

**Section 208 Area Wide Water Quality Management Plan Update  
Monitoring Subcommittee**

**Monday, December 8, 2014  
1-3pm**

**Strategic Information Office  
Innovation Room  
Main Street, Barnstable, MA**

**Attendance (12/8):** Tom Cambareri (CCC), Rich Delaney (CCS), Bob Duncanson (Chatham), Brian Dudley (MassDEP), Joann Muramoto (APCC/MassBays), Lindsay Counsell (Three Bays), Andrew Gottlieb (CCWPC), Ed Eichner (SMAST), Judith Underwood (Cape Cod Community College), Sia Karplus (Science Wares), Tara Nye (APCC), John Todd (JTED), Marcel Belaval (EPA), George Heufelder (BCDHE), Amy Coast (CCS), Chris Weidman (Waquoit Bay NERR), Ann Giblin (MBL), Matthew Reardon (DEP) [phone]

**Monitoring Subcommittee Sharepoint Site**

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Password: 208msc!

**1. 208 Status – Monitoring Recommendations – Brief Summary**

- a. What does 208 say about monitoring?
  - i. Monitoring Subcommittee Responsibilities
  - ii. Technology Monitoring
  - iii. Current Monitoring Efforts
  - iv. Monitoring Needs
    1. Monitoring role in Adaptive Management
    2. Monitoring Costs
    3. Region-wide data set: collected, analyzed and maintained by county
- b. Final 208 Plan to be complete March 1<sup>st</sup>
- c. Two day 208 symposium to be held at end of February
- d. Summary of Comments on 208 Monitoring
  - i. Fine tune protocols
  - ii. Determine schedule/milestones
  - iii. Watershed plans + regional pilots
  - iv. Criteria for selecting pilots
  - v. QAPPs provided
  - vi. Determination of nitrogen credits
  - vii. Knowledge Transfer (annual monitoring symposium)

- viii. Have draft protocols for I/A, Ecotoilets, PRBs, shellfish, Need: TMDL compliance, constructed wetlands, fertigation capture wells. The docs for completed protocols are on Sharepoint. Edits are encouraged.

Sia: Falmouth has tech memo on Bourne's pond inlet widening, which incorporates modeling and expected changes. It came out less than a year ago and is one of the premiere documents on inlet widening.

Bob: Will post Muddy Creek Assessment Report (includes more specific information on the monitoring component.)

Sia: What is useful in the tech protocols is a cost estimate, which, even at the very least, provides an order of magnitude estimate. Consider taking the PRB protocol framework and go from there.

Bob: The costs that are typically provided are per year. Recommend determining an up-front commitment for long term projects.

Marcel: EPA made recommendations for the committee to come up with costs for start up phase, construction phase, etc. Need to understand when N reduction is actually happening.

Bob: It is Important to understand the reason and mechanism for N- reduction. WHY aren't targets being met? Is it the fault of the technology? Did the hydrology in the system change? Was there a natural change occurring? We need to understand what is going on in the system.

George: Need to determine the worst possible scenario in regards to tech implementation. Need to understand and evaluate this because this risk is being undertaken. Smaller processes for more variables = high risk.

Tom: Monitoring data needs to be interpreted the right way. Folks need to be informed on the progress. Need to understand roles of agencies and consolidation of work processes.

Jo Ann: Who is going to look at commonalities among monitoring data over time? For example, in Falmouth if several alternatives are being proposed, how do we determine common requirements for monitoring to maximize monitoring efficiency?

Bob: It would be responsibility of the watershed to come up one set of monitoring protocols that covers all...in order to avoid repetition and optimize resources.

JoAnn: Is it the work of this committee to identify these common things?

Tom: Yes that is one of the roles of this committee

Ann: If you site too many different pilots...won't be able to identify the individual technology effects.

George: Need to distinguish between combined effect vs. individual effect.

Sia: Every watershed needs solid baseline conditions monitoring to get past a 10-15% standard error.

## **2. Coastal Restoration Monitoring (Tara Nye presented)**

### **a. Salt Marsh Program Design**

- i.** 18 sites in various stages of restoration
  - ii.** Compare reference unrestricted sides to tidally -restricted sides
  - iii.** Randomly located transects, with stations
  - iv.** Protocol based on CZM's concept of Wetland health assessment.
  - v.** Test for salinity, water temp, specific conductivity, identify/quantify plant species within (1meter x 1 meter) and invasive species, nekton monitoring, bird monitoring, photography of quadrants
  - vi.** Work with division of ecological restoration (DER)
  - vii.** Data analysis and reporting: use data report template to standardize data collection and reporting format.
  - viii.** Better baseline data enables identification of significant trends vs. normal variability
  - ix.** How can these protocols/methodology and use it for the pilot program for 208?
    1. Example: In the national estuarine reserve, the Central Data Management Office processes standardized data forms and analyzes the data quickly
  - x.** Do they use this data in a regulatory setting?
    1. Not really. Sometimes, when a permit is being sought data is used. Also use data to prove that restoration is working.
  - xi.** John: Is anyone studying changes in soil carbon in restored salt marshes?
    1. Just starting to look at this locally (Herring River) along National Seashore
- b.** Program on the northshore is similar. Volunteers are secondary school students. Every year, each class adopts an area and a sampling. Teachers are trained by MassAudobon.
- c.** Chris: in order to document whole system changes throughout Massachusetts, need to access this wealth of information. Using remote imagery (LiDAR) and comparing vs. ground monitoring. New techniques to use LiDAR to pick up plant height, etc.

## **3. Inlet Monitoring Discussion**

- a.** Anne and Tara to join Inlet Monitoring Team, to present next meeting
- b.** Sia, Floating constructed wetlands interested in low concentration applications (as they relate to stormwater). Has been in communication with the researchers on specifics regarding research setup.

- c. John Todd: Has difficult time finding floating wetland applications in a non-temperate climate.

**4. Environmental Bond Bill project fund – Andrew Gottlieb**

- a. Authorization is required and is good for five years.
- b. Do we have to wait for towns to come up with specific projects? Does the proponent HAVE to be a municipality? No. If there is an NGO, or a county interested. Two source of bonds: Public non-tax funds, Private activity bond cap. Do not yet know the fund allocation rules.

**5. Pilot Project Ranking Criteria**

- a. A set of criteria to help select favorable pilot projects will be useful
- b. Identify projects where monitoring can detect a measurable change.
- c. APCC is working to track all NGOs (wildlife, birds, salt marshes, water quality) working on the Cape. Want to ultimately develop some centralized approach to storing the data, sharing the data, etc. Will ask for coordinates of sampling stations. APCC has put together a list of some good QAPPs.

**6. Next Meeting**

- a. **Inlet widening/Wetlands**
- b. **Pilot Project Ranking Criteria**
- c. **Discuss Overarching Monitoring Needs**
  - i. **Data warehouse**
  - ii. **Resources**
  - iii. **Incremental approach and milestones**