

## National Water Quality Monitoring Council – Meeting, March 10-12, 2009

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### Decisions and Actions

- **Minutes from December 2008 meeting approved** with change related to phosphorus in Oregon (in WIS workgroup report) (Doug Glysson)
- **Next NWQMC meeting** (Greg Pettit)
  - Portland, Oregon – July 21-23, 2009
- **NWQMC Meeting December 1-3, 2009** (Denver, Colorado)
- **Placement of Power Points from the meeting on web** (Wendy Norton)
- **Membership** (Wendy Norton)
  - **New members** – Steve Wolfe, Dave Chestnut, and Doug McLaughlin to be formalized (Wendy Norton to pursue needed paperwork)
  - **USDA member to be pursued** – Mary Ann Rozum (Pixie Hamilton)
  - **Invite National Estuarine Reserve Program (NERS, NOAA)** – (such as Gabriella Cononaco; Stephanie Bailenson) (Eric Vowinkel; Steve Wolfe; Chuck Spooner)
  - **Follow up with Sheri Hazelhurst (Forest Service)** (Wendy Norton)
  - **National Science Foundation** (Chuck Spooner)
  - **Tribal representative** (Chuck Spooner to get a name to Wendy Norton)
  - **NASA (remote sensing)** (Steve Wolfe will get ideas to Chuck Spooner, Wendy Norton)
  - **Assess members who have missed 3 or more meetings** (Wendy Norton to report to Co-Chairs)
  - **Invite EPA Regional representative to meetings**
- **NEST – Water Information Strategies Workgroup** (Mary Skopec and Peter Tennant; Details provided in WIS workgroup notes, page 10)
  - Draft letter that summarizes Council's concerns and recommendations will be developed by Mary Skopec within a week for review by WIS group. Review by whole Council to follow. Release of letter to NEST-EMT early/middle April, signed by Executive Secretary for Council
- **National Conference – Collaboration and Outreach Workgroup** (Jeff Schloss, Dave Tucker, Doug Glysson; Details provided in Collaboration and Outreach workgroup notes, pages 16-22)
  - Local committee has provided thoughtful plans for field trips, plenary speakers, workshops (Barry Long is liaison for additional input)
  - "Save the Date" will go out in March 2009; Call for Abstracts will go out in April (Jeff Schloss; Dave Tucker)
  - Email contacts for "Save the Date" to Jeff Schloss (Pixie Hamilton)

- Council members encouraged to distribute the “Save the Date” to staff, memberships, and other colleagues
- Susan Holdsworth will support travel/conference costs for about 50 State folks (associated with NARS)
- Gayle Rominger (YSI) will provide funds to support travel/conference costs for volunteer monitors (Linda Green will work with Alice Mayo to work out allocation process)
- 250 estimated attendance by USGS; 50 estimated attendance by NPS
- “Call for Abstracts” themes, developed by the Collaboration and Outreach workgroup will be sent to the Council at large for input and reviews by April 4<sup>th</sup>. Please send comments to Jeff Schloss, Doug Glysson, and Dave Tucker.
- National Conference monthly calls planned for the second Wednesday, noon EST, starting in April 2009; everyone is welcome to participate. Contact Doug Glysson if you would like to join the call(s).
- **Online Newsletter – Collaboration and Outreach** (Tracy Hancock; Details provided in Collaboration and Outreach workgroup notes, page 12)
  - Goals, audience, purpose defined by Collaboration and Outreach workgroup
  - Designed as a “short” newsletter (4 pages) with active weblinks
  - Printer friendly version will be available, also, for those without access to the web, and a readable format will be developed for access by PDA/Blackberry
  - Editor (Tracy) with editorial board and layout team (Kim Martz)
  - Members for editorial board needed; please contact Tracy Hancock
  - Council workgroups to provide content for articles/columns (by end of April) to Tracy Hancock
- **Webpage updates – Collaboration and Outreach** (Tracy Hancock) (Details provided in Collaboration and Outreach workgroup notes, page 15)
  - Design sketched out; Linda Green will help update content; Tracy Hancock will work with Kim Martz (USGS) to update webpage
- **State and Regional Monitoring Councils – Summary of Council discussion** (More details provided in Collaboration and Outreach workgroup notes, page 13; effort spearheaded by Tracy Hancock and Pixie Hamilton)
  - Create visibility, sooner than later, to showcase cost-benefits and success stories of State and Regional councils; estimate cost savings over long term with monitoring and addressing water issues.
  - Develop “top ten reasons” to have a State and Regional council
  - Develop letter for ACWI and high level officials in States (Commissioners; Secretaries) showing value and need of Councils
  - Solicit funding – such as from EPA and others (particularly if have 5013c status) – to sustain Councils (Note: This reflects a very small amount compared to the total amount of money spent on monitoring.)
  - Showcase Councils at national conference; in NWQMC online newsletter; consider a BLOG or WIKI to promote dialogue among State and Regional Councils and the National Council
  - Develop Virtual Monitoring Toolbox (Details provided in Collaboration and Outreach workgroup notes)
  - Webpage on the NWQMC site will help summarize activities of the State and Regional Councils, categorized by themes (or cross topics) and that links Council sites for more detail. Themes could include:
    - Availability of State inventories and catalogues on monitoring
    - Special projects taken on by Councils (which provide a mechanism to deal with new issues or initiatives), such as fungicide on corn in Indiana; tributary monitoring in Lake Michigan; coordinated analysis of water quality in Delaware Bay; salmon crisis in Northwest
    - Water data sharing (NJ water-quality data exchange; Colorado data sharing network)
    - Products (FL 2009 Action Plan; monthly newsletter in VA; Indiana charter; integrated data in CWA report for NJ)
    - Council setup or business/organization (information on “5013c” setup in Colorado)
    - Role of Volunteer Monitoring and community based groups in Councils

- Issues that Councils address (such as Aquatic health; swimmable waters; safe to drink; shellfish safe to eat; stressors that affect water quality; emerging contaminants)
  - Benefits (communication, collaboration, building a “water community”, information exchange, immediate forum to address local issues, coordinate fresh water with coastal monitoring)
  - Challenges (funding; staff resources; lack of interaction with other Councils: entrenched programs; maintaining focus and reasonable scope)
- **National Monitoring Network – Summary of Council discussion** - NMN Steering Committee, spearheaded by Eric Vowinkel and Tracy Hancock along with Co-Chairs, will continue to:
  - Collaborate/integrate with NOAA IOOS, regional associations, and NOAA reserves, with common interests in data management and integration of discrete and continuous data; implementation of sensors; and making inland-to-sea connections with stakeholders associations associated with the different regional associations
  - Pursue the “nested approach” – which helps to address and bring visibility to local, state, and regional issues (such as in the pilots) but builds on national synthesis stories
  - Identify “high level” national questions that the Network can address (related to status and trends) (done in concert with the WIS workgroup)
  - Serve as a bridge to the “water community” on the availability of the data for synthesis of questions (making the data “reusable”, “accessible” to others for synthesis and analysis)
  - Pursue intersections with NEST, SOGW – maintaining flexibility and an “evolving” design
  - Showcase progress and direction of the pilots and Network, such as at the National Conference 2010 in Denver
  - Pursue “report outs”/outcomes from pilot/implementation projects for FY09 work
  - Consider motto “The Network that Works”
  - Demonstrate utility of data discoverability, accessibility, and interoperability
  - Update the NMN documents currently on the NWQMC to reflect the current progress and future directions.
- **Subcommittee on Ground Water National Network – Summary of Council Discussion** - Continued efforts will be spearheaded by Dave Wunsch; Tamim Younos; and Chuck Spooner to set up a work group composed of volunteers from both groups to discuss intersections between the NWQMC and NGWMN, including:
  - Identifying a list of programs driven by national legislation with ground-water and surface-water overlaps
  - Defining management of data elements in existing framework (NEMI)
  - Collaborating on a portal of “hydrologic information”
  - Integrating State and Regional councils and cooperative extensions (such as in Oregon, Pennsylvania, Virginia) in the process
  - Increasing awareness and visibility of ground water using NWQMC tools, including National Conference and Newsletter

### Noteworthy Items

- IBM “Water Innovation Alliance” – looking for green innovations; optimization projects; interested in NEST discussions and “water data architecture”  
(check out <http://www-03.ibm.com/technology/greeninnovations/> )
- For publications and information on research by Nancy Messner, such as “Designing Monitoring Programs to Evaluate BMP Effectiveness”, and the “Best Management Practices Monitoring Guidance Document” contact: [nancy.messner@usu.edu](mailto:nancy.messner@usu.edu) (435-797-7541)
- Volunteer Monitoring Fact Sheet Learning Modules (contact Linda Green for questions or visit: <http://www.usawaterquality.org/volunteer> )
- Climate publications by David Naftz (USGS) available ([dlnaftz@usgs.gov](mailto:dlnaftz@usgs.gov); 801-908-5053)
- Gulf of Mexico Alliance – 2<sup>nd</sup> Annual Monitoring Forum, New Orleans, LA, April 8<sup>th</sup>, 2009 (contact: Steve Wolfe)
- Check out EPA’s new watershed website: [www.epa.gov/watershedcentral](http://www.epa.gov/watershedcentral)

## Possible Agenda Items for meeting in Portland, OR, July 21-23, 2009 (Host – Greg Pettit)

- Conference planning (Jeff Schloss, Dave Tucker, Doug Glysson, Cathy Tate)
- WIS Session - Integrating Data from Diverse Sources to Address Water Issues – Case Examples (Pixie Hamilton, Greg Pettit, Mary Skopec, Doug McLaughlin, Leslie McGeorge, Gary Kohlhepp)
  - Corvallis lab (EPA) participation in data and analyses discussions (Olsen, Stoddard, Paulsen)
  - Local Presentation of the Willamette Valley study – integrates data from many sources
  - Local Presentation - WA DOE use of a master sample as a way to integrate multiple stream monitoring programs and share data.
- IOOS participation, Regional Association (Oregon and Washington) (contact Josie Quintrell, Pixie Hamilton)
- Methods Board and Sensors Work (Dan Sullivan and Gayle Rominger)
- Updates
  - State and Regional Councils (Virtual Tool Kit; Webpage)
  - Online Newsletter
  - Council intersections/collaboration with SOGW
  - National Monitoring Network
  - Assessment techniques and statistical procedures and guidance (Water Information Strategies Workgroup, Doug McLaughlin and Leslie McGeorge)
  - Monitoring clearinghouse (Jason Jones)
  - Volunteer Monitoring
- Local Presentations
  - PSAMP interagency/state group who has been looking at physical habitat protocols across programs
  - Northwest SPARROW model and its relevance to monitoring and assessment on regional scale
  - Lower Columbia Estuary Partnership
  - Cooperative extension activities in Oregon
  - A comprehensive study of contamination trends along the Columbia River basin by EPA Region X "*Columbia River Basin: State Of The River Report for Toxics*" (polybrominated diphenyl ethers (PBDEs) ([http://insideepa.com/secure/data\\_extra/dir\\_09/epa2009\\_0150a.pdf](http://insideepa.com/secure/data_extra/dir_09/epa2009_0150a.pdf) )
  - Jennifer Bayer - Pacific Northwest Aquatic Monitoring Partnership
- Tour of laboratory; possible field trip on Thursday
- Presentation - Aquarius Software Demonstration

**AGENDA - NWQMC MEETING – March 10-12, 2009**  
Salt Lake City, Utah, Hotel Monaco, Paris Room

**Tuesday, March 10, 2009**

7:30 a.m. – Continental breakfast in the Paris Room at the Hotel Monaco

8:30 a.m. – Welcome & Introductions

Council Co-Chairs

- Housekeeping and logistic
- Introductions of guests and alternates (and new members)

8:40 a.m. – Updates

Council Co-Chairs

- December Council Meeting Minutes
- Council Strategy (progress update)
- Aquarius Software update (Barry Long)
- NAS as a participant
- Council membership
- Meeting agenda overview

9:00 a.m. – Presentation by local speaker: *Real-time data collection and monitoring guide for devising cost-effective monitoring strategies*

Nancy Messner

9:45 a.m. – BREAK

10:00 a.m. – Panel Presentations and Discussion on State and Regional Monitoring Councils

Tracy Hancock (Overview) and Pixie Hamilton (Facilitator)

**Webex:** <https://usgs.webex.com/> (Choose "NWQMC State and Regional Councils"; you can log on 15 minutes before). **Teleconference Line:** (218) 844-0840; Passcode: 356188#

**Goals and expected outcome** – To exchange information on the benefits and challenges of initiating and implementing a State or Regional Monitoring Council – and to discuss how the national Council can serve to guide and promote initiation in other states and sustainability of existing councils.

**Panelists (in attendance):**

- Leslie McGeorge (New Jersey Council)
- Jeff Frey (Indiana Council, Indiana Board)
- John Hummer (Lake Michigan Council)
- Tamim Younos (Virginia Monitoring Council)
- Karl Hermann (Colorado; EPA regional monitoring perspective)
- Steve Wolfe (Florida Council)

**Panelists (on phone)** Dan Boward from Maryland; Val Connor and John Marshack from California

12: 30 p.m. – Lunch

1:30 p.m. – Panel Presentations and Facilitated Discussion on the National Monitoring Network

Tracy Hancock (Overview) and Pixie Hamilton (Facilitator)

**Webex:** <https://usgs.webex.com/> (Choose "NWQMC - National Monitoring Network"; you can log on 15 minutes before). **Teleconference Line:** (218) 844-0840; Passcode: 356188#

## National Monitoring Network Discussion, Continued

**Goals and expected outcomes** – To provide updates on (1) the status of the Network; (2) on current “demonstration” activities in the three pilots (Delaware Bay, Lake Michigan, and the San Francisco Bay); and, (3) current activities and goals of key NOAA Programs (such as associated with IOOS, NFRA, and NERRS) that overlap with Network objectives.

The expected outcomes are to identify intersections between Network and NOAA goals (such as common interests in comparable data management of discrete data and real-time data; sensors; quality assurance and control; and support for regional issues on inland-to-ocean connections), and to develop “next steps” for enhancing collaboration.

Ideas for additional refinements and future directions of the Network will also be outlined and discussed by the Council.

### Presenters/Panelists (in attendance):

- Tracy Hancock (USGS – National Monitoring Network Overview)
- Eric Vowinkel (USGS, DE Bay Pilot)
- John Hummer (Great Lakes Commission, Lake Michigan Pilot)
- Katie Harrold (SFEI, SF Bay Pilot)

### Presenters (by telephone):

- Dwayne Porter (Univ. of South Carolina)
- Whitley Saumweber (NOAA, NERRS)
- Zdenka Willis (NOAA, IOOS)
- Josie Quintrell (NOAA, NFRA)
- David Schoellhamer (USGS, SF Bay Pilot)
- Kevin Richards (USGS, Lake Michigan Pilot)
- Josh Kohut (Rutgers Univ., DE Bay Pilot for DRBC)

3:30 p.m. – BREAK

3:45 p.m. – Facilitated Discussion on the National Monitoring Network, continued

Tracy Hancock and Pixie Hamilton (Facilitators)

5:00 p.m. – END DAY 1

## Wednesday, March 11, 2009

7:30 a.m. – Continental breakfast in the Paris Room at the Hotel Monaco

8:30 a.m. – Opening Announcements

Council Co-Chairs

9:00 a.m. – Science Talk: *Climate Change and Ice Cores*

Dave Naftz, USGS, UT WSC

9:45 - Break

10:00 a.m. – Subcommittee on Ground Water (SOGW), National Ground Water Monitoring Network (NGWMN)  
Presentations and panel discussion

Pixie Hamilton (Facilitator)

**Webex:** <https://usgs.webex.com/> (Choose “NWQMC - National Monitoring Network and GW Monitoring Network”; you can log on 15 minutes before). **Teleconference Line:** (218) 844-0840; Passcode: 356188#

**Goals and expected outcomes** – To (1) provide updates on the status of the NGWMN (as presented to ACWI) and resolution approved by ACWI.; and, (2) identify intersections with the Council's National Monitoring Network,

including with data management and the water-quality exchange; overlap with pilots (such as in the Great Lakes, Delaware, or San Francisco); NEMI; data elements; and conference planning.

**Presenters/Panelists (in attendance):**

- Bill Cunningham (USGS, SOGW)
- Mike Wireman (EPA) or other EPA participants
- Dave Wunsch (NHDES, Council Rep. for AASG, and SOGW)

**Participants (by telephone):**

- Bob Schreiber (CDM, SOGW)
- Chris Reimer (NGWA, SOGW)
- Norm Grannemann (USGS)

11:00 a.m. – BREAK

11:15 a.m. – SOGW, National Ground Water Monitoring Network (NGWMN), Continued

12:00 noon - Lunch

1:00 a.m. – Update on National Environmental Status and Trends (NEST)

Mary Skopec, Greg Petit, Paul Currier and Co-Chairs

**Expected outcome** – To provide feedback to the NEST leadership team on state interests and possible roles in defining and implementing a national set of indicators. (Note: Discussion to be continued in Water Information Strategies workgroup)

1:30 p.m. – 2010 National Monitoring Conference (NMC) Update/Discussion

David Tucker, Jeff Schloss, and Doug Glysson

**Goals and expected outcome** – To gather ideas for possible “theme-building,” workshops, sessions and other venues for the National Conference (before the workgroup breakouts).

2:00 p.m. -- Work Groups – Break into groups

NAME	PURPOSE	PLACE
<p>Collaboration and Outreach Work Group with Conference Planning Committee</p>	<ul style="list-style-type: none"> <li>• Plans for Seventh NMC               <ul style="list-style-type: none"> <li>○ Update on facilities</li> <li>○ Securing Proposals</li> <li>○ Conference Themes, Call for Papers</li> <li>○ Field trips</li> <li>○ Workshops and working groups</li> </ul> </li> <li>• Online newsletter – plans</li> <li>• Next steps for State and Regional Monitoring</li> <li>• Webpage and updating information</li> </ul>	

<p>Water Information Strategies Work Group</p>	<ul style="list-style-type: none"> <li>• NEST indicators – consolidated response to NEST leadership</li> <li>• Improved strategies for using data from diverse sources for addressing water issues – discussion of case examples</li> <li>• Review of statistical procedures for clearinghouse (Doug McLaughlin)</li> <li>• Role of Aquarius Software</li> <li>• Webpage and updating information</li> <li>• Volunteer monitoring</li> <li>• Creation of a Clearinghouse of the Nation's State and Federal Water Quality Monitoring Programs</li> </ul>	

4:45 p.m. – Wrap -up (Dinner plans – to be decided)

Thursday, March 12, 2009

7:30 a.m. –Breakfast in the Paris Room at the Hotel Monaco

8:30 a.m. – Work Groups, Continued

NAME	PURPOSE	PLACE
Collaboration and Outreach Work Group	Continue previous day's discussion	
Water Information Strategies Work Group	Continue previous day's discussion	

12:00 noon LUNCH

1:00 p.m. – Workgroup reports (30 minutes each)

- Collaboration and Outreach (Dave Tucker, Tracy Hancock)
- Conference Planning Committee (Dave Tucker, Jeff Schloss, and Doug Glysson)
- *Water Information Strategies* (Peter Tennant, Mary Skopec)

2:15 p.m. – 3:00 p.m. – **Recap and Wrap-up:** (Action items and major decisions; Business items (membership issues; meeting dates and locations; other Council topics)



## Attendees, NWQMC, Salt Lake City, Utah, March 10-12, 2009

Pixie Hamilton  
Chuck Spooner  
Wendy Norton  
Doug Glysson  
Eric Vowinkel  
Tracy Hancock  
Mary Skopec  
Jason Jones  
Tamin Younos  
Leslie McGeorge  
Peter Tennant  
Jeff Ostermiller  
Tony Shaw  
Dave Wunsch  
Jeff Schloss  
Gary Kohlhepp  
Chris Piehler  
Dave Tucker  
Doug McLaughlin  
Linda Green  
Greg Pettit  
Barry Long  
Jane Caffrey  
John Hummer  
Paul Currier  
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### Participants (in person)

Jeff Frey (USGS, IN State Monitoring Council)  
Karl Hermann (EPA, Region 8)  
Katie Harrold (SFEI, SF Bay Pilot)  
Bill Cunningham (USGS, SOGW)  
Mike Wireman (EPA, SOGW)  
Cathy Tate (USGS, Local conference planning)

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### Participants (by telephone)

*State and Regional Monitoring Councils Discussion*  
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Val Connor  
John Marshack (California State Council)

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*National Monitoring Network Discussion*  
Kevin Richards (USGS, Lake Michigan Pilot)  
Josh Kohut (Rutgers Univ., DE Bay Pilot for DRBC)  
David Schoellhamer (USGS, SF Bay Pilot)  
Whitley Saumweber (NOAA, NERRS)  
Josie Quintrell (NFRA)  
Zdenka Willis (NOAA, National IOOS)  
Dwayne Porter (Univ. of South Carolina)

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### *Subcommittee on Ground Water Discussion*

Norm Grannemann (USGS; SOGW)  
Bob Schreiber (CDM; SOGW)  
Chris Reimer (NGWA; SOGW)  
Tom?

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### Presenters

David Naftz  
Nancy Messner

David L Naftz/WRD/USGS/DOI  
nancy.messner@usu.edu

## Notes - Water Information Strategies Workgroup

### 1. Conference ideas (Peter Tennant)

- Integrating Data from Diverse Sources to Address Water Issues (Workshop and session) (highlighting advancements since GAO critiques)
- Development of Water Indicators at Multiple Scales (Session)
- Possible consideration of Robert Ward for award

### 2. Comments on NEST for input to EMT (Mary Skopec, Peter Tennant)

- We endorse comparable monitoring data to address the concept of indicators. However, the process and uncertainty of the purpose of NEST thing are unclear. Comparable monitoring and exploration of indicators is one of the core missions of the Council. Thank them for an inclusive partnership process. (Check wording in NWQMC documents.)

Indicators need to be developed within the framework of collaboration, communication, and coordination, which is supported by the NWQMC (involving organizations at all governmental levels and non-government).

- Shortcomings of the current vision and process.
  - Why the urgent timing? June may not be realistic for sound implementation of this effort, given the scope and breadth.
  - Who is the audience?
  - What is the scale of issues?
  - State involvement; NEST must be a partnership from the beginning
  - Disparity between State and national findings
  - Core measures already in place by the States – asked to monitor for these - States don't necessarily want to do two things
  - Five questions were not framed as "indicators"; issue with definition of "indicator"
  - Seems like we are starting from square one – including integration of data bases. Need to educate on available tools and progress
  - Confusion among EMT about the metric – just a number or an analysis of bad/good, better/worse?
  - Who does the analysis? The mapping?
- Council recommendations to overcome it.
  - Frame the questions
    - Indicators need to be established within the context of a goal. And the CWA establishes the water-quality goals for the Nation. It also establishes the process by which those goals are to be achieved and reported. Therefore, remember the Clean Water Act goals that can serve as indicator questions (aquatic life use attainment and support for fish and wildlife propagation; water-quality uses being met and designated uses supported; drinking-water supply, recreational use, irrigation, fish and shellfish consumption. This is the mechanism in which improvements are made. Each State has assessment methodology public. May be different, but they are comparable.
    - Should be an effort to build on national, regional, and state indicator efforts, including the Heinz Center; National Estuary Programs (State of the Delaware Bay Estuary), and the State of the Lakes Ecosystem Conference indicators; State of Oregon environmental benchmarks; NJ Environmental Trends under the National Environmental Performance Partnership System
    - Multiple indicators, together, give an overall picture? Need to define the overall picture.
    - Indicators must address both status and trends.
  - Define the audiences
    - In reality the audience is large (including the public) and therefore covers different scales; levels of detail associated with the indicators will vary by the audience.

- Council endorses the attributes.
- Indicators reflect the quality of the data. Must have comparable information. Must include uncertainty with the indicators. Must include statistical variance. The population represented by the data must be included in the presentation of the indicator.
- The individual indicators should say something about status and trends.
- Indicators should include stressors - land use, population, etc. Put water monitoring data in context of landscape variables and stressors; must be an environmental indicator system that water indicators are part of. – must be associated with stressors/pressures; Indicators can not be in and of themselves; need to be prepared to answer why they are what they are.
- Use existing tools - we have advanced in data management (common web services; advanced models) and integration and statistical prowess to make statements on conditions and trends using existing data, as long as uncertainty is associated with the analysis.
- Multiple designs are needed to answer the multiple questions. No one design can answer all the questions.
- Recommend that you reaffirm the intent, timing, and objectives of the NEST with the current administration (i.e. interns at CEQ); communicate with NEST stakeholders and partners
- Communication and education must be considered in the process of development indicators; must keep it in mind as releasing the information; associate the relevance to the public.
- Exercise caution in the use of maps with the indicators at the highest levels. In particular, avoid use of maps with national aquatic resource surveys as they may not accurately convey what the data represent at the local and State scale.

**3. Integration of Diverse Sources of Data to Address Water Issues** (Pixie Hamilton, Mary Skopec, Doug McLaughlin, Greg Pettit, Leslie McGeorge, Gary Kohlhepp)– Show case examples to show optimization of existing data through enhanced water-quality exchange tools and statistical, modeling, and geospatial data. Show value of leveraging existing data. Show value and validity of multiple data designs to answer multiple questions. Show value of highlighting success of Council goals and activities.

- Demonstration by some WIS members at next NWQMC meeting in July in Portland
- Possible workshop and session at the NWQMC conference in Denver in 2010

**4. Assessment Techniques and Statistical procedures** (Doug McLaughlin and Leslie McGeorge)

- What methods are available for analysis? Compendium of assessment and analysis tools (status and trends).
- Has summarized links to guidance documents for data analysis, such as EPA's data quality assessment guidance (currently in a WORD file)
- USGS site for statistical guidance (Helsel and Hirsch)
- Include Brown and Caldwell document – WERF (Lindsey Griffin); place on website? (WERF charge; download pdf?) (Dave Tucker will look into it).
- A lot of information available – textbooks and documents.
- How do we carry the information forward? What framework would work to host the information and be dynamic (added to)? NEMI? Website? Link with Methods Board.
- Covers the analysis and data preparation/screening
- Includes state assessments
- How do we put sensor data in the analysis framework?
- All states assessment methodology is available publicly.
- Be sure to keep the policy guidance separate from the assessment guidance.
- Start as a compendium
- Subgroup needed to discuss product (website; forum on which folks can add products), criteria for preferred approaches, sensor data

## 5. Creation of a clearinghouse of the Nation's State and Federal Water Quality Monitoring Programs (Jason Jones)

- White paper
- ASIWPCA survey of monitoring programs to be incorporated (33/50 states)
- Mike McDonald has probabilistic map
- National inventory of monitoring and contacts for the program
- Challenge with maintaining.
- Use EPA STORET standard metadata record (WQX)
- How storing data (biological)
- Social media tool – WIKI's
- Jason will contact Susan Holdsworth about regional contacts for monitoring
- Must be able to filter historic and up-to-date monitoring programs.

### **Notes - Collaboration and Outreach Workgroup**

#### **1. Newsletter**

##### Audience:

- Anyone in monitoring community
- Existing interests and recruiting new interests
- Specifically State and Regional Monitoring Councils (to help manage process and learn of standards)
- Volunteer Monitors
- Water Resource and Monitoring Managers
- Feedback loop with groups to get hot tips (e.g. sensors)
- Those outside monitoring community: decision/policy makers (particularly with theme topics)

##### Purpose:

- Sustain monitoring community
- Encourage mobilization of new Councils
- Connect people in monitoring community - foster communication and updates (in snippets)
- Build on spokes on Council wheel
- Inform monitoring community of new technologies
- Condensed version of Council meeting minutes and updates with future plans
- Show that Council is on top of specialized areas (latest in volunteer monitoring, updates on data management, energy concerns, working set of topics) – building a community by informing re the spokes of Council wheel, working list from NMC
- Advertise NMC requests for abstracts, sponsors, vendors
- Influence and nudge water resource & monitoring managers and policy makers about monitoring issues important to community (e.g. NEST indicators for management decisions)

##### Organization and Format:

- Format:
  - Short, 4-5 pages (not a book) with many weblinks
  - Email with cover letter which links (opens) to the newsletter with live links
  - printer friendly with the format
  - readable via PDA/Blackberry version
  - Don't worry about fancy layout at first, focus on content
- Consider a theme newsletter:
  - based on a hot topic of the day – timely (sensors, state and regional councils)
  - First issue would include an introduction to the concept of the Newsletter
- Defined segments of newsletter
  - Small blurbs (tasters) on info with links to more info and report download

- Links to fact sheets
- Defined segments to appeal to new interests
- Description and advertisement of Council, entice new members and interests
- Advertising upcoming Council meetings and the National Monitoring Conferences
- Features: highlight a state or regional council
- Link to be added to email distribution list, support from USGS OWIC, Wendy's office

How to organize this Newsletter in Council:

- C&O as central organizers and decision makers
- Use existing structure of Council workgroups with chairs to provide regular updates of potential importance to newsletter – provide a few items to include on newsletter (e.g. sensors, NMN). Discuss what to include at Council Steering Committee.
- Editor: Tracy
- Editorial Board: Team of 3-5 people: Wendy Norton and representatives from Council components/workgroups
- Columnists: Individuals assigned to topics: Vol Mon, State and Regional Councils, NMC, Methods (known internally, but not to reader)
- Layout/design: USGS, Kim Martz, Carol Lewis
- Editorial Board plans topics ahead of time, so have back-up articles

Other Newsletters to check out as models:

- Mass Riverways notes: one or two liners to links for more info on a feature, easy to skim
- Great Lakes Commission Newsbriefs

Other Considerations:

- Don't assume email will reach everyone, do some hard copies (retired USGS newsletter)
- Budget? Need a layout designer!
- Timeline: this spring FY09, highlight top 10 reasons for state and regional councils
- Time publication to prompt registration, papers, sponsorships to aid NMC
- How to deal with other issues, consider at the time

Newsletter names:

- Monitoring News
- Monitoring Matters (used by PA)
- Monitoring Times
- Include water in name?

## **2. Discussion of State and Regional Councils**

Goal: Develop a white paper and/or power point on starting new, sustaining, and common elements

- Review past materials
- Wendy Norton to review Judy's files for results of survey
- Someone to review past power points and synthesize
- Someone to poll Councils to get success stories and common elements, call Val Connor
- Team: synthesize all this info into goal: a power point and/or white paper

Goal: Enhance collaboration of and showcase state and regional councils at 2010 NMC

- John Hummer and Linda Green to design an interactive workshop on creating and designing State and Regional Councils using the Tool Box
- All Council members: encourage and invite to submit abstracts
- review abstracts for sessions related to State and Regional Councils
- Barry Long to coordinate with Robert Ward to design fieldtrip on Council wheel

- Possible sessions on State and Regional Council
  - successes and overcoming challenges
  - collaborative partnership models (NPS and USGS)
  - sustaining long term volunteer monitoring programs
  - Include these on the "call for abstracts"
  - Invite and encourage abstract submission
- Workshops:
  - Developing a tool box for state and regional monitoring councils to form and sustain
    - Roll-out and teaching tool
    - Solicit Field back
    - Ex: MI Corps (MI monitoring group)
  - Different than Field trip on cogs on wheel for actual monitoring

Goal: Create tool box web page:

Purpose:

- Sustainability of existing
- Creation of new
- Solve common problems for existing councils
- Encourage and foster communication
- 2-way street with NWQMC

What is the tool kit - virtual monitoring tool box, include:

- Charters from Councils, especially ones that went non-profit
- Newsletter link to column on current councils, with highlights and success stories
- Power point presentations, those created by NWQMC past and future
- Directory list of Councils with contacts
  - national map with active links, but what to do about regions vs states)
  - active weblinks to state and regional council web pages
- Other links: IOOS NFRA, regional alliance (Gulf of Mexico Alliance, GL, Chesapeake)
- Fact sheet
- Announcements and News (cross link with NWQMC news and announcements)
- S/R success stories
  - Listing of column elements
  - How to start/create a state or regional council – involve synthesis info from top-down and bottom up approach
  - Sustainability
  - Link to May 04 workshop

Others to Include and consider:

- Look through past presentations and workshop talks.
- Fact sheet.
- Create category link for past presentations at meetings and workshops. Common elements and common activities: result of survey which C&O conducted. Workshop at Chatanooga NMC, workshop was good, turnout was not good. Keep to see if we want to continue to include May 2002 and 2001. Archive info, but update it.
- MD Council presentation
- Rhode Is collaborative

Summarize Common Elements:

- Give specifics with links
- Provide more info

### 3. NWQMC Web Page

#### Action Items:

- Linda Green to rewrite a draft purpose.
- Linda Green to provide updates to Volunteer Monitoring web sites.
- Kim Martz and Carol Lewis to update web page with the following issues listed below.
- All Council: send updates on presentations and "broken links" to Kim Martz and cc Wendy Norton
- Purpose (out of terms of reference): rewrite to be more inviting and reader friendly
- Keep top bar of menus with pull-downs
- Don't significantly change layout and structure because similar to ACWI
- Under: How the Council Works and Products of Council: need a sentence or two to introduce these topics, then "these links provide..."
- Have rotating pictures in the beginning, one with ground water, wetlands, people enjoying water and doing monitoring (technicians and volunteers), different parts of the country
- The Council wheel is too small, make it clickable to be enlarge it. Right now goes to fact sheet. Needs meaning for each of the piece, click on each cog and enlarge it and give text description and info on monitoring objectives (provide utility for starting and enhancing program). Include links to articles on design. Review AWRA monitoring framework for this info. 3Cs article written by Linda Green and Abby Markowitz. Currently listed on "The Framework for Monitoring" under "Products of Council" Make links active. Continuously rotate outer ring of the 3Cs if possible.
- Update all webpages and links for names of chairs with contact info.
- Workgroups with fact sheets need updates. Subcommittees and contacts have changed. Advertisement: Blurb on "how to get involved" encouraging those not on Council to join of workgroups. Under "How the Council Works"
- Change "who's who on the council" to "Members and partners"
- Bullet for state and regional councils or make it a separate section with own header (with clickable map)
- Bullet for Volunteer Monitoring (see EPA and Linda's facilitation grant web page)
- Update logos for state and regional councils
- Update membership spreadsheet list with contact info
- National Monitoring Conference section: - Advertise 2010 NMC in Denver; 2008 results – update results with presentations
- Consider including partners with NOAA? Where? Under related links and under NMN
- Move "Related links" of contacts and organizations to bottom of first web page under "Members and partners"
- Under "Products of the Council" - Change "Related Link" to "Related Products" and note this is separate from "Related Contacts" which will now include members and partner"
- "In the News" change to "News and Newsworth" which will evolve to link for Newsletter
- Change "national monitoring conferences" to "meetings and conferences"
- Add council meetings – past and future
- Scheduled council meetings: add Portland meeting
- Add meeting presentations and minutes

### 4. Conference Planning

- 1) Cathy Tate to check on all field trips and write draft paragraphs about each
- 2) Doug Glysson to talk with Greg Mormon about USGS National Water Quality Lab field trip
- 3) Pixie Hamilton and Chuck Spooner to organize and invite presenters to design a series of presentations in sessions, workshops, and other items clustered for database access and use (USGS Nate Booth, John Scott, Kristin Gundthart & someone from EPA), overview workshop with WQX web demonstration, Water Data Portal, fold in IOOS data exchange with Dwayne Porter (session with some hands-on).
- 4) Cathy Tate to coordinate with Sandy Williamson & Curtis Price to design a GIS workshop(s)
- 5) Cathy Tate to coordinate with some to do a SPARROW modeling workshop

- 6) Cathy Tate to talk with Dave Mueller to coordinate with Dennis Helsel to design a statistics workshop
- 7) Pixie to design a workshop on "Communicating effectively in the 21st century" on producing reports, web pages, etc to communicate issues and results in a socially relevant manner. Invite Eric Eckl to give workshop on "Water words at Work", Ellie Ely on "Writing to be Read".
- 8) Karl Hermann to design a workshop on new tools for biological assessment tools (MMI) (with Tetra Tech & Chuck Hawkins)
- 9) \*Someone to coordinate with Robert Ward in designing a workshop on State & USGS view of NWQMC framework (step through tour of process using logo as guide). -Barry
- 10) Someone to champion a workshop on Data Sharing Network (Colorado Water Quality Monitoring Council CWQMC)
- 11) \*Someone to champion a workshop on "tool kits" for state and regional monitoring councils
- 12) \*Designing Monitoring Strategies Workshop- is this different from 9 above?
- 13) Council co-chairs to coordinate with workgroup leaders and NMN leaders regarding who is giving overall charge at NMC

#### Major Decisions:

Mike Wireman to join local CPC  
 Council co-chairs to give overall charge at NMC

#### Possible Field Trips, Sunday

- Super gage (Golden) - sampling methods (Sunday) USGS- could be half day
- Engineered Drinking-water options - water use and reuse (Aurora) and artificial recharge
- EPA "green" building tour with a follow-up at local brewery- could be half day.
- South Platte tour - from the Summit to the Plains (led by organizations that collect data) full day many monitoring overviews. Showcasing monitoring and state-wide agricultural monitoring program, as well as urban issues and wildfires
- Big Thompson tour
- Mining restoration - Idaho Springs Superfund site- one half day tour.
- Rocky Mountain National Park-snowshoes, heavy hiking, full day tour
- Big Thompson, Ft. Collins, alternative tour to South Platte monitoring different examples of management. Full day.
- Department of Energy, Lakewood, renewable energy lab with windmills (1/2 day)
- Clear creek (1/2 day)

#### Other Field trips

- City of Aurora – Engineered drinking water (or other local city)
- Rockies games – best to just give info.
- Canoe trip
- New Belgium or Coors Brewery
- NCAR (Boulder) – climate change models and interactive simulations

#### Possible Workshops

- USGS National Water Quality Lab field trip – Doug to talk with Greg Mormon
- Database access and use (USGS Nate Booth, John Scott, Kristin Gundthart & someone from EPA), overview workshop with WQX web demonstration, fold in IOOS data exchange with Dwayne Porter (session with some hands-on) – Pixie and Chuck to invite and help organize for a series of presentations in sessions, workshops, and other items clustered. Showcase a Demo on effective data swap.
- GIS (USGS Sandy Williamson & Curtis Price + other agency reps?)
- SPARROW modeling – who?
- Statistical analysis of water-quality data – invite Dennis Helsel, Dave Mueller



- Biological Assessment tools (with Tetra Tech & Chuck Hawkins) – champion is Karl Hermann.
- “Communicating effectively in the 21st century” workshop on producing reports, web pages, etc to communicate issues and results with societal relevance. (Pixie & others), Water words at Work – Eric Eckl
- State & USGS view of NWQMC framework (step through tour of process using logo as guide) – suggestion from Robert Ward. Consider combining with USGS NWQL field trip and field trip to super gage.
- Data Sharing Network (Colorado Water Quality Monitoring Council CWQMC)
- Tool kits for state and regional monitoring councils

Key Themes Include:

- Integrating Water Quality Data from the Summit to the Sea
- Innovative Technologies and Analytical Methods
- Indicators of Sustainability and Condition of Water Resources
- Tools to evaluate information and extend our knowledge
- Understanding Federal, State, and Local Monitoring Needs
- Enhancing Local, State and Regional Monitoring Councils
- Multi-Jurisdictional and International Monitoring Issues
- Improving Communication through Novel Outreach
- Groundwater Monitoring and Hydrologic Interactions
- Promoting Community-based Monitoring Programs
- Water Availability (Quality, Quantity)
- Energy – Water Nexus
- Hydrology and Water Quality
- Assessing methods and data comparability
- Addressing different scales and multiple objectives
- Synthesizing and sharing data
- Integrating monitoring and prediction
- Large scale programs: results, lessons learned, and future direction
- Collecting, assessing, and interpreting data
- Integrated Groundwater and Surface Water Monitoring
- Reaching Underserved Audiences
- Monitoring for Climate Change
- Biological and Ecological Monitoring Issues (Groundwater, Surface Water)
- Watershed Scale Restoration Assessment
- Stop Monitoring NOW – Take Action!
- Monitoring Invasives
- Lake and Reservoir Monitoring
- Urban Development and Ag
- Economic Impact of Restoration
- Natural and Human Caused Disturbances
- Monitoring for Modeling
- Real-time Monitoring
- Emerging Contaminants – Where did they come from?
- Keeping programs Alive
- Data Data Data
- Indicators – States Love Multiple Indicators
- Leveraging Resources through Water Quality Partnerships

(Robert Ward suggests themes should be worded to aim practical and effective ways to do monitoring, assessments, etc. under new economic conditions).

#### Themes (NWQMC) Themes (Local Planning Team)

- Suggested USGS topics
  - Potential sessions

- Potential topics identified by the NWQMC Conference Workgroup

- Potential topics from the local planning team

#### Integrating Water Quality Data from the Summit to the Sea

- Results of national and regional assessments
  - Results of National Assessments

- Design and evaluation of water-quality monitoring networks

- National monitoring network

#### Innovative Technologies and Analytical Methods

- "Emerging" contaminants

  - Studies of emerging contaminants in relation to aquatic system health

  - Advances in analytical chemistry

  - Sources of PAH's to the environment

- "Emerging" monitoring technologies

- "Emerging" assessment techniques

  - Emerging contaminants: a sane approach

- Real-time water-quality monitoring

  - New equipment and techniques of continuous monitoring

  - Use of surrogates to estimate chemical and biological constituents in real-time

  - Post-processing of continuous monitor data

  - Using continuous monitor data for assessment

- Collecting, evaluating and interpreting microbiology data

  - Comparison of methods for measuring bacteria in water

  - Techniques for microbial source tracking

  - Applications of DNA polymerase chain reaction tools

#### Indicators of Sustainability and Condition of Water Resources

- Water quality and human health

  - Studies of source-water for drinking-water supplies

  - Development and application of Health-Based Screening Levels for unregulated compounds

  - Harmful algal blooms and algal toxins

- Water quality and ecological health

  - Climate variability and minimum flows for ecological health

  - Effect of urban development and agriculture on nutrient enrichment

  - Nutrient criteria

#### Practical and Effective Tools to Share and Evaluate Information and Extend Our Knowledge

- How much data is enough?

  - Estimating water-quality conditions at sites without direct data

Continuous monitoring - when periodic sampling isn't enough

Models of water quality

Models of spatial and temporal trends in water-quality

Modeling TMDLs

Regionalization and modeling of water-quality characteristics

Applications of Regional SPARROW models

Modeling ecologic flows

Interpretation of chemical data

Understanding chemical data, metadata, and databases

Techniques for defensible environmental interpretations

Evaluating data quality

Laboratory evaluation

Analysis of monitoring data

Integration of water quality data

Watershed condition assessment

Assessment methodologies for determining water-quality impairment

Statistical methods to estimate the likelihood of exceeding water-quality standards

Understanding Federal, State, and Local Monitoring Needs

Indicators for monitoring

Volunteer monitoring

Enhancing Local, State, and Regional Monitoring Councils

State and regional monitoring councils

Multi-Jurisdictional and International Monitoring Issues

Improving Communication through Novel Outreach

Messaging and communication

Water quality partnerships

Groundwater Monitoring and Hydrologic Interactions

Groundwater quantity and quality

Methods for Assessing Ground-Water Vulnerability

Assessing Ground-Water Trends

Ground-Water Quality of the Denver Basin or High Plains Aquifer

Ground-Water Quality

Impact of GW/SW interactions on Stream Chemistry

Hydrology and Water-Quality

Hydrologic Impacts on Water Quality

Diversion and water-development effects on water quality and stream biology

Climate change effects on water resources

Water conservation and reuse

Monitoring for water-rights administration

## Water Quality and Energy Development

- Energy development (particularly oil and gas / coal-bed methane)
  - Techniques for evaluating changes in water quality during and following oil and gas exploration
  - Monitoring impacts of coal-bed methane development

## Aquatic ecology

- Water-quality and biological studies of aquatic communities
- Ecological assessments (wadeable streams, lakes & reservoirs, etc.)
  - Biological assessment tool
- Ecological services
- Invasive species

## Lake and Reservoir hydrology and water quality

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### Western water-quality issues (brought up in the local planning team)

- Abandoned mine lands (and active mines, mineral development)
- Beetle kill
- Effluent dominated/dependent ecosystems
- Wildland fire
- Selenium
- Weather modification
- Snowmaking at ski resort

### Measuring Restoration or Measurable results

### Economic change effects on water quality monitoring

### Potential Speakers:

- Opening: Hickenlooper (Mayor of Denver)
- End of Conference: Ken Salazar (Secretary Department of Interior)
- Technical – Climate change (Someone from NCAR, UCAR up in Boulder?)
- Robert Sakata – Water Quality Control Commission (also local farmer)
- Jim Martin – Director of Colorado Department of Public Health and Environment (CDPHE)
- Brad Udall (NCAR) – summarize climate change models
- Paul Frohardt – Administrator of Water Quality Control Commission (CDPHE)
- Wrap-up plenary to summarize conference: who? Hirsh did good in the past.

### Other Speakers which would be a change from science:

- John Fielder – photographer
- Tom Noel – Dr Colorado (history of Denver area)
- Ellen Wohl – Virtual Rivers
- Environmentalist Supreme Court Judge – book on poetry
- Patty Limerick – environmental, mining, history of mountains, good at synthesis
- Tribal leader in encouraging youth on environmentalism (Wes Martel from Wind River Range)

### Off-Site Social

No specific ideas as yet:

Coors Field, Performing Art Center, Denver Library, Art Museum, Walking tour of Cherry Creek with Dinner

### Local Sponsors

Still compiling a list:

In-situ, Consulting Firms, Denver Water, Hach, Coors

### Dedicated Sessions and/or specific sessions under themes

- National Monitoring Network with relative to IOOS (data integration), Ground Water Network, and overall next steps for NMN
- Ground water network
- Integrated gw/sw monitoring and gw/sw interactions
- Atmospheric deposition
- Ground water and energy (energy development)
- Ground water monitoring and hydrologic interactions
- Western themes of quantity and quality
- Aquatic ecology
- NEST
- State and regional councils
- Vol Mon – but need a specific theme, topic
- Remote sensing and modeling, link to monitoring (temporal and spatial interpolation) – under new methods and techniques

### Update on planning of 2010 National Monitoring Conference (Jeff Schloss)

- Start on April 25, 2010, with field trips, workshops and ending with meetings for USGS and Fish & Wildlife
- Draft budget: 500-550 people needed to break even and get more for future conference.
- Plan for 40 exhibitors.
- Total sponsorship to get \$50,000.
- YSI committed to \$25,000 towards sponsorship for vol mons.
- Hope to provide scholarships for state and regional councils.
- heraton room rate at gov rate: \$149.
- Can do 6-8 concurrent sessions.
- Looking for an offsite event.
- What about student registration fees (typically lose funds)
- Food costs is the biggest category cost.
- 200-250 people coming from USGS (NAWQA, OWQ, and others),
- 50 people from states and EPA (Holdsworth will help support).
- 25 vol mons (YSI sponsorship),
- 25 Forest Service.
- Hoping to get about a few hundred more people.
- Contract with hotel: agreed to changes, and onto NALMS for review. EPA agreement has been signed.

### Accomplishments for next few months and Miscellaneous (Dave Tucker)

- Save the date notice. White space so pleasing to eye (less cluttered). Less text.
- Phillip, at NALMS, will help.
- NALMS board of directors meeting during this NMC conference, no more lake meetings.
- Plan to have a data integration poster demonstration of WQX with mappable features – Nate Booth and others
- Vendors: Line up folks to get booths

- December 2009 NWQMC meeting: will be focused on prep for the 2010 NMC, all council members to review abstracts and help pick into certain sessions
- Email distribution list: NALMS, WEF (past conference attendees), USGS NAWQA (1800). Do we reach academics? Tapped into WRR Center list. Ask council members to send out to their groups
- Have we considered online viewing for plenary sessions or pod casts? NALMS has done this for certain presentations. Use of video may be costly if there are labor unions in place. Tight margin for costs. Takes too long to post talks on web.
- USGS OWQ meeting coincident with this NWQMC meeting. All USGS OWQ specialists will be attending for all states with USGS water office.

DRAFT