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 snipits)
- 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?

<u>2. Discussion of State and Regional Councils</u>

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 announcments)
- 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 statement of NWQMC.
- 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
- Make website 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; plans to 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 web pages 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 others to join 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 Newsworthy" 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 Invasive Species
- 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

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

<u>Potential Speakers:</u>
Opening: Hickenlooper (Mayor of Denver)
Beginning 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.

<u>Other Speakers which would be a change from science:</u>
John Fielder – photographer
Tom Noel – Dr Colorado (history of Denver area)
Ellen Wohl – Virtual Rivers
Colorado Supreme Court Justice Gregory J. Hobbs.Jr. – 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.