

**SUMMARY OF THE MEETING OF THE
ADVISORY COMMITTEE ON WATER INFORMATION'S (ACWI)
SUBCOMMITTEE ON HYDROLOGY (SOH)
12:30 p.m. – 3:15 pm, Eastern Standard Time
April 21, 2016**

1. Welcome

Chair Robert Mason called the meeting to order at 12:30 pm.

2. Roll-Call

A roll call was performed for in-person attendees and those on the phone. The list of attendees is included as an attachment. Fourteen members of the SOH were present at the time of the roll call, therefore a quorum was reached. Other SOH members joined later in the call.

3. Review and approval of agenda

Martin Becker made a motion that the agenda be modified to discuss the HFAWG items earlier in the meeting. Siamak Esfandiary seconded the motion. There were no objections and the agenda was modified.

4. Words from our Host

Sam Lin welcomed everyone to FERC and discussed emergency evacuation procedures.

5. Hydrologic Frequency Analysis Work Group (HFAWG) Report and Discussion

(The HFAWG report and discussion occurred at this point in the meeting. However, to maintain consistency in the meeting minutes, the notes on this discussion have been moved to the HFAWG section, in "News from the SOH Workgroups".)

6. Background on SOH

Robert welcomed everyone to the SOH. SOH is a subcommittee within the ACWI, which provides information, guidance and ideas for the federal government. It is chaired by the U.S. Geological Survey (USGS) under the direction of the Department of the Interior and the Office of Management and Budget. The purpose of the committee is to discuss availability and reliability of water information. It generally meets the third Thursday of the quarter. There are several workgroups within the SOH. A list of current member organizations (http://acwi.gov/hydrology/hydrol_members.html) is available online, but a couple of other organizations have approached about joining. We will discuss today potential formulation of a streamflow information workgroup.

7. Feature Presentation

Claudia Hoeft presented "NRCS Runoff Curve Number Hydrology: Development, Status and Updates".

- The runoff curve number method is a method to estimate runoff volume. It does not provide peak discharge or a hydrograph. It is intended to be used for single, extreme events, although it is often used for continuous simulations or other applications such as LID.

- It was developed by Victor Mockus at the SCS. The method was developed based on plots of rainfall versus runoff for small research watersheds. Much of the documentation on its development has been lost. Additionally, the method never went through a critical open review.
- There is a need for some updates to the CN method. Issues include the way the method was developed (ordering the data), the need to make regional adjustments to the antecedent moisture condition, land slope, adjustments to the initial abstraction, the type of watershed response, and many others.
- The best and most current report on the CN method is in the ASCE publication, “Curve Number Hydrology: State of the Practice”. In 2015, the ASCE and NRCS signed a cooperative agreement to update the National Engineering Handbook (NEH) part 630, Chapters 8, 9, 10 and 12.
- The presentation was very informative and followed by several questions and lively discussion.

8. Review of Previous Meeting Summaries

The meeting summary for the January 28, 2016 meeting was circulated to the membership via email. There were no further comments on the minutes. Claudia made a motion to approve the minutes, Ted Engman seconded the motion. There were no objections and the minutes were approved.

9. Review of Action Items from Prior Meetings

Action Item 1: Minutes

Laura Chap and Robert to draft and circulate 1-28-16 meeting summary. SOH members should report corrections to Robert.

Follow-up: Summary circulated; see email from Robert from February 28.

Action Item 2: SOH B17C Communications plan

As per Martin’s motion, SOH members should review the peer review charge and forward comments to the group. Robert will set up an SOH conference call meeting for a follow-on discussion and a motion to adopt the charge. Persons wishing to suggest additional peer reviewers should speak with Will Thomas so that they can be considered during the conference call.

Follow-up: Robert distributed the revised peer-review charge and check list peer comments (see email from Robert of March 3). All who voted, voted to affirm the charge, some with minor suggestions such as to add a due date. (See attached vote compilation.)

The revision will be made and signed, but a peer review panel needs to be identified before it can be sent.

Action Item 3 –Proposal for Streamflow Information Collaborative Working Group

Robert will distribute a call for volunteers to develop a workgroup for the Streamflow Information workgroup charter.

Follow-up:

- The charter was circulated for comments, and edited/revised by Doug Yeskis and Robert.
- Information was not sent out for a conference call. The question posed to the group was whether to form a charter writing group, or accept as-is and start working with the idea of forming the group.
- Robert and Ashley Knoll will confirm that Victor Hom's email has been correctly updated on the contact list. Robert confirmed that Victor's changes had been received and the changes have been made.
- Ted made a motion that we accept the document as sent rather than redo the charter. Claudia seconded that motion. Robert asked for objections. Hearing none, the motion was adopted.
- A conference call will be set up for those who might be interested, to both the membership of the SOH and those on the meeting lists.

10. Old Business

Status of the B17C website and public comment

This was deferred to the HFAWG report.

11. Announcements

Agency Business Reports

FERC – Sam Lin provided the report. The full report is provided as an attachment to these minutes and summarized here. FERC performed a construction inspection of the Norway Dam, on the Tippecanoe River, Indiana. The project was to modify an existing gravity overflow spillway. FERC participated in a video conference with Tennessee Valley Authority (TVA), NRC and a consultant to discuss a TVA probabilistic flood hazard project.

NWS – Victor provided the report. The full report is provided as an attachment to these minutes and summarized here. As part of World Water Day on March 22, the White House hosted a Water Summit. A number of NOAA cross-agency activities were cited in the report titled ““Commitments to Action on Building a Sustainable Water Future”. The attached business report contains several hyperlinks to these activities and members are encouraged to browse through the links.

Additionally, NOAA released its spring outlook, which appears to be panning out for Houston.

NRCS – Claudia provided the report. NRCS signed a Memorandum of Understanding (MOU) with ASCE to facilitate the sharing of information. A full report is provided as an attachment to these minutes.

USGS – Robert provided the report. The full report is provided as an attachment to these minutes and summarized here.

At the Water Summit, the MOU was re-signed with USACE, USGS, weather service and FEMA for an integrated water sciences consortium. This was a renewal of a 5 year agreement.

StreamStats – The USGS's regression equation tool has been updated and new version issued. A link has been provided in the full report.

News from SOH Workgroups

Extreme Storm Events Work Group (ESEWG) – Marian Baker, Vice-Chair of the work group, provided the report. The report is provided as an attachment to these minutes and summarized here. The ESEWG held a conference call on April 4, 2016 to discuss the development of the Extreme Rainfall Product Needs proposal. The major revisions included highlighting the need for updated HydroMeteorological Reports (HMRs) and re-ordering the needs. The next scheduled meeting is Monday, May 16 at 9:00 am. The group plans to have a completed draft proposal by the end of May 2016.

Satellite Telemetry Interagency Work Group (STIWG) – LySanias Broyles, Chair of the work group, had to leave the call prior to providing a report, however he provided via email that the annual Telecommunications Working Group (TWG)/STIWG meeting will convene May 3-5 at EROS, Sioux Falls, South Dakota.

HFAWG – The notes in this section are from discussion earlier in the meeting due to the revised agenda, but placed here for consistency.

- The peer review panel was previously approved by the SOH. There was some concern that the panel was not broad enough. Will Thomas was asked to identify additional people. This list will be distributed to the subcommittee.
- Martin would like the SOH to have some additional time to think about the composition of the panel. He has discussed this with Will Thomas. He has no issues with anyone who has been selected. However, one example of someone with a broader background is Ben Pope (AECOM), who has more “on the ground” rather than academic experience. Martin feels if members think about it for a couple of weeks they could come up with 2-3 more reviewers to balance out the current, very academic reviewers.
- Will noted that all three academic reviewers were previously approved. John England came up with two more (also from universities). Martin wanted more practical experience with flood frequency analysis. Ben Pope is a former USGS employee, who now works for AECOM and has more practical experience. The SOH could probably come up with more possibilities, given some thought. There is probably a limit of how many people we want to ask.
- John stated that there were additional academic reviewers that he had recommended, but he had not approached them. He looked for people with national standing. He felt a DWRE and over 20 years of experience in flood frequency is necessary.
- Martin was concerned that one reviewer has a long-standing relationship with the author. He feels that the Subcommittee has the authority to determine the qualifications.
- Robert agreed that the Subcommittee has the authority to determine the qualifications, but that national standing and experience is probably a prerequisite.
- John suggested that the SOH reach out to the ASCE surface water technical committee.
- Martin made a motion to delay the review for three weeks for Will to make additional recommendations for reviewers. The first week is for the SOH to suggest candidates, Will will follow up with a list for the committee, and then the SOH will have two weeks to consider.

- Tom Nicholson asked for a quick point of clarification, who makes the final selection? Robert replied that the SOH will do this through an email exchange, likely voting through an online poll.
- John asked that Robert pull up the communications plan that was voted on by the SOH that shows the necessary qualifications for peer reviewers. Does it need to be modified for the number of reviewers and the requisite expertise? Martin stated that the SOH can determine qualifications. Robert said that major changes to the plan might require a new review and public comment period. The “expected” number of reviewers is three, according to the plan, but the word “expected” allows flexibility. It does say that the reviewers should have national standing so the committee should consider that when evaluating expertise.
- Following this discussion and a rereading of Martin’s motion, Ted seconded the motion.
- Siamak questioned the added value of adding another reviewer. Robert replied that the current slate of panelists has a lot of common background in terms of their education. It would be reasonable to expand the panel to include more diverse backgrounds.
- Robert – asked for objections on the motion proposed by Martin and seconded by Ted. Hearing none, the motion passed.
- As an action item, the SOH will provide names to Will, then Will will provide the list to the SOH.
- (The meeting reverted to the original agenda at this point.)
- During the regular workgroup report agenda item, Will provided a recap of the discussion and the work group report. The HFAWG produced the new Bulletin 17C, and posted for public comment. Tomorrow is the last day of public comment. Currently, four sets of comments have been received. In general, the comments are concerns about extrapolating frequency curves, more information on the amount of data for analysis, examples of computing skew and guidelines on how it affects past work. (Will noted that it will not affect past work.) One set of comments came from ASFPM. All comments will be received as of close of business tomorrow and the work group will start preparing responses.
- Robert asked if any agencies will be providing comments as a group. Claudia reported that the NRCS is preparing comments and will send to Will or submit through website.
- Robert noted that the public comment portion of the website will be taken down/closed to comments at the end of the comment period and asked for any objections. There were no objections.

12. Review Actions and Plans for next SOH meetings

- For the peer review plan, all members are to send candidate suggestions to Will; an online poll will be taken to vote on suggested candidates
- A call to hold the inaugural meeting of the streamflow information coalition will be set up to discuss the formation of a working group
- ESEWG will coordinate with NASA regarding NASA’s datasets, through NASA’s representatives on the SOH (Sujay Kumar and Ted). It was noted that an update on the NASA datasets would be a good feature presentation.

The next quarterly meeting will be in July. Normally it will be held the third Thursday of July. A suggestion was made that the meeting take place at NASA Goddard; in the past it has been held at the visitor center. Sujay will look into dates; it will more likely be July 28th rather than July 21st. If there is a tour, it would take place in the morning before the actual meeting. If any agency or groups would like to present, please send a note to Robert.

13. Meeting Adjourned

Tom made a motion to adjourn the meeting. It was seconded by Claudia. The meeting adjourned at 3:14 pm.

Attachments

- 1) Attendee list
- 2) Vote compilation – peer review charge
- 3) Agency business reports – FERC, NOAA, NRCS, USGS
- 4) ESEWG report

Attendee List

Name	Attending	SOH Member	Organization
Robert Mason	In Person	Yes	USGS
Will Thomas	By Phone	Yes	ASFPM
Brian Beucler*	By Phone	Yes	FHWA
Victor Hom	By Phone	Yes	NOAA NWS
Claudia Hoeft	In Person	Yes	USDA
Laura Chap	In Person	No	Atkins/STARR
Jack Felbninger	By Phone	Yes	Office of Surface Mining Reclamation and Enforcement
Li-Chuan Chen	By Phone	No	NOAA NWS
LySanias Broyles	By Phone	No	USACE/STIWG
Sujay Kumar*	By Phone	Yes	NASA
Bill Kappel	By Phone	No	Applied Weather Associates
Jerry Coffey	By Phone	No	Public (former OMB)
Ted Engman	In Person	Yes(Alt)	NASA
Donell Woods	In Person	No	NOAA/Office of the Federal Coordinator for Meteorology
Ben Pratt	By Phone	Yes	National Hydrologic Warning Council
Maged Aboelata	By Phone	No	AECOM
Siamak Esfandiary	In Person	Yes	FEMA
John England	By Phone	No	USACE
Martin Becker	By Phone	Yes	Defenders of Property Rights
Sam Lin	In Person	Yes	FERC

Doug Yeskis	In Person	No	USGS
Terry Davies	By Phone	Yes	National Science Foundation
Marian Baker	By Phone	No	USACE
Tom Nicholson	By Phone	Yes	NRC
Aaron Byrd	By Phone	No	
David Raff	By Phone	Yes	Bureau of Reclamation
Dongsoo Kim	By Phone	No	NOAA
Daven Maheda	By Phone	No	AECOM
Mathini Sreethran	By Phone	No	Dewberry
Ed Tomlinson	By Phone	No	Atmospheric Science Associates

* Not present at initial roll call but joined later in the call

Vote Compilation – Peer Review Charge

1	NSF	Terry Davis	Y	
2	FHWA	Brian Beucler	Y	
3	ASFPM	Will Thomas	Y	Minor comments (addressed)
4	NRCS	Claudia Hoeft	Y	
5	ARS	Dave Goodrich	Y	Minor comments (addressed)
6	Global Ecosystems Center	Don Woodward	Y	
7	OSW	Jack Felbinger	Y	Add due dates (added)
8	NASA	Ted Engman	Y	
9	FERC	Sam Lin	Y	
10	BOR	David Raff	Y	
11	USACE	Chandra Pathank	Y	Need due date (added)
12	FEMA	Siamak Esfandiary	Y	
13	EPA	Karen Metchis	Y	
14	NRC	Tom Nicholson	Y	Need due date (added)
15	NHWC	Ben Pratt	Y	
16	NSF	Terry Davis	Y	

17	OSW	John Felbinger	Y	
18	NWS	Vic Hom	Y	Minor comments (addressed)
19				
20				

Agency Business Reports

FERC

FERC Report for April 2016 SOH Meeting

FERC participated in March in a Part 12D Independent Consultant Inspection and potential failure mode analysis (PFMA) review session for Tallulah Falls Project located in northeast Georgia on the Tallulah River. This project is currently under investigation to determine if it is stable under flood loading. The licensee has ongoing stability and inflow design flood (IDF) studies and indicated in their most recent submittal that they are considering the risk informed decision making (RIDM) process.

FERC conducted in April a construction inspection of the spillway expansion work at the Norway Dam, a part of the Norway and Oakdale Hydroelectric Project located on the Tippecanoe River, Indiana. The work involves modifying the existing gravity overflow spillway to lower its crest and install five vertical lift gates across the spillway to increase the spillway capacity to safely pass the inflow design flood (IDF). The work is progressing on schedule and is planned to be completed by May 2017.

FERC participated in April in a videoconference with the Tennessee Valley Authority (TVA), Nuclear Regulatory Commission (NRC), and a consultant to discuss the TVA’s probabilistic flood hazard project. In 2015, TVA began a two-year project to create tools to quantify flood hazards to assist with risk informed decision making (RIDM). TVA recently completed a Site Specific PMP and PMF analysis of the drainage basins that flow to their dams and nuclear sites.

NOAA

As part of [World Water Day](#) on March 22, the White House hosted a Water Summit to shine a spotlight on the importance of cross-cutting, creative solutions to address the water problems of today, highlight the innovative strategies that will catalyze change in how we use, conserve, protect, and think about water in the years to come. A number of NOAA cross agency activities was cited by the White House in the report titled “[Commitments to Action on Building a Sustainable Water Future](#)”.

- [Improving drought monitoring and forecasting](#). In 2016, as part of the National Drought Resilience Partnership (NDRP) Action Plan, the U.S. Department of Agriculture (USDA) and NOAA will expand the [U.S. Drought Monitor](#)—to include the U.S. Virgin Islands and the U.S. Affiliated Pacific Islands.

- [Improving weather forecasts for water-management operations](#). This year, NOAA, USGS, and the U.S. Army Corps of Engineers (Army Corps), along with the Sonoma County Water Agency and other local and state partners, will launch the [Lake Mendocino Forecast](#) Informed Reservoir Operations pilot project in California's Russian River.
- [Water-resources dashboard](#). NOAA and several outside organizations are launching [a shared water-resources dashboard](#) as part of the U.S. Climate Resilience Toolkit. This dashboard will serve as a common resource for urban planners and local officials to easily access flood and drought data sets needed to support climate-adaptation planning.
- [Improving identification and monitoring of harmful algal blooms](#). In August 2016, NOAA, the University of Michigan, and the Monterey Bay Aquarium Research Institute will expand the deployment of the Environmental Sample Processor (ESP) to Lake Erie. The [ESP](#) “lab-in-a-can” will autonomously collect water samples, run molecular diagnostics, and provide water managers with data on harmful-algal toxicity in near real-time before the water reaches municipal water intakes
- [Enabling early identification of algal blooms](#). EPA, NOAA, NASA, and USGS are collaborating to develop an early-warning indicator system using [historical and current satellite data to detect algal blooms](#), which can severely impact drinking-water quality, in U.S. freshwater systems.
- [Releasing a new National Water Model](#). In June 2016, NOAA will release a new [National Water Model](#) that will dramatically enhance the nation’s river-forecasting capabilities. The model, being developed by the National Center for Atmospheric Research (NCAR) with funding from NOAA and NSF, relies on data from EPA and USGS and will deliver forecasts for approximately 2.7 million locations, up from 4,000 locations today—a 700-fold increase in forecast density.
- [Memorandum to enhance Federal coordination](#). Army Corps, USGS, NOAA and FEMA renewed a [Memorandum of Understanding \(MOU\) for Collaborative Science, Services and Tools to Support Integrated and Adaptive Water Resources Management](#). The MOU will increase collaboration and partnership in areas of mutual interest to address challenges, streamline processes, and share data and information (both within the Federal government and with non-Federal institutions) in order to increase efficiency and enhance service delivery.

Other Noteworthy News for this Quarter includes:

- [NOAA’s U.S. Spring Outlook](#), [NOAA’s Spotlight on El Nino, La Nina, ENSO](#), and [NOAA’s Support of the National Hurricane Meeting](#)

Members are encouraged to click on the hyperlinks, news article, and related topic tags to learn more about the subject or get the latest from NOAA.

NRCS

NRCS Report to Subcommittee on Hydrology, April 21, 2016

USDA-NRCS and ASCE signed a Memorandum of Understanding at the end of March to establish a general framework for cooperation between NRCS and ASCE in order to advance the science and practical application of the engineering profession in the United States, its territories, commonwealths, and possessions; and improve the methods of assembling and disseminating NRCS engineering related data and information to engineering professionals, educational and scientific institutions, and other civic professional organizations, legislators, governmental agencies, and the public. This MOU is an outgrowth of a Cooperative Agreement between NRCS and ASCE for using ASCE volunteers to prepare updates to NRCS’ National Engineering Handbook, Part 630, Hydrology, chapters related to the runoff

curve number method. Through this MOU, NRCS hopes to increase collaboration between NRCS and ASCE in areas of mutual interest.

USGS

The Integrated Water Resources Science and Services (IWRSS) consortium MOU was renewed by the NWS, USACE, FEMA, and USGS in March and announced at the White House “Water Summit” March 6. The MOU retains the same structure and goals and continues a focus on “operational water and metrology” data flows and coordination to make the four-agency databases more interoperable and to standardize, share, and expand the flood-inundation mapping products of the agencies.

The USGS StreamStats software program (URL: <http://water.usgs.gov/osw/streamstats/>) has been updated with expanded functionality and a more intuitive and more easily navigable user graphical user interface. The tool provides links to a GIS web-based GIS tool that helps a user delineate a watershed, identify and download applicable streamgages and flow statistics, and solve USGS’s regional regression equations to yield various streamflow statistics for ungaged watersheds.

ESEWG Report

Report of the Extreme Storm Events Work Group to the SOH at the April 21, 2016 Meeting by Tom Nicholson, Chair and Marian Baker, Vice-Chair

The proposal writing team of the Extreme Storm Events Work Group (ESEWG) met on Monday, April 4, 2016 via teleconferencing to discuss development of the ***Extreme Rainfall Product Needs*** proposal. An updated draft (March 17, 2016) of the proposal was sent to all of the team members for their review prior to the April 4th discussions.

During the meeting discussions, the strategy was to review through each draft chapter with the identified authors. For those authors not present, Marian Baker, USACE and the writing team chair, will contact them to obtain their updates prior to our next meeting. Each section will be thoroughly reviewed and updated. We discussed the possible removal of the chapters and sections deemed no longer relevant. Other less detailed sections were combined into the existing chapters of the write-ups to make a more focused and succinct proposal. The emphasis is on direct contact for each chapter author, and to discuss their contribution prior to our next meeting. We are actively removing non-essential material from the proposal. We will actively work with those writing team contributors to have them submit a timely and relevant write up to us prior to the next meeting.

The proposal outline and table of contents were revised to highlight the need for updated HydroMeteorological Reports (HMRs) and to re-order the product needs. Although not developed at

this time, we still plan to identify a product need with discussion for the statistical approach which estimates extreme rainfall. Marian Baker will consult with Chandra Pathak, USACE on this product need and discussion content. We are planning to have a completed draft proposal by the end of May 2016.

The next scheduled meeting of the writing team will be Monday, May 16, 2016 @ 9:00 a.m. EDST. Sanja Perica, NOAA/NWS has agreed to host the teleconference at their offices in Silver Spring, MD. An updated draft proposal will be distributed to the team members by May 6, 2016.

Please contact Marian Baker, USACE-Kansas City, MO at 1-816-389-3222, if you need more information or details on the ***Extreme Rainfall Product Needs*** proposal.