

**MINUTES OF THE JULY 24, 2014 MEETING OF THE
ADVISORY COMMITTEE ON WATER INFORMATION (ACWI)
SUBCOMMITTEE ON HYDROLOGY (SOH)**

1. Welcome

The July 24 meeting of the SOH was held at the USGS Powel Center in Reston, VA. The Chairman, Victor Hom, called the meeting to order at 12:30.

Vic provided a brief overview of the ACWI and SOH. ACWI has 10 workgroups: (1) Groundwater, (2) Hydrology (SOH), (3) Sediment, (4) Spatial Water Data, (5) Water Resources Adaptation to Climate Change, (6) NAWQA Liaison, (7) Monitoring Methods Control Board (Water Quality), (8) Water Quality Methods Board (labs), (9) Sustainable Water Resources Roundtable, and (10) Monitoring Challenges.

Martin Becker and Jerry Coffee interjected additional information about the controlling laws and controls underling the ACWI. Martin offered to provide some background on the Federal Advisory Committee Act as a follow up action.

Action Item 1 –Martin to provide background on the Federal Advisory Committee Act.

[After the meeting Martin provided more insight and clarification regarding the Federal Advisory Committee Act. Vic followed up with some investigations of his own. Upon further review of the GSA website (Interested members are encouraged to review the following: [Statutes and Related legislation](#) and [OMB Circular A-135 as it relates to FACA](#)), Vic confirmed that GSA has a role to help in ensuring transparency of the various Advisory Committees: In particular, GSA has an important role in sharing information about the number of various FACAs and their related websites. Victor is happy to report that (a) the SOH parent organization ACWI is listed in the GSA website, (b) its national board members are provided there, and (c) his experience with the national meetings are in line with the Act. (Please see the [Overview of GSA Management role with FACA](#).)

The ACWI website also contains important information about ACWI. In particular: [The purpose of the ACWI] is to improve water information for decision making about natural resources management and environmental protection. The Office of Management and Budget (OMB) Memorandum No. 92-01 designates the Department of the Interior, through the U.S. Geological Survey (USGS), as the lead agency. According to the memo, other Federal organizations that fund, collect, or use water resources information work together with the USGS to implement program recommendations. (URL: <http://acwi.gov/aboutus.html>). Additional information regarding the history and charter of the ACWI is posted on its website (URL: <http://acwi.gov/acwihist.html>) and the delegation of authority (URL: <http://acwi.gov/m9201.html>)

2. **Words from our Host**

Vic invited Robert Mason (vice chair and USGS representative) to address the group. Robert welcomed the attendees and thanked them for making the long pilgrimage from DC to historic Reston, VA (established in 1964). Robert provided facility orientation and emergency exit procedures.

3. **Roll-Call** (See attendance matrix as attachment 1 below.)

4. **Review and Approval of Agenda**

Vic reviewed the agenda and requested a motion that it be adopted. Don Woodard so moved and the motion passed without objection.

5. **Approval of the May 2014 Meeting Summary**

Victor Hom

Robert provided the May meeting summary via email on July 23. Vic thanked Robert and asked the group to approve the summary. Will Thomas offered some edits and Don Woodard moved that the summary be approved with Will's edits. Will seconded the motion, and with no objections, they were approved.

6. **Status of action Items and Background on SOH**

There was only one action item from May. The Action Item 1 was to document the proposed process for approving and publishing the draft "Bulletin 17C", but the process was still undergoing discussion within the HFAWG. The SOH agreed that the process should be defined and documented and listed where members could cite it.

Action 2 –Define and document the proposed process for approving and publishing the draft "Bulletin 17C."

(After the close of the meeting, the following process was proposed with intent to discuss at the net SOH meeting:

1. The HFAWG will complete the draft "Bulletin 17c". A drafting team has been formed and writing assignments distributed, and the draft is well underway.

2. HFAWG will be present the draft to the SOH at the January 2015 meeting.

3. SOH will discuss the draft and vote on a motion to proceed with distribution of the draft for public comment.
4. The USGS, through the Office of Water Information (OWI), will develop a "Bulletin 17C" public website for public distribution of the draft document and create a process for compiling public comments.
5. The USGS OWI will announce the development and release of the draft through the Federal register as "proposed guidelines for computing flood frequencies" and solicit comments.
6. The HFAWG will review the comments and draft responses. The comments and responses will be provided to the SOH for discussion.
7. The SOH will vote on a motion to proceed with the formal publication of the guidelines.
8. Once the SOH has approved the document, it will be presented to the ACWI for approval.
9. Once the ACWI has approved the publication, the USGS will proceed with publication of the draft through the normal USGS publication process. The plan is to publish the document as a USGS "circular" to facilitate the easy maintenance, discovery, and formal citation of it.)

7. Feature presentation

- Guest Introduction -Vic introduced the featured speaker. Robert Mason is a hydrologist with the USGS, Deputy Chief of the USGS Office of Surface Water, and Acting Delaware River Master and serves as the vice-chair of the SOH.
- Robert presented details about the USGS streamgaging network including information on the status of the network, the process for selection of a site for a streamgauge, the streamgaging process, and data dissemination. His presentation was punctuated with many questions. Robert's ppt will be made available on the SOH webpage.

8. Announcements and Business Reports

FERC Business report

Sam Lin

- On May 6-8, FERC provided training on Risk-Informed Decision Making (RIDM) to licensees, consultants, and FERC staff in a Level 3 RIDM Workshop in Portland, OR. The workshop showed participants how to conduct a dam safety risk analysis, describe risk probability concepts, and explain how small groups can be used to develop probabilities of hypothetical potential failure modes and risk consequences.
- On July 17, FERC staff met with representatives of the Nuclear Regulatory Commission, U.S. Army Corps of Engineers, and Exelon Power in Baltimore, MD concerning a site specific Probable Maximum Precipitation (PMP) study. The study will be the basis the inflow design flood (IDF) for the Conowingo Project located on the Susquehanna River in northern Maryland and could affect the design flood for nearby nuclear power plants.

FHWA Business Report

Brian Beucler

- Brian Beucler (FHWA) announced a planned formal one-day webcast rollout of the FHWA Gulf Coast 2 project (Climate Change). The project is wrapping up and FHWA is planning an event to describe it sometime in early October. There is a weblink (URL: http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/index.cfm (could also Google "FHWA gulf coast study")) to the project, but this site will be greatly enhanced with resources and tools once the project is completed.
- Brian also announced the creation on another new link to all the other climate adaptation initiatives the FHWA is undertaking: http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/summary/index.cfm

NRC Business Report

Tom Nicholson

- *Tom Nicholson (NRC) announced that the next Annual Public Meeting of the Interagency Steering Committee on Multimedia Environmental Modeling (ISCMEM) is set for October 14 – 15, 2014 at the U.S. Army Corps of Engineers Baltimore District (NAB). This year's theme is "Environmental Modeling: from the Mountains to the Estuary." The ISCMEM Chair and contact is Patrick Deliman, USACE – Vicksburg, Mississippi at 1-601-634-3623.*

NWS Business Report

Vic Hom

- *Vic provided the NWS business report. He referenced articles which may be potential interest to the SOH community from the recent NWS Hydrology Program Newsletter:*
 - *2013 Flood Losses*
 - *Coordination after Silver Fire Burn Scar Support*
 - *Seasonal Water Forecasts Support of Water Management due to California Drought*

For more details, please see the NWS Hydrology Program Newsletter:
http://www.nws.noaa.gov/ohd/confluence/Confluence_No7_May2014_Final.pdf

USGS Business Report

- *The USGS has released a new web portal for coastal change hazards (URL: <http://marine.usgs.gov/coastalchangehazardsportal/>). The portal provides public access to maps and graphics depicting coastal areas vulnerable to sea level rise and coastal erosion.*
- *USGS celebrates 50th anniversary of the Water Resources Research Act -The Water Resources Research Institute Program originally authorized by WRRRA in 1964 is a federal-state partnership that provides for competitive grants to be awarded for research projects focusing on the state and region. Each of the 54 institutes is charged with overseeing competent research that addresses water problems or expands the understanding of water and water-related phenomena. They are also responsible for aiding the entry of new research scientists into water resources fields, helping to train future water scientists and engineers, and transferring the results of sponsored research to water managers and the public. Learn more at <http://water.usgs.gov/wrri/>.*

9. **Workgroup Reports**

- HFAWG –Will Thomas (Baker, Jr.) presented the HFAWG report (see attachment) (The full report is included as an attachment.)
 - The Hydrologic Frequency Analysis Work Group (HFAWG) is continuing with drafting Bulletin 17C, an update of Bulletin 17B, ***Guidelines For Determining Flood Flow Frequency***. As reported at the May 1, 2014 SOH meeting, the Bureau of Reclamation, the U.S. Geological Survey and the U.S. Army Corps of Engineers are the three Federal agencies leading this effort with support from Cornell University. John England, Bureau of Reclamation, is coordinating this effort.
 - The objective is to complete a complete draft of Bulletin 17C about October, 2014 and to publish the report as an USGS Circular. Once a complete draft is available, the report will be provided to the HFAWG for review. Once the draft of Bulletin 17C has been completed and reviewed by the HFAWG, the next meeting of the HFAWG will be held

to discuss any issues. A draft of Bulletin 17C will be provided to the SOH for their review once the HFAWG review is completed.

- **ESEWG –Tom Nicholson presented the ESEWG workgroup report**
(The full report is included as an attachment.)
 - The Extreme Storm Events Work Group (ESEWG) held a workshop on May 15, 2014 at NOAA’s National Weather Service Headquarters, Silver Spring, Maryland to define needed extreme precipitation products.
 - To facilitate the workshop objective and goal, the ESEWG prepared and sent to Victor Hom and Robert Mason, two questionnaires, one for the Federal agencies (attachment #3); and one for the State agencies involved in dam safety assessments (attachment #4). Victor Hom and Robert Mason sent the questionnaires to all of the Federal agencies on the SOH, and to the State agencies identified by the Interagency Committee on Dam Safety (ICODS) and National Dam Safety Review Board (NDSRB).
 - A “Proposal Writing Team (PWT)” organized by the ESEWG to include the National Weather Service, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, U.S. Geological Survey, Federal Energy Regulatory Commission, Natural Resources Conservation Service, U.S. NRC and the State of Colorado Dam Safety Division specialists met the following day to review the workshop’s identified needs and insights.
- In the absence of Jerry Web and Claudia Hoeft, Vic presented the Modeling workgroup report
 - The Federal Hydrologic Modeling Conference is set for April 19-23, 2015. A webpage has been established (URL: www.sedhyd.org/2015/).
 - Abstracts have been submitted and the selection process is underway.
- **STIWG -Dan Schwitalla (Chair) did not attend the meeting but submitted the STIWG report through email.** (The full report is included as an attachment.)
 - The Satellite Telemetry Interagency Work Group met in Austin, Texas at the USGS Texas Water Science Center on May 6-8, 2014. The three-day meeting consisted of two days of technical discussions with vendor and government personnel. The last day was a government only meeting to discuss policy and funding issues.

- Extensive discussion of the Low Rate Information Transmission (LRIT) service on the GOES satellites. This service is sending a copy of all GOES DCS messages received on a near real-time basis. Many users are leaving the DOMSAT service and going to LRIT. This will allow the retirement of the DOMSAT service which costs the government around \$70K per annum.
- A presentation was made about advanced signal processing techniques that can be used to more fully utilize the bandwidth assigned to GOES DCS.
- Many GOES DCS users gave short presentations on their utilization, projects, and concerns with the GOES DCS program

- **Review Actions and Plans for next SOH meeting**

Vic Hom

- *Next Meetings on Thursdays: October 23, 2014 (NWS, Silver Spring), January 22, From 1230PM to 330PM EDT.*

- **The Meeting Adjourned**

Attachment 1. Roll call and attendance.

Roll Call -Meeting attendance		Organization	Participation
Brian	Beucler	FHWA	<i>(In-Person)</i>
Siamak	Esfandiary	FEMA	<i>By phone)</i>
Victor	Hom	NOAA/National Weather Service (NWS)	<i>(In-Person)</i>
Julie	Kiang	U.S. Geological Survey (USGS)	<i>(In-Person)</i>
Sam	Lin	Federal Energy Regulatory Commission (FERC)	<i>(In-Person)</i>
Robert	Mason	U.S. Geological Survey (USGS)	<i>(In-Person)</i>
Thomas	Nicholson	Nuclear Regulatory Commission (USNRC)	<i>(In-Person)</i>
Chandra	Pathak	U.S. Army Corps of Engineers (USACE)	<i>(In-Person)</i>
Will	Thomas	Baker/ASFPM/ HFAWG	<i>(In-Person)</i>
David	Wells	US Environmental Protection Agency (USEPA)	<i>(In-Person)</i>
Don	Woodward	Global Ecosystems Corporation	<i>(In-Person)</i>
Martin	Becker	Becker	<i>(phone)</i>
Jerry	Coffey	Office management and	<i>(phone)</i>

**Budget OMB
(Retired)**

Doug	Hulstrand	AWA	(phone)
Dongsoo	Kim	NOAA – NCDC	(phone)
Bill	Merkel	USDA, Natural Resources Conservation Service (NRCS)	(Phone)
Sanja	Perica	NOAA/National Weather Service (NWS)	(phone)
David	Sutley	FEMA	(phone)
John	Remus	U.S. Army Corps of Engineers (USACE)	(Phone)
Tim	Cohn	USGS	In person

Attachment 2 - Hydrologic Frequency Analysis Work Group (HFAWG) report to the Subcommittee on Hydrology (SOH) for the July 24, 2014 meeting

The Hydrologic Frequency Analysis Work Group (HFAWG) is continuing with drafting Bulletin 17C, an update of Bulletin 17B, ***Guidelines For Determining Flood Flow Frequency***. As reported at the May 1, 2014 SOH meeting, the Bureau of Reclamation, the U.S. Geological Survey and the U.S. Army Corps of Engineers are the three Federal agencies leading this effort with support from Cornell University. John England, Bureau of Reclamation, is coordinating this effort. John has created an initial draft of Bulletin 17C using the basic format of Bulletin 17B and identified authors for certain sections and the appendices. On July 15, we had a conference call to discuss the writing assignments. The following people have agreed to draft certain sections of Bulletin 17C:

- John England, Bureau of Reclamation,
- Tim Cohn, Julie Kiang, Andrea Veilleux and Robert Mason, U.S. Geological Survey
- Beth Faber, U.S. Army Corps of Engineers,
- Jerry Stedinger, Cornell University, and
- Will Thomas, Michael Baker International.

The objective is to complete a complete draft of Bulletin 17C about October, 2014 and to publish the report as an USGS Circular. Once a complete draft is available, the report will be provided to the HFAWG for review.

On June 17, 2014, Jerry Coffey provided comments on the April 29, 2014 version of the Testing report to Will Thomas with copies to all HFAWG members. Jerry's comments were primarily related to the Multiple Grubbs-Beck (MGB) test. Will Thomas, with input from John England, provided responses to Jerry on July 23. Once the issues and responses are clearly defined, they will be shared with the HFAWG.

On July 11, 2014, Don Woodward provided two questions to Will Thomas on the Effective Record Length (ERL) and Average Gain (AG) statistics used to evaluate the Monte Carlo simulations in the HFAWG Testing Report. Will Thomas, with input from John England, provided responses to Don's questions on July 22.

Once the draft of Bulletin 17C has been completed and reviewed by the HFAWG, the next meeting of the HFAWG will be held to discuss any issues. A draft of Bulletin 17C will be provided to the SOH for their review once the HFAWG review is completed.

Attachment 2 -Report of the Extreme Storm Events Work Group to the SOH at the July 24, 2014 Meeting by Tom Nicholson, Chair ESEWG

The Extreme Storm Events Work Group (ESEWG) held a workshop on May 15, 2014 at NOAA's National Weather Service Headquarters, Silver Spring, Maryland to define needed extreme precipitation products. The workshop was in response to a request from the Advisory Committee on Water Information (ACWI) to prepare a detailed proposal identifying needed extreme storm products [e.g., updating of the Hydrometeorological report (HMR) series which provide estimates of Probable Maximum Precipitation (PMP); completion of NOAA Atlas 14 which provides precipitation frequency estimates; and development and completion of a national storm catalogue which provides detailed maps of precipitation distribution over a watershed and the detailed analysis of a given storm that resulted in severe flooding]. The proposal is to incorporate the needs of the Federal agencies for assessing extreme storm events, and the resources needed to satisfy those identified agencies' needs. The workshop was developed by the ESEWG over a six-month period, and in consultation with the Subcommittee on Hydrology (SOH) leadership.

The workshop followed the attached workshop agenda (please see attachment #1). As directed by the SOH secretariat, the workshop was open to the public. Both the onsite attendees and those participating via Webinar are listed on attachment #2. Victor Hom, SOH Chair and NOAA/NWS representative to SOH was the workshop host. Victoria Sankovich-Bahls, U.S. Bureau of Reclamation (BoR) was the workshop facilitator. Robert Mason, SOH Vice-Chair and U.S. Geological Survey representative to SOH and ESEWG member was also present. Mark Perry, Dam Safety Engineer, State of Colorado lead the discussion of State dam safety officials on their current application of extreme precipitation data and information from their States' perspective.

The workshop objective was to clearly define extreme storm products; primarily extreme precipitation data, methods and estimates that are needed for deterministic (e.g., design basis criteria) and risk-informed infrastructure decision making (e.g., frequency, magnitude and duration of the initiating event and its consequence) by Federal agencies, now and in the future. The goal was to refine the extreme precipitation information and methodology needs of each Federal agency that participates in the ACWI-SOH ESEWG.

To facilitate the workshop objective and goal, the ESEWG prepared and sent to Victor Hom and Robert Mason, two questionnaires, one for the Federal agencies (attachment #3); and one for the State agencies involved in dam safety assessments (attachment #4). Victor Hom and Robert Mason sent the questionnaires to all of the Federal agencies on the SOH, and to the State agencies identified by the Interagency Committee on Dam Safety (ICODS) and National Dam Safety Review Board (NDSRB). Victor Hom and Tom Nicholson, Chair, ESEWG had earlier met with and presented

the draft questionnaires to the ICODS and NDSRB members on April 24, 2014 at their quarterly meeting. Tom Nicholson also informed them of the planned ESEWG workshop and questionnaires which would be circulated prior to the workshop. These questionnaires were developed much earlier by the ESEWG members through many teleconferences, along with a review of the Federal and State surveys in Appendix D of FEMA's "Summary of Existing Guidelines for Hydrologic Safety of Dams," in FEMA report P-919 issued in July 2012.

The Federal questionnaire (see attachment #3) provided a preamble to inform the Federal agencies as to the reason for the questionnaire, and the utility of its responses in developing the proposal requested by ACWI. The preamble states:

"Extreme storm hydrometeorology studies impact extreme flood estimates and assessments for dams, nuclear power plants, levees, and other high-hazard structures within the United States. Additionally, environmental impacts from extreme storm events are of increasing concern. The Extreme Storm Events Work Group is responsible for reviewing and improving methodologies and data collection techniques used to develop design precipitation estimates of large storm events up to and including the Probable Maximum Precipitation. The charter for the Work Group states that it will develop a detailed scope of work/plan of study and determine the necessary funding requirements to update the Catalog of Extreme Storms and Hydrometeorological Reports (HMRS). The Work Group is also tasked with developing a list of individual Federal Agency extreme storm product needs. From ongoing discussions and recent advances to probabilistic methodologies for risk-assessment, it is evident that updates to the Catalog of Extreme Storms and Hydrometeorological Reports may not fully address the national needs. This questionnaire asks each Agency to critically evaluate their views, methods, data sources, tools, etc. regarding extreme storm events and to identify any needs and/or gaps in extreme storm event information. In a Writing Workshop scheduled for later this year, the answers to the questionnaires will be synthesized to define extreme storm product(s) that are needed for deterministic and risk-informed infrastructure design. The product(s) and corresponding schedule(s) and cost(s) will be presented in a proposal to ACWI-SOH."

The Federal questionnaire requested the responder to:

"Discuss your agency methods and extreme precipitation needs for decision making, assessments, and designs (extreme precipitation is defined as those events with a return period of 1,000-years or greater, up to and including PMP):

- a. What extreme precipitation data do you use in your decisions?
- b. How is this extreme precipitation data used?
- c. What is the scale and resolution of this data (regional, site-specific, watershed-specific)?

- d. What is the spatial extent to which this data is applied?
- e. Would it be beneficial if this data were updated? And why is that?
- f. What decisions are made by utilizing this data? Discuss your agency methods and extreme precipitation needs for decision making, assessments, and designs (extreme precipitation is defined as those events with a return period of 1,000-years or greater, up to and including PMP).”

These and other questions set the focus and content of the Federal agencies’ responses which was reflected in the Federal agencies’ presentations at the workshop.

Similarly, the State questionnaire (attachment #4) provided a preamble and list of questions to the State dam safety officials to learn of their needs for extreme storm information and analysis. This information was discussed in the workshop’s afternoon panel discussion (see agenda in attachment #1) by the dam safety officials lead by Mark Perry.

Claudia Hoeft, National Hydraulic Engineer, Natural Resources Conservation Service (NRCS) discussed NRCS’s needs in extreme precipitation products. She discussed the NRCS’s history and their ongoing program in evaluating dams and collecting snow-pack information important to irrigation and water resource evaluations. Robert Mason, U.S. Geological Survey discussed the uses of extreme precipitation estimates by the USGS.

Ken Fearon, Federal Energy Regulatory Commission (FERC) discussed FERC’s application, need and support to extreme storm products. Since FERC has the responsibility for any water power project in the U.S., FERC staff reviews the construction, operation, maintenance, use, repair, or modification of any project works which are subject to FERC inspection. FERC is responsible for the safety and adequacy of 2,523 non-Federal jurisdictional dams (i.e., 803 high-hazard, 176 significant-hazard and 1,544 low-hazard category dams). FERC, through its dam safety program, requires regulated dams to have adequate spillway capacity to pass the project’s Inflow Design Flood (IDF). Ken discussed their use of the PMP estimates from the National Weather Service’s Hydrometeorological Reports (HMRs) and site-specific studies in reviewing spillway design and dam inspections.

Joseph Kanney, U.S. Nuclear Regulatory Commission (NRC) discussed NRC’s goal of developing and implementing risk-informed and performance-based regulation. He mentioned the ongoing flood re-evaluation studies of all commercial nuclear facilities following the recommendations from NRC’s Lessons Learned Report on Fukushima Daiichi. NRC guidance is based on the HMRs and the need to establish design criteria for flood protection at its licensed nuclear facilities. NRC staff also use NOAA Atlas 14 in their Significant Determination Process reviews of operating facilities. Research efforts are being planned to develop probabilistic flood hazard assessment (PFHA) technical basis to support risk-informed design basis flood estimation guidance.

Mike Eiffe, Tennessee Valley Authority (TVA) identified the HMRs and special study reports used by TVA. The list includes: HMR-41, HMR-47, HMR-56 and a series of special studies for estimating PMPs over various time intervals for river basins within the Tennessee River watershed. The primary usage of HMRs at TVA is to provide the design rainfall basis for PMF evaluations at TVA's high hazard dams and nuclear power plants. The HMRs and special study reports provide the design rainfall basis for MPF evaluations at TVA's significant and low hazard dams. Mike Eiffe noted that the PMF and MPF probabilities are not known.

Geoffrey Bonnin, National Weather Service (NWS) discussed the history and status of the HMRs, and the lessons learned from the ongoing development of NOAA Atlas 14. He provided insights on how to proceed in the development of a national program to identify and create the needed extreme precipitation products.

Doug Clemetson and Aaron Byrd, U.S. Army Corps of Engineers (USACE) discussed the USACE extreme storm data needs. These data needs support: the USACE's Dam Safety Program which relies on site-specific PMP studies, HMR and their updates, and HMR Tools; the Levee Safety Program which uses updated Standard Project Storm criteria, precipitation-frequency information from NOAA-14, TP40, and NOAA II; and development of an Extreme Storm Database which uses extreme storm data archiving and retrieval, analysis of recent extreme storm events, and will be linked with USACE Hydrologic Engineering Center models such as HEC-HMS, HEC-MetVue, and others.

John England and Victoria Sankovich-Bahls, U.S. Bureau of Reclamation (BoR) discussed BoR's needs in extreme precipitation data and methods. This information supports their risk analysis and dam safety program, specifically their hydrologic hazard analysis (HHA) hierarchy and levels of study with a focus on the Issue Evaluation (IE) extreme precipitation, and Corrective Action Study (CAS) extreme precipitation. They identified numerous opportunities in the development and analysis of extreme rainfall observations and databases. These include the coupling of point rainfall data with the significant use of radar data to provide better spatial and temporal correlations, and the need to establish and maintain a national extreme storm catalog. They also discussed opportunities to incorporate advances in statistics and data processing methods using regionalization techniques, storm spatial and temporal patterns, mapping larger regions, accounting for seasonal variability, and quantifying uncertainty estimates. They also discussed possible improvements in physical and numerical modeling through the use of radar data resulting in better resolution models for better results; the use of models for hypothesis testing; modeling to evaluate past events such as the September 1970 and May 2010 storms in the Nashville, TN area. Finally, they addressed the needs to handle technical complexities related to watershed size and different storm mechanisms; create and utilize evolving computing resources; training of skilled

personnel to conduct hydrometeorological studies needed to update the HMRs and risk analysis.

Mark Perry, Dam Safety Engineer, State of Colorado presented his responses to the State questionnaire, and moderated a panel discussion of dam safety officials. The first State presenter was Ron Mease, Pennsylvania Department of Environmental Protection, Division of Dam Safety. Dam safety officials from California, Arizona, Virginia and Kentucky participated remotely via “Webinar.”

Victoria Sankovich-Bahls, workshop facilitator provided a preliminary, short summary of the products identified by the workshop presentations and discussions as:

- U.S. Extreme Precipitation Database (including its long-term maintenance and hosting) to include electronic archiving of storm paper records that were the basis of the HMRs;
- Extreme Precipitation Estimates beyond 1:1000-year (also known as the “Fancy Tool”);
- Completion of NOAA Atlas 14 (not beyond 1:1000-year);
- Streamlined Updating of PMPs using statistical methods (workshop is recommended to fully develop);
- Interagency business process to analyze after-event data (an example would be the tornado damage assessment process as a model) tie to the Extreme Storm Catalogue; and
- Synthesis of workshop discussions on needed products.

This synthesis report will be expanded with supporting details on the workshop presentations in a Workshop Summary under development.

A “Proposal Writing Team (PWT)” organized by the ESEWG to include the National Weather Service, U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, U.S. Geological Survey, Federal Energy Regulatory Commission, Natural Resources Conservation Service, U.S. NRC and the State of Colorado Dam Safety Division specialists met the following day to review the workshop’s identified needs and insights.

On June 26, 2014 the ESEGW met via teleconference to review and discuss the Workshop and its preliminary products (please see above). On July 1, 2014 the PWT met via teleconference to organize a proposal outline and make assignments for the writing of its sections. The PWT plans to meet August 4th to further develop the proposal.

The Workshop Synthesis report and proposal will be submitted to the SOH and ACWI later in Fall 2014.

Attachment 4 - The Satellite Telemetry Interagency Work Group (STIWG) Quarterly Report

The Satellite Telemetry Interagency Work Group met in Austin, Texas at the USGS Texas Water Science Center on May 6-8, 2014. The three day meeting consisted of two days of technical discussions with vendor and government personnel. The last day was a government only meeting to discuss policy and funding issues.

Highlights of the technical meetings included:

1. Extensive discussion of the Low Rate Information Transmission (LRIT) service on the GOES satellites. This service is sending a copy of all GOES DCS messages received on a near real-time basis. Many users are leaving the DOMSAT service and going to LRIT. This will allow the retirement of the DOMSAT service which costs the government around \$70K per annum.
2. A presentation was made about advanced signal processing techniques that can be used to more fully utilize the bandwidth assigned to GOES DCS.
3. Many GOES DCS users gave short presentations on their utilization, projects, and concerns with the GOES DCS program.

The minutes of the technical meeting can be found here:

<http://www.noaasis.noaa.gov/DCS/htmlfiles/twg.html>

The government only meeting was held on the last day. This meeting is used to discuss funding and policy issues. As many of these issues could affect contract or acquisitions, the vendor community is not allowed to attend.

Items discussed included:

1. Reorganization of the STIWG. Due to travel restrictions, the shut down and the sequester, the STIWG was not able to meet face-to-face for over a year. We were able to confirm the officer roster and confirm the STIWG's charter and mission.
2. The ability to transmit binary data through the GOES DCS system was discussed. The STIWG will generate a request for comments from the vendor community on this change.
3. Due to the slow life cycle nature of GOES DCS, it was decided that STIWG face-to-face meetings will occur once a year. This will save travel money and allow projects to progress enough where a status meeting is useful. The next meeting will be in the DC metro area in April 2015.

The minutes of the government meeting can be found here:

http://acwi.gov/hydrology/stiwg/Meetings/20140508/Austin_STIWG_minutes_abridged.pdf

DOMSAT and EDDN Funding

The STIWG would like to formally request assistance from the SOH and ACWI for the funding of the EDDN and the DOMSAT service.

The Emergency Data Distribution Network (EDDN) is a system located at the USGS EROS facility near Sioux Falls, South Dakota. It is the primary backup for the GOES system located at Wallops Island, Virginia. It receives the full message stream from the satellites and makes it available to users in North and South America.

Additionally, the EDDN provides other services such as web access to the messages and a database of USGS platform configurations.

The web site for the EDDN is: <http://eddn.usgs.gov>

Facilities and maintenance for the EDDN cost the USGS around \$75K per annum.

The STIWG meetings have been used as a place to solicit funding from other agencies. The STIWG would like to ask its parent organizations for assistance in securing funds for this vital system.

The DOMSAT service is a commercial satellite feed that is leased by the government. When the GOES DCS receiver at Wallops Island receives GOES messages, these messages are packaged and distributed through the DOMSAT feed. This allows users to get GOES DCS data with a small dish antenna. Eventually, DOMSAT is going to be retired with LRIT taking its place. In the short term (one or two more years), there is still a need to fund DOMSAT. The service costs \$70K per annum. You can see notes on this DOMSAT funding discussion in the STIWG meeting minutes.