

## **NEIWPCC-IEC District Shared Waterways Monitoring Workgroup**

Monday, May 9, 2016

10:00 AM – 12:30 PM

USEPA Region 2

290 Broadway, New York, NY

### **Attendees (In Person)**

Evelyn Powers (NEIWPCC-IEC); Robin Jazxhi (NEIWPCC-IEC); Jeff Myers (NYS DEC); Peter Linderoth (Save the Sound); Tracy Brown (Save the Sound) Ashley Slagle (PVSC/NJHDG); Jim Ammerman (NEIWPCC/LISS); Mark Tedesco (EPA Region 2) Mark Ringenary (National Park Service), Stanley Stephansen (EPA Region 2), Phil DeGaetano (NEIWPCC/NYSDEC), Ariane Giudicelli ( NYNJ HEP/HRF); Rob Buchanan (NYC WTA), Rick Winfield (EPA Region 2), Steven Terracciano (USGS); Shawn Fisher (USGS); Jessica Bollinger (Columbia University); Kaled Alamarie (NYCDEP); Robert Pirani (NYNJ HEP)

### **Attendance (On Phone):**

Matt Lyman (CT DEEP); Amanda Levy (NYC DOH); Jason Fagel (NYSDEC); Darvene Adams (EPA Region 2); Trevor McProud (NYC DOH)

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## **STATE UPDATES**

- **New York**
  - Much of the harbor monitoring is done by the NYC Harbor Survey Program.
  - DEC is working with IEC on their RIBS (Rotating Integrated Basin Studies). IEC performs four sampling events annually at station A4 in the far western Long Island Sound as part of the RIBs program routine. For a suite of parameters. The purpose of this was to incorporate a station south of Poughkeepsie in the routine network of stations in the RIBS program.
  - The statewide lakes program is working with NYC Parks on sampling in urban lakes with interest in harmful algal blooms. There is a statewide surveillance and notification system as well as a website for citizens to notify the state of any observations. Weekly updates are posted on the website with regard to areas with algal blooms.
  - DEC is also discussing the possibility of embayment studies with Save the Sound and IEC with regard to nutrients/eutrophication/algal blooms and pathogens.
  - Currently, the state program is slightly disconnected from the marine program, but they are working towards synergy in that area to develop a program.
  - There will be a public comment period for the revised water quality standards. Nutrient criteria will likely be in the form of its own package. DEC is trying to pull a final package together to circulate internally this summer, with the hopes of a release Fall 2016.
  
- **Connecticut**
  - CT's Long Island Sound monitoring program is entering its 26<sup>th</sup> season this summer. No stations have been added or dropped. The monitoring program consists of 17 year-

- round sites that are monitored monthly for nutrients, chlorophyll, and hydrographic profiles. In addition, 31 sites are monitored biweekly from mid-June to mid-September.
- During the last two years, DEEP has been using a FIRE unit for phytoplankton productivity in Long Island Sound, which has been loaned from NOAA. This has been a pilot program to determine if this method is suitable for estimating productivity in LIS. The use of this unit will conclude in July 2016, which will provide two full years of data. The initial data looks good, there are some fluctuations, and data does show that phytoplankton are stressed during the summer months when nutrients are being depleted.
  - This summer DEEP will start an embayment pilot project focused on monitoring in three embayments (eastern, central, western basins). Currently, they are developing the project/SOPs and determining what parameters can be collected easily as well as what methods to use.
- IEC
    - IEC is entering its 26<sup>th</sup> year of monitoring in the far western portion of Long Island Sound for *in situ* (most importantly, DO) parameters, nutrients, BOD, TSS, chlorophyll. *In situ* data is collected weekly at 22 stations, TSS and chlorophyll a sampling is performed biweekly at all stations. BOD and nutrients sampling is performed biweekly at 11 stations.
    - IEC added a monitoring station to NYSDEC's RIBs monitoring network.
    - IEC is currently working with EPA Clean Water Division to develop and execute a pathogen trackdown project in the Second River tributary to the lower Passaic River as a result of high pathogen results from NJHDG.

### **FEDERAL UPDATES**

- EPA Region 2
  - The Clean Water Division is working with IEC on an enhanced bacterial monitoring program on the Second River tributary to the Passaic River.
  - The Edison office is finishing pre and post Sandy storm comparisons of water and sediment quality. The report should be finalized in the coming months.
- USGS
  - The Northeastern Quality Assessment Program is evaluating water quality in fresh water streams across eight states. The goal is to evaluate stressors to aquatic communities. The program includes nine weeks of sampling each year for the next three years.
  - Monitoring along the north and south shores on Long Island continues.
  - USGS has collaborated with EPA on the release of Hurricane Sandy data (released in 2013). The reports are being compiled into 15-16 articles that discuss sediment quality, oyster tissue analysis, groundwater studies. This report should be out soon.
- National Park Service
  - NPS continues to monitor from Memorial Day to Labor Day.
  - The sampling regimen changed in 2013 to include embayments and tributaries around Jamaica Bay. Some routine sites in the Bay were dropped to compensate for this change. The new sites in the embayment and tributaries have not been sampled for chlorophyll and nutrients yet, but there are plans to add those parameters.

- NPS plans to digitize and incorporate into GIS a Jamaica Bay dataset spanning years 2001-2012. This will be available this coming fall.

### **LOCAL AGENCIES**

- NYC DEP
  - Intensive water quality testing of 81 sites in the harbor has begun and will continue through October.
  - The NYC Harbor Water Quality Survey began in 1909. Currently, some parameter data is available online, but DEP is working towards making all of the data available.
  - The 2015 water quality report should be out very soon.
- NYC DOH
  - Private and public beach monitoring started two weeks ago and will continue through October with biweekly and weekly sampling.
  - The state currently has not reconvened on the recreational criteria. Beach action value for *Enterococcus* and fecal levels are thus still not determined. DOH will continue to use the standard 104 CFU/100mL for daily averages. It is expected that there will be increased notifications to the public and closures if the beach criteria are lowered.
  - A model has been put together which will be used to track data and trigger any necessary notifications.
  - DOH's website is updated daily and weekly for beach status and beach water quality data.
  - DOH anticipates putting their data on NYC Open Data.
  - This is the third year of the texting service for NYC public beaches, "Know Before You Go."

### **REGIONAL AND ESTUARY PROGRAMS**

- NJHDG
  - Continuing long term monitoring on the NJ side of the harbor. Biweekly sampling is conducted from May to June. Weekly monitoring runs from July to September. NJHDG has a total of 34 sites that are monitored for 17 parameters, including *in-situ*, pathogens, nutrients, chlorophyll, TSS. This data is exported into the NJ DEP WQDE system, which is then forwarded to EPA's STORET/WQX database.
  - The National Water Quality Monitoring Council created a water quality portal which pulls data from STORET and USGS.
  - NJHDG has been maintaining a HRECOS station on the Passaic River since March 2014 with continuous, real time data.
- NY NJ Harbor Estuary Program
  - Field sampling will be kicking off soon for citizen monitoring. HEP and IEC will be working with two groups (one from NJ, one from NY) on training at the end of the month.
  - HEP will be developing a state of the estuary report next year.
- Long Island Sound Study

- Jim Ammerman is the new Science Coordinator for the LISS. His goal in this new role is to synthesize LIS water quality data and publish it.
- CT DEEP and IEC both monitor in Long Island Sound and have plans to begin the process of combining annual reports.
- Jim also leads the LISS Water Quality Workgroup.
- NYS is now working on the Nitrogen Action Plan in both Suffolk and Nassau counties. The plan addresses how we can use monitoring information and assess appropriate endpoints to help define nitrogen reduction targets.
- There is a research conference being held by the LISS on Friday, May 13<sup>th</sup> in Bridgeport for anyone who is interested.
- Save the Sound is working on a Unified Water Study in Long Island Sound that is focused on studying embayments through citizen science.
- UCONN will be putting a buoy out in the Sound this year. The buoy has automated nitrate, phosphate, and ammonia sensors.
- Mark Tedesco, LISS Director, will be on a 120-day detail as the acting Chief of the EPA Region 2 Watershed Management Branch. Sheri Jewhurst will step in as the LISS Director during this time.

### NGO's

- Save the Sound
  - Save the Sound is currently overseeing two monitoring programs.
    - The pathogen indicator bacteria program has 52 sites from Mount Vernon to Greenwich along open shoreline, embayments, and tributaries. Data is available on Save the Sound's website in Excel format.
    - The 2015 Long Island Sound report card resulted in the observation that embayments and the open sound do not function the same and have different dynamics. In response, Save the Sound is leading the Unified Water Study which is focused on developing an ecosystem health study with community groups targeted in CT and NY embayments. The goal is to have community groups sampling and collecting the same data using the same methods to be able to draw comparisons and conclusions on the ecosystem status in these areas. The data audience will be the public and agencies. Save the Sound is still working through how this data will be disseminated.
  - Save the Sound has a webpage for Sound Health Explorer which maps all beaches around Long Island Sound and automatically pulls the last 10 years of data from STORET.
- NYC Water Trail Association
  - This is their fifth year of monitoring roughly 40 sites at boat launches and docks from Yonkers to Jamaica Bay. They collect weekly Enterococcus samples on Thursdays and post the results on their website on Fridays.
  - NYC WTA has recently partnered with Brooklyn College for lab services. This will allow WTA to add Jamaica Bay and Coney Island Creek stations.
  - NYC WTA would like to develop a QAPP in order to get equipment from EPA for their monitoring program.
  - Additionally, WTA is trying to develop a middle school curriculum.

- WTA's primary goal is to inform boaters, but also would like agencies to consider their data.

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### **DISCUSSION**

- Continuous Monitoring Equipment
  - USGS, NJHDG, and NYCDEP use continuous monitoring equipment and shared their trials and tribulations with regard to cost, operation and maintenance.
  - USGS mostly uses YSI EXOs. USGS HOBO data loggers typically cost about 30K per year per station. Maintenance can be difficult and is usually required about every two weeks to reduce biofouling. It can be difficult to siphon through the data and determine which data values are unusable due to biofouling on the monitor or other issues that can arise.
  - NYC DEP has 4 real-time stations using YSIs, which costs in total about 200K per year just to maintain. Sondes have been lost in the past.
  - PVSC has a YSI EXO2 at their HRECOS site and has conducted continuous monitoring at other locations in the Harbor over several summer seasons with YSI 600 OMS v2 sondes. Two EXO 2's were purchased totaling 41K, and it costs about 6-10K per year to run the station, not including staff time. They have realized that there is a three-week max period during summer months before they have to go out and address biofouling on the monitor and thus the possibility of data inaccuracies. PVSC has had a series of maintenance and troubleshooting issues as well as equipment losses that have resulted in high costs. Additionally, they have found that the conductivity/temp sensors on the YSI EXO2 needs to be replaced much more often in estuaries than in freshwater.
  - USGS suggested deploying ex-situ stations through a pump in areas where appropriate to reduce the constant struggle with continuous monitors.
  - UCONN runs the LISICOS program which has buoys deployed in Long Island Sound with continuous, real time data. These buoys have proven to be expensive to deploy and maintain, but provide valuable datasets.

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### **CITIZEN SCIENCE AND REGULATORY DECISION MAKING**

- What is the role of citizen science in regard to regulatory decisions such as impaired waterways listings, assessments, etc.?
  - Volunteer data is useful for agencies to determine where further investigation is necessary. Additionally, volunteer data is beneficial for advancing the understanding of what is going on in an area that may not be on an agency's radar. It may be difficult to assume volunteer data will provide definite answers about what is causing water quality issues in their region as it takes multiple efforts to answers these questions about a waterbody. There are plenty of opportunities to learn from citizen data, but it won't always identify new, surprising water quality trends to the agencies. Near shore and on the land areas may be important first places to look for citizen groups as well as areas where you wouldn't expect to find something.

- Citizen groups are interested in communication and understanding between their group and state agencies, however, agencies may not always have the resources to follow up with citizen groups. For this reason, it would be greatly beneficial for citizen groups to work with municipalities, sewer authorities, and other local entities and alert them on some of the issues. Onondaga Lake is an example where citizen scientists were able to work cooperatively with the city and other groups to look at sewer mapping and identify sources without DEC involvement. In addition, Harbor Watch in CT has created relationships with coastal towns such as Westport and work together on finding and addressing hotspots, rather than trying to get on 303d listings. This may not be the case everywhere, but it is a viable option.
- Citizen science data can act as a precursor for larger entities, such as IEC, to go out and perform more in depth studies. This work, in turn, can then be used by agencies.
- Citizen science data is useful for data gaps. Some have found that the most receptive audiences are the public, agency workers that are directly involved in enforcement, EPA's investigatory groups, and municipalities that are under consent orders.
- Approved QAPPs are critical in the consideration of citizen science data being used for regulatory purposes. The entity "in charge" of the waterbody, or those that might use the data should review QAPPs, however this typically isn't the case. If groups aren't funding a project, they don't have the resources or time to review the QAPP.
- Unfortunately, not all citizen groups can carry a project from beginning to end. Save the Sound is currently working to fill a gap with the Unified Water Study.

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### **NOTEWORTHY ITEMS**

- June 3<sup>rd</sup> Save the Sound is having a workshop for the Unified Water Study, all groups invited.
- Please consider possible topics for future meetings for the group to discuss i.e. data management, data distribution, better data sharing, presentations on a particular theme?
- Please consider the format of this workgroup and forward suggestions on how the group can best serve the interest of its members.
- Information/invites will be sent out regarding the Huddle platform where members can post links and reports. Members can also send information for distribution to [epowers@iec-nynjct.org](mailto:epowers@iec-nynjct.org) or [rjazxhi@iec-nynjct.org](mailto:rjazxhi@iec-nynjct.org).
- Next meeting likely in September 2016.