

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

**9:00 AM – 12 Noon  
April 29, 2010  
Meeting Room 3M2B  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC**

**FINAL MINUTES**

**AGENDA**

- |   |                          |
|---|--------------------------|
| 1. Welcome and Introductions  | Mary Greene              |
| 2. Review and Approval of Agenda  | Mary Greene              |
| 3. Approval of Minutes from January 7, 2010   | Mary Greene              |
| 4. Status of Action Items from January 7, 2010 Meeting  | Mary Greene              |
| 5. Presentation<br>Federal Interagency Flood Plain Management Task Force  | Rhonda Montgomery (FEMA) |
| 6. Presentation<br><i>"Implementation of the Community Hydrologic Prediction System (CHPS)"</i>                                   | Jon Roe (NOAA/NWS)       |
| 7. National Hydrologic Information System (HIS) development and SOH effort<br>and status of a new Water Data Work Group under SOH | David Goodrich           |
| 8. Hydrologic Modeling Work Group   | Don Frevert              |
| 9. Hydrologic Frequency Analysis Work Group   | Will Thomas              |
| 10. Hydrologic and Hydraulic GIS Applications Work Group  | William Merkel           |
| 11. Extreme Storms Work Group   | Tom Nicholson            |
| 12. Current Events within Hydrologic Communities  | All                      |
| 13. Announcements and Q&A on Business Reports from Member Organizations   | All                      |
| 14. ACWI 2010 Annual Meeting  | Mary Greene              |
| 15. Plans for Next Meeting  | Mary Greene              |

**Adjourn**

## Summary of the Meeting

Prepared by Claudia C. Hoeft, USDA - NRCS

### Attendees

Martin Becker	Defenders of Property Rights (DPR)	(by phone)
Steve Blanchard	United States Geological Survey (USGS)	
Robert Boyd	Bureau of Land Management (BLM)	(by phone)
Richard Cuenca	National Science Foundation (NSF)	(by phone)
Don Frevert	Bureau of Reclamation (BoR), Retired	(by phone)
Dave Goodrich	USDA Agricultural Research Service (ARS)	(by phone)
Mary Greene	USDA – NRCS – National Water and Climate Center (NWCC)	
Claudia Hoeft	USDA Natural Resources Conservation Service (NRCS)	
Victor Hom	National Oceanic and Atmospheric Administration (NOAA/NWS)	
John Hunter	U.S. Army Corps of Engineers (USACE)	
Joseph Krolak	Federal Highway Administration (FHWA)	(by phone)
Sam Lin	Federal Energy Regulatory Commission (FERC)	
William Merkel	USDA Natural Resources Conservation Service (NRCS)	
Richard Raione	Nuclear Regulatory Commission (NRC)	
Gene Stallings	National Hydrologic Warning Council (NHWC)	(by phone)
Nancy Steinberger	Federal Emergency Management Agency (FEMA)	(by phone)
Will Thomas	Association of State Floodplain Managers (ASFPM)	(by phone)
David Wells	Environmental Protection Agency (USEPA)	
Max Yuan	Federal Emergency Management Agency (FEMA)	(by phone)

### 1. Welcome and Introductions

**Mary Greene**

Mary Greene, NRCS, Chair of SOH, welcomed members and visitors to the second meeting of the SOH in 2010 at the Federal Energy Regulatory Commission in Washington, D.C. There were a total of 18 persons who participated in this meeting; 8 who participated in person and 10 who called in to teleconference. Claudia Hoeft, NRCS, Vice-chair of SOH, acknowledged Sam Lin, FERC, for his help in making this meeting possible. Claudia learned on April 28 that the room she reserved in the South Ag Building was not available prompting a very last minute location change.

### 2. Review and Approval of Agenda

**Mary Greene**

One change to agenda was proposed and accepted to allow guest Rhonda Montgomery to speak earlier in the agenda about the FEMA, Federal Interagency Task Force on Floodplain Management. Rhonda is unable to join us for the entire teleconference.

### 3. Approval of Minutes from January 7, 2010

**Mary Greene**

Steve Blanchard, USGS, and Will Thomas, ASFPM, both provided minor corrections to the minutes from the January 7, 2010 meeting to Claudia. SOH members were encouraged to provide further corrections or revisions to Claudia by May 5, 2010 at which time Claudia will finalize the minutes. Upon completion, Claudia is to submit the minutes to Carol Lewis at USGS for posting on the SOH web-site. Claudia is also to inform Carol that it is okay to archive minutes from past meetings.

### 4. Status of Action Items from January 7, 2010 Meeting

**Mary Greene**

- Member agencies are asked to look for volunteers who are willing to serve as chair and as vice-chair for the Hydrologic Modeling Work Group. These individuals will be expected to step into these roles at the end of 2010. Please contact Don Frevert who can provide further information on duties and responsibilities.  
*Richard Raione, NRC, has some folks who might be interested in serving in this responsibility. He will check with them and encourage them to contact Don Frevert directly.*
- Update the minutes from the October 8 meeting with additional information from Tom Nicholson. Finalize after a one-week review period.  
*Complete.*

3. Fill out (flesh out?) terms of reference for the next SOH meeting in April.  
*Dave Goodrich will report further on this later in the meeting.*
4. Mary will contact the Subcommittee chair to gage their interest and what to present to ACWI.  
*Complete.*
5. Present the proposal to establish the work group to ACWI at the February meeting.  
*February meeting was cancelled due to snowmageddon. Awaiting word on rescheduling.*
6. Submit Newsletter items to Claudia Hoeft, NRCS, and/or Richard Raione, NRC by March 26, 2010.  
*Claudia Hoeft will report further on this later in the meeting.*
7. Work Group Chairs provide slides to Mary for use in the ACWI presentation in February.  
*Complete.*

## 5. Presentation

**Rhonda Montgomery, FEMA**

Rhonda Montgomery, FEMA, presented the following information on the Federal Interagency Flood Plain Management Task Force, which is chaired by FEMA.

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### Federal Interagency Floodplain Management Task Force “Listening Session”

**Dates:** Afternoon of May 10 & morning of May 11, 2010  
**Location:** Crystal Gateway Marriott, 1700 Jefferson Davis Highway in Arlington, Virginia

#### Purpose of the Listening Session

- Solicit input on specific topics of interest to inform the content and sequencing of the work of the Task Force;
- Provide an overview of key concepts and themes associated with floodplain management, as well as the related laws, regulations, current initiatives, and future initiatives (such as development of a unified, national vision) to promote a common frame of reference among participants;
- Explore the most significant benefits associated with floodplain management, and identify the challenges to achieving this vision;
- Obtain the perspectives of stakeholders on how these challenges can be addressed in order to more effectively protect resources and reduce hazards to people and property;

#### Federal Interagency Floodplain Management Task Force Member Agencies

Department of the Army (Corps of Engineers)  
 Department of Homeland Security-Federal Emergency Management Agency  
 Department of Agriculture  
 Department of Commerce  
 Department of Defense  
 Department of Energy  
 Department of Housing and Urban Development  
 Department of the Interior  
 Department of Transportation  
 Environmental Protection Agency  
 General Services Administration  
 Tennessee Valley Authority  
 Council on Environmental Quality (Advisor)  
 Office of Management and Budget (Advisor)

#### Background

The Federal Interagency Floodplain Management Task Force was authorized and established by Congress in 1975. The purpose of the Task Force is to carry out the responsibility of the President to prepare for the Congress proposals necessary for a Unified National Program for Floodplain Management.

For more than 40 years, some form of an interagency group has worked to better understand the interactions between human actions and natural systems in the floodplain environment and to make recommendations to reduce the loss of life and property caused by floods. In 1994, the Task Force submitted to the President *A Unified National Program for Floodplain Management*, which called for the formulation of a more “comprehensive, coordinated approach to protecting and managing human and natural systems” in a sustainable development context. Before being reconvened in 2009, the Task Force last met in 1997 after publishing the document *Protecting Floodplain Resources: A Guidebook for Communities*.

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**Federal Interagency Floodplain Management Task Force**  
**Listening Session**  
**May 10-11, 2010**  
**Crystal Gateway Marriott**  
**1700 Jefferson Davis Highway, Arlington, Virginia**

**Objectives**

The current Administration's emphasis on consistency and collaboration, as well as the need to respond to new economic and environmental challenges, has inspired a renewed effort for unifying the Federal Government's approach to floodplain management. As an important step in this process, the Federal Interagency Floodplain Management Task Force (FIFM-TF) has been reestablished to identify and address critical issues associated with floodplain management. To ensure that this work is well informed by a wide range of stakeholders' perspectives, the FIFM-TF is hosting a listening session designed to:

- Solicit input on specific topics of interest to inform the content and sequencing of the work of the Task Force.
- Provide an overview of key concepts and themes associated with a unified vision for floodplain management, as well as related laws, regulations and current initiatives to promote a common frame of reference among participants;
- Explore the most significant benefits associated with fully realizing this vision, and identify the challenges to achieving this vision;
- Obtain the perspectives of stakeholders on how these challenges can be addressed to more effectively protect resources and reduce hazards to people and property;

**Monday May 10, 2010**

**12:00 – 1:00 Registration**

**1:00 – 1:15 Welcome and Opening Remarks** – Terrance “Rock” Salt, USACE

**1:15 – 2:30 Opening Presentations**

*Objective: Provide participants with common themes and concepts to be used as context for later discussions*

- *The Cost of Flooding* – Sandra Knight, DHS/FEMA
- *Natural Resource Benefits and Functions of Floodplains* – John McShane, USEPA
- *Key Challenges of Floodplain Management: Federal and Non-federal Perspectives* – Ed Hecker, USACE
- *50 Years of Floodplain Management: Concepts & Actions* – Gerry Galloway

**2:30 – 2:40 Concurrent Breakout Session Instructions**

**2:40 – 3:00 Break and Move to Breakout Rooms**

**3:00 – 6:00 Concurrent Breakout Sessions**

*Objective: Promote dialogue among participants and provide feedback to the FIFM-TF on key issues that can guide the future work of the TF and its member agencies.*

Participants will rotate through three rounds of breakout sessions chosen from one of the following five session topics. Below you will find the title of each Topic area. A facilitator and Subject Matter Expert will lead each group to identify specific action items the Task Force should consider concerning this topic.

- **Topic 1: A Unified Approach to Floodplain Management**
- **Topic 2: Identifying Successes and Conflicts in Floodplain Management**
- **Topic 3: Balancing Environmental, Economic, and Public Safety Aspects of the FPM Vision**
- **Topic 4: Fostering Partnerships**
- **Topic 5: Adapting to Climate Change**

**6:00 Adjourn**

**6:30 – 7:30 Networking Reception**

**Tuesday May 11, 2010**

**8:00 – 8:15 Welcome, Recap of Day 1 and Instructions for Day 2 Breakouts**

**8:15 – 8:30 Break and Move to Breakout Rooms**

**8:30 – 11:30 Concurrent Scenario-based Breakout Discussions**

*Objective: Get focused feedback from participants about floodplain management issues associated with specific topics.*

Participants will rotate through three rounds of scenario-based breakout sessions identified below. Based on the discussions and ideas generated in Day 1, each breakout session will involve small groups working through these pre-identified scenarios and sharing their creative ideas with the breakout group.

- **Managing Disaster Mitigation, Preparedness, Response, Recovery and Rebuilding**
- **Balancing Environmental Justice Issues and Challenges**
- **Achieving a Watershed Approach**
- **Fostering Disaster Resilience with Community Values and Economic Viability**
- **Protecting and Restoring the Natural Resources and Functions of Floodplains**
- **Possible Wildcard Session**

**11:30 – 11:45 Break and Reconvene in Plenary**

**11:45 – 12:15 Summary of Morning Session and Closing Remarks, Richard Serino, Deputy Administrator, FEMA**

*\*\* Post-listening session comments are welcome and can be submitted via the FEMA website at [http://www.fema.gov/business/nfip/FIFM\\_Task\\_Force.shtm](http://www.fema.gov/business/nfip/FIFM_Task_Force.shtm)*

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**Federal Interagency Flood Plain Management Task Force – Member Agencies and Representatives**

Agency	Principle	Work Group Members
DHS	Craig Fugate	
FEMA	Sandra Knight	Deb Ingram/Rhonda Montgomery/ <a href="#">Bill Blanton</a>
COE	JoEllen Darcy	Cliff Fitzsimmons
COE	John Hurley	
COE	Rock Salt	
COE	Ed Hecker	Pete Rabbon/Joe Manous
Department of Commerce	David Kennedy	Maria Honeycutt
Department of Interior	Jane Lyder	Bill Wilen
Tennessee Valley Authority	Janet Herrin	Roger Milstead
Center on Environmental Quality	Michael Boots	Terry Breyman
Environmental Protection Agency	Nancy Stoner	John McShane
Department of Housing and Urban Development	Charles Bien	Robyn Colosimo
Department of Defense	Maureen Sullivan	Pat Coury
Department of Transportation	Michael Lowder	Joe Krolak
General Services Administration		Gina Noel
Department of Agriculture	Ann Mills	Tony Kramer
Other Participants		
Gerry Galloway (University of Maryland)		

## 6. Presentation

John Roe ( NOAA/NWS)

### ***“Implementation of the Community Hydrologic Prediction System (CHPS)”***

Jon Roe, Chief of Hydrologic Software Engineering Branch for NOAA, National Weather Service made a presentation entitled, Implementation of the Community Hydrologic Prediction System (CHPS). Jon’s presentation can be accessed through the SOH web-site.

## 7. National Hydrologic Information System (HIS) development and SOH effort     David Goodrich and status of a new Water Data Work Group under SOH

David Goodrich, ARS, has edited the draft terms of reference (attached to end of document) to point time series data which was a revision that grew out of discussions at the last SOH meeting. He will do no further edits or revisions until we know more about when the ACWI meeting will be held. (ACWI has proposed a meeting for sometime in July to make-up for the February meeting which was canceled. See item 14.)

Further decision on the terms of reference will be delayed until the October meeting – after ACWI and after JFIC. Dave Goodrich will continue working with Maidment and \_\_\_\_\_ in the meantime.

There were some problems with file-sharing. Dave Goodrich sent the terms of reference out for group review, but not everyone could get to the file. Dave will send some information on how to easier share files.

Steve Blanchard, USGS suggested that the terms of reference be reviewed closely for time commitment. With a 3 year rotation, a total of a 6 year commitment would be required for an individual serving the group as vice-chair and then chair.

## 8. Hydrologic Modeling Work Group

Don Frevert

Update on the Joint Federal Interagency Conference (JFIC):

- ***Registration:***

So far, about 183 persons have registered for the Conference. The expected registration is around 600 persons. May 31<sup>st</sup> is the registration deadline.

- ***Technical program:***

The technical program is full with 6 tracks, 3 hydrologic modeling and 3 sedimentation. There are also a couple of poster sessions, demonstration sessions, and opportunities for exhibitors.

- ***Short courses:***

This is the one area of concern. There are 10 scheduled short courses, 5 on hydrologic modeling and 5 on sedimentation. To date, registration for short courses is no where near to where it needs to be for any of the short courses. One reason may be because of the Grand Canyon Tour. There has been a huge response for the tour which includes Sunday morning which is when many of the short courses are scheduled.

There was an error on the registration form regarding registration for the RiverWare short course. The listing shows the cost at \$250. In actuality, it should be \$125.

- ***Field trips:***

*Grand Canyon Trip.* This trip is proving very popular. It will depart on Thursday and return on Sunday.

*Hoover Dam.* Sunday morning trip.

*Red Rocks Area.* Sunday morning trip.

See the web-site for additional information on field trips. [www.jfic.us](http://www.jfic.us)

**The SOH will meet on Friday morning, June 25, 2010 in Las Vegas, NV.**

There are some concerns regarding continuity within the HFWG. Don’s tenure ends right after the conference. Mary encouraged all members to beat the bushes for volunteers to lead the group.

## 9. Hydrologic Frequency Analysis Work Group (HFAWG)

Will Thomas

Work is still proceeding on the action items from the November 19, 2009 meeting of the HFAWG. There is not a date established for a future meeting. It is anticipated that the next meeting will be after the November 19 action items are complete. An extended abstract was sent to Don Woodward, AF, for JFIC. John England, BoR, is going to make the presentation at the JFIC on HFAWG activities relative to the EMA-Bulletin 17B test results. This presentation will focus more on describing the testing procedures and objectives rather than the

test results. Martin Becker, DPR, requests that the work group review presentation materials prior to the June conference. Martin also noted there is a need to address Jerry Coffey's questions on the EMA-Bulletin 17B test results discussed at the November 19, 2009 meeting.

#### **10. Hydrologic and Hydraulic GIS Applications Work Group**

**William Merkel**

This work group has gathered information on H&H models. This information is posted on the Texas A&M web-site. The Bureau of Reclamation has provided \$20,000 in funding for that effort and developed the agreement which was extended to August to complete the work on the extended questionnaire as well as contacting additional organizations which aren't yet included. Texas A&M agrees to maintain the web-site with no additional financial support. Bill Merkel is presenting a paper on the work group activities at JFIC.

At the April 7, 2010 teleconference, long-term questions regarding the work group were discussed. The work group was originally charged to prepare a report for SOH regarding H&H models and who develops/maintains them across government agencies. That report is being prepared with the hopes of completing it by the end of the fiscal year. When this is done, is the work group finished? Or does the work group need to be extended?

#### **11. Extreme Storms Work Group**

**Tom Nicholson**

No report today.

#### **12. Current Events within Hydrologic Communities**

**All**

- ***National Hydrologic Warning Council – Gene Stallings***

Gene Stallings has been selected to the NOAA Science Board's Environmental Science Working Group. This group is developing a work plan for the next three years at NOAA. The first action is to provide review and comments on NOAA's strategic plan. Other members of the work group include Raytheon, Weather Channel. Gene represents the only hydrologist. The next work group meeting will be in the Summer. Victor Hom, NWS, expressed his appreciation of Gene's support and involvement with the work group.

#### **13. Announcements and Q&A on Business Reports from Member Organizations All**

- ***United States Geological Survey – Steve Blanchard***

**USGS Real-Time Data Hydrologic Threshold Notification System** - The USGS has developed a new water-data reporting system that will send email and text notices about the exceedance of subscriber selected water-level, streamflow, groundwater levels, precipitation, or water-quality data thresholds or ranges at subscriber-selected monitoring stations. Subscribers can specify either hourly or daily updates. The notices can be sent to any email address and to many phone networks.

The USGS recently completed internal beta testing of the system. We would like to expand our testing to include other organizations before publicly announcing the system and making it available for general use.

We request members of the SOH use the system and test it prior to its public announcement. While we understand the need for sharing useful information, we trust that no one will distribute the system notices or subscriber information to the general public until the USGS has completed testing of the system and releases it. Since the system has not been fully vetted by a large subscriber base, we view it as somewhat experimental. The email formats are now generally stable, but we are still experimenting with the text messages.

The system web interface can be found at: <http://water.usgs.gov/rt-hns/>. We value your feedback about the system and how we might improve it. Feedback should be directed to [GS-W\\_RT-HNS\\_Feedback@usgs.gov](mailto:GS-W_RT-HNS_Feedback@usgs.gov), or use the web form at: <http://water.usgs.gov/rt-hns/feedback.html>. It would be most helpful to us if the feedback is specific with descriptions of bugs, irritations, suggestions, etc.

**"100-Year Flood" Poster and Handout** - The USGS recently released a poster and handout titled "100-Year Flood-It's All About Chance". In the 1960's, the United States government decided to use the 1-percent annual exceedance probability (AEP) flood as the basis for the National Flood Insurance Program. The 1-percent AEP flood was thought to be a fair balance between protecting the public and overly stringent regulation. Because the 1-percent AEP flood has a 1 in 100 chance of being equaled or exceeded in any 1 year, and it has an average recurrence interval of 100 years, it often is referred to as the "100-year flood". The term "100-year flood" is part of the national lexicon, but is often a source of confusion by those not familiar with flood science and statistics. This poster is an attempt to explain the concept, probabilistic

nature, and inherent uncertainties of the "100-year flood" to the layman. The poster and handout version can be found at <http://pubs.usgs.gov/gip/106/> ; a high resolution PDF suitable for printing as a poster on a large format plotter is available at this web site

- **Federal Energy Regulatory Commission – Sam Lin**  
A Remote Sensing and Hydrology Symposium session on Flood Forecasting and Management is planned for September 27 thru 30, 2010 in Jackson Hole. Information can be found at: <http://www.remotesensinghydrology.org/>
- **Climate Change and Water Working Group (C-CAWWG) – Sam Lin, FERC and Nancy Steinberger, FEMA**  
Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information request by C-CAWWG. <http://www.usbr.gov/climate/userneeds/>  
The C-CAWG is an interagency work group formed to address climate change issues. Information on C-CAWG and their activities can be found at: <http://www.esrl.noaa.gov/psd/ccawwg/>
- **Natural Resources Conservation Service – Claudia Hoeft**  
NRCS celebrated its 75<sup>th</sup> anniversary on April 27, 2010. Claudia shared some information about NRCS which can be found on the NRCS web-site at: <http://www.nrcs.usda.gov/about/index.html>
- **NOAA National Weather Service – Victor Hom**  
NWS completed its Annual Flood Loss Summary for Water Year 2009. In WY2009, there were over 50 flood related deaths and over \$1B in flood damages. The flood loss summary for WY2009 and past years can be accessed at: [http://www.nws.noaa.gov/oh/hic/flood\\_stats/Flood\\_loss\\_time\\_series.shtml](http://www.nws.noaa.gov/oh/hic/flood_stats/Flood_loss_time_series.shtml)
- **SOH Connections newsletter - Editor's Report - Claudia Hoeft (USDA) Editor and Richard Raione (NRC) Co-Editor**  
Have submissions to Claudia and Richard by May 15. They would like to have newsletter issued by June 1, 2010 before JFIC.
- **Nuclear Regulatory Commission – Richard Raione**  
NRC has critical gaps in surface water hydrology. They are looking for outside expertise related to Dam Safety because NRC does not have dam engineers. Additionally, they are looking for additional expertise in predictive groundwater hydrology particularly given limited data in groundwater and unconfined aquifers.
- **Discussion regarding SOH activities/purpose - All members**  
Richard Raione, NRC, raised the issue as to whether or not it was/is appropriate to discuss vacancy needs (openings in hydrology positions), and potential issues regarding sharing of resources at this subcommittee.

Victor Hom, NWS, suggested that the committee needs to look more at exchanging requirements. There is a need for groups to look at how agencies are adapting to new issues/sciences technologies. Victor also suggested that there is a need to look at the work groups charters (terms of reference) to see how those can be made more attractive.

Mary Green, NRCS, pointed out that JFIC has an emphasis on students and recruiting the next generation. She asked if there is a potential for an announcement board for students on government employment.

Richard also pointed out that with summer hires, it's often difficult to get them on in time to do either the agency or the student any good. To many students, it doesn't seem worth the effort to background checks, for positions that only last a couple of months.

All subcommittee members participating in this meeting agreed these issues should be addressed, but more importantly, all agreed that this subcommittee is an appropriate venue for discussing these issues so they can be addressed.



**14. ACWI 2010 Annual Meeting – February 10-12, 2010**

**Mary Greene**

ACWI has proposed a meeting for sometime in July to make-up for the February meeting which was canceled. Mary Greene, NRCS, will let members know more when she knows more. Will Thomas, ASFPM, pointed out that the ACWI web-site lists July 13-14, 2010 as the alternate date. Dave Goodrich asked if the current slides are okay. Mary indicated all is in good shape and that she will post the slides for members to review. A final discussion on the slides will be held at the June meeting in Las Vegas.

Mary asked if any subcommittee members could represent SOH at the July meeting because she will be in a three week training session and Claudia is unavailable. Steve Blanchard has agreed to make the SOH presentation. Will Thomas volunteered to serve in the fall-back position.

**15. Plans for Next Meeting – Friday June 25, 2010**

**Mary Greene**

The next meeting will be in Las Vegas, just prior to the Joint Federal Interagency Conference. Subcommittee representatives are requested to let Mary Greene know if they will be attending in person or via telephone. Information will follow on dialing in.

**Action Items:**

1. Dave Goodrich, ARS, will re-send information on File-sharing.
2. Mary Greene will post ACWI presentation slides for SOH on the SOH web-site.
3. SOH members should send suggestions/revisions to the slides by the end of May.
4. Slides will be updated/revised at the June meeting.
5. All subcommittee representatives are asked to let Mary know if they will be attending in Las Vegas in person or if they will be dialing in.
6. Mary Greene will check on the time and meeting room at the hotel for the meeting and let members know.
7. Members submit items for newsletter to Claudia Hoeft and/or Richard Raione by May 15, 2010.
8. SOH Connections newsletter issued by June 1<sup>st</sup> (or prior to JFIC).

# **SUBCOMMITTEE ON HYDROLOGY**

## **DRAFT TERMS OF REFERENCE FOR**

### **WATER DATA WORK GROUP**

#### **I. Sponsorship:**

The Water Data Work Group (Work Group) is a working group of the Subcommittee on Hydrology (Subcommittee) of the Advisory Committee on Water Information (ACWI).

#### **II. Purpose, scope, applicability, functions, and initial goal:**

- A. **Purpose.** The overall goal of the Water Data Work Group is to effectively promote the sharing of hydrologic point time series information and promote open standards to effectively share and disseminate this data via the internet with an extensible structure to support as-yet unknown functions and capabilities.
- B. **Scope.** The Work Group coordinates the input of agencies collecting and storing hydrologic point time series data on the types of data they collect and how to best describe and represent this data and information so that comprehensive and inclusive national and international standards for sharing and transmittal of this data can be accomplished with web-based services.
- C. **Applicability.** The Work Group will identify technical experts in its respective agencies with expertise in web services and databases (see VI.). The Work Group will act as a focal point for the expert sub-group to strive to identify the types and attributes of hydrologic data collected and required by the US Water Agencies and partners responsible for collecting and utilizing said data and communicate this information via its technical expert sub-group to non-profit, international, voluntary consensus standards organizations. The group will cooperate with a work group from the FGDC/ACWI Spatial Water Data Subcommittee and other SOH subcommittees focused on water related web-based information services (NWQMC – Water Quality, Groundwater, Sedimentation).
- D. **Function.** The Work Group will promote cooperation among agencies and their international counterparts, where possible, to aid the development of water web service standards to facilitate cost-effective, and consistent well documented methods to publish, disseminate, and ingest hydrologic time series data with the essential metadata with standards to accurately describe this data.
- E. **Initial Goal.** Develop a list of hydrologic point time series data types with descriptive metrics and standards collected and utilized by the Federal Water Agencies and forward it to the OGC/WMO Hydrologic Domain Working Group. This may include model generated data such as forecast data. The target date for this task is ??.

The Work Group will be subject to the direction of and will report activities to the SOH of ACWI.

### III. Membership:

- A. The Work Group shall have a membership open to governmental agencies, non governmental organizations as well as private sector entities and individuals.
- B. During meetings the Chair will announce and the group will act on new membership applications received at least two weeks prior to the meeting.
- C. The Chair and Vice Chair will be selected from among the members. The Chair and the Vice Chair will serve three year terms ending December 31 of the year of their membership. The Vice Chair will then become Chair and the members will elect a new Vice Chair to replace the Chair in another four years. Also, the Vice Chair will serve in the absence of the Chair. A special election will be held if either the Chair or Vice Chair terminate their association with the Subcommittee before their terms expire.
- D. Members are expected to attend, in person or by teleconference, all meetings of the Work Group. If a member does not attend at least 50 percent of the meetings in any calendar year, the Chair may remove the member from the rolls. A member can be reinstated by informing the Chair of their desire to renew their participation in the Work Group.

### IV. Meeting and Procedures:

- A. The Work Group will meet at least two times a year and more frequently as designated by the Chair. The Chair will determine the dates, times, and locations of the meetings in consultation with the members. The Chair will be responsible for announcing meetings 2 months in advance and distributing agendas and information about meetings to all members at least 2 weeks in advance of the meetings.
- B. Members of the Work Group will receive no pay, allowances, or benefits from the Subcommittee or the ACWI. All travel expenses will be borne by the individual member organizations.
- C. The Work Group will conduct business in an open fashion by discussing and attempting to resolve issues by recognizing the legitimate interests and diverse views of the Work Group members. If complete agreement cannot be reached on a specific issue, then the following procedures will apply:
  - 1. A consensus will exist unless one or more members request a vote.
  - 2. Once a vote is requested, the Chair will poll the voting members. An affirmative vote of a majority of the members present will constitute approval of a motion. Two-thirds of the members will constitute the quorum necessary for a formal vote. Each member except for the Chair may cast one vote. In the event of a tie, the Chair will cast the deciding vote. The chair will record how the votes were cast.
  - 3. The Chair will sign and forward to the Chair of the Subcommittee decisions of the Work Group that are proposed advice, guidance or recommendations intended for implementation. Members may prepare minority reports and provide them to the Chair within 3 weeks of a decision. Such minority reports will be forwarded along with majority reports.
- D. Meetings of the Work Group will be open. Each meeting will include time for individuals who are not members to make statements or to have written statements distributed during the meeting.

E. The Chair will prepare and distribute minutes with action items of Work Group meetings to members and to the Chair of SOH.

V. Termination:

The Chair of the Subcommittee has the authority to terminate the Work Group in consultation with the Subcommittee. At least 60 days notice must be provided in advance of termination.

VI. Subordinate groups:

For assistance in conducting its business, the Work Group may establish task groups for a specific purpose and time period with approval of Subcommittee. Such groups will gather information, conduct research, analyze relevant issues and facts, and draft proposed position papers and recommendations for deliberation by the Work Group. These groups will be established by the Chair and will have the balanced perspectives and knowledge necessary to perform their assigned functions. Representatives that serve on subordinate groups may include persons that are not members of the Work Group, but that provide knowledgeable and interested individuals needed to carry out the assigned tasks. All subordinate groups will serve for the time necessary to complete the action for which they were formed. The Work Group will review the status of subordinate groups each year and terminate those that have completed their assignments.

VII. Authority:

The Work Group will work under the Subcommittee as part of the Water Information Coordination Program mandated by OMB Memorandum No. 92-01, dated December 10, 1991. The Work Group reports to the Subcommittee of ACWI that operates under the Federal Advisory Committee Act (FACA). The Work Group is not separately chartered under FACA.

Dates of Approval: Subcommittee on Hydrology (SOH) and Advisory Committee on Water Information (ACWI)

(Signed Date)

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Wendy E. Norton	Mary Greene	Claudia Hoeft
Executive Secretary, ACWI	Vice-Chair, SOH	Vice-Chair, SOH

***Issues to Consider – Points of Discussion: – not altered from Jan. 2010 version.***

**Do we endorse or sign-on to working with the The Hydrology Domain Working Group of the Open Geospatial Consortium (OGC) ?**

Background (edited from information provided by David Maidment): The [Open Geospatial Consortium, Inc.](#) (OGC) is a non-profit, international, voluntary consensus standards organization that is leading the development of standards for geospatial and location based services. Through member-driven consensus programs, OGC works with government, private industry, and academia to create open and extensible software application programming interfaces for geographic information systems (GIS) and other mainstream technologies. Adopted specifications are available for the public's use at no cost.

The Hydrology Domain Working Group (DWG) is a domain working group in the OGC. It brings together interested parties to develop and promote the technology for greatly improving the way in which water information is described and shared. This working group is hosted by the OGC and co-chaired by a representative from the World Meteorological Organisation's (WMO) Commission for Hydrology (CHy). The Hydrology DWG will coordinate efforts with other earth science DWGs (Meteorology, Oceans, etc) through the Earth System Science DWG.

The purpose of the Hydro DWG is to provide a venue and mechanism for seeking technical and institutional solutions to the challenge of describing and exchanging data describing the state and location of water resources, both above and below the ground surface. The path to adoption will be through OGC papers and standards, advanced to ISO where appropriate, and also through the World Meteorological Organization's (WMO) and its Commission for Hydrology (CHy) and Information Systems (WIS) activities. While CHy has the recognized mandate to publish and promote standards in this area, OGC contributes to the process with its resources and experience in guiding collaborative development among disparate participants in a rapidly evolving technological environment. The OGC Hydrology DWG will provide a means of developing candidate standards for submission to ISO and for adoption by CHy as appropriate.

We need some mechanism within the US to ensure that our views are appropriately focused and communicated to this emerging international open source data standards effort. ACWI and its subgroups are likely one of the best mechanisms to accomplish this. A possible task for this work group is to help define the User Requirements and Use Cases for WaterML 2.0 (i.e. formalize the functions which this language is expected to perform to meet the needs of US water mission agencies and partners.

The Co-Chairs of the OGC/WMO Domain Working Group in Hydrology are Ilya Zaslavsky from the San Diego Supercomputer Center (David Maidment's colleague from the CUAHSI HIS effort), David Lemon from CSIRO Land and Water in Australia, and Ulrich Looser, from the Global Runoff Data Center in Koblenz, Germany, who represents the WMO in this work.

For more information see:

[http://external.opengis.org/twiki\\_public/bin/view/HydrologyDWG/WebHome](http://external.opengis.org/twiki_public/bin/view/HydrologyDWG/WebHome)

## **How might this SOH Work Group interact or work with other SOH and ACWI subgroups?**

David Maidment spoke to the FGDC/ACWI Subcommittee on Spatial Water Data about water web services and the role that that Subcommittee might play in interacting with other components of ACWI concerned more with water observations data, such as the SOH. He suggested to the Spatial Water Data Subcommittee that geospatial layers of observation sites should be considered part of the nation's geospatial information infrastructure for water, just like any other layer, such as the river network, water bodies, watersheds, etc.

ACWI ostensibly contains four committees that deal with point observations (NWQMC for Water Quality, Groundwater, Hydrology, and Sedimentation). These groups would determine how best to organize their observations data and web services. The Subcommittee on Spatial Water Data should see that geographic descriptions of the observations sites are consistent among all the forms of water observations (ie water quality, hydrology, groundwater, sedimentation). In this sense, geography “Brings things together”. David Briar (USGS) is leading an effort to publish a set of geospatial web services which will provide observation site information for the National Water Information System.

The Subcommittee on Spatial Water Data (Co-Chairs: Bob Pierce, USGS; Tod Dabolt, EPA) are cognizant of the activity of OGC in this area and consider OGC to be more an organization that sets standards. But it is important that input from the US concerning our hydrologic information and web service needs go into the OGC/WMO Hydrology Domain Working Group to ensure that they are covered by these standards.

Note: Bob and Tod with others were instrumental in setting up the Hydrology Domain Working Group with WMO.

### **Perceived Role of Technical Expert Subgroup:**

From Nate Booth (USGS) who is working with the OGC/WMO Hydrology Domain Working Group (HDWG) on a groundwater interoperability experiment between the US and Canada:

Nate's idea is that the OGC/WMO HDWG is where the technical expertise is concentrated for standardizing water web services structural development, and it doesn't make sense for ACWI to be duplicating that effort, but rather ACWI might look at the OGC/WMO Hydrology Domain Working Group as a kind of technical consultant. ACWI would facilitate input from US water mission agencies and their collaborators at the state and local level to help to define the requirements for water web services development as the need is perceived by them.

This would parallel the effort internationally at the OGC/WMO level on WaterML where the WMO Commission for Hydrology is the point of connection with the “hydrology domain sciences” in mediating WaterML design with the Europeans, Australians, etc. We in the US need to have some focal point to ensure that our viewpoint is heard collectively in that discussion and we need also to achieve a consensus among our own water data people as to best approaches that we should use.

## **Should this Work Group help promote/facilitate Data Interoperability Experiments?**

Currently there is a joint Groundwater Interoperability Experiments effort led by Nate Booth (USGS) and Geological Survey of Canada, led by Boyan. Its goals are to advance the design of the Water Markup Language (ML) v.2 schema, to see how Groundwater data fit into existing OGC services, and to advance groundwater data exchange between the US and Canada. Maidment alerted Nate and Boyan to the groundwater data standards work undertaken by the ACWI Subcommittee on Groundwater, led by Chuck Job of EPA.

Peter Fitch, CSIRO Land and Water in Australia, is proposing a parallel surface water interoperability experiment. Should the US participate in this? Demonstrating the interoperability of surface water observations data derived from the US water mission agencies would be a significant accomplishment.

There is also talk of having a third interoperability experiment in Water Quality. This would be instructive since water quality has characteristics different from physical hydrology data. As the results of these interoperability experiments are assembled, a clearer path forward for a common water web services data structure should emerge for GW, SW, and WQ.

For more information on proposed Surface Water Interoperability Experiment see:  
[http://external.opengis.org/twiki\\_public/bin/view/HydrologyDWG/SurfacewaterInteroperabilityExperiment](http://external.opengis.org/twiki_public/bin/view/HydrologyDWG/SurfacewaterInteroperabilityExperiment)

## **The OGC/WMO Hydrology Domain Working Group Paper of Interest:**

“Harmonising Standards for Water Observation Data - Discussion Paper”

[http://external.opengis.org/twiki\\_public/bin/view/HydrologyDWG/HarmonisationReport](http://external.opengis.org/twiki_public/bin/view/HydrologyDWG/HarmonisationReport)