
Elizabeth Goldbaum, USGS
Eric Loucks, ASCE
Erica Brown, AMWA
Gary Rowe, USGS
Greg Prelewicz, AWWA
Harry Zhang, AWRA
Irqa Nasir, EPA
James Kreft, USGS
Jason Gallagher, Lewis-Burke Associates
Jeff Peterson, EPA
Jessica Lucido, USGS
Jim Kreft, USGS
Jim Pletl, NACWA
Joe Fillingham, WellIntel
Johanna Kovarik, USFS
John Barndt, GWPC
John McShane, ASFPM
Judy Beck, LWV
Julia Jester, USGS
Karen Metchis, EPA
Kim Martz, USGS
Laurel Schaider, Silent Spring Institute
Lauren Schapker, NGWA
Marc Dettmann, U.S. Water Partnership
Mary Skopec, NWQMC / University of Iowa
Masoud Mahdisoltani, CDM-Smith
Meg Jonas, COE
Meredith Carr, NRC
Mia Drane-Maury, USGS
Mike Eberle, USFS
Nate Booth, USGS
Paul Freedman, WEF
Rick Hooper, CUAHSI
Robert Mace, WSWC
Ron McCormick, BLM
Sara Larsen, WSWC
Sheri Alcalde, USGS
Siamak Esfandiary, COE
Sonya Jones, USGS
Stan Bronson, Florida Earth Foundation
Steve Heiskary, NALMS
Susan Holdsworth, EPA
Ted Engman, SOH
Teri Angst, SL Environmental Law Group Thomas
Tom Nicholson, NRC
Tim Randle, BOR
Tim Smith, USGS (Ret)
Tom Graziano, NOAA
Tony Willardson, WSWC
Wendy Norton, USGS-ACWI
Will Thomas, ASFPM

Attendees with unknown affiliation:

Dan Auerbach
Dominic MacCormack
Kiran Pande
Lisa Huff
Marvourneen Dolor
Richard Rogers
T. Mack

Frequently Used Acronyms

AASG	Association of American State Geologists
ACWI	Advisory Committee on Water Information
AGU	American Geophysical Union
AMWA	Association of Metropolitan Water Agencies
ARS	Agricultural Research Service
ASCE	American Society of Civil Engineers
ASDWA	Association of State Drinking Water Administrators
ASFPM	Association of State Floodplain Managers
AWRA	American Water Resources Association
AWWA	American Water Works Association
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
C&O	Collaboration and Outreach Workgroup
COE	Corps of Engineers
CUAHSI	Consortium of Universities for the Advancement of Hydrologic Sciences, Inc.
DOI	Department of the Interior
EPA	Environmental Protection Agency
ESEWG	Extreme Storm Events Work Group (Subcommittee on Hydrology)
FEMA	Federal Emergency Management Agency
GOES	Geostationary Operational Environmental Satellite
GWPC	Ground Water Protection Council
HFAWG	Hydrologic Frequency Analysis Workgroup (Subcommittee on Hydrology)
HMWG	Hydrologic Modeling Work Group (Subcommittee on Hydrology)
HUC	Hydrologic Unit Code
ICWP	Interstate Council on Water Policy
ITFM	Interagency Task Force on Monitoring Water Quality
LAMP	Lakewide Action and Management Plan
LWV	League of Women Voters
NACWA	National Association of Clean Water Agencies
NALMS	North American Lake Management Society
NCASI	National Council for Air and Stream Improvement
NEMI	National Environmental Methods Index
NGWA	National Groundwater Association
NHD	National Hydrography Dataset
NLDI	Network-Linked Data Index
NNRW	National Network of Reference Watersheds
NOAA	National Oceanic and Atmospheric Administration
NRC	Nuclear Regulatory Commission
NSMDE	National Stream Morphology Data Exchange
NWIS	National Water Information System
NWQMC	National Water-Quality Monitoring Council
NRSST	National Reservoir Sedimentation and Sustainability Team
OSTP	Office of Science and Technology Policy
OWDI	Open Water Data Initiative
PFAS	Polyfluoroalkyl Substances
PMP	Probable Maximum Precipitation
QA / QC	Quality Assurance / Quality Control
SEDHYD	Joint Federal Interagency Sedimentation and Hydrologic Modeling Conference

SOGW	Subcommittee on Ground Water
SOH	Subcommittee on Hydrology
SOS	Subcommittee on Sedimentation
SSWD	Subcommittee on Spatial Water Data
STEWARDS	Sustaining the Earth's Watersheds – Agricultural Research Database System
STIWG	Satellite Telemetry Interagency Workgroup (Subcommittee on Hydrology)
STORET	EPA Storage and Retrieval data system
SWRR	Sustainable Water Resources Roundtable
TOR	Terms of Reference
UCOWR	Universities Council on Water Resources
USBR	Bureau of Reclamation
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WBD	Watershed Boundary Dataset
WEF	Water Environment Federation
WIS	Water Information Strategies Workgroup
WQP	Water Quality Portal
WQX	Water Quality Exchange data standard
WRACCW	Water Resources Adaptation to Climate Change Workgroup
WSWC	Western States Water Council