

**SUMMARY OF THE MEETING OF THE
ADVISORY COMMITTEE ON WATER INFORMATION'S (ACWI)
SUBCOMMITTEE ON HYDROLOGY (SOH)
12:30 p.m. – 3:30 pm, Eastern Standard Time
January 19, 2017**

1. Welcome

Chair Robert Mason called the meeting to order at 12:33 pm and welcomed the participants. He noted that the meeting had been relocated due to the inauguration.

2. Words from our host

Chandra Pathak welcomed everyone to the Institute for Water Resources (IWR). In addition to the USACE headquarters downtown, there are eight division offices. Within each division there are five to seven districts. The IWR is at an equal level with the Engineer Research and Development Center (ERDC). The IWR is engaged in water research at a policy level. There are several elements, which include the Hydrologic Engineering Center (HEC) in Davis, California. This building hosts the headquarters of IWR. Conflict resolution and public participation are major elements of the program.

There is also a risk management group with approximately 100 engineers and scientists. A local USACE unit in Winchester represents the transatlantic division, which is non-civil works, the office supports international efforts.

3. Roll call

A roll call was performed for in-person attendees and those on the phone. The list of attendees is included as Attachment 1.

4. Review and approval of agenda

Tom Nicholson mentioned that there was an article in the DHS newsletter on recent trends in US flood risk; we should discuss how we should look at that report and how agencies should react. It was added to the agenda under “status of action items”.

Tom motioned to approve the revised agenda, Sam Lin seconded and the revised agenda was approved. The agenda is included as Attachment 2.

5. Background on SOH

Siamak Esfandiary provided an orientation to the SOH. The SOH operates under the ACWI and the USGS Water Information Coordination Program. The purpose of ACWI is to improve water information for decision making.

The purpose of the SOH is to improve the availability and reliability of surface water quantity information. There are over 20 member organizations, four workgroups and two proposed workgroups.

6. [Feature Presentation](#)

Chandra introduced Chuck McWilliams of the USACE. Chuck works with USACE Omaha district, working closely with the Risk Management Center and with John England. He is a meteorologist by profession,

and has been involved with the USACE Hydrologic Hazard Team as one of the leads. He will be presenting HEC-MetVue.

HEC-MetVue is a precipitation viewing and analysis tool. It also has the capability to model gridded data and the snow water equivalent. It performs precipitation processing for real time forecasting, storm translation and rotation, storm analysis, and design storms such as HMRs for PMP, SPF, standard and frequencies such as the 100-yr. It is standalone software or it can be incorporated with CWMS. MetVue was originally developed by the southwest districts to get a better handle on water resource decisions. There was a need for a tool to visualize and process precipitation for real-time numerical hydrologic modeling.

The software imports data from a variety of meteorological sources, and produces gridded data. It can refine storms by trimming/correcting, translating storms spatially or temporally, rotating storms and scaling storms (factoring and resizing). It can also animate storms. Input/output formats include TIN, NEXRAD, ASCII Grids, PRISM, NEXRAD_GRID, XMRG, NetCDF, SHG, HRRR and GageInterp.

HEC-MetVue was developed for particular needs. One example is real-time forecasting where the modeler can incorporate rainfall data and adjust for NWS QPF. Emergency management applications include better visualization of threats and improved communications. Other uses include PMP storm development and project planning. Real-time and planning applications are CWMS real-time decision support and dam safety studies.

The integration of HEC-MetVue in CWMS allows automated processing, visualization and interactive analysis as well as modeling and forecast scenarios. HEC-MetVue real time applications include ingesting radar/forecast data; analysis in place or transposed; computation of basin average rainfall; and output data to a hydrology model.

HEC-MetVue inputs can utilize multiple coordinate systems. The computation tools include a depth-area-duration computation tool and a hyetograph/TIN surface generation tool. Output tools include creation of basin average hyetographs and aggregate TINs.

Additionally, there is HMR map coverage through a HMR 52 plug-in. HMRs are still heavily used with PMP studies. The HMRs were digitized and TINs created for MetVue. Future enhancements include a storm centering optimizer and storm ensembles.

The option to perform historical storm analysis uses recording gages and puts it into an isohyetal map to create more realistic data.

Ongoing development includes improvements to file management, time zone management, CWMS forecast integration design, and a documentation update. An official release version is pending.

Future development includes interface enhancements, CWMS enhancements, an extreme storms database, MetVue-HMS Data Exchange and HEC-WT/FRA uncertainty.

The presentation concluded with a live demonstration of the software.

Tom Nicholson noted that a lot of what was presented is not in the proposal of needs for the federal government. We should work with William Otero to get these items into our proposal. Is MetVue used today for flood forecasting, for example, in California? Chuck is not sure if it is being used in California, it

has been used in the past in the Fort Worth District, in particular. The USACE has identified more real-time uses in the last couple of years.

Ted Engman asked what is done when there are data gaps (real time fails for a few minutes, or other gaps). Chuck responded that for the real-time data, QA/QC is performed before running the models. For historical storm data, they have used what was available, with some assumptions. For more recent storms, they have direct contact with local RFCs from NOAA. This has not been as much an issue of late as it has been in the past.

Robert asked if the PowerPoint could be shared as a pdf. Chuck will send it to Chandra.

Tom Nicholson asked if there was any publically available data, he would appreciate as a last slide added to the presentation. Chuck agreed.

7. Announcements

A full text of the announcements is included in the attachments. The announcements are summarized here.

Mathini Sreetharan announced that a 3-day workshop presented by NASA's Applied Remote Sensing Training (ARSET), "Remote Sensing Applications for Flood Monitoring and Management" will be hosted by Dewberry April 18 -20, 2017. The workshop, held at Dewberry's Headquarters in Fairfax, VA is free of charge, but requires prior registration. Topics covered in the workshop include information on satellite based data collected for precipitation, topography and soil moisture as well as an overview of flood monitoring tools. The workshop announcement is included as Attachment 3.

Tom announced that the Probable Flood Hazard Assessment workshop will be held at NRC January 23-25. It is too late to register to attend on-site, but it is possible to join the conference remotely. Information on the workshop is included as [Attachment 4](#).

Siamak announced that FEMA has been asked to do a congressionally-mandated study on urban flooding. The study will be done through a contract with National Academy of Sciences (NAS). The kickoff will be February 6, and there will be both open sessions and closed sessions, which may be listed on the NAS website. FEMA asked them to reach out to other agencies. **Siamak will send the website link.**

Robert announced that the USGS is hosting the NASA SWAT group on April 5 and 6.

Brian Beucler announced that FHWA will be hosting a webinar series on HEC-17. Information is included as [Attachment 5](#).

Agency reports were provided by FERC (Attachment 6) and NOAA (Attachment 7).

A 10-minute break occurred at this point. The meeting resumed at 2:14 pm.

8. Review and approval of the October 2016 meeting summary

Laura Chap circulated the original draft of the minutes on November 3. Edits were received and incorporated into a draft circulated January 12. There was one minor change received after Jan 12 (Martin Becker's affiliation was incorrect). This correction was not circulated but has been made.

Chandra made a motion to accept the January 12 draft with the additional edit, Ted seconded the motion, and the summary was approved.

9. Status of action items from October 20 meeting

a. SOH talking points on “Water Resources Earth Observing Systems Assessment”

Robert noted that the report had not been completed at the time Steve gave the presentation. Since the last meeting, there have been two developments: 1) the report came out 4 days ago, and Robert has had a chance to read the final report; and 2) there are instructions from OSTP that it can be shared within federal agencies but it cannot be transmitted to anyone outside of the federal government.

This puts Robert in a bind since the SOH is about sharing information. Robert can provide the information on sharing to federal agencies. The report will eventually be published. Robert proposes that he read the report, extract some information on it for his agency as permitted, and publish it with reference to his program. Beyond that, he cannot complete the action item.

Robert asks that other agencies share that they have done the same, and whether the extracted information can be allowed to be published on the web page.

b. NASA draft outline for task force on analytical methods for dealing with missing or nonexistent spatial and/or temporal hydrologic data

Ted created the draft outline and Robert distributed it. This action has been completed. Ted has not heard anything and would like to know the next step. The goal is to do a simple white paper with identification of the problem, a literature review and a description of procedures used by various agencies and consultants. It would be ideal to have representatives from agencies and private companies. The final product would be the white paper and possibly a journal article.

Robert stated that the task force needs commitment and participation, and if that is confirmed then the task force has launched. The next step is to get commitment from agencies and a named person to participate. Robert suggested that Ted convene a conference call. **Ted will email each SOH member with an outline and a request for a representative.** Private consultants can participate.

Sam noted that the task force would need meteorologists as well as hydrologists.

Siamak noted that there are books on some of these methods.

Tom asked if this task force is what came out of the meeting with Sujay Kumar. Ted explained that this is something slightly different.

Tom asked for a paragraph he can show the meteorologist/hydrologist representative to explain the project.

Siamak said that it would help if Ted could develop some specific examples.

Ted noted that the original justification, etc. for the task force will evolve.

Jerry Coffee commented that there is substantial statistical literature about these methods, and the methods that hydrologists generally use may not be adequate. He has a couple of papers on this subject by Robert Schumway that he will send to Ted.

Will Thomas noted that flood frequency analysis uses the methods in Appendix 7 of Bulletin 17C.

c. SOH SED/HYD conference account representative

Robert has had a discussion with Tim Randle (SED committee chair) and they have agreed to use federal or former federal employees for the conference account. For the SOH the account representative is Jerry Webb (USACE).

d. B17C methods survey

This had been discussed in a previous meeting to collect additional technical insight on 17C. The USGS and USACE have had trainings on 17C at ASCE, ASFPM, and National Hydrologic Warning Council conferences. The suggestion was to contact the attendees. Robert is reluctant to do this for a variety of reasons, which will be discussed in the HFAWG report.

10. SOH Workgroups

a. HMWG

Claudia Hoefft emailed Robert a brief report. The SedHyd conference committee sent out an RFP and now has 28 responses from 17 cities. The committee is ranking the proposals by cost, including factors such as airfare, lodging, meals and registration as well as subjective qualities such as field trips and travel time. They are trying to get it narrowed down to a few locations to visit. There will be a January 30 teleconference meeting. It would be helpful to have SOH representation on the planning committee. Full report is included as Attachment 8.

b. STIWG

LySanias Broyles provided the report. STIWG met earlier this month to discuss source selection for consolidated open DCS software. The consolidated version will be supported by the STIWG agencies. STIWG is remaining informed and involved in the 1675-1680 MHz spectrum discussion; private industry wants to share that portion of the spectrum. Agencies are already seeing interference with commercial transmitters. Interfering with the spectrum will interfere with the ability to collect real time stage, flow data, etc. If the platforms are not able to receive the data, the tools won't work. The group is planning the 2017 TWIG & STIWG meeting, which will be somewhere on the east coast.

The question was asked if they are getting cooperation from the FCC. LySanias said yes, and it is becoming more and more important that when the FCC puts out requests for comments that the agencies respond. Please follow the chain of command for making comments if you represent an agency, however, the public can comment.

c. ESEWG

Tom provided the report. Marion Baker has left USACE and is now with NOAA. William Otero (USACE) has taken over her role. William has been with the USACE for 5 years, mostly performing risk assessment work. He is starting to get familiar with the team. The group is scheduling a call today to get more information about the task at hand. George Huffman (NASA) is a new member. January 30 1:30-3 is the next conference call. George will be speaking about the global precipitation monitoring mission. A short report has been provided to Robert. They are moving forward with the proposal

writing report. The full report is provided as Attachment 9 (Note: the attachment is the draft report, Tom to provide final version after review).

d. HFAWG

Will Thomas provided the report. At the October meeting he reported that the draft had been sent to five peer reviewers. In November, there were two sets of comments received, from Chuck Kroll and Gabriele Villarini. Gabriele's comments were mostly editorial, with some technical comments on trend analysis. Chuck Kroll's comments were more technical, regarding the perception threshold and regional skew studies. In particular, the USGS has done skew studies for about 25 states, and more information is needed regarding how to handle the partial coverage of new skew data. Rich Vogel reviewed an earlier version, and he resent the same comments from 2015. The review panel was extended to Henry Hu (West Consultants) and Ben Pope (AECOM); their comments had not been received as of the SOH meeting. Steve Yochum provided some comments on more frequent floods. The 2-year event cannot be determined with the increased censoring, so more text is needed regarding the 2-year event.

Martin asked if the members of the workgroup will be allowed to review those comments. Will responded that the plan will be to provide the comments and responses to the HFAWG. Robert responded that we can certainly discuss the questions, and can definitely ask quick questions of the reviewers. Robert or Will will distribute comments to the HFAWG. The survey of participants in the 17C trainings will wait. Will will submit a report.

e. Streamgaging collaborative

Doug provided the report. The collaborative is in the final stages of writing the charter, and he hopes to roll it out and get it approved for the ACWI meeting. There will be one more call the day before the ACWI meeting. They have started working on the technical issues.

11. Plans for SOH presentation to the ACWI

The SOH will present ACWI in February. Usually the SOH chair makes the opening remarks, and then the chairs of the workgroups speak. HFAWG should present, so Will will attend in person. ESEWG should present; Tom will check with his new supervisor about a short presentation. Doug can present about the collaborative and will be there. Instead of a separate STIWG report, perhaps Robert can bring up the concern about the spectrum auctions. Robert will not be at the meeting in person, but could do it remotely. Siamak cannot not be at the meeting. The meeting is February 22-23. Claudia can step in but would need help from the workgroup chairs.

12. Addition to agenda – discussion of “Recent trends in U.S. flood risk”, Louis J. Slater and Gabriele Villarini, Geophysical Research Letters, December 21, 2016

Tom noted that the DHS had picked up this article in its newsletter, and it was causing a lot of concern among the agencies.

The authors took the USGS streamgage data and did a Cox regression analysis looking for trends, and also looked at NASA GRACE data on basin wetness. NRC is not going to comment on the paper directly. They would like to know what other agencies think.

Will has not read the paper or studied it in detail. He is not sure why this one gathered unusual attention. His concern is that they are only using stage data (since 1985) and how many times thresholds are exceeded. His concern that they are not using a long enough data record. Also, stage data is affected by increased numbers of bridges, etc. Will thinks the report is interesting and has good information but it is one of many analyses, and not a cause for alarm.

Robert commented that the USGS has seen report, but has not convened any type of review. Robert agrees with Will about the concerns of a short record and use of stage data. The other issue is that he is talking about lower floods (2-, 5-, and 10-yr) and not the 100-yr flood. We have other information that indicates the low magnitude floods are increasing, based on area of the country. He also believes it is not a cause for alarm.

Jerry noted that there are possible issues with the fact that it was a regional analysis. It is accurate for what it is measuring, but is what it is measuring what we are concerned with?

13. Review actions and plans for next SOH meeting

- **Chuck will send a pdf of the presentation to Chandra for sharing.**
- **Chuck will add a list of publically available data as a last slide.**
- **Siamak will send a website link (when available) for the NAS urban flooding study**
- **As agencies look at the OSTP report and extract information, please share with the SOH if the information can be shared publically**
- **Ted will email the SOH with an outline on the task force and request for a representative from their agency**
- **Robert will distribute the proposed presentation slides for ACWI**

14. Next meeting

A location and presentation is needed for the next SOH meeting, which will be April 20. Siamak will try to get the FEMA conference center at 400 C St. He will see if it is available and will let everyone know.

15. Meeting adjourned

Ted moved to adjourn the meeting. Siamak seconded. The meeting adjourned at 3:29 pm.

Attachment 1 – Roll call of attendees

Name	In person/by phone	Organization
Jerry Coffee	By phone	Retired OMB, consultant to Congress, officer in non-profit
Sam Lin*	In person	FERC
Siamak Esfandiary*	In person	FEMA
Victor Hom*	By phone	NOAA NWS
Claudia Hoeft*	By phone	USDA NRCS
Stephen Breithaupt	By phone	NRC
Robert Mason*	In person	USGS
Victoria Sankovich Bahls	By phone	MetStat, Inc.
David Goodrich	By phone	USDA-ARS
Mathini Sreetharan	In person	Dewberry
Thomas Nicholson*	By phone	NRC
Brian Beucler*	In person	Federal Highway Administration
Steven Yochum*	By phone	Forest Service
Will Thomas*	By phone	ASFPM
Laura Chap	In person	STARR II/Atkins (for FEMA)
Ted Engram*	In person	NASA
Jason Giovannettone	In person	Dewberry
Chandra Pathak*	In person	USACE
Chuck McWilliams	By phone	USACE
Donell Woods	By phone	NOAA/Office of the Federal Coordinator for Meteorology
Dongsoo Kim	By phone	NOAA
Doug Hulstrand	By phone	Applied Weather Associates
Jack Felbinger*	By phone	Office of Surface Mining Reclamation and Enforcement
Li-Chuan Chen	By phone	NOAA NWS
Mike Eberle	By phone	Forest Service
William Otero	By phone	USACE
Doug Yeskis	By phone	USGS
Martin Becker*	By phone	BECKER

*Indicates SOH member

**MEETING OF THE
ADVISORY COMMITTEE ON WATER INFORMATION'S (ACWI)
SUBCOMMITTEE ON HYDROLOGY (SOH)
12:30 p.m. – 3:30 pm, Eastern Standard Time
Thursday January 19, 2017**

Location: *US Army Corps of Engineers,
Institute for Water Resources,
Casey Bldg., 2nd Floor Classroom
7701 Telegraph Road
Alexandria, VA 22315*

Direction: Enter from Gribble Gate (off Telegraph Road) to Humphrey Engineering Center (US Army Corps of Engineers). Stop your vehicle for security check at the gate and show your CAC or government-issued ID to Security Officer. After entering gate take first left turn. Few yards after turn, you will see the Casey Building on left. Continue few more feet after passing the building, take left turn (one way lane) into parking lot and park. Enter Casey Building from the door (has no ID check) facing parking lot. Please proceed to second floor classroom.

See the enclosed map for more information and direction.

Parking: Parking lot is behind the Casey Building. There is no parking fee.

Attendees: Please register in advance via the survey monkey (see URL below) as we will be providing this list to security for expedited check-in. Please bring government-issued ID that will be checked at the Gribble Gate. Please allow 15 minutes for logistics.

Problems? Contact: Rolf Olsen, 703-428-6314 (office), 571-606-2030 (cell)
Chandra Pathak, 202-761-4668 (office), 202-699-2771 (cell)

Remote Instructions:

1. In the interest of time, we will be using the survey monkey to do our roll-call. Please register before COB on January 7, 2017 via <https://www.surveymonkey.com/r/MYSZZDQ>.
2. Please join meeting via PC: <https://www.webmeeting.att.com>
Meeting Number(s): 8773361839 or 6366510008
ACCESS CODE: 7993540
Note: PC weblink for meeting will be open around 10-15 minutes prior to the meeting. Please allow ample time to setup your computer.
3. After connecting via computer, please dial the
Toll-free conference line: (877) 336-1839
USA Caller Paid/International Toll: (636) 651-0008

ACCESS CODE:

7993540 #

I. Tentative Agenda

1. **Welcome and Background on SOH** (5 mins) Robert Mason
 2. **Words from our Host** (10 mins) Chandra Pathak
 - *Logistics: Facilities, Emergency Exits, Internet Access*
 - *Introduction of Special Guests from USACE, Their Special Roles and Activities*
 - *Areas of USACE Mutual needs for SOH consideration*
 3. **Roll-Call (Remote Participants/In-Person Attendees)** SOH Members and Guests
 - *Please see attendee list.*
 4. **Review and Approval of Agenda** (2 mins) Robert Mason
 5. **Background on SOH** (5 mins) Siamak Esfandiary
 6. **Feature Presentation** (~60 mins) **(1:05 – 2:05 PM)**
 - *Guest Introduction* Robert Mason
 - **HEC-MetVue: Tool to analyze rainfall data from storm events**
Charles McWilliams, U.S. Army Corps of Engineers, Omaha District
 - *Questions/Answers/Discussion* All
 7. **Announcements** (10 mins)
-
- BREAK** (2:15 – 2:30 PM)
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8. **Approval of the October 2016 Meeting Summary** (2 mins) Robert Mason
 9. **Status of Action Items from October 2016 Meeting** (5 mins) Robert Mason
 - SOH talking points on “Water Resources Earth Observing Systems Assessment” report (Mason)
 - NASA draft outline for task force on analytical methods for dealing with missing or nonexistent spatial and/or temporal hydrologic data (Ted Engman)
 - Designate SOH SED/HYD conference bank account representative (Mason)
 - B17C methods survey (to be discussed in HFAWG report) (Mason)
 10. **SOH Workgroups** (30 mins)
 - [HMWG](#) Claudia Hoeft
 - [STIWG](#) LySanias Broyles
 - [ESEWG](#) Tom Nicholson
 - [HFAWG](#) Will Thomas
 - *Streamgaging collaborative* Doug Yeskis
 11. **Plans for SOH presentation to the ACWI** Robert Mason

12. **Review Actions and Plans for next SOH meeting** (15 mins)

Robert Mason

13. **Next Meeting:**

All

- *Thursday May x, 2017 from 1230PM to 330PM EDT (Tentative)*
- *Location: TBA*
- *Guest Speaker Topics? Suggestions??*

14. **Meeting Adjourn** (Around 3:30 pm)

Workshop - NASA Remote Sensing Applications for Flood Monitoring and Management – April 18, 19, and 20th, 2017 at Fairfax, VA

Dewberry has invited the NASA Applied Remote Sensing Training (ARSET) program to conduct a 3-day workshop focusing on using remote sensing observations for improved flood monitoring and management activities. The workshop will be held at Dewberry Headquarters in Fairfax, VA from 18-20 April 2017.

The ARSET program offers trainings for using remote sensing and modeling data from NASA and other sources to facilitate environmental decision support. Trainings include overview and interpretation of freely available remote sensing data relevant to end-users' needs; search, access, visualization and analysis of the data using open source tools.

Currently there are numerous polar and non-polar orbiting satellites observing geophysical quantities over land, atmosphere, and oceans. Several of these satellite observations relevant for flood management are available publically covering near-global domain. These observations, including precipitation, soil moisture, land cover, and terrain; in addition to derived quantities such as runoff and streamflow can be accessed via dedicated web-tools for monitoring and evaluating extreme weather conditions and planning for impending flooding, and post-flood relief activities. Integrating spatially and temporally uniform satellite observations in decision support strategy for flood management will greatly enhance the ability of Dewberry to serve their client's needs.

This workshop will provide a good opportunity to meet with NASA-ARSET personnel, interact with clients and potential clients, and to gain an understanding of how to incorporate remote sensing and modeled data in flood management activities. The agenda of the workshop is provided below.

With proof of attendance, following Certifying Agencies has communicated to us that participation in the workshop will qualify for Continuing Education Credits (CECs)/ Professional Development Hours (PDHs):

- Professional Engineer Certification Boards for the States of MD, VA, NC,
- American State Floodplain Managers (ASFPM) Association has preapproved the workshop and will give 12 CECs for Certified Floodplain Manager Certification
- GISPH certification

Please use this link to register for the training: <https://goo.gl/forms/w9dyKdrJhiDNc2wF3>

NASA Remote Sensing Applications for Flood Monitoring and Management

Day	Topic	Activity
Day-1	1) Global Precipitation Measurement (GPM) Mission 2) Shuttle Topography Radar Mission (SRTM)	<p>Presentations:</p> <ul style="list-style-type: none"> -Remote Sensing of precipitation, GPM sensors, data products, & data access. -Overview of SRTM & SRTM data access <p>Hands-on exercises:</p> <ul style="list-style-type: none"> - Access GPM precipitation & SRTM data and analysis in QGIS. -Python script to read HDF data files (applicable to GPM, SMAP)
Day 2	Soil Moisture Active Passive(SMAP) and Synthetic Aperture Radar (SAR)	<p>Presentations:</p> <ul style="list-style-type: none"> - Remote Sensing of soil moisture from SMAP, data products & data access -Intro to SAR, SAR data & applications to open water and inundation mapping <p>Hands-on exercises:</p> <ul style="list-style-type: none"> -Access and analysis of SMAP data -Access and analysis of SAR data (Sentinel-1, Palsar)
Day-3	⁺ Flood Monitoring Tools: GFMS, MODIS NRT Flood Mapping, GDASC	<p>Presentation:</p> <ul style="list-style-type: none"> - Overview of flood monitoring tools <p>Hands-on exercises:</p> <ul style="list-style-type: none"> - Selected flood case(s)*

⁺ GFMS: Global Flood Monitoring System
 MODIS NRT : MODerate-resolution Imaging Spectroradiometer (MODIS) Near Real Time (NRT)
 Flood Mapping
 GDACS: Global Disaster Alert and Coordinate System

* Pre-flood monitoring phase (GPM, SMAP); Flood monitoring and risk assessment – streamflow and inundation (GFMS, SAR, SRTM), Post-flood relief planning (MODIS-NRT, SAR, GDACS)

[Attachment 4](#)

(separate pdf)

[Attachment 5](#)

(see attached pdf)

FERC Report to January 2017 SOH Meeting

- On January 10-12, OEP staff participated in the DHS Dam Sector Government and Sector Coordinating Council meetings. This forum allowed an open exchange of security related information such as best practices, vulnerabilities, and evolving threats. A classified briefing also took place to hear from the Intelligence Community on physical and cyber security threats to critical infrastructure.
- On January 11-12, OEP staff participated in a meeting with the licensee and consulting engineers in Charlotte, North Carolina for the East Fork Hydroelectric Project. The project has four high hazard potential dams. Cedar Cliff Dam, the most downstream in the project, currently cannot accommodate the PMF as required by FERC regulations. Geologic investigations have been conducted and the remediation is in the design phase.
- On December 15-16, FERC participated in a Board of Consultants (BOC) meeting and conducted a construction inspection of the Twin Falls Dam Project. A new tainter gate spillway was constructed to increase efficiency and add spillway capacity to safely pass the design flood.

Attachment 7 – NOAA Report

SOH Member Business Reports (Jan 2017)

NOAA

NWS AWARE

Aware (<http://www.weather.gov/publications/aware>) is a free publication of the National Weather Service. This publication, available in PDF format, is geared to the emergency management community, partners and NWS staff. Please check out the [November 2016 edition](#) for stories on FY16 Extreme Precipitation Events, Swiftwater Rescue, and Highwater Mark sign to commemorate 30th Anniversary of the Arkansas River Floods. If this type of news articles is of interest, you can subscribe to Aware by going to <http://www.nws.noaa.gov/os/awarelist.shtml>

NWS Assessment of Historic Nor'Easter of January 2016

In November, NWS completed its service assessment of the January 2016 No'Easter. This storm produced heavy snow, gale force winds, and blizzard conditions to areas across mid-Atlantic to Southern New England. The storm's total snow accumulations exceeded 2 feet across parts of West Virginia, Virginia, Maryland, Pennsylvania, New Jersey, and New York, with snow accumulations reaching up to 3 feet in the higher elevations. Along the coast, near hurricane-force winds resulted in extreme coastal flooding. Please check out the report on the January 2016 Winter Storm Event: http://www.weather.gov/media/publications/assessments/16Northeast_Blizzard.pdf . An archive of other significant events are available at: <http://www.weather.gov/publications/assessments> .

Report of the 2016 Billion-Dollar Weather and Climate Disasters for the United States

The National Centers for Environmental Information (NCEI) is our Nation's Scorekeeper in terms of recording severe weather and climate events in their historical perspective. NCEI tracks and evaluates climate events in the U.S. and globally that have great economic and societal impacts. In 2016, there were 15 weather and climate disaster events with losses exceeding \$1 billion each across the United States. These events included a drought event, 4 flooding events, 8 severe storm events, a tropical cyclone event, and a wildfire event. Overall, these events resulted in the deaths of 138 people and had significant economic effects on the areas impacted. For the report which compares 2016 to disasters of other years, check out <https://www.ncdc.noaa.gov/billions/overview> .

NCEI Study on Hurricane Intensification along United States Coast during Active Hurricane Periods.

A recent NCEI study hypothesizes that a protective barrier of vertical wind shear and cooler ocean temperatures can setup along the U.S. East Coast to weaken storms as they approach land during favorable periods of hurricane activity in the tropical Atlantic. Warmer sea surface temperatures and the weaker wind shear favorable for hurricane intensification in the Atlantic might be coupled with unfavorable conditions along the coast. This reasoning could explain why the period of high Atlantic hurricane activity over the past 20 years and the accompanying development of the buffer zone may help explain the present "drought" of major hurricane landfalls in the United States. NCEI believes that this buffer may have affected Hurricane Matthew as it headed toward the U.S. Although Matthew's rains were devastating for some areas, the buffer zone helped weaken the storm from a Category 4 as it advanced on Florida to a Category 1 when it officially made landfall in South Carolina. Please see this intriguing study at <https://www.ncdc.noaa.gov/news/periods-greater-atlantic-hurricane-activity-linked-weaker-us-landfalls>.

The 2017 Geospatial Summit – April 24-25, 2017

On April 24-25, 2017 NOAA National Geodetic Survey (NGS) will host the 2017 Geospatial Summit in Silver Spring, Maryland. The 2017 Geospatial Summit will provide updated information about the planned modernization of the National Spatial Reference System (NSRS). Specifically, NGS plans to replace the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88) in 2022. For more information to the workshop, please see: <https://www.ngs.noaa.gov/geospatial-summit/index.shtml>

Attachment 8 – HMWG Report

As of January 9, 2017, the SEDHYD planning committee received 28 proposals from 17 different cities, with a few more expected. The committee is ranking the proposals by cost (including airfare, lodging, Meals, and conference registration), and then applying other more subjective criteria (including field trip opportunities, ease of travel, distance between hotel and conference facilities, access to local mass transit and restaurants) to narrow the list to some 3-5 sites to visit.

The next conference planning committee meeting is planned for Monday, January 30.

As always, the Subcommittee on Hydrology seeks volunteers to help with the conference planning. If you are interested, please let Claudia Hoeft or Robert Mason know.

**draft Report of the Extreme Storm Events Work Group
to the SOH at the January 19, 2017 Meeting**

by Tom Nicholson, Interim Chair

Marian Baker, ESEWG Vice-Chair and Proposal Team Lead announced in December 2016 that she is stepping down at ESEWG Vice-Chair and Proposal Team Lead. Marian Baker left the U.S. Army Corps of Engineers (USACE) to accept a position as meteorologist with the NOAA/ National Weather Service's Central Region Headquarters in Kansas City, MO.

Prior to leaving, Marian arranged with Chandra Pathak, USACE Headquarters to have William Otero, USACE–Kansas City become her replacement as ESEWG Vice-Chair and Proposal Team Lead. William Otero's contact information is William.Otero@usace.army.mil and telephone 1-816-389-3727.

Our next ESEWG meeting is scheduled for Monday, January 30, 2017 @ 1:30 – 3:00 p.m. EST via GoToWebinar. We will introduce our two new ESEWG members, William Otero, USACE and Dr. George J. Huffman, Deputy Project Scientists on the Global Precipitation Measurement Mission, Goddard Space Flight Center, NASA to the ESEWG members. During our ESEWG teleconference, Dr. Huffman will make a presentation on NASA's missions on precipitation monitoring. {Dr. Huffman's contact information is: E-mail: george.j.huffman@nasa.gov, telephone +1 301-614-6308 and mail address: NASA/GSFC Code 612, Greenbelt, MD 20771.}

The Proposal Writing Team (PWT) of the Extreme Storm Events Work Group (ESEWG) continues to work on the national proposal f "Extreme Rainfall Product Needs."

Marian Baker, ESEWG Vice-Chair and Proposal Team Lead, uploaded the latest draft of the ESEWG product needs report and shared them with the writing team.

The updates includes:

1. An updated chapter on NOAA Atlas 14 by Dr. Sanja Perica, NOAA/NWS.

2. John Onderdonk's, FERC, write-up on needed HMRs/new methods for computing PMP estimates. John and his colleagues also provided discussion on needed guidance to review PMP studies by the States and their contractors.

3. Victor Hom's, NOAA/NWS, section 2.4 (but not section 2.5 which needs further work). William Otero, USACE will work with Victor Hom to address needs in statistical tools for probabilistic approaches.

4. The final portion of the proposal still needs to be completed.

5. The appendix on acronyms is complete.

I will confer with William Otero, USACE on Thursday, January 19th to discuss the status of the draft Proposal report, his leadership of the writing team to complete the report, and planning for our calendar 2017 activities.