



National Water Quality Monitoring Council

Working together for clean water



Meeting Minutes – National Water Quality Monitoring Council (Council) Indiana Department of Environmental Management, Indianapolis, IN November 29 – December 1, 2016

(Agenda and list of participants on pages 7-9, presentations posted on Council website at: <https://acwi.gov/monitoring/>)

Actions, Decisions and other Information

1. **Decision:** Upon a motion duly made (Martha Clark Mettler), seconded (Mary Skopec), and carried, the October 17, 2016 Council Meeting minutes were approved and will be posted on the website.
2. **2018 National Monitoring Conference – Conference Planning Committee**
 - Logistics for Conference: Jeff Schloss updated the Council on venues for the 2018 National Monitoring Conference. Jeff checked with Kansas City, Albuquerque, and San Antonio; the normal scheduling of the conference in late April/early May is a busy time in the Southwest due to Cinco de Mayo and this has made some venues unavailable.. Albuquerque is still a possible venue, so is Kansas City the week of April 9-13. Jeff suggested Salt Lake City as an alternate location that he could also check with for our time frame.
 - o ACTION: Jeff will update the Council when a final venue and time has been chosen.
 - Alice Mayo presented an overview of committees and leadership positions on the Conference Planning Committee (see presentation "[Planning the 2018 Conference](#)"). The goal of the 2018 Conference is to get things done sooner (especially sending out a Save the Date for exhibitors and Call for Abstracts), and with less of a burden on the Council as a whole. The Conference Planning Committee will arrive at the Winter 2017 Council meeting with draft sessions developed and will solicit comments and feedback at the meeting, leaving time for other Council work. The Council discussed the 2016 National Monitoring Conference and suggested that moderators needed to play a larger role in the meeting and that assigning moderator positions to young professionals attending the meeting would be a good networking opportunity. ..
3. **Water Information Strategies Work Group**—Mary Skopec presented on activities and deliverables for the WIS group. The statistics for water quality monitoring fact sheet needs to be reviewed and WIS is looking for a reviewer. About six "What my Manager Needs to Know" fact sheets have been assembled; most have been laid out and reviewed and need to be finalized and uploaded to the Council website. In addition, WIS is helping the Water Quality Portal team with data management activities, including trying to better understand what barriers exist for loading data into the Portal.
4. **Collaboration and Outreach Work Group** – Danielle Donkersloot and Candice Hopkins presented on recent outreach activities. Our webinar series has seen an increase in attendance recently, and new webinar software is aiding in increasing our capacity. The C&O work group will be focusing on new products for members to take to meetings and conferences, including updated handouts and posters (one on the Council, and one on the Water Quality Portal). In addition, the group is going to focus more on working with state, regional, and local volunteer monitoring groups and reaching out to the international community.
 - Action: Spring Newsletter deadline is March 3, 2017. Please encourage submission of articles by this date.
 - Action: C&O will Revise and publish posters and presentation files for both the NWQMC and for the Water Quality Portal. Documents will be available for NWQMC members in March, 2017.
5. **Volunteer Monitoring Work Group:** Danielle Donkersloot and Julie Vastine updated the Council on recent Volunteer Monitoring Work Group activities. The co-chairs are working on updating the map of Volunteer Monitoring organizations and are trying to figure out a method that would allow for two-way communication. The work group has two webinars in the works and will try to encourage volunteer monitoring groups to submit articles for the newsletter.

6. **Methods Board and Sensors Work Group:** Dan Sullivan updated the Council on recent activities of the Methods Board. Recent activities have focused on sensors, including QA guidance and workshops. Other activities include maintaining NEMI, looking at water-quality data elements, lab accreditation, lab methods, and bioassessment comparability. The group hosted a continuous monitoring track at the last Conference and published an illustrated deployment guide for continuous sensors. Members of the group are involved with EPA projects focusing on interoperable watersheds and sensor development. Potential focus areas for the future include training for sensor use, streamlining methods and metadata in NEMI, and reviewing sensors metadata (see presentation "[Methods Board Dec. 2016 update](#)").
7. **National Network of Reference Watersheds (NNRW):** Mike McHale gave an overview of the NNRW website and idea behind the network. Right now, the web page is active but searches are limited to 50 sites. The focus of 2017 activities will be on Communication and Expansion as the website has never been advertised. The NNRW will continue to look for new users and data contributors. The best way for new contributors to add data is to provide a shapefile to be incorporated into the NNRW; data can either be flow or water quality data.
8. **Overview of Council Terms of Reference:** Wendy Norton reviewed the NWQMC's Terms of Reference (available [here](#)) and emphasized that membership is intended to offer balanced representation. Susan Holdsworth then followed with a presentation on the Council's purpose and functions as a kick-off for a visioning session (see presentation "[nwqmc_purpose](#)"). A majority of the Council's strategy was taken from the Final Report of the Intergovernmental Task Force on Water Quality Monitoring (1995), which can be read in full [online](#). These two presentations led to a brainstorming session on the framework; Council members assessed accomplishments and gaps of each priority area, the conclusions of which are outlined below.
 - Maintain institutional framework, membership
 - Accomplishments
 - Disseminate information to a broad audience
 - Gaps
 - Oil and gas industry are not represented and have lots of monitoring data
 - Agricultural industry is not represented
 - Bring water quantity perspective to council
 - Systematic Evaluation of Progress (re: functions in strategy)
 - Accomplishments
 - Summary of Council accomplishments given to ACWI (annual) and in National Monitoring Conference Program (bi-annually)
 - Gaps
 - Evaluate impacts of Council successes in advancing monitoring goals and develop metrics to measure progress
 - Share importance of monitoring in briefings, convey key message of fact sheets
 - Seek support from ACWI to help champion increased data submission and attention to data quality documentation in the Water Quality Portal
 - Method and data comparability
 - Accomplishments
 - NEMI
 - NEMI-statistics
 - Water-Quality Data Elements documentation
 - Sensor Deployment guidance
 - Gaps
 - Provide training and certification (if allowed by ACWI by-laws) for young water quality professionals
 - Improve use and clarity in reporting non-detect, reporting limits, detection limits
 - Biological data comparability
 - Incentives for getting data into water quality portal
 - Get consistent use of methods and consistent, complete reporting
 - Prioritize contaminants
 - Data quality and documentation
 - Accomplishments
 - NEMI and Water Quality Portal

- Gaps
 - Use models for information
 - Foster use and recording of observational data, including generation of models
 - Work on data quality issues – host webinars on why and how
 - Need to promote NEMI more, need them to be the source for white papers, needs to institutionalize more. Water sensors.org is good example.
 - WQ Portal - needs to include NOAA data
 - Need more help with continuous monitoring – how to deal with all this data.
 - Need to be able to incorporate anecdotal information into water quality data collection– get narrative/photodocumentation from individuals.
- Information Dissemination
 - Accomplishments
 - Bi-annual National Monitoring Conferences
 - NWQMC website, webinars, newsletters
 - NEMI, Water Quality Portal
 - Gaps
 - Measure outcome for dissemination of information, like web search, track hits
 - Make virtual conference attendance possible
 - Use Water Quality Portal as gateway to other information and tools
 - Marketing to people to add data and improve documentation
 - Explore more media options, such as SnapChat or Tweets
- National and international activities
 - Accomplishments
 - Presentations from the international community at conference
 - International participation in newsletter
 - Gaps
 - International data; recommend focus on transboundary data sets for Canada and Mexico
- Information Management and Sharing:
 - Accomplishments:
 - Water Quality Portal, National Monitoring Conference, WIS fact sheets
 - Gaps:
 - Getting key data sets into WQP including NOAA, NPS, academic data (CUAHSI), and volmon/citizen science datasets
 - Addition of QA/QC data to WQP
 - Addition of metadata for current and future data in WQP
 - Identifying requirements for continuous QW data for the WQP (or alternate web portal)
 - Develop clearinghouse for state water-quality and bioassessment methods
- Data Elements, codes, and reference tables
 - Accomplishments:
 - Minimum QW data elements, NEMI
 - Gaps:
 - Develop crosswalk of water-quality parameters
 - Work on metadata requirements for all data
 - Tiered framework for quality of data
- National Assessment
 - Accomplishments:
 - Have been able to get NAWQA, NARS, and ATTAIN programs working together.
 - Gaps:
 - Advertise impacts of national assessments
 - Bring assessment teams (NAWQA, NARS) together to tackle causal analysis at national level
 - Foster better data quality
 - Promote assessment results as much as the data collected to support the assessment
- Reporting and public education
 - Accomplishments:

- National Monitoring Conference, website, webinars, newsletter
 - Gaps
 - More webinars, fact sheets
 - Get more individuals on the ground promoting Council activities
 - Need to conduct more listening sessions to better understand QW information needs
 - Include narrative data (semi and non-quantitative data)
 - Conduct QW information campaign in city we hold National Monitoring Conference
9. **Water Quality Standards:** Chris Greene presented on Water Quality Standards and led a discussion of what interest the Council has in the area of Water Quality Standards (see presentation "[NWQMC Water Standards pres](#)"). Many Council members were interested in this topic, and this conversation led to a set of tasks being identified that will be overseen by WIS and led by Chris Greene.
10. **Data into Action:** Larry Willis led a conversation and brainstorming effort about actionable insights from monitoring efforts (see presentation "[Actionable Insights 12012016](#)"). Larry discussed the importance of emotion in communication, and how important it is to turn insights into understanding for the public. The Council followed up with a discussion about the importance of telling stories as part of our communications and working to convey our key messages to the public with the help of professional communicators. Larry emphasized that the Council should keep communication in mind when working on future projects and look for ways to pull insights from monitoring data.
11. **Work Plans for 2017:** After discussing large gaps that the Council would like to fill, members outlined tasks that each group will work on in 2017. Tasks are listed below and are organized by Work Group:
- **Collaboration and Outreach:**
 - Review Social Media Accounts and Outreach (complete by Jan 2017)
 - Expand communication to state, tribal, and local monitoring councils (complete by May 2017)
 - Work on reaching out to the international community (complete by December 2017)
 - Update website and check for new content (done on 3-month rotation)
 - **Trainings and Certifications (all tasks to be started by December 2017)**
 - would like to be able to provide certifications, but need to focus on core competencies from an entry-level water-quality professional/monitoring specialist
 - Group will identify core competencies desired by monitoring community
 - Identify what type of certification or program NWQMC can offer
 - Examine how other similar organizations offer certifications
 - **National Assessment**
 - The first three months (January through March 2017) will be used to compile facts from various national assessments
 - The second three months (April through June 2017) will be spent composing key messages (downselecting data, selecting stories, looking at costs)
 - The next six months (July through December 2017) will be spent focusing on creating communications tools that reach the public and decision makers.
 - The main ideas that this group hopes to focus on are nutrients, harmful algal blooms, and the relationship between those two, as well as how each relate to human health.
 - **Volunteer Monitoring:**
 - Address items on existing work plan
 - Identify ways to fund the VM community at the 2018 National Monitoring Conference (by Jan. 2018)
 - **Water Information Strategies (WIS)**
 - Publish Fact Sheets to website
 - Find reviewer for Statistics page
 - **Increasing data submission to the Water Quality Portal (all tasks to be completed by December 2017)**
 - Help brainstorm with Water Quality portal team about advertising and messaging for WQP
 - Develop YouTube videos and tutorials for submitting data
 - Find and train people who can respond to input data issues with the WQP

- Identify and prioritize known datasets to be entered. There may be some datasets that are easy and ready to input, and there may be high-value datasets that need contract support to be loaded into the WQP.
- Develop more systematic training, including working with VM groups. Perhaps recruit a partner to help with training or figure out the best ways to educate without overwhelming technicalities.
- **Water Quality Portal Data Quality (metadata)**
 - Discussion has been tabled until Dan Sullivan and Jeff Thomas can meet with the WQX workgroup. A big priority is getting metadata fields filled out and discovering how to conduct training or assistance for how to fill out existing fields.
 - Explore ways that the NWQMC can act as a clearinghouse for industry comparability studies for sensors
- **Evaluate Progress (ideally tasks will be completed by 2018 Winter ACWI meeting)**
 - Need to determine what progress is being evaluated against (strategy and terms of reference)
 - Make matrix of functions versus NWQMC products, and have people review and identify legacy products
 - Reach out to other workgroups for metric for evaluating progress.
 - Find success stories for products.
- **Water Quality Standards**
 - Produce rudimentary assessment and potentially a survey of existing water quality standards among states, federal agencies, tribes, and others. This will be completed by December 2017.
 - Develop fact sheets and white papers relating to water quality standards. Use WIS fact sheets as a model for how these should look. Cover why NWQMC is interested in topic, do not repeat existing work. We want to get the monitoring and standards people communicating. How does the Council work on WQ standards? White paper on types of guidance (numerical vs. narrative). Teleconference in Jan/Feb, meet monthly to bimonthly. One fact sheet in the next year, more in years to come.

12. Technical Presentations

- Julie Vastine presented on US models of Volunteer Monitoring (see presentation "[NWQMC Vol Mon 11.16](#)"). Her presentation covered the history of volunteer monitoring, strengths and weaknesses of volunteer and citizen science, and opportunities for volunteer monitoring to help fill in knowledge and data gaps. Barb Horn, participating by phone, also gave a brief presentation on NACEPT (included in presentation slides).
- Erich Emery presented on Water Quality Monitoring efforts by the Corps of Engineers (see presentation "[USACE Water Quality Overview for NWQMC Nov2016](#)"). The Corps of Engineers does collect water-quality data as a supportive mission and Erich outlined many of their current efforts in his presentation.
- Jim Kreft gave an updated on the Water Quality Portal's use and functionality (see presentation "XXXX"). Jim emphasized that we assess progress by watching returning users.
- Lori Sprague gave a presentation on her work examining data quality issues and the opportunity cost of lost data. Lori pointed out that many metadata are required in order to use water-quality data, and secondary data users do not know how to handle ambiguous data. The most essential metadata that Lori identified are parameter names, filtration status, chemical form, units (sometimes not listed or inappropriate), remark codes (unique or not listed), and censored data. Her publication is available at: <http://www.sciencedirect.com/science/article/pii/S0043135416309642>.
- Laura Shumway gave a presentation on the Water Quality Exchange Metadata workgroup's recent efforts, which focus on addressing data ambiguity for secondary users (see presentation "[WQX Nutrient Best Practices PP for NWQMC](#)"). The best practices outlined by the nutrient focus group addresses correctly documenting censored data, consistent use of characteristics (parameter names), documenting method speciation and sample fraction, and correctly documenting a complete nutrient record. A list of proposed changes will be released as part of WQX 3.0.
- Dwane Young conducted a training on the Water Quality Portal and associated tools (see presentation "[QW Portal Train NWQMC](#)"). Dwane presented multiple data analysis tools that are available on EPA.gov/STORET and ran through examples of processing data through multiple tools.
- Amina Pollard reviewed the National Lakes Assessment Data Dashboard which is in draft form currently. The data dashboard covers what the water-quality challenges are for each indicator, and how they change over time. This was developed as a response to feedback that it was hard to pull together reports without flipping pages. This tools hopefully will help people to pull in data and explore it differently; the website will be released to the public in December, 2016.

- Scott Haterthey presented on new directions for the EPA's Report on the Environment (see presentation "[ROE Presentation NWQMC_01Dec2016_v1](#)"). The goal of the Report on the Environment (ROE) is to report trends, develop indicators, inform EPA priorities, and communicate with the public; however, the ROE does not analyze and report out on status and trends. Scot is trying to increase the visibility of the ROE. The ROE can help to measure effectiveness of programs and identify what indicators need to be represented at the national level. The ROE can also help to identify emerging issues in water-quality.
- Dwane Young gave a presentation on the Water Quality Framework (see presentation "[WQF NWQMC](#)") that aims to streamline water quality assessment and reporting. The framework includes a geospatial component that will call upon concepts of the NHDPlus and allows us to tell how streams are connected. Dwane compared some of the potential visualizations to those that exist for air quality data, but we will be able to do more with the geospatial connectedness of water bodies.
- Jon Marshack and Kristopher Jones presented on developments in California's "My Water Quality" portals that help to visualize data from HABs and estuaries (see presentation "[Harmful Algal Blooms 12-1-16](#)"). The Portals that were shown were developed by a series of work groups and have been made more user-friendly with easier navigation and drop-down menus over time.
- Greg Gearheart gave an overview of the California Water Data Challenge (see presentation "[WHwaterdatachallenge_nwqmc](#)"). The challenge was instituted to raise interest and awareness in available data and to promote creative solutions to solve drought challenging problems. The challenge, which is described at <https://www.whitehouse.gov/blog/2016/10/28/using-data-build-sustainable-water-future>, allows the public to compete for innovative ways to use existing water data, and closes on December 9, 2016. Greg also discussed success stories from past data challenges and recommended this as a way to solve problems in the future.

MEETING AGENDA

Tuesday, November 29th, 2016

8:00 AM	Welcome and Introductions: Housekeeping and logistics Introductions Membership updates	
8:30 AM	Updates from Work Groups	Work Group Chairs
9:15 AM	BREAK	
9:30 AM	Overview of Council Terms of Reference	Susan Holdsworth / Wendy Norton
10:00 AM	Council Visioning: Where do we go from here?	Facilitators TBD. We have main room plus two breakout rooms available
12:00 PM	Lunch	Lunch from Yats Cajun
1:00 PM	Breakout Sessions by Topic	Rooms will be assigned based on group size
3:00 PM	BREAK	
3:15 PM	2018 Monitoring Conference: Update and recruitment for leadership	Jeff Schloss/Alice Mayo
5:00 PM	Member Updates	
5:20 PM	Recap Day/Identify Action Items	Candice/Susan/Gary
5:30 PM	Adjourn for Day	

Wednesday, November 30th, 2016

8:00 AM	Proposal for WQS Standards Work Group	Chris Greene
8:30 AM	Work Group Collaboration and Synthesis	Work Group Chairs
10:15 AM	BREAK	
10:30 AM	US Models of Volunteer Monitoring	Julie Vastine
11:30 AM	An Overview of USACE Water Quality Programs and Activities	Erich Emery
12:00 noon	Lunch	IDEM Framework Brownbag
1:00 PM	300 million results, 2.2 million pages, and 66 thousand visitors: an overview of the Water Quality Portal with an emphasis on new features	Jim Kreft
1:45 PM	Data Quality Issues and Opportunity Cost of Lost Data	Lori Sprague
2:15 PM	WQX Metadata work group update	Laura Shumway
2:45 PM	BREAK	
3:00 PM	Water Quality Portal Training	Dwane Young
5:00 PM	Member Updates	
5:20 PM	Summary of discussion, action items, and next steps	Susan/Gary/Candice
5:30 PM	Adjourn for Day	

Thursday, December 1, 2016

8:00 AM	Data into Action Ideas	Larry Willis
8:30 AM	National Lakes Assessment Data Dashboard	Amina Polard, Office of Water for NLA
9:00 AM	New Directions for EPA's Report on the Environment	Scott Hagerthey, Office of Research and Development for Report on the Environment

9:45 AM	Water Quality Framework	Dwane Young
10:15 AM	BREAK	
10:30 AM	California Web Visualization	Jon Marshack and Kristopher Jones
11:15 AM	CEQ/ CA Water Data Challenge	Greg Gearheart, CA Waterboards
12:00 noon	Lunch	Boxed lunches from Q'doba
1:00 PM	Data into Actions Discussion Introduction Breakout Groups Review of ideas and answers Voting Wrap Up	
3:20 PM	Reconvene as council workgroups, finalize plans	Work Group Participants
3:50 PM	Update entire Council on Work Group plans and accomplishments	Entire Council
4:45 PM	Review meeting action items/wrap up discussion	Susan Holdsworth/Gary Rowe
5:15 PM	Adjourn meeting	

Attendees at Indiana Department of Environmental Management:

Name Email Address

<i>Aaron Borisenko</i>	borisenko.aaron@deq.state.or.us
<i>Alice Mayo</i>	mayio.alice@epa.gov
<i>Candice Hopkins</i>	chopkins@usgs.gov
<i>Chris Greene</i>	christopher.greene@state.mn.us
<i>Danielle Donkersloot</i>	ddonkersloot@iwla.org
<i>Dave Chestnut</i>	chestnde@dhec.sc.gov
<i>Dean Tucker</i>	Dean_Tucker@NPS.GOV
<i>Doug McLaughlin</i>	dmclaughlin@ncasi.org
<i>Erich Emery</i>	Erich.B.Emery@usace.army.mil
<i>Gary Rowe</i>	glrowe@usgs.gov
<i>Jane Caffrey</i>	jcaffrey@uwf.edu
<i>Jeff Schloss</i>	jeff.schloss@unh.edu
<i>Jeff Thomas</i>	jthomas@orsanco.org
<i>Jim Dorsch</i>	JDorsch@mwrddst.co.us
<i>Jon Marshack</i>	jon.marshack@waterboards.ca.gov
<i>Julie Vastine</i>	vastine@dickinson.edu
<i>Larry Willis</i>	larry.willis@deq.virginia.gov
<i>Leslie McGeorge</i>	leslie.mcgeorge@dep.state.nj.us
<i>Marie DeLorenzo</i>	marie.delorenzo@noaa.gov

<i>Martha Clark Mettler</i>	mclark@idem.in.gov
<i>Mary Skopec</i>	mary.skopec@dnr.iowa.gov
<i>Michael Eberle</i>	mbeberle@fs.fed.us
<i>Mike Higgins</i>	mike_j_higgins@fws.gov
<i>Mike McHale</i>	mmchale@usgs.gov
<i>Monty Porter</i>	Monty.Porter@owrb.ok.gov
<i>Nancy Schuldt</i>	nancyschuldt@fdlrez.com
<i>Nichole Halsey</i>	nhalsey@seabird.com
<i>Steven Greb</i>	Steven.Greb@wisconsin.gov
<i>Susan Holdsworth</i>	holdsworth.susan@epa.gov
<i>Tim Asplund</i>	tim.asplund@wisconsin.gov

Attendees via WebEx:

<i>Name</i>	<i>Email Address</i>
<i>Amina Pollard</i>	pollard.amina@epa.gov
<i>Barb Horn</i>	barb.horn@state.co.us
<i>Dan Sullivan</i>	djsulliv@usgs.gov
<i>David Chestnut</i>	chestnde@dhec.sc.gov
<i>Greg Gearheart</i>	greg.gearheart@waterboards.ca.gov
<i>Jim Kreft</i>	jkreft@usgs.gov
<i>Kim Martz</i>	kimmartz@usgs.gov
<i>Kristopher Jones</i>	kristopher.jones@water.ca.gov
<i>Laura Shumway</i>	shumway.laura@epa.gov
<i>Lori Sprague</i>	lsprague@usgs.gov
<i>Melissa Morris</i>	melissa.morris@waterboards.ca.gov
<i>mike mcdonald</i>	mcdonald.michael@epa.gov
<i>Sheri Alcalde</i>	salcalde@usgs.gov
<i>Wendy Norton</i>	wenorton@usgs.gov

