



# NJ Water Monitoring Coordinating Council

## Measuring What Counts for Clean & Plentiful Water

September 21, 2011  
MEETING MINUTES

### Member Attendees

**NJDEP** – *WM&S*: Leslie McGeorge, Alena Baldwin-Brown, Danielle Donkersloot, Debra Hammond, Helen Pang, Bob Schuster, Tom Vernam *NJGS*: Ray Bousenberry *OS*: Gary Buchanan, Judy Louis *SRP*: Mary Anne Kuserk

**USGS** – Rick Kropp, Jack Gibs, Bob Reiser

**DRBC** – Tom Fikslin

**EPA R2** – Randy Braun, Paula Zevin

**IEC** – Caitlyn Nichols

**NJ Pinelands Commission** – Nick Procopio

**NJ Water Supply Authority** – Todd Kratzer

**Rutgers (Coop Extension Service)** – Lisa Galloway Evrard

**Rutgers (IMCS)** –

**Montclair University** – Meiyin Wu

**Monmouth University/Urban Coast Institute** – Jim Nickels

**Meadowlands Environmental Research Institute** –

**NOAA** –

**Monmouth County Health Dept** –

**Barnegat Bay Partnership** – Stan Hales

**Stony Brook-Millstone Watershed Association** –

**Musconetcong Watershed Association** – Nancy Lawler

**NJ Harbor Dischargers** – Ashley Slagle

**Brick Township MUA** – Rob Karl

### Guest Speakers/Discussion Leaders

Tom Belton – NJDEP/OS

Sandra Cohen – NJDEP/WM&S

Eric Evenson – USGS NJ Water Science Center

Dennis Flynn – NJDHSS/PHEAL

Trish Ingelido – NJDEP/WM&S

Jill Lipoti – NJDEP/WM&S

Paul Morton – NJDEP/WM&S

Daryll Pope – USGS NJ Water Science Center

Vic Poretti – NJDEP/WM&S

Erik Silldorf – DRBC

John Yagecic - DRBC

### Guests

Ben Fertig – Rutgers/IMCS

Jeff Hoffman – NJDEP/NJGS

Rafael Pietri – NJDHSS/ECLS

Paul Schorr – NJDEP/DWSG

Robert Servis – NJDHSS/ECLS  
Gordon Shun – NJDEP/DWSG

➤ **Council Business**

- Dennis Flynn, Assistant Commissioner, provided welcoming remarks to the Council on behalf of DHSS
- Bob Reiser co-chaired the Council meeting on behalf of USGS
- Minutes from the 05/25/11 Council meeting were approved.
- Member Announcements:
  1. Replacement Member – Dr. Kirk Barrett resigned from the Council in August as he has taken a new position at Manhattan College. Dr. Meiyin Wu has replaced Kirk as the Montclair University representative.
  2. Updated Continuous Monitoring Inventory – Alena Baldwin-Brown reported that the Continuous Monitoring Inventory spreadsheet and map have been updated and re-posted on the Council’s website. Suggestions were made to add information for short term deployments including a link to the USGS website that includes continuous record water quality data from short term deployments (website address is: [http://nj.usgs.gov/infodata/diurnal\\_do/](http://nj.usgs.gov/infodata/diurnal_do/)), add continuous monitoring information from other groups, such as the Pequannock River Coalition, as well as possibly producing a separate map that shows short term deployment locations. Danielle Donkersloot offered to assist Alena and Paul Morton in adding the Pequannock River Coalition information.
  3. NWQMC State & Regional Councils Survey: NJWMC Response – Leslie McGeorge briefed the Council on a National Water Quality Monitoring Council (NWQMC) effort to gather information related to State and Regional Councils related to their composition, organization and activities. The purpose of the survey is to provide the NWQMC with information to better enable it to assist State and Regional Councils, including development of a related workshop for the 2012 National Water Monitoring Conference. Leslie and Alena completed the survey for the NJWMC. Leslie summarized the information provided and asked that, if Council members have suggested revisions, they should let her know. Additionally, she asked Council members for benefits they see in being on the Council. Responses included: the ability to see what others are doing in the water monitoring arena, making contacts outside of those entities with whom the agency usually deals with, leveraging of efforts/resources, technical information exchange, as well as an increased awareness of data availability and accessibility.
  4. 2011 NJ Water Monitoring Summit – Debra Hammond (Planning Committee lead) summarized plans for the 2011 NJ Water Monitoring Summit, scheduled for Dec 1 & 2, at this facility. As the NJWMC is a co-sponsor, she encouraged Council members to participate either as platform or poster presenters. A Summit-related website has been established ([http://www.state.nj.us/dep/wms/2011\\_summit.htm](http://www.state.nj.us/dep/wms/2011_summit.htm)) which has information related to registration, agenda, etc. Other NJWMC members who are part of the Planning Committee are Leslie McGeorge, Danielle Donkersloot and Alena Baldwin-Brown.
  5. Update on NJ’s River/Stream Monitoring Network – Tom Vernam announced a few changes that had occurred in this network - primarily some new probabilistic as well as targeted monitoring. Both of these modifications were achieved through reallocation of existing network resources.
  6. Hurricane Irene Efforts – Jill Lipoti summarized monitoring-related efforts that occurred during and after Hurricane Irene. She also sought suggestions for lessons learned as well as future direction/collaboration in the area of emergency response monitoring. Additionally, she made a request that the Council consider devoting the technical session, for a future meeting, to emergency response monitoring [Note: this will be the technical topic for the May 2012 meeting].
  7. Investigation of Alternate Data Management Options – Jill Lipoti announced that, as a result of newer available technology, DEP is considering alternate data management options to the use of the Water Quality Data Exchange System (WQDE). One of these options is use of the Ambient Water Quality Management System (AWQMS) where data would be hosted in the “cloud”, as opposed to on a server at NJDEP. Easier data entry and reporting could be benefits from switching to AWQMS. As

WQDE was a major product of the Council, Council members were asked to test a version of AWQMS and provide their input as to its usefulness vs. WQDE [Note: a request to test AWQMS was sent to the Council on October 26. Several Council member organizations responded with favorable reviews.].

- National Ground Water Monitoring Network Update (Update on NJ Pilot) – Daryll Pope (USGS NJ Water Science Center) provided a summary on the NJ pilot developed as part of the National Ground Water Monitoring Network (NGWMN). The NGWMN was designed to provide information for planning, management and development of ground water supplies. Five (5) pilots were chosen to test the NDWMN concept: Montana, Minnesota, Illinois/Indiana, Texas and New Jersey. Pilot states reviewed candidate wells and placed them into either Trend or Surveillance networks and categorized the wells as either unstressed or targeted. Pilots also compared their data collection and data management practices against the network guidelines. USGS and DEP's NJGS worked on the NJ pilot. The NJ pilot has four types of networks: 1. water quality-ambient shallow, 2. water quality - chloride, 3. water level - trend, and 4. water level - synoptic. All pilots are complete and suggested changes/lessons learned are in the process of being provided to the ACWI Subcommittee on Ground Water. Daryll presented a demonstration of the Pilot data portal that was developed. The Pilot version of the data portal is currently publicly available ([http://cida.usgs.gov/gw\\_data\\_portal/](http://cida.usgs.gov/gw_data_portal/)). Daryll's presentation is available on the Council's website.
- Update on Ocean Glider Monitoring – Bob Schuster provided an update on the ocean glider(s) that were deployed during the summer and the data that has been collected, including DO, salinity and temperature. Additionally, one of the gliders was rerouted to stay in a large algal bloom to record DO conditions. That same glider also collected data through Hurricane Irene which, when viewed, showed large amounts of mixing due to wave action. This last glider was removed after September 7. One additional deployment is planned for 2011, with additional deployments scheduled for summer 2012. Additional focus will be on how to use and evaluate the data generated. Bob's presentation is available on the Council's website.
- WaterSMART Initiative Update: Delaware River Basin Focus Area Study – Eric Evenson (USGS) updated the Council on both this national effort as well as the focus study in the Delaware River Basin. The overall WaterSMART objectives are determining if the nation has sufficient freshwater to meet human and ecological needs as well as will it be present in the future. As part of this, focused water availability assessments were conducted in 3 basins, including the Delaware River. Stressors to availability in this basin include: climate change (sea level rise & more frequent & intense storms), population growth (increased demand, land use change, & increased load on the watershed) and water quality degradation. A team has been formed to draft a workplan to detail these and other issues. Stakeholder comment on the draft workplan has been sought and responses have been received related to water use, hydrologic modeling, and water availability stressors. Next steps include finalizing the workplan for the Delaware Focus Area and beginning work once the Fiscal Year 2012 funds have been secured. Eric's presentation is available on the Council's website. [Note: DRBC will be meeting with Ward Friedman on January 31 regarding the outcome from the Stakeholder Meeting as well as the FY12 budget. USGS will be asked to provide updates on this effort at a future meeting.]
- Web Application for Private Well Testing Act (PWTA) Data – Judy Louis demo'd an interactive website that is being developed for homeowners and county health officers using PWTA data. Information is shown by municipality within the county, including gross alpha, nitrate, VOCs and mercury. Four counties have been completed to date (Burlington, Ocean, Monmouth and Atlantic). Anticipated completion date for the remainder of the counties is February 2012, after which the website will undergo internal DEP review before it goes "live".
- **Technical Presentations** (Copies of the following presentations have been posted to the Council's webpage - <http://www.state.nj.us/dep/wms/wmccpresentations.html>)

## Barnegat Bay: Monitoring and Research

### *A. New Research Projects – Gary Buchanan (DEP/OS)*

Gary Buchanan provided a summary of the ten (10) research projects that have received approval and funding under Action Item 9 of the Governor's 10 point plan for Barnegat Bay. Some projects are predicted to start as early as fall 2011 and expected to run through summer/fall 2012. Three years of research is planned. Research is being coordinated with the Barnegat Bay Partnership (Science & Technical Advisory Committee), USGS, EPA, Ocean County College, State Universities as well as various DEP programs. Additional information on the research projects can be found on the Action Item 9 webpage: <http://www.state.nj.us/dep/barnegatbay/plan-research.htm>.

### *B. Completed Research: Nutrient Histories in Barnegat Bay – Tom Belton (DEP/OS)*

Tom Belton summarized research that has taken place on nutrient and ecological histories in Barnegat Bay. The two primary questions that this research was designed to answer were: 1. how can environmental changes in Barnegat Bay (& other areas) be monitored over time, and 2. are management programs succeeding in cleaning up the Bay? Research was conducted using sediment cores because they are good indicators of changes over time related to land use, aquatic ecology and pollution sources. The project involved taking samples from 4 locations within Barnegat Bay (north, middle, south) and analyzing them for organic carbon, total nitrogen, total phosphorus, diatom species composition, stable isotopes of carbon & nitrogen, grain size and radioactive isotopes of lead and cesium. Results reveal that, overall, the irreversible shifts recorded by diatom species suggest that these sites remain impacted by anthropogenic disturbances and did not return to their natural, reference conditions.

### *C. Water Quality Monitoring Collaborative Project*

#### ▪ *Status of Sampling – Tom Vernam, Vic Poretti & Bob Schuster (DEP/WM&S)*

Tom Vernam, Vic Poretti and Bob Schuster summarized the status of freshwater and marine water sampling at the 27 monitoring locations. In addition to the chemical and flow data that are being collected at the tributary sites, benthic macroinvertebrate data are being collected. To date, 7 sampling events have taken place; 5 more are planned for the remainder of 2011 [NOTE: the remaining 5 sampling events have occurred, bringing the grand total for 2011 to 12].

#### ▪ *Summary of Data Collected to Date – Trish Ingelido (DEP/WM&S)*

Trish Ingelido provided an overview of the data collected to date as well as plans for Phase II (2012 and beyond) of this monitoring project. She briefly summarized the field parameter results from 4 sampling events, as well as laboratory results for nutrients, solids, chlorophyll and BOD from 3 sampling events, and results for alkalinity, carbon and silica from 1 sampling event. Once complete, Phase 1 data will be used to inform the Phase 2 sampling plan, to develop the input file for the model as well as potentially serve as the validation data set for the model. Phase 2 is scheduled to begin in Jan 2012 and will include 2 intensive sampling events.

#### ▪ *Accessing Project Information and Data – Alena Baldwin-Brown (DEP/WM&S)*

Alena Baldwin-Brown demonstrated how users can access project information as well as the monitoring data from the Interactive Map on the Barnegat Bay, Action Item 7 webpage (<http://www.state.nj.us/dep/barnegatbay/plan-wqstandards.htm>). From this map, users can access individual station-related information such as: location, photos, and partner(s) performing the monitoring. Also available on the webpage is a pdf'd spreadsheet of all available, quality assured data. Alena announced that a forthcoming enhancement to the Interactive Map will allow users to access data by individual station. [NOTE: this enhancement went "live" on December 1 and was debuted at the NJ Water Monitoring Summit.]

## Clean Water Act Assessments – Using the Monitoring Data

### *A. CWA Requirements, 2012 Integrated Report Assessment Process & 2010 Assessment Results – Debra Hammond & Sandra Cohen (NJDEP/WM&S)*

Debra Hammond provided an overview of the Clean Water Act (CWA) requirements with regards to water quality assessment, as well as its role in NJ's water resources management. She also summarized NJ's approach to integrating the federal requirements for development of both a statewide water quality report (305(b)) as well as a list of water quality-limited waters (303(d)) into 1 overall assessment – known as the biennial Integrated Water Quality Monitoring and Assessment Report. Additionally, Debra shared how data are assessed, including what data are sought,

parameters needed, and how the overall information is presented for each of the CWA-defined designated uses. Recent assessment improvements (including those proposed for the 2012 Integrated Report) were also highlighted. Sandra Cohen presented the results from the 2010 Integrated Report, including an explanation of the new format used and how to interpret the information presented. Overall, approximately 3% of NJ's assessment units fully support all applicable uses (aquatic life, recreation, drinking water, shellfish harvest & fish consumption), approximately 65% do not support the aquatic life designated use and only 4% remain unassessed for at least one use. Top ten causes of impairment are: pathogens, TP, DP, pH, cause unknown, temperature, PCBs, mercury, DDX and arsenic. Additional assessment-related information, including the full 2010 Integrated Report and current information for the 2012 Report, is available at:

<http://www.state.nj.us/dep/wms/bwqsa/generalinfo.htm>.

*B. DRBC's Water Quality Assessment of the Delaware River and Bay – John Yagecic & Erik Silldorf (DRBC)*

John Yagecic and Erik Silldorf presented both a summary of how DRBC's assessment process differs from that used by DEP as well as their proposed methodology for development of the DRBC 2012 Assessment Report. The major differences between the DRBC and DEP assessment process are: DRBC has no 303(d) list (only States can create said list), DRBC provides its water quality assessment report to DEP for its use in its listing process, different states have different EPA-approved methodologies (NY, NJ, PA & DE), and DRBC assesses the mainstem of the Delaware River while states assess its tributaries (even where DRBC has criteria). For its 2012 Water Quality Assessment Report, the current schedule is to provide a draft to states in December 2011 and submit a final to EPA by April 1, 2012. A summary of data sources was provided as well as an overview of how DRBC divides the mainstem Delaware River into assessment units and how each is assessed for the 5 designated uses. Additionally, changes from the 2010 assessment methods that were used for 2012 were also presented, including pH, toxics, bioassessment for aquatic life use, biomonitoring/biocriteria development, and IBI performance.

➤ **Technical Topics for Next Meeting**

Indicators of Water Quality and Quantity

➤ **Next Meeting**

January 25, 2012 at NJDEP HQ [Note: Snow date of February 1]