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Workgroup update from Methods Board – see presentation on NWQMC website under Portland meeting (to be up soon)

**Actions and Decisions:**

- Meeting minutes from Salt Lake City, Utah – approved and ready for posting on NWQMC website
- Next Council meeting – December 1-3, 2009 – Wendy and Doug will pursue possibility of staying in conference Sheraton. Council updates and local planning committee will be on agenda the first day. Workgroups will break out the second day for several hours. Otherwise we will devote whole meeting to abstract review/conference planning.
- Site to be set up for photo exchange (perhaps using internal NWQMC site or ftp site set up by Eric Vowinkel); council members to forward any photos (including group photo) to Wendy and Eric
- Pursue possible EPA support for Lindsey Griffin (compiling/updating assessment techniques by State) (Pixie, Chuck, Susan H.)
- Distribute contact information (Sheila Mercer, [sm Mercer@ngwa.org](mailto:sm Mercer@ngwa.org)) and “request for statement of interest” associated with the Subcommittee on Ground Water to State and Regional Councils (Tracy Hancock)
- Post presentations on the NWQMC website (Wendy; Kim Martz)
- Set up Webinar for State and Regional Councils – First will be to introduce the concept of Webinars – tool for communication (national council with state councils) and to talk about the conference (agenda for that first call will be developed by Hancock, Hummer, Tucker, and Green by August 12<sup>th</sup>). The second will be possibly to showcase successes of the Lower Columbia River Estuary Partnership (Deb Marriot) (Tracy Hancock)
- Provide feedback to EMT on NEST (related to role of Council; etc) (see WIS workgroup notes for listing of items requiring feedback) (Tennant; Skopec and WIS). Discussion will be spearheaded on next WIS phone call; target date in August/September. An email will go from Skopec and Tennant to the EMT with ccs: to Council members.
- Set up face-to-face meeting with Lara Autry to help align activities of Forum for Environmental Measurement (FEM) and Methods Board (sensors, methods comparability; NEMI; etc) (Chuck, Pixie, Dan, Gayle)
- Initiate integration of USDA-ARS STEWARDS database with WQX (Pixie and Nate)
- Set up National Monitoring Network steering committee call in August (Tracy)
- Plenary speaker actions:
  - Confirm interest/calendar of Tracy Mehan (Monday morning speaker) (Leslie McGeorge)
  - Confirm Bob Hirsch (Thursday luncheon speaker) (Pixie)
  - Pursue DOI interest in plenary (Salazar or Anne Castle) (Pixie; Barry Long)
  - Pursue possible interest in Robert Kennedy (Jeff Ostermiller)
  - Pursue possible interest of Judy Myer (NOAA) (Pixie; Jawed; Jeff Ostermiller)
- Get discussion of NEMI and sensors activities by Methods Board on upcoming monthly monitoring call (spearheaded by Susan H.; Dan Sullivan).

- Get discussion of NEMI on monthly monitoring calls EPA-ASWIPCA states (spearheaded by Peter Tennant)
- Pursue possibilities of aligning the Spring meeting of the National Tribal Water Council with the NWQMC biennial conference in Denver, April 2010 (Dave Fuller)
- Council members to select topics to champion for the conference. Themes were distributed. Council members to send topics to Doug Glysson by COB July 28<sup>th</sup>, 2009.
- Draft Power Point presentations on how to start and sustain State and Regional Councils will go on Web by C&O Committee (by December 2009). Final webpage will be ready by the national conference in 2010. (See C&O notes)
- Webpage updates to be circulated to Council for review and comments (to go to Kim Martz; August 31<sup>st</sup>). Kim Martz will do updates by September 12<sup>th</sup>, 2009.
- Online newsletter, first edition, will be ready by mid-April 2010 for display/distribution at national conference (see C&O notes).
- Statistics workgroup will have monthly phone calls (McGlaughlin; McGeorge). Group will provide update on a plan for a session(s) at National Conference (presentations and workshop). The subgroup will be using internal webpage (by Dan Sullivan) to exchange information.
- Draft web page highlighting success stories and challenges on integrating data from diverse sources for improved assessments – with links to Feds and States (projects, monitoring, etc) (Pixie, Kim Martz). Final planned for launch before National Conference in April 2010. Web page would be dynamic – continuing building.
- Council membership is at near capacity – Wendy will revisit membership slots and pursue possible opening for a new member to help enhance information exchange on drinking water and municipal supplies and environmental tracking of water quality as it relates to human health. In addition, Council will revisit idea for including an EPA regional representative as a member on the Council (perhaps rotate and start with Region 1). (Wendy will initiate discussion with Holdsworth, Spooner, and Hamilton). Finally, the slot for volunteer membership will be pursued (Spooner, Hamilton, Green, Schloss).
- NOTE: Army Corps, National Collaborative Water Resources Conference “Collaborating for a Sustainable Water Resources Future” (August 25<sup>th</sup>). Pixie will call David Shepp to get more information. Wendy will call Jerry Webb (ACWI). (Agenda sent separately to Council members and participants)
- NOTE: Agenda for the upcoming ICWP 2009 Annual Meeting – September 23-25, 2009 (see ICWP website for agenda)
- NOTE: “Science to Policy” Forum December 9-11, 2009 in Des Moines, Iowa – focus on modeling and monitoring in the Upper Mississippi River Basin and applications/relevance to and needs of managers and decision makers. Contact Pixie Hamilton for more information

## Appendix A: Listing of Attendees and Participants

### Council Reps/Alternates:

Karen Bennett (filling for Sherry Hazulhurst)  
Paul Bishop  
David Chestnut  
Don Dycus  
David Fuller  
Linda Green  
Jawed Hameedi  
Pixie Hamilton  
John Hummer  
Jason Jones  
Neil Kamman  
Gary Kohlhepp  
Barry Long  
Leslie McGeorge  
Mike McDonald  
Doug McLaughlin  
Jeff Ostermiller  
Greg Pettit  
Chris Piehler  
Mary Ann Rozum (by phone)  
Jeff Schloss  
Rob Schweinfurth (by phone)  
Tony Shaw  
Mary Skopec  
Chuck Spooner  
Peter Tennant  
David Tucker  
Steve Wolfe  
David Wunsch  
Tamim Younos  
Doug Glysson  
Tracy Hancock  
Wendy Norton  
Dan Sullivan  
Cathy Tate  
Eric Vowinkel

### Other Participants and Presenters

Gayle Rominger (YSI)  
Aaron Borisenko (Oregon)  
Warren Kimball (Massachusetts, by phone)  
Hal Walker (EPA, Narragansett Lab, by phone)  
Lara Autry (EPA)  
Gretchen Hayslip (EPA, Region 10)  
Susan Holdsworth (EPA)  
Bob Hirsch (USGS, by phone)  
Denise Shaw (EPA, by phone)  
Dennis Lynch (USGS)  
Jennifer Morace (USGS)  
Greg Wilson (USDA, ARS)  
Jean Steiner (USDA, ARS, by phone)  
Helen Rueda (EPA, Region 10)  
Steve Paulsen (EPA)  
Tony Olsen (EPA)  
Debra Marriot (Lower Columbia River Estuary Partnership)  
Emilio Mayorga (NANOOS region of IOOS)

Note: Many states and federal employees are not listed who participated by phone

## Appendix B: Meeting Agenda

### MEETING AGENDA

July 21<sup>st</sup> -24<sup>th</sup>, 2009

Hotel Monaco<sup>1</sup>

Meeting room - Fifth Avenue Banquet Room, 10<sup>th</sup> Floor

Breakout room – Limpman Wolfe, Room A, 3<sup>rd</sup> Floor

Tentative list of Council attendees and other participants (see page 5)

Directions to Hotel (see pages 6-7)

### Tuesday, July 21<sup>st</sup>, 2009

7:30 a.m. –Meet & Greet in the Fifth Avenue banquet room (10<sup>th</sup> floor)

8:30 a.m. – Welcome & Introductions (Co-Chairs)

- Housekeeping and logistics
- New Council Members (Region 4 (Dave Chestnut); NSF (Paul Bishop); USDA (Mary Ann Rozum); Tribal (Dave Fuller)

8:45 a.m. – Brief updates on selected Council activities and priorities (*no more than 5-10 minutes each*; more detailed discussions will be pursued in breakout sessions)

- State and Regional Councils (Virtual Tool Kit; Webpage) and Online Newsletter (Tracy Hancock)
- Webpage updates (Wendy Norton and Kim Martz)
- Council intersections/collaboration with SOGW (Chuck Spooner and Dave Wunsch)
- National Monitoring Network and ongoing discussions with NOAA (Pixie Hamilton)
- Common web services (Water-Quality Exchange), data portal, and relations to other efforts, such as CUAHSI and NOAA (Pixie Hamilton; Spooner)
- Assessment techniques and statistical procedures and guidance (Water Information Strategies Workgroup, Doug McGlaughlin and Leslie McGeorge)
- Monitoring clearinghouse (Jason Jones)

10:00 – 10:45 a.m. - *Science to Policy—The Lower Columbia River Estuary Partnership*, by Deb Marriot, Executive Director and Catherine Corbett, Technical Programs Coordinator (*30 minutes with 15 minutes discussion*)

10:45 – 11:00 a.m. - BREAK

11 a.m. – 12:30 p.m. - *Status of the National Environmental Status and Trends (NEST) indicators effort* by Susan Holdsworth (USEPA, Office of Water) (*30 minutes*), with discussion following with Robin O'Malley and select members of NEST-EMT via teleconference/WebEx

WebEx<sup>2</sup>: <https://usgs.webex.com/> (Choose "NEST National Water Quality Monitoring Council"; you can log on 10 minutes before).

Teleconference Line: (218) 844-0840; Passcode: 356188#

12:30 – 1:30 p.m. - LUNCH

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<sup>1</sup> Lodging Information - A block of rooms is reserved at the Hotel Monaco Portland, located at *506 SW Washington Street, Portland, OR 97204* (<http://www.monaco-portland.com/>). There is complimentary WiFi high-speed Internet access throughout the hotel, as well as complimentary morning coffee service. To make your individual reservations, please call the toll-free number 1-800-556-6087, and be sure to request a room in the USGS-NWQMC block. This will ensure that you are charged properly and the room block is credited. **Cut-off date for making reservations is COB on Monday, July 13, 2009.** Check-in time is 3:00 p.m. and check-out time is 12 noon.

<sup>2</sup> For accessing WEBEX. Please check and prepare your computer a day or two in advance of the meeting as follows: 1. Start your web browser. 2. Visit <http://usgs.webex.com>. 3. Select Setup / Meeting manager (left side of page).

1:30 – 5:00 p.m., (Pacific Time) – Panel Discussion on Water Information Strategies – *Successes and Challenges with Integrating Data from Diverse Sources and Multiple Monitoring Designs to Address Water Issues*

Monitoring **Webex:** <https://usgs.webex.com/> (Choose "Water info Strategies – National Water Quality Council"; you can log on 10 minutes before).

**Teleconference Line:** (218) 844-0840; Passcode: 356188#

- Pixie Hamilton - Introductory remarks on goals of session and brief example (*10 minutes*)
- Steve Paulsen (USEPA Corvallis Lab) (*45 minutes*)
  - Long-term EPA acid rain study in the Mid-Atlantic and Northeast, showing how probabilistic and targeted designs address a broad set of spatial and temporal questions
  - Integration of macroinvertebrate data in western streams and associated challenges
  - National Eutrophication Program re-assessment in selected lakes showing successful leveraging of monitoring investments and designs, even over decades
- Mary Skopec - Use of multiple designs to answer different questions in Iowa (*15 minutes*)
- Greg Pettit and Aaron Borisenko (*30 minutes*) – Multiple approaches to answer different questions in Oregon, as highlighted in (1) the Willamette River Assessment, which integrates 9 sources of probabilistic survey data and allows analysis of data by sub-regions and different land-use settings; and, (2) trending analyses based on 130 fixed monitoring stations.
- Warren Kimball – The Massachusetts Report Card (*10-15 minutes*)
- Hal Walker - EPA/USGS integrated assessment of Narragansett Bay and phosphorus assessments on NH Lakes (*30 minutes*)
- Neil Kamman - National Lakes Survey (*20 minutes*)
- Discussion

**Wednesday, July 22<sup>nd</sup>, 2009**

7:30 a.m. - Meet & Greet in the Fifth Avenue banquet room (10<sup>th</sup> floor)

8:30 – 9:00 a.m. – Recap of first day – group thoughts

9:00 – 10:00 a.m.

- Lara Autry, EPA, Research Triangle Park, NC - Forum for Environmental Measurements (*20 minutes with 10 minutes discussion*)
- Dan Sullivan and Gayle Rominger – Methods Board and Sensors Work (*20 minutes with 10 minutes discussion*)

**Webex:** <https://usgs.webex.com/> (Choose "National Water Quality Monitoring Council"; you can log on 10 minutes before).

**Teleconference Line:** (218) 844-0840; Passcode: 356188#

10:00 – 10:15 a.m. – BREAK

10:15 – 11:00 a.m. – Presentations on the Columbia River

- Helen Rueda, EPA, Region 10 - Developing a comprehensive "Monitoring Strategy in the Columbia River"
- Jennifer Morace, USGS hydrologist, on occurrence and transport of contaminants in the Columbia River (including PBDEs)<sup>3</sup>

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<sup>3</sup> For access to 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) )

NOTE: Access same Webex and teleconference line as cited above.

Wednesday, July 22<sup>nd</sup>, 2009, Continued

11:00 – 12:00 a.m. – CEAP and STEWARDS

- Mary Ann Rozum, USDA-CSREES - CEAP updates, followed by Jean Steiner and Greg Wilson on the web-accessible data infrastructure (STEWARDS) for CEAP data

**Webex:** <https://usgs.webex.com/> (Choose "National Water Quality Monitoring Council"; you can log on 10 minutes before).

**Teleconference Line:** (218) 844-0840; Passcode: 356188#

12:00 – 1:00 p.m. - LUNCH

1:00 – 1:30 p.m. - Status of conference planning (Jeff Schloss, Dave Tucker, Doug Glysson, Cathy Tate)

1:30 – 5:00 p.m. - Workgroup Breakouts

NAME	PURPOSE	PLACE
Collaboration and Outreach Work Group with Conference Planning Committee	<ul style="list-style-type: none"> <li>• Plans for Seventh NMC               <ul style="list-style-type: none"> <li>○ Update on facilities</li> <li>○ Conference Themes, Call for Papers</li> <li>○ Field trips</li> <li>○ Workshops and working groups</li> <li>○ Sponsorships</li> <li>○ Plenary speakers</li> <li>○ Integrating with other conferences, workshops, organizations</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><b>Webex:</b>  <a href="https://usgs.webex.com/">https://usgs.webex.com/</a>            (Choose "NWQMC C&amp;O workgroup w/ CPC"; you can log on 10 minutes before).</p> <p>Teleconference: call (218) 844-0840; Passcode: 356188#</p> <p>Start Time: 1:30 pm, PDT</p>
Water Information Strategies Work Group	<ul style="list-style-type: none"> <li>• NEST indicators</li> <li>• Florida's draft metadata standard (Steve Wolfe)</li> <li>• Improved strategies for using data from diverse sources for addressing water issues – discussion on forums for communicating examples and ideas</li> <li>• Creation of a Clearinghouse of the Nation's State and Federal Water Quality Monitoring Programs (Jason Jones)</li> <li>• Review of statistical procedures for clearinghouse (Doug McLaughlin; Leslie McGeorge)</li> <li>• Webpage and updating information</li> <li>• Volunteer monitoring</li> </ul>	<p>There is no teleconference/webex for this workgroup breakout session</p>
Methods Board	<ul style="list-style-type: none"> <li>• Sensors</li> <li>• NEMI</li> <li>• Bringing visibility to physical habitat elements</li> <li>• Statistics</li> </ul>	<p><b>Webex:</b>  <a href="https://usgs.webex.com/">https://usgs.webex.com/</a>            (Choose "NWQMC Methods Board mtg"; you can log on 10 minutes before).</p> <p>Teleconference: call 712-775-7100;</p>

		Passcode: 565414# Start Time: 2:00 pm, PDT
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**Thursday, July 23<sup>rd</sup>, 2009**

7:30 a.m. – Meet & Greet in the Fifth Avenue banquet room (10<sup>th</sup> floor)

8:00 a.m. – 12:00 p.m. - Workgroup Breakouts and report-out to Council

NAME	PURPOSE	PLACE
Collaboration and Outreach Work Group with Conference Planning Committee	<ul style="list-style-type: none"> <li>Continue from previous day</li> </ul>	<b>Webex:</b> <a href="https://usgs.webex.com/">https://usgs.webex.com/</a> (Choose "NWQMC C&O workgroup w/ CPC"; you can log on 10 minutes before). <b>Teleconference:</b> call (218) 844-0840; <b>Passcode:</b> 356188#  Start Time: 8:00 am, PDT
Water Information Strategies Work Group	<ul style="list-style-type: none"> <li>Continue from previous day</li> </ul>	There is no teleconference/webex for this workgroup breakout session
Methods Board	<ul style="list-style-type: none"> <li>Continue from previous day</li> </ul>	<b>Webex:</b> <a href="https://usgs.webex.com/">https://usgs.webex.com/</a> (Choose "NWQMC Methods Board mtg"; you can log on 10 minutes before). <b>Teleconference:</b> call 712-775-7100; <b>Passcode:</b> 565414#  Start Time: 8:30 am, PDT

1:00 – 6:00 p.m. – Field trip within the Columbia River Basin and dining at Multnomah Falls Lodge at 6:00 p.m. (lead by Greg Pettit, described below)

**Appendix C:** Water Information Strategies Breakout Session (contact Mary Skopec for more detailed notes on discussions)

**WIS Workgroup:**

Action Item:

1. Peter and Mary will establish monthly conference calls with the WIS workgroup.
2. Review website during a conference call.

**Clearinghouse:**

Action Items:

1. Develop a prototype for the clearinghouse and a mechanism for populating the clearinghouse. Use the "10 Elements of a State Monitoring Program" as a starting point. (Jason, Jeff, Don, Steve, and Mary)

**NEST**

Action Items: Report Back to EMT on NEST

1. Review and comment on the NEST 5 major questions and indicator text on the NEST website for the following by **August 31st**:
  - a. Technical Content of the indicators
    - i. Does it meet the purpose ("Are decision makers getting what they need")
    - ii. Is it understandable to the masses?
  - b. Context for the indicator in terms of:
    - i. Thresholds for the indicator
    - ii. Environmental Laws (CWA/SDWA/Clean Air/NEPA).
  - c. Disclaimers and Caveats on the data and use of the data
  - d. Potential State "off-ramps" for the indicators
  - e. Suggestions on improving the NEST process, implementation of indicators or NEST framework.
    - i. Suggestions for other indicators or other display options – (examples – Aaron's color-coded indicators based on data comparability; Great Lakes indicators).
2. Review National Research Council's "Principles and Practices for a Federal Statistical Agency" (Tony O. has a pdf copy of the report) and assess the current NEST effort: where are they meeting the principles in the report, where are they not meeting the principles and practices?
3. NWQMC Message of Support (to whom?)?

NEST Five Questions:

1. How Much Water Do We Have? (*Mary*)
2. How Much Water Do We Use?
3. What is the Condition of Aquatic Ecological Communities? (*Neil and Doug*)
4. What is the Physical and Chemical Quality of Our Water? (*Aaron*)
5. Is the Water We Have Suitable for Human Use and Contact? (*Leslie*)

**Statistics Workgroup:**

Action Items:

1. State monitoring contacts will provide a list of monitoring questions to Doug and Leslie (provide real-life examples as well as hypothetical examples). These questions will provide the basis of developing a decision support framework.
2. Develop email list of interested participants (Doug and Leslie).
3. Develop a session for Denver – potential speakers and session titles (Tony suggestion: statistically verifiable standards and state evaluation methods).

## Integrating Data from Diverse Sources for Improved Assessments – Successes and Challenges:

### Action Items:

1. Put success stories on the website with a link to the study. Pixie will work with Kim and Tracy to put a draft intro to the “Integrated Monitoring Success Stories” part of the Council webpage. Goal to have this piece of the website ready by the conference.
  - a. States develop a small introduction to their success stories to go with their link. Send to Pixie/Tracy

## Volunteer Monitoring:

### Action Items:

1. Provide success stories in volunteer monitoring on the Council website – link to the Volunteer Monitor newsletter, but also provide stories on the Council website that highlight their successes. Success stories at tiered levels – local levels, state levels, etc. Develop a list for next meeting.
  - a. Develop a Frequently Asked Questions for volunteers/states
  - b. States provide a two-page document on successes of their volunteer monitoring program or ways they overcame obstacles. Address barriers to use/acceptance of volunteer data.
2. Conference Topic: How to work with difficult volunteers, effective recruitment methods, how to communicate effectively.
3. Volunteer group presentation at the next Council meeting.
4. Review the state monitoring strategies for volunteer monitoring programs – what is the role of volunteer monitoring in their states.
5. Concept paper for the database tool box for volunteers (building on Susan’s idea for the SOS program).

## Conference Topics:

1. Integrated Monitoring to Cost Effectively Support Water Resource Management rolled into an entire track (*Dave and Neil* - WIS champion). Want to make sure to showcase the states. **State people talk with each other to get the word out that EPA is trying to get 4 people from each state and to not let limited travel funds be an impediment to submitting an abstract.**
2. Statistics (see Statistical Workgroup action items, *Mary work with Tony*).
3. Habitat Session (*Neil*)
4. Nutrient Monitoring to Support Criteria (*Leslie*)
5. Pathogens and Emerging Contaminants (*Leslie, Dave, Mary*)
6. Integrating ecological and economical data or integrated assessment of ecological and economic data. (*Jawed*)
7. Monitoring Strategies to Track Climate Change
8. Climate Impacts on Water Quality and Water Quantity
9. Enhancing implementation of the EPA state surveys
10. Use of Monitoring data to set standards
11. Communicating Science to Policymakers (NEST, Heinz Center, Report on the Environment, Lake C., Chesapeake Bay, Warren’s Report Card) (*Mary*)
12. Workshop on how to evaluate and assess real-time sensor data (*Jeff*)

## Appendix D: NWQMC C&O Workgroup

### A. Conference Planning Committee: (see excel file on themes)

The following field trips are being considered:

- South Platte River Basin: Monitoring from the Summit to the Prairies (headwaters to end users)
- Loch Vale; snow shoe
- Mining Restoration
- Methods for Water-Quality Sampling & Monitoring - Part 1 of the "Monitoring Framework"
- USGS National Water-Quality Lab - Part 2 of the "Monitoring Framework"
- Tour of Coors Brewery
- EPA - Green Building tour
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The following workshops are being considered:

- Man vs. Stats
- Database access and use
- Biological Assessment Tools
- Overview of continuous monitoring using real-time sensors
- USGS Data from the Lab to the Public - Part 3 of the "Monitoring Framework"
- Tool kit for State and Regional Councils
- GIS
- Communicating effectively in the 21st Century: "water words at work"
- How to do data analysis for Trends
- Volunteer Monitoring 1
- Volunteer Monitoring 2
- Aquatic Resource Surveys
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The following concurrent meetings are planned or these groups are interested in joining in the NMC:

- National Tribal
- Aquatic Surveys
- NALMS
- USGS OWQ
- USGS Research Modelers
- SOGW
- Forest Service
- ARS, CEAP, SWCS

The following major themes and sessions are being considered:

#### *Applying Innovative Monitoring, Assessment, and Modeling Tools and Approaches*

- Developing indicators of water availability, sustainability, & condition of water resources
- Studies of source-water for drinking-water supplies
- Harmful algal blooms and algal toxins
- Monitoring and Assessing Groundwater Vulnerability
- NAWQA principle-aquifer, TANC and drinking-water studies,
- Radionuclide occurrence, arsenic studies, etc
- Groundwater Quality of the Denver Basin or High Plains Aquifer
- Collecting, evaluating and interpreting microbiology data
- Nutrient criteria
- Integrating monitoring & prediction and informing network designs with water-quality models
- Models of spatial and temporal trends in water-quality
- Assessing Groundwater Trends
- Modeling TMDLs

- Modeling ecologic flows
- Extrapolating water-quality conditions spatially and temporally
- Estimating water-quality conditions at sites without direct data
- Regionalization and modeling of water-quality characteristics
- Applications of Regional SPARROW models
- Assessing effects of agricultural, urban development and mining on water resources
- Effect of urban development and agriculture on nutrient enrichment
- Effects downstream from abandoned mine lands, active mines, and mineral development
- Assessing effects of hydrologic alteration on water resources
- Hydrologic Impacts on Water Quality
- Innovative monitoring technologies, analytical methods, data management, and assessment tools

#### *Integrating Monitoring to Cost Effectively Support Water Resource Management*

- Large-scale programs: Results, lessons learned, & future directions
- Results of National Assessments
- Updates on the National Monitoring Network for Coastal Waters
- Updates from the pilot networks
- Managing, interpreting, sharing, and disseminating monitoring data
- Understanding chemical data, metadata, and databases
- Biological Data Bases
- Techniques for defensible environmental interpretations
- Statistical methods to estimate the likelihood of exceeding water-quality standards
- Assessing methods & data comparability
- Evaluating data quality
- Laboratory evaluation
- Integrating groundwater and surface water
- Impact of GW/SW interactions on Stream Chemistry
- Monitoring lakes and reservoirs
- Methods for evaluating lake and reservoir chemistry and biology
- Reservoir sedimentation
- Reconstructed trends
- Biological monitoring approaches and assessments
- Biological assessment tools
- Selecting reference sites across ecoregions
- Combining NAWQA and EPA reference site data
- Assessing ecosystem services
- Monitoring invasive species
- Developing the "Biological Gradient" across jurisdictions and different water types
- Integrating wetland assessments into stream monitoring
- Monitoring and assessment at multiple scales
- Using different network designs (such as statistical surveys and targeted designs) for cost-effective assessment, management, and decision making
- Integrating water quality data from diverse sources
- Use of volunteers for Groundwater studies and monitoring

#### *Exploring New Technologies and Analytical Methods*

- Emerging contaminants: Assessing priorities & new analytical methods
- Studies of emerging contaminants in relation to aquatic system health
- Advances in analytical chemistry
- Real-time monitoring: Direct measures and surrogates
- Continuous monitoring - when periodic sampling isn't enough
- New equipment and techniques of continuous monitoring
- Post-processing of continuous monitor data

- Using continuous monitor data for assessment
- Use of surrogates to estimate chemical and biological constituents in real-time

*Addressing Climate, Energy, Water Availability, and other Emerging Water Issues*

- Assessing effects of climate change on water availability in the west (and elsewhere)
- Climate variability and minimum flows for ecological health
- Monitoring impacts of energy development on water resources
- Techniques for evaluating changes in water quality during and following oil and gas exploration
- Monitoring impacts of coal-bed methane development

*Communicating Science to Decision Makers and the Public*

- Understanding and communicating federal, state, tribal, & local monitoring needs
- Informing watershed-scale restoration planning
- Making data meaningful: Success stories showing how science is helping to effectively manage water resources
- Monitoring and reporting on program effectiveness
- Communicating what we do and what we find
- Innovative outreach and communication approaches

*Strengthening Collaboration and Partnerships at all Scales*

- Addressing multi-jurisdictional & international monitoring issues
- Leveraging resources through partnerships
- Strengthening volunteer monitoring programs and expanding the use of volunteer data
- Enhancing monitoring and partnerships through state and regional monitoring councils
- Implementation and Pilot Studies of the National Groundwater Monitoring Network

**B. State and Regional Councils - Goals and Action Items**

**General:**

- C&O workgroup meet monthly following CPC calls, 2nd Wed of ea month
- Hancock to update Glysson with email distribution lists (add Hummer)
- Hancock, Tucker, Green, and Hummer develop agenda for S&R call by Aug 12, initiate via email in early Aug.
- Schedule Conf Call with S&R Councils to learn their needs , get direction, and show our plans and get feedback – early Fall 2009, co-occur with abstract.
- Develop a power point(s) on starting new, sustaining, and common elements, draft by Dec 2009, final by NMC 2010
- Enhance collaboration of and showcase State and Regional Councils at 2010 NMC
- Create tool kit - virtual/web page
- Update Council webpage:
  - <http://acwi.gov/monitoring/workgroups/co/index.html>
  - [http://acwi.gov/monitoring/regional\\_councils.html](http://acwi.gov/monitoring/regional_councils.html)

**Specifics:**

- **Develop updated powerpoint(s) on starting new, sustaining, and common elements**
  - Encourage S&R Council participation in development
  - Dave Tucker & Tracy Hancock to review past materials, check with Chuck, files for results of survey, and power points by August 31, 2009.
  - Poll Councils to get success stories and common elements, Wendy to gather info from Val Connor by August 31, 2009.
  - Conf call following CPC call, Sept 9, 2009.
  - Team (Tucker, Hancock, Norton, Hummer, Green, Schloss): synthesize all this info into a revised power point by Dec 1, 2009

- send out NWQMC and S&R Councils to solicit comments
- showcase at booth at NMC meeting
- showcase during a workshop during NMC
- post on web
- include in tool kit
- **2010 National Monitoring Conference**
  - Involve local CO Council in planning committee
  - Meeting session(s) – encourage/invite S&R Councils to submit abstracts , host sessions, attend workshop, post using their list serves
  - Interactive workshop on creating and designing S&R Councils using the Tool Box
  - Design field trip on Council wheel
- **“How to Tool Kit” Purpose: communication forum**
  - Sustainability of existing Councils
  - Creation of new Councils
  - Solve common problems for existing councils
  - Share successes
  - Encourage and foster communication
  - 2-way street with NWQMC
  - What is the tool kit? A virtual monitoring tool box, to 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
    - 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
    - Success stories
    - Link to May 04 workshop
- **Webpage updates:**
  - Update Council webpage:
    - <http://acwi.gov/monitoring/workgroups/co/index.html>
    - [http://acwi.gov/monitoring/regional\\_councils.html](http://acwi.gov/monitoring/regional_councils.html)
  - All Council members review website update table from Martz and Norton and provide feedback by Aug 31
  - Martz update group on changes on Sept 12 conf call
  - Council wheel links with text: Tucker, Hancock, Green and other review and give ideas to Martz by Aug 31
  - Workgroup members updates needed
  - NMN updates needed
  - State & Regional Councils, logos with active links, update spreadsheet listing: add Tribal and new Councils (Utah?), update New England
- **Newsletter**

What is the purpose, who is the audience, what do we want them to be inspired about?

**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), e.g. National Council of State Legislators (NCSL) – Wunsch to help organize contacts with policy makers

#### **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 (after ea Council meeting)**

- 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:
  - 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 (Kim Martz to design, create, and maintain)

#### **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, Dave Tucker, John Hummer, Pixie Hamilton and representatives from Council components/workgroups
- Columnists: Individuals assigned to topics: Vol Mon, State and Regional Councils, NMN, WIS, 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
- MiCorps Monitor

- VA Council newsletter
- CO Council newsletter
- YSI Newsletter (Water Monitor)

**Other Considerations:**

- Don't assume email will reach everyone, do some hard copies (retired USGS newsletter)
- Budget? Need a layout designer!
- Timeline: first edition before NMC April 25, 2010 (highlight top 10 reasons for state and regional councils)
- 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?