NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

NWQMC

Minutes - NWQMC Meeting – December 9-11, 2008 (Draft February 5, 2009)

U.S. Geological Survey
Sunrise Valley Drive
Reston, Virginia

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Action Items and Decisions:

1. National Ground-Water Monitoring Network (NGWMN), ACWI Subcommittee on Ground Water (http://acwi.gov/sogw/index.html). (Note: The design will be available for review in January 2009 and will be presented to ACWI for approval at its next meeting.)

- Decision: Identify intersections between NGWMN and the goals, activities, and capabilities of NWQMC, including:
  - Consider Pilot areas, such as Delaware Bay, as candidate pilot area for NGWN to broaden the hydrologic understanding by including ground water.
  - Seek interactions with Methods Board data elements in defining "core elements" for NGWMN
  - Explore integration with Water Quality Exchange and parallel web services for hosting ground-water-quality data
  - Seek mutual collaboration/role of Consortium of Universities for Advancement of Hydrologic Science, Inc.(CUASHI and WATERS (Water and Environmental Researsh Systems Effort) Network CLEANER (Collaborative Large-Scale Engineering Analysis Network for Environmental Research)in data integration and clearinghouse capabilities
  - Promote communication/visibility of NGWN through NWQMC networks and forums, including the bi-annual conference in 2010
  - Share list of state partners to facilitate information exchange and networking on existing networks, etc.
- Actions:
  - Council members to provide NWQMC review of the DRAFT NGWM report in the next 4-6 weeks to provide ideas for collaboration and intersecting with NWQMC goals – provide input to NGWN before the ACWI meeting in February 2009 (review will be coordinated through the Co-Chairs and distributed to those associated with the NMN pilots and others interested).
  - Co-Chairs will set up workshop at the next NWQMC meeting that involves members of the National Ground-Water Network to outline next steps after ACWI approval.

2. Water-Quality Exchange (WQX) – USGS and STORET Water-quality data in a common format
The development of "WQX Web" to facilitate the entry of small data holdings into STORET was described. WQX Web is expected to be used to load data from tribes and volunteer groups and other small entities into STORET.

- Actions:

- Council members are encouraged to access and "beta test" the WQX and USGS web services. Provide feedback to the WQX team, including Nate Booth (USGS) (nlbooth@usgs.gov), Kristen Gunthardt (EPA) (gunthardt.kristen@epa.gov), and Jonathan Scott (Jon@usgs.gov). Copy (cc: feedback to Eric Vowinkel (vowinkel@usgs.gov) and Doug Glysson (gglysson@usgs.gov) for wider distribution to Council members. Feedback can include needed data elements; challenges in working with the system; "what worked, what didn't"; and, how you use the system to meet your day-to-day needs.
- Web services are: -
  - EPA - http://www.epa.gov/storet/web_services.html
  - USGS – http://qwwebservices.usgs.gov.
  - NOAA – http://ioos.noaa.gov

3. Decision: Physical Habitat Data Elements - Council accepted physical data elements proposed by the Methods Board and will recommend them for adoption by ACWI at the February, 2009 meeting (Note: these are the second of the updates in the data element series).

4. Action: Co-Chairs to begin updates to the "Strategy for Improving Water-Quality Monitoring in the United States" with decisions/prioritized issues reflecting advances in monitoring over the years intervening since its adoption; draft available for next Council meeting.

5. Decision: Prioritized issues over the next two years (see Appendix 3 for list used in discussion)

- Support for integrated monitoring programs (Water Information Strategies)
- Note: Indicators (and relations to NEST) will be covered in discussions on integrated monitoring programs (Water Information Strategies)
- Support for state and regional monitoring councils (Communication and Coordination)
- Support assessment tools (Water Information Strategies)
- Promote new technologies (Methods Board)

5. Action: Tracy Hancock to schedule meetings, starting in January, to outline next steps for the National Water Quality Monitoring Network for U.S. Coastal Waters and Their Tributaries (Tracy Hancock; Co-Chairs, Eric Vowinkel, Don Dycus, Jane, Dave Wunsch, Jawed, legacy "emeritus" members, Doug M., Michael McDonald)

6. Action: Co-Chairs to review status of approval of documents by ACWI associated with National Monitoring Network; present plan for future directions to ACWI at February meeting.

7. Decision: Conference will be Sheraton, Downtown Denver, April 25-29, 2010

8. Decision: Gail Rominger reported that YSI funding may be available to help volunteer monitoring travel assistance

9. Action: State council members need to contact Jeff Schloss about state travel bans that may influence conference participation ASAP.

10. Action: Susan Holdsworth will explore possibilities for support through EPA by including a survey component in the conference

11. Action: Spooner to solicit NSF interest in involvement with NWQMC and ACWI.

12. Action: Hamilton to contact USDA-NRCS/ARS – Mark Walbridge – to solicit participation on the NWQMC 12.

13. Decision: Next meeting, Salt Lake City, Utah – March 9-13, 2009 – Champion: Jeff Ostermiller (jostermiller@utah.gov)

14. Decision: Summer meeting, July 20-24, 2009, Portland, Oregon - Water Science Center host along with Greg Petitt (Susan Holdsworth and Pixie Hamilton will invite the Corvallis ORD group and EPA Region 10 Monitoring Coordinator, Gretchen Hayslip)

15. Action: Glysson and Norton to do member assessment (including filling representative gaps, such as Region 4, and planning ahead for those rotating off); will provide a list to Co-Chairs before March 2009 meeting.

16. Action: Eric Vowinkel to inform Council on USGS/EPA Web Ex, Tuesday, December 16, 2008, on emerging contaminants

17. Actions associated with individual workgroups listed on pages 5-11.

Noteworthy Notes to Council Members:

- NEST meeting in February in conjunction with ACWI – Council members invited – save the date (ACWI: February 9-11, 2009, the NEST Meeting: February 11-12, 2009)
  - NEST is intending to pick 4-5 water indicators of water availability (and quality) and then show how they can be integrated to answer the bigger questions (how are conditions changing; where are the issues, etc)
  - Possible starter set of indicators discussed by the Council included: nitrogen, phosphorus, sediment, contaminants, flow regime, physical condition, biological condition (natives, non-natives), links to spatial landscape information (i.e. land use, for example)
  - Vision for indicators - Better integrated; better resources; better delivery; broad acceptance by stakeholders; not limited to existing data; regular reporting

- Look for the next Water Use report "Estimated Use of Water in the United States in 2005"by USGS out in January/February 2009

- Look for an article in EOS Transactions (American Geophysical Union, AGU) during Winter 2009 on the water-quality exchange system (that merges USGS and EPA data) – by Jon Scott

- Look for WQX advances, including
  - Extension to include NOAA – IOOS data
  - Integration of streamflow data and continuous and real-time water quality data
  - A common spatial framework (National Hydrography Dataset) to express site locations in a common way.
  - Common analytical method metadata (NEMI).
  - Common portal
  - Interaction with CUASHI
  - EPA "WQX Web" tool for smaller organizations such as volunteers and/or tribes that makes it easier for them to submit data to EPA's National Data Warehouse to EPA's STORET data system.

- Access *Environmental Information: A Road Map to the Future* (see - http://www.heinzctr.org/ecosystems/2008report/pdf_files/Roadmap_Future_Report.pdf)
  - Recommendations
    - Congress should formally establish a national system of indicators – involve all parties in selection; create forum for dialogue; use indicators to drive monitoring
    - States should participate as full partners
    - White House Executive Branch should move ahead in advance while working with Congress to get a formal structure
    - Congress and executive branch should provide greater funding, including transition funds

- NOAA websites of interest
  - http://nsattrends.noaa.gov
  - http://coastwatch.noaa.gov
  - http://www.oar.noaa.gov
  - http://ccma.nos.noaa.gov/about/coast/nsandt/welcome.html (mussel watch)
  - http://www.chesapeakebay.noaa.gov

Candidate Agenda Items for Spring NWQMC Meeting, March 9-13, 2009 – Salt Lake City, Utah

(Champion, Jeff Ostermiller)

- USGS Water Use Data (expected report out Feb. 2009) (Lead: Doug Glysson)
- NEST follow-up and broader discussion on indicators (such as State feedback gathered by the WIS. Lead: Mary Skopec)
- NSF Presentation (Lead: Chuck Spooner)
- State and/or Regional Monitoring Council presentation and update by Communication Workgroup on status of Councils, (Tracy Hancock)
- Report out on outline for data integration papers/web activities, state examples (Leads: Pixie Hamilton, Susan Holdsworth, Mike McDonald, Aaron B.)
- Conference planning of "structured themes" to meet "Call for Abstracts" deadline (Lead: Dave Tucker)
- Demonstration of data analysis software, such as Aquarius (Lead: Barry Long)
- Breakout session with members of the National Ground-Water Network to find intersections (Lead: Bill Cunningham, Dave Wunsch)
- Update on revisions of Council strategy (Leads: Co-Chairs)
- Update on National Monitoring Network progress and implementation and next steps (Lead: Tracy Hancock)
- Invite EPA regional monitoring coordinator to speak about State monitoring strategies? (Lead: Chuck Spooner)
- Methods used in National Aquatic Resource Surveys (NARS) (Lead: Chuck Spooner)
- Structured discussion of ancillary data (Lead: Pixie Hamilton and Chuck Spooner)
- Presentation IOOS regional associations (such as MARCOORA)
- Report out on DRAFT ideas for the expert systems and clearinghouses (Lead: Don Dycus)

Water Information Strategies Workgroup

Co-Chairs, Peter Tennant and Dr. Mary Skopec

Members:

Peter Tennant	tennant.peter@orsanco.org
Pixie Hamilton	pahamilt@usgs.gov
Debra Hammond	debra.hammond@dep.state.nj.us
Chris Piehler	chris.piehler@la.gov
Susan Holdsworth	holdsworth.susan@epa.gov
Tony Olsen	olsen.tony@epa.gov
Steve Paulsen	Paulsen.steve@epa.gov
John Stoddard	Stoddard.john@epa.gov
Richard Mitchell	Mitchell.richard@epa.gov
Ellen Tarquinio	tarquinio.ellen@epa.gov
Alice Mayio	mayio.alice@epa.gov
Mary Skopec	mary.skopec@dnr.iowa.gov
Warren Kimball	warren.kimball@state.ma.us
Aaron Borisenko	Borisenko.aaron@deq.state.or.us
Tony Shaw	tshaw@state.pa.us
Jason Jones	jdj@azdeq.gov
Mike McDonald	mcdonald.michael@epa.gov
Jane Caffrey	jcaffrey@uwf.edu
Gary Kohlhepp	Kohlheppg@michigan.gov
Don Dycus	dldycus@tva.gov
Doug McLaughlin	douglas.mclaughlin@wmich.edu
David Wunsch	david.wunsch@dep.nh.gov
Jeff Ostermiller	jostermiller@utah.gov

A. Support Integrated Monitoring and Analysis Among Different Programs and Organizations

1. Goal: Share/explore roles of different monitoring, including probabilistic and targeted designs and how to integrate them to begin to answer questions beyond what the individual programs could address. Get people thinking in terms of "What is your question?" Show how the integration can be used to help better address State questions and needs (TMDLs, compliance, assessment) on status and trends, and to address the role of indicators. Demonstrate "on-the-ground" examples of benefits of integrating data – such as demonstrated in the Southeast with the integration of USGS and STORET data. Seek to illustrate the data and analysis integration in NMN areas and to promote the utility of the Network. Articulate captivating vision and distribute among Council Members.

- Champions – Pixie Hamilton, Susan Holdsworth, and Mike McDonald
- Other interested members – Richard Mitchell, Ellen Tarquino, Stoddard, Paulsen, Olsen, Aaron Borisenko
- Develop written materials to meet different audience needs (detailed issue paper to monitoring community; fact sheet and policy briefing sheet to policy makers) to meet different audience needs) that highlight water issues and kinds of questions; how different monitoring designs address questions (probabilistic, targeted, for example). Use the paper to highlight how the different monitoring programs and objectives support regulatory, survey, compliance, and assessment needs. Highlight role of volunteer monitoring such as in filling in needed geographic gaps. Provide examples, including, for example:
    - Oregon – demonstrate probabilistic merged with land use characteristics – Willamette – full report due June 2009 (Fact Sheets available). (Aaron Borisenko, OR)
    - Oregon – phosphorus linked to landscape characteristics (Aaron Borisenko, OR)
    - Southeast regional example – nitrogen (Pixie Hamilton, Donna)
    - EPA examples – such as work by Ellen Tarquino and Richard Mitchell

- John Stoddard – statewide assessment of OR – includes WQI scores and biology (500 sites)
  - Action: Paper available, first DRAFT, annotated outline and examples of successful integration, by Spring 2009 meeting (discuss with Council members at March 2009 meeting)
  - Action: Develop ideas for dedicated website that hosts the written materials and "toolbox" of examples and best practices, along with Power Point presentation, and maintains examples of the benefits of integrating data – dynamic system with evolving examples of successful integration and the questions that are successfully addressed.
  - Action: Coordinate topic with sessions at the NWQMC conference
  - Action: Susan and Peter Tennant will raise subject in their monitoring calls with States, 1st Monday every month

2. Assess the States role in helping to define and support indicators and data needs and availability
   - Champions – Mary Skopec, Warren Kimball
   - Other interested members – Peter Tennant, Doug McLaughlin, Don Dycus, Debra Hammond, Jeff Ostermiller, Chris Piehler
   - Action: Distribute NEST information, presentation, and prospectus and Heinz Center "Road Map to the Future" to the States. Define questions for State feedback (ask about challenges and ideas for useful indicators). Gather information on existing State indicators. What are States doing to talk with their legislatures?
   - Action: Conference call with other WIS members before NEST meeting to share State response.
   - Action: Give feedback to Robin O'Malley ahead of NEST meeting; State response to "Roadmap for the Future" (get copy of the pyramid for use)
   - Action: Present information at February 10-11 meeting on NEST in Reston, VA – Peter Tennant, Mary Skopec, Warren Kimball, Don Dycus, Gregg Good, David Wunsch
   - Action: Regroup with WIS members after NEST meeting and design next steps on how to broaden the application to collaborate in NEST effort after meeting in February

3. Explore and promote the utility of volunteer monitoring in the integrations
   - Champions – Peter Tennant and Warren Kimball
   - Other interested members – John Hummer, Alice Mayio, Candy, Gary Kohlhepp, Mary Skopec, Chris Piehler. Action: Confirm interested members.
   - Action: Outline specific questions about volunteer monitoring and relations to strategies. Ask EPA (Alice Mayio) to review strategies and see how volunteer monitoring fits in. Where have States identified volunteer monitoring? Outline specific questions for volunteer monitors.
   - Action: Speak with Linda Green and Chris Stepenuck about the National Facilitation Volunteer Grant and progress.
   - Action: Identify advantages (benefits) and disadvantages and challenges on volunteer monitoring – incorporate in white paper?
   - Action: Interact with selected State Councils – provide information on how States handling volunteer monitoring data (i.e. how does the data get into the states? Web based submission tools available in States? Share?)
   - Action: Incorporate volunteer monitoring into conference – involve Linda Greene
   - Action: Solicit the interest of a State Council to present at upcoming NWQMC meeting.
   - Action: Share with States the availability of the EPA web based submission tool to WQX
   - Action: Build matrix on the who, methods, resources, etc – place on web for others to see (subsequently pass to Methods Board so that volunteer methods are reflected in NEMI)
   - Action: Contact EPA (Alice Mayio, for example) on availability of guidance on quality assurance to facilitate the integration of volunteer monitoring in standardized manner.

4. Monitoring Clearinghouse and Technique Expert System
   - Champion – Jason Jones and Jeff Ostermiller and Don Dycus
   - Others interested: Larry Keith
   - Goal is to facilitate access to current information on monitoring designs, expertise, statistical tools and other assessment/reporting tools, and techniques and for what (why)
   - Action: Develop concept paper before Spring 2009

- Action: Query the sensor group (Eric V.). How do you analyze the data? What kinds of questions can the sensor data be most relevant?
- Action: Generate questions and give to Susan Holdsworth for conference (involve EPA monitoring coordinators in each region)
- Action: Involve EPA's FEM (Forum and Environmental Measurement) who work on monitoring methods, including sensors
- Action: Explore web capabilities in handling the information (USGS)

5. Monitoring needs/strategies to address climate change

- Champions: Jane, Tony, Gary, Dave Wunsch
- Goal: To educate the water community on the need for long-term monitoring, especially at reference sites, to be able to tease out landscape and man's activities from long-term natural hydrologic cycles; and to provide guidance among States needed on how States can/are monitoring for climate change – when you sample, biological indicators that are relevant
- Action: Suggest conference session to include stories on how we anticipate changes and how it may affect monitoring and selection and protection of reference sites. Propose plenary speakers.
- Action: Explore what parts of existing State monitoring can be used to address climate change?
- Action: Outline the content for a position paper/Fact Sheet with members on sub-committee of NGWN; present in Spring 2009
- Action: Get contact information for others working on the issue (EPA, USGS)

B. Support Assessment and Reporting Tools – Discuss jointly with Methods Board

Action: Peter will talk with Leslie, who will work with Jeff, Jason, Don, Doug, and Eric

Communication and Collaboration Workgroup

Co-Chairs: Dave Tucker, NACWA and Tracy Hancock, USGS
Executive Secretary: Kim Martz, USGS

Members:
Jawed Hameedi, NOAA
Jeff Schloss, NALMS
Barry Long, NPS
Rob Schweinfurth, WEF
Sheri Hazelhurst, USFS
Edith Stevens, LWV
Doug Glysson, USGS
Gary Rowe and Cathy Tate, USGS
Linda Greene (adjunct)

Sub-committees:

Local Denver Conference Planning Committee:

Gary Rowe, Cathy Tate, Barry Long, Local Forest Service contact

Conference Budget Committee:

Jeff Schloss, USGS Co-Chairs, Rob Schweinfurth, David Tucker:

Newsletter and State and Regional Councils
Tracy Hancock, Sherry Hazelhurst, Rob Schweinfurth

1. 2010 National Conference Topics (Champions – Dave Tucker, Jeff Schloss)

- Room Block Needs – EPA state meeting 100 people Thursday afternoon; NOAA limited needs (20 staff); Park Service limited needs (20 staff); USGS water quality meeting 200 people, USGS business meeting Thursday 150 people; 400-450 peak night estimate
- Conference Facilities Discussion – Vendors setup inside and outside downstairs ballroom, buffet lines in hallway; 8 concurrent venues; upstairs ballroom for plenary; contact Linda on volunteer monitoring needs (need local reps); Cathy local USGS rep
- Sponsorship Discussion – Potential sponsors include WEF (Rob to check on seed monies), DOI-NPS, YSI support for volunteer, NACWA, Denver Metro Wastewater, Denver Water, USGS potential to prepay block; Microbrew sponsorship; In situ; Coors; WEB layout needed – NALMS to prepare; Council Members to brainstorm potential sponsors. *Champion: NALMS (Jeff Schloss) to prepare draft for CPC review*; *Milestone: Get sponsorship page up in Feb 2009 timeframe*
- Conference Theme Discussion - climate change; water quantity and quality; Monitoring in a changing world; Collaborative monitoring in a changing world; Linking water quantity and quality in a changing world; From Data to Information – A Critical Transformation; Resource Monitoring in a changing world; Monitoring: Gateway to Resource Management; Monitoring from the summit to the sea.
- Action: Council Members to brainstorm potential titles.
- Action: SAVE THE DATE! – evaluate themes from the 21 elements; check past notices for topics; *Champion: NALMS to prepare draft for CPC review*; *Milestone: get Save the Date out in Feb 2009 timeframe*
    - Results of national and regional assessments
    - Climate change on water resources
    - State and regional monitoring councils
    - Emerging monitoring technologies
    - Emerging contaminants
    - Indicators for monitoring
    - Integration of water quality data
    - National monitoring network

    - Groundwater theme
    - Volunteer monitoring
    - Watershed condition assessment
    - Ecological services
    - Messaging and communication
    - Water conservation and reuse
    - Evasive species
    - Analysis of monitoring data
    - Water quality partnerships

- Conference Timeline – Chuck to get TT update of timeline, Jeff to review from NALMS perspective and revise and send to co-chairs for distribution
- Conference budget – NALMS to draft for Budget Committee (Jeff, Doug, Chairs) review
- Structured Themes – agencies encouraged to submit session topics; perhaps special focus on council themes and/or directions; national experts; Action: request council committees for theme recommendations
- Action: Nail down structured themes in Spring 2009 Council meeting so that "Call for Abstracts" goes out May 2009
- Vendors - NALMS to prepare, WEF to provide 2008 information. *Champion: NALMS to prepare draft for CPC review*; *Milestone: Get vendor page up in Feb 2009 timeframe*
- Conference chairs – Recommended: Barry Long (Checking), Pixie Hamilton; Chuck Spooner; (Gary Rowe – Local Host),
- Workshops Brainstorm – Data Exchange, How to sustain a monitoring council; SPARROW tool; Statistics; trend assessment analysis; environmental flow; wetland monitoring; Messaging and PR (communication)
- Field Trip Brainstorm - USGS Water quality laboratory - 15 minutes away; Golden CO – Coors Tour, USGS Field Methods Workshop at local stream; NCAR Boulder – 30 minutes away; contact Colorado monitoring council for ideas; contact other volunteer groups; Rocky Mountain National Park; snow shoe trip; Rocky Mountain Institute; USFS Experimental forest;
- Receptions – locals asked to make recommendations
- Plenary – begin thinking of venues, Hickenlooper – Denver Mayor
- Action: Monthly meetings – co-chairs to set up reoccurring time beginning Jan 2009;
- Action: If interested in conference planning, please send email to Dave Tucker and Tracy Hancock

2. Support for State and Regional Monitoring Councils (Champion: Tracy Hancock)

- State and regional monitoring council tool kit – presentations; tools on WEB site; this task has languished for some time and has changed champions several times; committee first needs to ask what the councils need (direct contact by committee members, newsletter requests, 2010 conference process) Champion: Committee Co-chairs;
- Action: Doug Glysson to update contact list – January 2009 and provide to workgroup
- Action: Make State Council contacts – March 2009 (before next council meeting); encourage State Councils to attend meeting, if possible
- Action: Send Tracy updates if you attend any State/Regional Council meeting
- Action: Develop work plan and next steps – Mar 2009 (Dave Tucker and Tracy Hancock)
    - Conference workshop, special session (successes, not!) - topic for discussion over coming months
    - Reach out to state councils (co-chairs to assign contacts) – obtain council needs and wants, make direct committee contacts
    - Committee members to attend state monitoring councils (members to contact current councils, send summary to Tracy with contacts and updated information)
    - Creation of revised council contact list – Doug to revise and distribute, USGS to update council WEB page as needed

3. Improve Communication

- Actions: Review and re-evaluate communications strategy (Tracy, Dave, Dec 2008-Jan 2009); obtain review by council co-chairs (Jan – Feb 2009); Out to full council for review (before Mar 2009 meeting); update WEB addresses and contacts (Doug, Jan 2009); update committee fact sheets (committee co-chairs, before Mar 2009 meeting), initiate WEBEX communication exchange with local councils (co-chairs & Chuck, before Mar 2009 meeting)

- Action: Develop revised email distribution list (USGS, WEF, conference lists) (Doug and Wendy)
- Action: Evaluate and update WEB site (Tracy, Dave, Carol Lewis); evaluate and make recommendations, early 2009)

4. Newsletter – Champions - Tracy, Rob, Sherry); twice yearly (April-May, October-November); general council updates, workgroup communications, call to councils to contact us with needs, conference save the date, communicate council highlights, links to subcommittees, showcase success stories; relevant topics for monitoring, pre and post conference editions, council and other announcements, upcoming events, grant timelines; MONITORING NEWS; *Milestone – first edition in Apr-May 2009*

- Action: Newsletter outline – champions to prepare, early 2009 (consider possible invited articles, such as by IOOS, Chesapeake Bay)
- Action: Check USGS support – graphics, layout, etc. (Tracy, Doug, Sherri, USFS, Rob (WEF)

Methods Board Workgroup

(Champions: Eric Vowinkel and Dan Sullivan)

1. Sensors
   - Field applications
     - Product guidance being developed – will be ready for conferences – includes field check list and standardized methods; will be offered to manufacturers and place din owner's manuals, ; YSI fundings the development and production of the document
   - Technologies into NEMI
   - QA/QC
   - Data management (will work with Nate Booth and Kristen, WQX)
   - Action: Contact Eric if you would like to be involved in the conference calls.

2. Forming development of statistics workgroup – possible ideas are to incorporate statistics into NEMI

3. Contaminants workgroup just forming

4. Event Monitoring workgroup lead by Hammill?

5. Develop and provide guidance on statistical tools and assessment and reporting for the National Monitoring Network pilots – will work with Steering Committee of the National Monitoring Network on next steps (Tracy Hancock and co-chairs, Jane, Don, and others)

Appendix 1 – Agenda, December 9-11, 2008; USGS Headquarters, Reston, Virginia

Tuesday, December 9 - USGS Auditorium

8:30 a.m.
Welcome & Introductions — Chuck Spooner

- *Housekeeping and logistics*

8:40 a.m.
Welcome to the USGS — Wendy Norton or Tim Miller

- Introduction of Pixie Hamilton, USGS CoChair

9:00 a.m.
Overview of the Council — Chuck Spooner

- *History, accomplishments, goals – moving forward*

9:45 a.m.
Agenda overview — Co-Chairs

- *Goals for the meeting*
  - *To learn the specifics of several Federal programs,*
  - *To plan future Council actions to work with them, and*
  - *To establish Council goals for the next two years and to organize and increase participation in the Council to achieve those goals.*

9:15 a.m.
Introduction of Members and Guests — Chuck Spooner

- *Jason Jones, Arizona (representing Region 9 states)*
- *Warren Kimball, Massachusetts DEP – Substituting for Neil Kamman*
- *Debra Hammond, New Jersey DEP – Substituting for Leslie McGeorge*
- *Douglas B. McLaughlin – National Council for Air and Stream Improvement, Inc.*
- *Gayle Rominger, Executive Vice President, YSI, Inc.*
- *Jared Entin, National Aeronautics and Space Administration*

10:10 a.m.
National Ground Water Monitoring Network, Progress report: — David Wunsch, State Geologist, NH

10:40 a.m. BREAK

11:00 a.m.
Introduction to USGS Water Resources Discipline — Matthew C. Larsen, Associate Director for Water, USGS

11:30 a.m. LUNCH at the USGS Cafeteria

12:30 p.m.
Interoperable Data Systems
USGS/EPA/NOAA Web Services Collaboration — Nate Booth (USGS), Kristen Gunthardt (EPA)

1:00 p.m.
Physical Habitat Data Elements
Recommended Additions to the Water Quality Data Element — Dan Sullivan, Methods Board

1:15 p.m.
Environmental Information: A Road Map to the Future — Robin O'Malley, The Heinz Center

2:00 p.m. BREAK

2:15 p.m.
USGS and EPA water programs' response to the Heinz Center Roadmap — Susan Holdsworth (EPA), Donna Myers (USGS)

3:00 p.m.
Facilitated Discussion on the Response to the Roadmap
and the Council Workplan (21 Issues) Pixie Hamilton

4:30 p.m.
Next Steps for the Council Council Co-Chairs

- Issues for discussion at February ACWI meeting
- National Monitoring Network

Wednesday, December 10, 2008 (Room 5A-217)

8:00 a.m.
Opening Announcements Council Co-Chairs

- *Announcements*
- *Plans for the day*
- *Goals for each Work Group*
- *Tasks for Work Groups – Thinking about specific issues to further products*

8:15 a.m. Conference Planning Update Jeff Schloss, Conference Planning Committee

8:30 a.m. NOAA Program Overview:

- NOAA's water quality-related activities and Programs Jawed Hameedi, NOAA/CCMA
- Current activities in NOAA's National Status and Trends Program John Christensen, NOAA/CCMA
- Atmospheric mercury monitoring and modeling Mark Cohen, NOAA/ARL
- Water quality monitoring operations in the Chesapeake Bay Doug Wilson, NOAA/NC

9:30 a.m. Discussion of NOAA Programs Council Co-Chairs

10:00 a.m. BREAK

10:15 a.m.
Plans for the National Wetlands Condition Assessment Michael Scozzafava, EPA Wetlands Division

10:35 a.m.
Developing Genetic Barcoding for use in Water Quality Studies . . . . Chuck Spooner

11:00 a.m. Lunch

12:00 noon Work Groups – Break into groups:

NAME	PURPOSE	PLACE
Collaboration and Outreach Work Group	Plans for Seventh NMC --Update on facilities --Securing Proposals --Date for Conference --Co-Chairs for Conference --Facilitator for Conference	5A217
Water Information Strategies Work Group	--Issues with Methods Board --Need for revisions	5A323
Methods Board	Issues with WIS Work Group	5A306

Thursday, December 11, 2008

8:30 a.m.
Work Groups – Break into groups:

12:00 noon LUNCH

1:00 p.m.
Work group reports

- *Membership update (Co-Chairs)*
- *Collaboration and Outreach (Dave Tucker)*
- *Methods and Data Comparability Board (Eric Vowinkel)*
- *Water Information Strategies (Peter Tennant)*

2:00 p.m.
Meeting recap, Business Meeting

Appendix 2: List of Attendees

LAST NAME	FIRST NAME	REPRESENTATION	ROLE
Hamilton	Pixie	FED - U. S. Geological Survey	Co-Chair
Spooner	Charles	FED. - U.S. Environmental Protection Agency	Co-Chair
Glysson	Doug	FED - U. S. Geological Survey	NWQMC Ex-Secretary
Borisenko	Aaron	The States of EPA Region 10 - OR	Substitute Representative
Kimball	Warren	The States of EPA Region 1 - VT	Substitute Representative
Caffrey	Jane	INDUSTRY - American Society of Limnology and Oceanography	Representative
Dycus	Don	FED. - Tennessee Valley Authority	Representative
Hameedi	Jawed	FED. - National Oceanic and Atmospheric Administration	Alternate
Hammond	Debra	The States of EPA Region 2 - NJ	Substitute Representative
Hazelhurst	Sherry	FED. - U.S. Forest Service	Representative
Jones	Jason	The States of EPA Region 9 - CA	Representative
Kimball	Warren	The States of EPA Region 1 - VT	Substitute Representative
Kohlhepp	Gary	The States of EPA Region 5 - MI	Representative
Long	Barry	FED. - National Park Service	Representative
McDonald	Michael	EPA - Federal Monitoring Coordinator	Representative
Noble	Rachel	INDUSTRY - American Society of Limnology and Oceanography	Alternate
Ostermiller	Jeffrey	The States of EPA Region 8 - UT	Representative
Piehler	Chris	The States of EPA Region 6 - LA	Representative
Schloss	Jeffrey	ENVIRONMENTAL/ Watersheds - North American Lake Management Society	Representative
Schweinfurth	Rob	Water Environment Federation	Representative
Shaw	Tony	The States of EPA Region 3 - PA	Representative
Shepp	David L.	FED. - U.S. Army Corps of Engineers	Representative
Skopec	Mary P.	The States of EPA Region 7 - IA	Representative
Tennant	Peter	RIVER BASIN COMMISSIONS (ORSANCO)	Representative
Tucker	David	MUNICIPAL: National Association of Clean Water Agencies (NACWA)	Representative
Wunsch	David R.	GEOLOGY - Association of American State Geologists	Representative
Younos	Tamim	ACADEMIA - National Institutes for Water Resources	Representative
Hancock	Tracy	U.S. Geological Survey	NMN Exec Sec
Booth	Nate	U.S. Geological Survey	Guest / Speaker via webex
Christensen	John	NOAA	Guest / Speaker
Cohen	Mark	NOAA	Guest / Speaker
Gunthardt	Kristen	U.S. EPA	Guest / Speaker
Holdsworth	Susan	U.S. EPA	Guest / Speaker
Myers	Donna	U.S. Geological Survey	Guest / Speaker
O'Malley	Robin	The H. John Heinz Center for Science, Economics and the Environment	Guest / Speaker
Scozzafava	Michael	U.S. EPA - Wetlands Division	Guest / Speaker
Sullivan	Dan	U.S. Geological Survey	Guest / Speaker

Wilson	Doug	NOAA	Guest / Speaker
Entin	Jared	National Aeronautics and Space Administration	Guest
McLaughlin	Douglas B.	National Council for Air and Stream Improvement, Inc.	Guest
Rominger	Gail	YSI, Inc.	Guest
Rowe	Gary	U.S. Geological Survey	Guest
Seiger	Ryan	U.S. House of Representatives	Guest
Smith	Ethan Tim	Sustainable Water Resources Roundtable	Guest
Stevens	Edith	League of Women Voters	Guest
Webster	Ben	U.S. House of Representatives	Guest
Norton	Wendy	Advisory Committee on Water Information (ACWI)	Executive Secretary, ACWI
Vowinkel	Eric	U.S. Geological Survey	Alternate & Co-chair, Methods Board
Wendelken	Steven	U.S. Environmental Protection Agency	Alternate & Co-chair, Methods Board

Appendix 3: Prioritized issues, 12-09-2008, in facilitated discussions

Outcome – To lay out the framework for prioritized activities, next steps, products, expanded membership and collaboration over the next two years and that can be incorporated in a revised Council "*Strategy for Improving Water-Quality Monitoring in the U.S.*"

Note: The common thread for the Council in the ongoing and additional activities is to serve as a facilitating forum that fosters partnerships and collaboration to address the issues over the next two years. It is understood that within each of the activities that membership should be expanded to accomplish the goals, particularly with NASA, NOAA, IOOS, MACOORA, NAS, CUASHI, WATERS, etc.

Ongoing and continued NWQMC activities and products (http://acwi.gov/monitoring/activities_products.pdf)

- National conference - Host bi-annual national conferences (such as in May 2010); develop companion products to promote monitoring issues and collaboration (such as, for example, articles in AWRA's Impact journal) – (Communication and Collaboration Workgroup)
- National Monitoring Network - Showcase and continue to refine next steps for the National Monitoring Network (NMN) Demonstration Projects in Delaware Bay, Lake Michigan, and San Francisco Bay with NAWQA and NASQAN involvement (Co-Chairs)
- Data exchange - Support the data exchange (WQX) (USGS/EPA collaboration). (Water Information Strategies Workgroup)
- Core date elements - Continue to develop and report out on core sets of data elements for use in reporting chemical, physical, and microbiological water-quality sampling (Methods Board).
- Comparable analytical methodology - Continue to develop and report out on web-based catalogs and systems to distribute information about the precision, accuracy, and cost of analytic laboratory methods that can be specified in monitoring programs (National Environmental Methods Index, NEMI).

Prioritized issues and activities for discussion and prioritization, with associated workgroup

- Support Integrated Monitoring (Water Information Strategies Workgroup) (16 votes)
  - Explore roles of different monitoring, including probabilistic and targeted designs and how to integrate them to begin to answer questions beyond what the individual programs could address; to better address State questions and needs; and to address the role of indicators.
  - Explore examples of benefits of integrating data – such as demonstrated in the Southeast with the integration of USGS and STORET data.
  - Assess the States role in helping to define and support indicators and data needs and availability (10 votes)
    - Help to create a forum that Involves States in the development and use of indicators
    - Cooperate with and advise the NEST national forum
    - Respond to the Heinz Center "Roadmap for the Future"
  - Explore and promote the utility of volunteer monitoring in the integrations
    - Promote WQX Web for volunteer data
    - Reflect volunteer methods in NEMI
    - Write paper on benefits of volunteer monitoring
    - Improve guidance on quality assurance so that integration is easier
  - Track and share information on the different monitoring programs and objectives to support regulatory, survey, compliance, and assessment needs.
  - Create forums to share success stories and identify gaps
  - Explore how integrated data can address Climate Change (9 votes)
    - Advise monitoring agencies on long-term monitoring, assessment approaches, and indicators that can be used to detect climate change
    - Develop position paper with "climate change experts"

- Support Assessment and Reporting Tools ((Water Information Strategies Workgroup) (15 votes)

- Promote, share, and document statistical and modeling and assessment tools; build capacity among Feds and States.

- Support State and Regional Monitoring Councils (Communication and Collaboration Workgroup) (15 votes)
  - Promote, share, and track progress related to approaches, monitoring, funding, incentives
  - Set up structure/logic model for collaboration and cooperation among individual Councils, such as, for example, hosting routine Webexs or creating an interactive Website or Wikipedia
  - Create and maintain excel worksheet on "who's who"
  - Invite certain State councils to speak at the conference – organize special session
  - Write paper that summarizes the status of existing Councils for distribution at the conference

- Advance the National Monitoring Network (NMN) beyond the current demonstration projects (Co-Chairs) (12 votes)
  - Work with National Ground-Water Network to find intersections – re: pilots, water-data exchange, communication, portal, etc (
  - Explore role of a clearinghouse for monitoring data
  - Work with ACWI, CEQ, OSTP to articulate a vision
  - Upgrade "Design Document," including pros/cons of the design
  - Promote endorsement of the NMN through presentations and the web
  - Recruit new members to NMN interagency steering committee

- Promote new technologies to support water-quality criteria, monitoring, data management and communication (Methods Board) (10 votes)
  - Evaluate and explore use of sensors and probes (real- time, continuous) and remote sensing to advance monitoring designs and assessments and to inform the regulatory process
  - Data management innovations
  - Explore and share information on available and utility of virtual web services (modeling after Alabama, Louisiana)
  - Collaborate and support the Integrated Taxonomic Information System (ITIS)

ISSUES RAISED but RANKED LOW IN PRIORITY

- Emerging Contaminants (1 vote) (on hold)
  - Guide monitoring priorities
  - Promote analytical techniques
  - Create a sub-work group of Methods Board
  - Develop session at 2010 NMC
- Invasive species (2 votes) (on hold)
  - Work with National Invasive Species Council (U.S. Fish and Wildlife) – explore SeaGrant activity for coastal areas
  - Evaluate effectiveness of monitoring programs to assess water-related, invasive-species issues
  - Develop session at 2010 NMC

- Track and Promote Legislative Support and Funding of Monitoring (2 votes) (on hold)
  - Work with ASIWPCA and others involved in legislative policy and funding strategies/needs
  - Foster communication with upper level officials within Council organizations
  - Provide clearinghouse of information via website
  - Routinely update ACWI

Appendix 4: Recorded Notes of Discussions:

National Ground Water Monitoring Network:
A Progress Report , David Wunsch, State Geologist, New Hampshire

He gave a history of how the Subcommittee on Ground Water (SOGW) was formed and a timetable of its development. Jan 2007 it was approved by ACWI. He gave an overview of the group and the issues they are interested in. Bob Schreiber and Bill Cunningham are the subcommittee Co chairs, and Chris Reimer is the Executive Secretary. He discussed the Scope of the SOGW. They are interested in a ground water monitoring program nationwide, and discussed the drivers of such a network and what the benefits of such a program would be. He discussed the report, National Framework of Ground Water Monitoring Network (NGWMN), which is in its 3 draft. The SOGW, through this report, will recommend that ACWI peruse a NGWMN, which will have water quality component to it. The hope is for pilot testing in 2009 and 2010. (Q) Mary Skopec asks if new wells will be drilled. (A) They may have some new, but would like to use existing. Develop of how this is done would be left to the states, as long as they followed the guidelines. (Q) Pixie, how can we work together on areas of overlap? She suggested good opportunity is at the council conference. (A) There was significant number of GW talks at the last conference. Key point to sum up is that they want to bring parity to GW monitoring across the country. Stress that the network needs to look at differences at depths as well as spacially.
Tamim Younos asked how they plan to handle and use data from private wells and water use. (A) They have not addressed this because most states have water use programs and they are a wide range of how this data is collected and reported.
Pixie – one area of common is the current pilot studies for the National Monitoring Network (NMN). (A) They are thinking of how to do their pilots and where they will get funds to do this. They are very interested in using some of the same states. Pixie would like to see some next steps for this coordination. Mary Skopec brought up the WQX and why do they need to make a new one, her GW data goes into STORET now. Bill Cunningham answered that some of the data elements that they found to be critical may not be able to be stored in current data base. He said that they have looked at WQX and it is in the report and found that WQX is week in storing physical data (water levels) and in some data can not be stored at all. Eric Vowinkel would like to work with them on their data elements. Need to consider continues water level measurements to define water levels. (A) (Bill C.) Coordination with Water for America could be done. USGS has been charged to look at this and has committed to integrated data. This will be submitted to ACWI to be considered at their Feb 2009 meeting.
Pixie we could serve as an outreach facilitator. (A) Are willing to partner with council and have their own also. (Areas of corporation: conference, data exchange, outreach, pilot study development)
Mary Skopec - how will this be roll out to state partners? (A) They have not talked about that yet. Several members of the SOGW could handle it.

The draft Network design report by the ACWI Subcommittee on Ground Water < http://acwi.gov/sogw/index.html >, will be available for review shortly after New Year and will be presented to ACWI for approval at its next meeting

Introduction to USGS Water Resources Discipline, Matthew C. Larsen, Associate Director for Water, USGS

Matt discussed the Water Resources Discipline's mission, organization, budget, challenges, future programs, and Water for America program.

Interoperable Data Systems
USGS/EPA/NOAA Web Services Collaboration, Nate Booth, USGS, Kristen Gunthardt, EPA

Expected outcome of this discussion is what ways that the system can be enhanced are and what it does for each member and their organizations.

Nate made a webex presentation (and Kristen was present at the meeting) of the new integrated retrieval program to get data form both STORET and NWIS. Nate went over the history of the two data bases and how they developed into the Water Quality Data exchange and how it works. He described the work with NOAA Integrated Ocean Observation System (IOOS) to bring their data into this system. Nate did a demo on Lake Michigan and Delaware, pilot studies data retrieval from both data bases. He thinks it will encourage small collectors to use the system and get their data to more users. WQX Web is being developed for smaller users such as volunteer groups and tribes to be able to share their data nationally. Future Emphasis: Data Exchange Common spatial framework and common analytical methods and metadata, National Environmental Methods Index (NEMI); New applications; Collaboration USGS, NOAA IOOS, real-time data. They looked at what portion of the data

was unusable – They decided that there was a whole class of data that was not combatable with the new system, but that 95% of the USGS data was useable in the system. The question was asked about what kind of QA/QC procedure are going to be put in place for smaller user. (A) They have data elements and metadata that will help qualify and assume that the supplier has QA'ed their data before it get into the system. What about GW: there are some elements that will allow GW data to be tagged. What are additional elements that the council would like to see in the system?

Physical Habitat Data Elements
Recommended Additions to the Water Quality Data Element, Dan Sullivan, Methods Board

Goal is to scansion the work of the Methods Board to proceed to the ACWI. Letter (in the handout) to the ACWI and the data elements were given to the council members. Dan explained the workgroup and how they did their work. These are the second of the updates in the data element series.

Motion to accept the data elements and pass them on to ACWI for their consideration made by Michael McDonald, second by Jeff Ostermiller – Vote, passed unanimously

Environmental Information: A Road Map to the Future, Robin O'Malley, Heinz Center

Robin gave background of the project. The strategies of the monitoring programs need to be integrated. He discussed the need for indicators that will useful by decision makers.
He discussed the four major recommendations:

- Congress should formally establish a national system of indicators (involve all partners in selection, Use to drive key monitoring, Not all indicators/monitoring included);
- Executive branch should move ahead in advance;
- Congress and executive branch should provide greater funding, including transition funds;
- States should participate as full partners.

He presented a sample started set of indicators for water. NEST is intending to pick 4-5 water indicators of water availability (and quality) and then show how they can be integrated to answer the bigger questions (how are conditions changing; where are the issues, etc)

Possible starter set of indicators discussed by the Council: Nitrogen, phosphorus; Sediment; contaminants; flow regime; linked to local information (land cover, etc); physical condition; biological condition (inc. natives, non-natives)

There was a question on how to handle lag time in some of these when the indicators do not pick trends and at what level will change be detected. Indicators need to help define trends at the high level and fate and effects at the land or lower level. The Heinz Center has discussed how to protect the programs in the agencies that development the data to support the indicators. Question: Does congress see water as a national issue? (A) Some do and some so not, but we need to educate congress on the big water issues.

USGS and EPA water programs' response to the Heinz Center Roadmap, Susan Holdsworth, EPA and Donna Myers, USGS

Susan discussed EPA's National Policy Questions. She set the background as to why they do national surveys. She discussed priority stressor: nutrients, toxics, flow, habitat, and invasive species. She discussed the benefits of collaboration on national surveys.

Donna discussed USGS approach to water indicators. How can we collaborate on indicators? Donna showed how using other agency data allow them to do analysis that would not have been able to do with out the additional data. Her two major points: Different monitoring design answer different questions; the water quality exchange will allow this type of analysis much easer.

Q - How does real-time continuous data supplement the analysis done on discrete sample sets? What is the question that is being trying to answer with the continuous data, they maybe new questions that have not been asked before.

Peter Tennant bottom line for this presentation is that a national monitoring network is too big for any one agency and to big for even the combine power of the all the states to do one their own.

Facilitated Discussion on the Response to the Roadmap and the Council Work plan (21 Issues), Pixie Hamilton

Goal for this session is to rank and priorities the 21 issues, so that we have 2-3 things that we can make progress on over the next 17 months and report on at the 2010 conference.

Pixie discussed the issues that are classified as on-going and will not go away and the new issues. This discussion needs to help use redefine our charge/strategies, which was given the council at it formation in the mid 90's. There was some reworking of the issues and eliminating/combining of some others.

How can the council serve the needs of the states? But the council has limited resources so we have to prioritize our work. Each member got 4 votes, each voted for the priorities that they felt we should stress. On-going work was not voted on.

The vote resulted in the following 3 highest issues –

1. Support Integrated monitoring programs (WIS);
2. Support state and regional monitoring council (C&C);
3. Support assessment tools (WIS)

Promote new technologies to be addressed by method board.
Indicators will be covered support integrated monitoring programs
Include volunteer monitoring under both integrated monitoring programs and support state and regional monitoring councils.
(See Appendix 3 for summary of issues)

NOAA Program Overview: (B.2)

- NOAA's water quality-related activities and Programs . . . . . Jawed Hameedi, NOAA/CCMA
- Current activities in NOAA's National Status and Trends Program . . . . . John Christensen, NOAA/CCMA

See www.nsandt.noaa.gov for information on status and trends work. Funding will run out in 2010, contract for lab analysis expires in 2099 and will not be renewed, 2010 will only be sample collection, they will have to be frozen for analysis at some time when funds become available.

- Atmospheric mercury monitoring and modeling . . . . . Mark Cohen, NOAA/ARL
- Water quality monitoring operations in the Chesapeake Bay . . . . . Doug Wilson, NOAA/NCBO

NOAA internet sites of interest:

http://nsandt.noaa.gov
http://coastwatch.noaa.gov
http://www.oar.noaa.gov
http://ccma.nos.noaa.gov/about/coast/nsandt/welcome.html (mussel watch)
http://www.chesapeakebay.noaa.gov
http://www.arl.noaa.gov/mercury.php (Air Resources Laboratory)

(B.3) Plans for the National Wetlands Condition Assessment . . . . . Michael Scozzafava
EPA Wetlands Division

Goal of the program: Produce national report that describes the ecological conditions pf the nation's wetlands. Help states and tribes and advance their wetland monitoring and advance the state of the art of wetland research. See www.epa.gov/wetlands/survey for more information. Federal Geographic Data Committee is finalizing a set of standards for special data for wetlands. It was suggested that they contact the National Audubon Society and they may be able to help with the bird surveys.

(B.4) Developing Genetic Barcoding for use in Water Quality Studies . . . . . Chuck Spooner
Chuck discussed EPA's research into using genetic barcoding for the identification of macro invertebrates.

Work group reports (see full reports pages 5-10)

- Membership update (Co-Chairs) - Co-Chairs discuss that our membership is about full and that they will be working keepingit up to date. After the beginning of the new year, Doug and Wendy will present to the Co-Chairs a list of all members who's membership is to run out at the end of 2009. (C.1)
- *Collaboration and Outreach (Dave Tucker)* – Dave discussed conference plans (anyone interested in joining conference planning workgroup contact Dave or Tracy); Tracy discussed the plans to start, sustain, and help State Councils to grow, and the start of a NWQMC newsletter which will be an on line electronic publication. (C.2)
- *Methods and Data Comparability Board (Eric Vowinkel)* –Eric discussed the activities of the subgroups in the Board; Large growth in the sensor workgroup, their work will be on guidance for manufactures to put into owners manual to help standard the use of sensor; Support Assessment and Reporting tools workgroup; They are developing a statistical workgroup; They would like feedback for the states on how they need to use the data. (C.3)
- *Water Information Strategies (Peter Tennant)* – Peter discuss the support of integrated monitoring and the workgroup will be focusing on the following: Assess the States role in helping to define and support indicators and data needs and availability, Explore and promote the utility of volunteer monitoring in the integrations, Monitoring Clearinghouse and Technique Expert System, Monitoring needs/strategies to address climate change. The work group will also look at Support Assessment and Reporting Tools and Discuss this jointly with Methods Board (C.4)