

**MEETING OF
ADVISORY COMMITTEE ON WATER INFORMATION'S (ACWI'S)
SUBCOMMITTEE ON HYDROLOGY (SOH)**

9:00 am – 12:00 PM (EST)

January 24, 2008

*Room 6641, Department of Interior Building
1849 C Street, N.W., Washington DC 20240*

AGENDA

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| 1. Welcome and Introductions | Steve Blanchard |
| 2. Review and Approval of Agenda | Steve Blanchard |
| 3. Approval of Minutes from October 18, 2007 Meeting | Steve Blanchard |
| 4. Status of Action Items from October 18, 2007 Meeting | Steve Blanchard |
| 5. Presentation of "Overview of NRCS Snow Survey/Water Supply Forecasting" by Claudia Hoeft, Natural Resources Conservation Service <i>(Presentation followed by Q&A - total 0.5 hrs)</i> | |
| 6. Update on Hydrologic Frequency Analysis Work Group | Will Thomas |
| 7. Update on Satellite Telemetry Interagency Work Group | Steve Blanchard
<i>for Ernest Dreyer</i> |
| 8. Hydrologic and Hydraulic GIS Applications Work Group | William Merkel |
| 9. Update on Hydrologic Modeling Work Group
<i>(Including site selection for 2010 Joint Federal Interagency Conference)</i> | Don Frevert |
| 10. National Hydrologic Information System (HIS) development and SOH effort | David Goodrich |
| 11. Extreme Storms Workgroup | Added 1/24/08 |
| 12. Water Availability in the East – Impact on the Nuclear Regulatory Agency | Added 1/24/08 |
| 13. Current Events within Hydrologic Communities | All |
| 14. Announcements and Q&A on Business Reports from Member Organizations | All |
| • <i>"The SOH CONNECTIONS" Newsletter Editor's Report</i> | |
| 15. Plans for Next Meeting | Steve Blanchard |

Adjournment

SUMMARY OF THE MEETING

(Prepared by Mary Greene, OSM)

The SOH wishes to express special thank you to Angela Peavy and Jaime Hernandez for their assistance with the meeting room and AV equipment.

PARTICIPANTS

Martin Becker	Defenders of Property Rights (DPR) (<i>by phone</i>)
Steve Blanchard	Geological Survey (USGS)
Chris Cook	Nuclear Regulatory Commission (NRC)
Don Frevert	Bureau of Reclamation (BOR)
Mary Greene	Office of Surface Mining (OSM)
Claudia Hoefft	Natural Resources Conservation Service (NRCS)
Victor Hom	National Weather Service (NOAA/NWS)
John Hunter	Army Corps of Engineers (USACE)
Joe Krolak	Federal Highway Administration (FHWA) (<i>by phone</i>)
Sam Lin	Federal Energy Regulatory Commission (FERC)
William Merkel	Natural Resources Conservation Service (NRCS)
Tom Nicholson	Nuclear Regulatory Commission (NRC)
Richard Raione	Nuclear Regulatory Commission (NRC)
Gene Stallings	National Hydrologic Warning Council (NHWC)
Will Thomas	Association of State Floodplain Managers (ASFPM)
David Wells	Environmental Protection Agency (USEPA) (<i>by phone</i>)

Meeting Highlights

Steve Blanchard called the meeting to order at 9:00 AM (EST)

1. Welcome and Introductions

Steve Blanchard welcomed everyone to the meeting. Each person introduced themselves and their organizational affiliation. A total of 16 individuals participated, with 3 of the 16 participating by phone. Steve thanked Sam Lin for his service as committee chair for the past year.

2. Review and Approval of Agenda

The meeting agenda was approved as listed above

3. Approval of Minutes from October 18, 2007 Meeting

The minutes were approved.

4. Status of Action Items from October 18, 2007 Meeting

- a. Presentations later in this meeting will address the action items from the October 2007 meeting.

5. Presentation of “Overview of NRCS Snow Survey/Water Supply Forecasting” by Claudia Hoeft, Natural Resources Conservation Service

Claudia’s Powerpoint Presentation was e-mailed to committee members and will be posted on the SOH website.

6. Update on Hydrologic Frequency Analysis Work Group

Will Thomas reported that the Hydrologic Frequency Analysis Work Group is continuing their testing and comparisons of the Expected Moments Algorithm (EMA) and Bulletin 17B procedures. The testing is not far along to report significant results at this time. The tentative plan is to have HFAWG meeting in mid February to discuss the results of this testing. A more detailed report will be provided at the next meeting.

7. Update on Satellite Telemetry Interagency Work Group

Steve Blanchard reported for the Work Group and announced the new Work Group chair is Ernest Dwyer.

The STIWG has its next meeting in Gulfport, MS on January 23, 2008.

Subjects to be covered at this meeting:

- Status of Emergency Data Distribution System (EDDN) at EROS
 - Brief status is
 - All antennas and outside infrastructure (power cables, fiber-optic cables, etc.) have been installed.
 - The GOES receive system has been installed in the EROS computer center and connected with the antennas.

- As of last week, the system was receiving data from all domestic channels on both GOES East and West.
 - System testing will continue through February.
 - Integration into operational systems will begin in March.
- Status of Data Collection Platform Interrogate (DCPI) project.
 - This is a project supported by NOAA/NOS to include two-way communications with DCPs over the GOES DCS.
 - The Sutron Corporation was awarded a contract to propose an operational system and develop a prototype.
- Status of transition to High Data Rate (HDR) DCPs
- Status of work towards reducing the bandwidth of each GOES channel when the conversion to HDR DCPs has been completed.
 - The HDR DCPs can transmit in a much narrower bandwidth than the old 100-baud DCPs. So the current bandwidth of each GOES channel can be reduced by ½ its current length. This will have the effect of doubling the current capacity of the GOES DCS.
- Reception of 100/300 baud transmissions on same channel
 - The new HDR demodulators can receive 100 and 300 baud transmissions on the same channel. However, not every receive site has this capability. Discussion will be about how to proceed. This capability will facilitate the transition from 100-baud DCPs to HDR DCPs.
- Support of Dual Pilot Signal
- Changes to DOMSAT
 - Status of NESDIS action items:
 - Explore possibility of transmitting of dual streams of data to DOMSAT: one from Wallops; one from backup.
 - Explore replacement of transmission protocol which is becoming obsolete
- Support for acquiring newly available frequency band for GOES DCS use.
 - An unused frequency band has been identified and may be available for use by the GOES DCS when the satellite GOES S is launched (2013). The band is about the same size as the current GOES DCS band and its use would effectively double the current capacity of the GOES DCS. Along with the reduction in the size of each GOES channel, this would quadruple the current capacity.
 - The GOES DCS community will have to present a good case for the use of the newly-available band for the GOES DCS because other groups may apply for

it also. The ARGOS system has already expressed an interest in it. We may need SOH and ACWI support for justifying its use in the GOES DCS.

8. **Hydrologic and Hydraulic GIS Applications Work Group**

William Merkel provided the following report. A web site for the workgroup was set up which links to the web site of the SOH. In addition to a list of members and organizational charge (charter), teleconference minutes are posted. Detailed information on the new Workgroup can be accessed from the web site: <http://acwi.gov/hydrology/h2gisa/>. Information on additional activities will be posted periodically.

The third teleconference was held January 7, 2008. To gather and systematize information on GIS applications in hydrology and hydraulics, a questionnaire was written. The purpose of gathering the information will be to prepare a report to be distributed and posted on-line. The intent of the questionnaire is to gather enough information about a particular application so a potential user can determine if it meets his/her objectives and data requirements. A draft questionnaire was distributed to SOH members for comments before distribution. Discussion concerning the questionnaire included how it would be distributed and responses received. There are 10 members of the Workgroup representing different federal agencies. These members will be requested to distribute the questionnaire within their respective agencies. SOH members or alternate members whose agency does not have a representative on the Workgroup will be requested to forward the questionnaire to an appropriate individual within their agency.

To promote the educational aspect of the Workgroup, a short GIS application demonstration or presentation (10-15 minutes) will be arranged for future teleconferences. At the next teleconference, logistics will be tested for members to view a presentation on their workstations.

William Merkel and David Wells have co-authored a paper for presentation at the American Water Resources Association conference "GIS and Water Resources V" to be held in San Mateo, CA March 17-19, 2008. The presentation will cover the activities, progress, and future direction of the Workgroup.

The next teleconference will be held March 5, 2008.

9. **Update on Hydrologic Modeling Work Group**

Don Frevert reported that the site selection team had reached a recommendation for a site to host the 2010 Joint Federal Interagency Conference.

The request for proposals was sent out for consideration by about ten locations in June, 2007 and responses were received from three cities – Reno, Las Vegas and Orlando. Among those cities responding, there were four viable facilities in Reno (the Silver Legacy, the Peppermill, the Nugget and the Atlantis), one in Las Vegas (the Riviera) and one in Orlando (the Wyndham). Other facilities had one or more disqualifications in

their responses such as excessive hotel room rates, excessive charges for meeting rooms and unworkable charges or terms for food and beverage service. Site visits to the Reno and Las Vegas facilities were done the week of December 10th and the Orlando facility was visited in mid January.

The recommendation from the site selection team was based on both financial and facility suitability considerations. It was requested that the subcommittee discuss and reach a consensus regarding this recommendation. The recommendation was discussed and the subcommittee unanimously endorsed the selection. Several recommendations for possible field trips in conjunction with the 2010 conference were offered including Hoover Dam, EPA facilities, Clark County Flood Control facilities and research sites of the University of Nevada – Las Vegas’ Desert Research Institute. Pending concurrence from the Subcommittee on Sedimentation, contract negotiations with the Hotel should be completed by early March.

Proceedings from the 1998, 2002 and 2006 Federal Interagency Hydrologic Modeling Conferences have been uploaded to a USGS web address. Steve Markstrom is working with Doug Glysson to get the proceedings linked to the Subcommittee on Hydrology website. Proceedings from the 1993 Workshop on Hydrologic Modeling Needs for the 1990’s have not yet been uploaded. This will be a priority for 2008.

The work group is scheduled to hold a conference call at 1:00 EST on Tuesday, February 12, 2008.

10. **National Hydrologic Information System (HIS) development and SOH effort**

Update was reviewed by Steve Blanchard for Dave Goodrich.

Regarding the CUAHSI-HIS effort:

- Some work on terms of reference
- Update obtained from David Maidment
- Need to formally name and organize subcommittee members.

11. **Extreme Storms Workgroup**

Discussion: There is multi-agency concern for loss of knowledge with recent and impending retirements from multiple agencies. There is interest in exploring the following areas and other areas as well:

- Rainfall data
- There is interest in updating the extreme storm catalog and PMP’s
- NOAA Atlas 14 could be reviewed
- Update PMP technologies

Decisions:

The SOH decided to form a Task Force to determine the interest and need

- SOH members were asked to identify names of agency representatives.
- NRC agreed to lead the first meeting.
- Agency interest and topics of interest will be explored by the Task Force

- 12. Water Availability in the East – Impact on the Nuclear Regulatory Agency**
Tom Nicholson discussed drought forecasting and information exchange efforts that are occurring regionally. There was some discussion as to the possible need for national coordination or providing a means to share the information coming from these regional efforts nationally.
- Decision:** Steve will contact Doug James prior to our next meeting regarding possible NSF sponsorship of the information exchange efforts and activities in water availability.
- 13. Current Events within Hydrologic Communities**
The National Meeting of the ACWI will be held February 20-21, 2008 in Herndon, VA.
- 14. Announcements and Q&A on Business Reports from Member Organizations**
- Bureau of Reclamation alternate to the SOH is Mr. John Osterberg.
- 15. “The SOH CONNECTIONS” Newsletter Editor’s Report**
Mary Greene reported the SOH Connections continues to be well received. She requested feedback on the new format created by Claudia Hoeft which tightens the presentation and condenses the conferences and meetings to one page. Mary reminded the committee members that feedback and especially contributions are always needed and welcomed.
- 16. Plans for Next Meeting**
The next meeting of the Subcommittee on Hydrology is on Thursday April 17 starting at 9 AM at the Main Interior Building.

Adjournment

Action Items:

- I. Email any additional organization business reports to Mary Greene by February 8
- II. Work Group leaders - email a written version of the reports you gave at the meeting to Mary Greene by February 8 so Mary can complete the draft minutes.
- III. The Hydrology and Hydraulics (H&H) GIS Applications Workgroup would like to send out a questionnaire to gather information from organizations on existing H&H related GIS applications. The Workgroup would like the SOH to review and comment on the draft questionnaire. Please review the attached draft questionnaire and send any comments to Bill Merkel (william.merkel@wdc.usda.gov) by February 8.
- IV. There is continued interest in forming an Extreme Storms Work Group. The SOH decided to proceed on this activity by having an exploratory meeting for representatives from each of the SOH organizations to get together to discuss conceptual approaches, methods, what products are needed, etc. The NRC agreed to host this meeting with

people attending in person and by phone as necessary. Each SOH organization is to send Tom Nicholson (tjn@nrc.gov) and Chris Cook (cbcl@nrc.gov) a name of a person who could attend this meeting and speak to what is needed regarding Extreme Storms; names are due by February 8.

- V. Steve will contact Doug James prior to our next meeting. Regarding possible NSF sponsorship of the information exchange efforts and activities in water availability.
- VI. Send any submissions you have for the next SOH Connections newsletter to Mary Greene (mgreene@osmre.gov) and Claudia Hoeft (claudia.hoeft@wdc.usda.gov) by February 22.

Member Reports:

USDA-ARS

David C. Goodrich

ARS, and the Forest Service experimental watershed scientists and representatives met on a conference call Dec. 19th to outline an approach to respond to a request by NSF to develop a workshop proposal to discuss how ARS and FS might collaborate with NEON (National Environmental Observatory Network) scientists and utilize ARS and FS experimental facilities by NEON for deployment of their proposed satellite tower and data collection systems. Deb Hayes (FS) and Mark Walbridge (ARS) are heading up this coordination effort at the national level.

Bureau of Reclamation

Don Frevert

The following will be the Bureau of Reclamation's Business Report for our next subcommittee meeting:

On December 14th, Interior Secretary Dirk Kempthorne signed the Record of Decision implementing new and innovative management strategies for the Colorado River reservoir system. The agreement reflects concurrence among the seven basin states on how to deal with shortages in the system that may be encountered in the future. In his remarks, Secretary Kempthorne noted that the decision was "a remarkable consensus" among stakeholders about sharing water during the current drought and also charting a water management course for the future.

Work on Reclamation's Management for Excellence Initiative is nearing completion and a number of action items are now fully completed. A summary of the status of each action item can be found at: <http://www.usbr.gov/excellence/finalproducts.html>

FERC - Sam Lin

A major flood event, with about a 100-year recurrence interval, took place on January 8, 2008 at the Norway and Oakdale Hydropower Projects in Indiana which are under FERC's jurisdiction. Both projects' emergency action plans (EAPs) were activated for the flood. The media incorrectly reported that Norway dam was in danger of failing. At no time during the flood event was the dam in danger of overtopping and failing. In fact, the both Norway and Oakdale passed the flood, which may have been the flood of record, with the reservoir levels barely above normal levels. This watershed has widespread flooding of low level downstream development during flood flows at flows substantially less than spillway capacity.

The EAPs for both dams was activated for Condition C (no danger of dam failure but flooding from natural flood events is expected). FERC's Chicago Regional Office was informed January 14, 2008 by Northern Indiana Public Service Company (NIPSCO), the owner of both projects that there was a failure of the automatic reverse 911 flooding alert system. They are investigating the cause but believe it may be human error. We have required a report, Condition affecting the safety of a project.

Office of Surface Mining - Mary Greene

The office of Surface Mining provided training on the Groundwater Modeling System software for the interagency development team of the Watershed Characterization Modeling System in support of the OSM Applied Sciences Grant received by the University of West Virginia to develop a groundwater modeling module. Members of the State of West Virginia Department of Environmental Protection also attended. The OSM TIPS Hydrology Success Team will be meeting in Early March to develop discuss program development and priorities.

U. S. Geological Survey - Steve Blanchard

National Streamflow Information Program - The USGS received an increase of \$3.5M for its National Streamflow Information Program as part of the FY08 Federal appropriations. This increase will help stem the loss of important long-term record streamgages. \$1.5M of the increase is just for FY08; so these funds will be used primarily for short-term needs such as purchasing high data rate satellite telemetry radios to improve the frequency of data transmissions from once every 4 hours to once every 1 hour.

USGS Makes Significant Contribution to Special Issue of the Journal of Hydraulic Engineering on Acoustic Velocimetry for Riverine Environments - The American Society of Civil Engineers has published a special issue of the Journal of Hydraulic Engineering for December 2007. The title of this special issue (SI) is Acoustic Velocimetry for Riverine Environments. The focus of this special issue is measurements and research relating to capabilities, limitations, operational considerations, and innovative applications of acoustic Doppler instruments, with special emphasis on practical considerations regarding the use of the instruments for hydraulic measurements. USGS personnel have authored or co-authored 6 of the 12 technical papers, 1 technical note, and an introduction to the SI and the epilogue; contributing to 9 of the 14 articles appearing in the issue.

According to the introductory paper of the special issue, “The USGS has been leading the way in developing, adopting, and improving these acoustic instruments in their hydrologic data-collection programs, as well as disseminating their experience to the broader river measurement community. In 2006, 33% of all USGS discharge measurements were made by using acoustic instruments. Approximately 57% of all USGS discharge measurements that could be made from a boat, cableway, or bridge were made with an ADCP, whereas 27% of all wading measurements were made with an ADV. As of this writing (2007), an estimated 250 ADCPs and 627 ADVs are actively being used for making streamflow and velocity measurements in USGS water science programs.” These papers represent significant contributions to the field of hydraulic measurements by USGS personnel and are a product of much work by the USGS to pursue new technologies for measurement of streamflow.

Technical papers authored by USGS personnel and published in this special issue include papers on the following topics, (a) validation/evaluation of hydroacoustic measurements, (b) techniques for use with hydroacoustics instruments, (c) research on errors caused by flow disturbance, and (d) special applications of ADCPs for measuring complex flows. They include:

Validation of Streamflow Measurements Made with Acoustic Doppler Current Profilers, by Kevin Oberg and David S. Mueller

Application of Acoustic Doppler Velocimeters for Streamflow Measurements, by Michael Rehmel
Correcting Acoustic Doppler Current Profiler Discharge Measurements Biased by Sediment Transport, by David S. Mueller and Chad R. Wagner
Errors in Acoustic Doppler Profiler Velocity Measurements Caused by Flow Disturbance, by David S. Mueller, Jorge D. Abad, Carlos M. García, Jeffery W. Gartner, Marcelo H. García, and Kevin A. Oberg
Evaluation of Mean Velocity and Turbulence Measurements with ADCPs, by Elizabeth A. Nystrom, Chris R. Rehmann, and Kevin A. Oberg
Field Assessment of Alternative Bed-Load Transport Estimators, by D. Gaeuman and R. B. Jacobson
ADCP Measurements of Gravity Currents in the Chicago River, Illinois, by Carlos M. García, Kevin Oberg, and Marcelo H. García

The introduction and epilogue were also co-authored by USGS personnel:
Acoustic Velocimetry for Riverine Environments, by Marian Muste, Tracy Vermeyen, Rollin Hotchkiss, and Kevin Oberg
Call for Collaboration in WMO Project for the Assessment of the Performance of Flow Measurement Instruments and Techniques, by Janice M. Fulford, Paul J. Pilon, Zurab Kopaliani, Patrick J. McCurry, and Claudio Caponi

Additional information about these papers and the USGS activities related to hydroacoustics are available from the USGS Hydroacoustics Web pages <http://il.water.usgs.gov/adcp/>. General information regarding the special issue, including access to all the papers published therein, is available at <http://ascelibrary.aip.org/dbt/dbt.jsp?KEY=JHEND8&Volume=133&Issue=12>.
<http://pubs.asce.org/journals/hydraulic/default.htm>

Although important advances have been made in the capability and use of acoustic instruments for hydrologic data collection, the science and engineering of these instruments is still incomplete and worthy of further research and critical evaluation. The USGS continues to explore the use of new and more accurate measurement technologies as a way to better collect and disseminate information as a part of the National Streamflow Information Program (NSIP).

Streamflow of 2007 - Water Year Summary – The USGS published its second annual summary of streamflow condition in the United States for the 2007 water year. The publication is available on-line at:
<http://water.usgs.gov/waterwatch/2007summary/>

Association of State Floodplain Managers – Will Thomas
Nothing to report

Bureau of Land Management – Mike Eberle
Nothing to report

Corps of Engineers – Jerry Webb
Nothing to report

Defenders of Property Rights – Martin Becker

Nothing to report

Federal Highways Administration – Joe Krolak

Nothing to report

Federal Emergency Management Association – Doug Bellomo

Nothing to report

Forest Service – Chris Carlson

Nothing to report

Natural Resources Conservation Service – Claudia Hoelt

Nothing to report

National Hydrologic Warning Council – Gene Stallings

Nothing to report

National Aeronautic and Space Administration – David Toll

Nothing to report

National Science Foundation – Doug James

Nothing to report

U.S. Environmental Protection Agency – David Wells

Nothing to report

National Weather Service – Victor Hamm

Nothing to report