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CAPE COD  
COMMISSION

## **Agenda**

**Section 208 Area-Wide Water Quality Management Plan Update  
Monitoring Subcommittee  
May 20, 2014  
1pm  
Cape Cod Commission Conference Room  
3225 Main Street, Barnstable, MA**

1. Introductions
2. Recap
3. PRBs and Aquaculture
4. Regional Data Management
5. Other Business



**208 Area Wide Water Quality Management Plan Update  
Monitoring Subcommittee  
May 20, 2014  
1pm  
Cape Cod Commission Conference Room**

Attendance: Tom Cambareri, CCC  
Erin Perry, CCC  
Scott Horsley, Consultant to CCC  
Marcel Belaval, EPA  
Brian Dudley, MassDEP  
Rich Delaney, Provincetown Center for Coastal Studies  
Robyn Hannigan, UMASS Boston  
Tim Gleason, EPA  
John Todd, John Todd Ecological Design  
Sia Karplus, Falmouth Water Quality Committee  
Chris Weidman, WBNERR  
Joanne Muramoto, APCC  
Judith Underwood, Cape Cod Community College

**Recap**

Tom Cambareri provided an overview/recap of last meeting. This is a subcommittee to the 208 advisory board, reiterated mission, roles and responsibilities, preliminary technology monitoring framework (review of meeting 1 presentation).

Monitoring for: Pilots, Long Term Performance, Embayment. Last meeting we talked about inlet monitoring for inlet widening projects, fertigation well monitoring, and I/A systems.

Sia Karplus said for Falmouth, MEP looked at widening two inlets. Estimated a reduction to septic load removal required. Can start to look at expected water quality changes.

Scott Horsley said that golf courses have existing data on this – they keep track of how much water they pump and many of them are monitoring water quality. Can compute mass of nitrogen being removed from groundwater and applied to land. In many cases they are reducing the fertilizer applied as a result. Could also apply to athletic fields and substitute for commercial fertilizers. Ideally, we could come up with a credit once we better understand amount being removed and applied to land per acre.

Sia said she thinks that ecotoilets have the same kinds of monitoring requirements as I/A systems. I/A monitoring could just be applied to ecotoilets.

Falmouth project will be 18 months of monitoring.

There is a legacy period where there is still septage along the tank – about 3 months.

Brian Dudley said monitoring of I/As depends on how many systems you have in a watershed. If you have a lot, it makes sense to take a percentage to monitor. Some questions – monitor the same ones? Rotate and randomly distribute?

Need an ongoing monitoring program, just like treatment facilities, so that we know they are continuing to operate.

### **PRBs**

Tom Cambareri:

- Establish expectations: hydrogeological study, water quality, water use surrogate
- Installation: Ensure design criteria met
- Pilot performance
- Long term performance

Rich Delaney asked if we were able to identify a lot of sites Cape-wide

Scott said we came up with about 30-35 sites based on screening analysis (roadways, 20ft or less depth to groundwater). Identified an issue with areas that have underground utilities. Locating areas with no utilities on down gradient side of road is more promising.

John Todd asked how deep the trench is.

Scott replied that we looked at less than 20ft depth to groundwater.

Sia said there are some restrictions to the one pass systems to dig trenches, because they require clearance above.

Sia said they are looking at whether or not they can get away with reaching half way through aquifer.

Marcel said nitrogen profiling needs to happen before we know where nitrogen is in aquifer. Also need geologic profile. PRBs fall in category where, without monitoring,

the costs might be attractive. With necessary monitoring, they become much more expensive.

Scott said we need to identify latest, cost effective methods for monitoring. Let's not use old monitoring methods to monitor new technologies.

Brian pointed out that we need to be careful testing new monitoring approaches and new technologies at the same time.

Scott asked what the status for Falmouth's next step – Sia said that's the next thing on the list. They have not selected a site yet. Need to look at areas other than Seacoast Shores.

### **Monitoring for TMDL Compliance**

Sia – for Little Pond looking at chlorophyll, clarity, nitrogen, salinity gradients, dissolved oxygen (surface and bottom). Existing monitoring at sentinel stations will need to show a change.

Existing monitoring going on at sentinel stations. Monitoring did not necessarily go on after need for MEP studies. Provincetown Center for Coastal Studies (partnering with Three Bays and others) has started monitoring all of the south coast embayments.

Rich said Amy Costa could put together an overview.

Sia said someone needs to put together a list of organizations and what their monitoring data is.

Chris Wideman said that more up front cash is needed to support how this is done and centralize data in one location. Analysis needs to be done in a consistent way and data needs to be stored in a consistent place in a consistent format.

How many sites are there? Brian Dudley said that there is probably one per system, with 2-3 in the larger systems.

Chris said that some sites are hard to access – MEP sites were open water sites and in some areas (ex. Bourne pond, oyster pond) they are difficult to access. Is a nearby land site good enough?

Judith said we could think about physically locating it at the college, potential for state of the art testing lab – could be the host of something like this. Don't have the existing capacity to manage it, but could be a collaborative effort.

Sia said that Falmouth already has MEP doing this and historical consistency is important. If towns don't have this, they could utilize something like this.

Joanne mentioned remote sensing for regional large scale changes in water quality over time. In addition to the local monitoring.

Tim Gleason said that EPA can help with the remote sensing data – working to translate satellite data to look at water quality.

Robyn said that a faculty member does the ocean productivity work for satellite remote sensing. He would probably be interested in something like this locally.

Brian said that West Falmouth and Chatham permits include sentinel station monitoring.

Rich said that the County and the Community College, with consistent funding, would help to develop a consistent place/process.

Scott – should 208 plan recommend a central approach.

Chris Wideman said there should be a central place. Rich said it should be a public place, with free access to data all the time. CCC and Community College are those places.

Robyn said that College could be place that collects samples and does consistent analysis, with CCC hosting data and making information available to the public.

Joanne asked if any part of this monitoring could be done with tethered systems.

Robyn said they have about 70 buoys deployed in Boston Harbor and could potentially work with us to have them moved south. They use them to identify if there is a potential elevation and then take samples.

Sia asked Brian if there is a requirement that it be a wet lab analysis, state certified lab, etc.

Brian said yes

Tom reiterated that the group agreed that there should be a regional monitoring framework, that sets aside adequate resources to do so and is sufficiently funded. Should include standard protocols.

Rich reiterated that it seems like a great role for a collaboration between County and Community College.

Joanne asked if one of the recommendations should also be to have a town position?

Tom said that this takes a lot of time for local officials.

Joanne asked if the town helps the Provincetown Center by providing boats etc and Rich said no, not much.

Rich said for the Boston Harbor cleanup for organizations to sit at the table they had to show their data. CCC could host monitoring summit and require data sharing.

Next meeting will include discussion of aquaculture.

Sia said that technologies matrix should require user to identify size class of oyster to determine nitrogen removal efficiency.

Tom will circulate one pager on recommendations to include in 208 plan draft.

Next meeting – Tom will circulate poll to schedule.