

Shared Waterways Workgroup Meeting Notes
March 19th, 2019
USEPA Region 2 Headquarters, 290 Broadway, NYC.

Attendees: Evelyn Powers (IEC), Jessica Bonamusa (IEC), Brett Dunkley (IEC), Stephen Terracciano (USGS), Shawn Fisher (USGS), Jason Fagel (NYSDEC), Rosana DaSilva (NY-NJ HEP), Jim Ammerman (NEIWPC/LISS), Rick Winfield (USEPA R2), Jacqueline Rios (USEPA R2), Aimee Boucher (USEPA Region 2), Sara Powell (Urban Waters Federal Partnership), Mark Tedesco (EPA-LISO), Beau Ranheim (NYCDEP), Rob Buchanan (NYC Water Trails Association), Emily Nering (USEPA R2-Edison), Roop Guha (NJDEP), Bob Schuster (NJDEP), Amanda Levy (NYCDOH), Noreen Gallagher (NYCDOH), Peter Linderoth (Save the Sound), Debbie (NJDEP), Mark Ringenary (NPS), Jasper Hobbs (NEIWPC), Matt Lyman (CTDEEP), Esther Nelson (US EPA R2), Chris Girgenti (Randall's Island Park Alliance), Rachael Graham (USEPA R2), Darvene Adams (USEPA R2)

Purpose of the meeting:

- In the past it's been a check in for regional monitoring programs, and a place to discuss how programs have changed and evolved and identify what current or future regional monitoring needs are.
- IEC developed a matrix or inventory of monitoring programs (who was doing what where). This matrix was used to inform some of the HEP efforts such as the Environmental Monitoring Plan.
- Still a need to this workgroup- useful for comparisons of methodology, QAQC oversight, split sampling. Discussions of methodologies and QAPPS--unify and align efforts while minimizing redundancies. Network to troubleshoot and share resources.

Regional Monitoring efforts:

FEDERAL MONITORING UPDATES

- EPA: Working on Hudson River Park Trust on the Hudson River and USGS on the Harlem River. Nearshore vs center channel monitoring. Wants to put CSO pipelines on the bottom along the center channel as opposed to nearshore
- Long Island Sound: Jim Ammerman reported increased funding in recent years has enabled the LISS to provide funding to expand the Unified Water Study, as well as to provide funding to enable the recent expansion of IEC's western LIS monitoring year-round. Seeing a greater and greater need for a database, especially as modeling efforts move forward. Mark Tedesco mentioned that Dwayne Young would be willing to discuss EPA's WQX database at future meeting in regards to national vs. regional database support needs. Questions about how to best use national systems vs how to supplement that with regional local efforts, in terms of databases. Jim Ammerman suggested a future meeting between this workgroup and the LIS WQWG could be beneficial.
- USGS: Working with DEC to make a Long Island Sound Water Quality database, which includes a mapper and an integrated system. Data includes nitrogen data from Nassau and Suffolk counties. The database will dynamically link to other databases, but will allow for sensitive (not public) data to be accessible to managers and government can access the entire picture, without putting sensitive data in the public. (Homeland security considers data as well water data to be

sensitive). USGS also has continuous monitors in Rockaways and Jamaica Bay. Certain sensors have recently been pulled due to lack of funding, others due to sensitivity of location by Homeland Security. Other continuous monitoring, still running: Hog Island (pH, temp, salinity, chlorophyll, turbidity, nitrate) and Hempstead Bay (pH, temp, conductivity, stage). Stephen Terraciano shared a link to the [methods paper](#) paper for the Northeast Stream Quality Assessment (NESQA) Fact Sheet.

- National Park Service: Mark Ringenary. NPS eliminated monitoring tributaries 16 and 15 in Jamaica Bay. Hopefully data will be available this year in an annual report. Also monitoring regular bathing beaches out on Atlantic. 6 sites in Staten Island (Great Kills Park) and 6 sites in Sandy Hook. Usual monitoring parameters plus bacteria. Data sent to Denver Service Center which enters it into EPA's WQX. Mark Ringenary requested via email after the meeting that a reminder be included in the meeting notes that a Research and Collection Permit is required when doing work inside the jurisdictional boundaries of Gateway National Recreation Area and other National Park properties. The application can be found online at <https://irma.nps.gov/RPRS>.
- EPA Edison: Rachael Graham. Equipment loan notice just went out. Didn't expand number of equipment available, but they do have a micro plastic trawl. They also have Comparison papers between IDEXX and membrane filtration. Bob Schuster mentioned that Clean Ocean Actions has been working with NJDEP to do a comparison of IDEXX vs. membrane filtration for e. coli along the Navesink. Mark Ringenary also mentioned the NPS has done comparisons between IDEXX and colilert. Peter Linderoth said that Save the Sound has also done some comparisons and QC analyses with IDEXX. Darvene Adams mentioned that EPA will be discussing performing REMAP studies in 2019 with IEC and others. Roop Guha (NJDEP) asked whether the REMAP survey will reconsider the indices used. There was also interest in what the extent of the stations included would be. Darvene indicated that changes to the scope will depend on the funding available. The 2020 national coastal assessment is also coming up: they will assess 1000 sites across the country. Esther Nelson added in a comment after the meeting that it may be helpful and interesting to share results and/or links of documents of comparison discussion of IDEXX vs. membrane filtration, as a draft working document.

STATE MONITORING UPDATES

- New York State: Jason Fagel: HRECOS network may be expanding sensors in the harbor. Preliminary monitoring also in the planning stages to perform some intensive monitoring in Hudson maybe up to the Troy dam, scope would be similar to Harbor survey parameters and nutrients. IEC has funding in FY18 for continuous monitoring - proposing locations for HRECOS. Maybe a pilot level of monitoring this season
- NJDEP: Shellfish program (samples across Sandy Hook Bay). They also do remote sensing - monitoring for algae condition across Sandy Hook and Raritan, as well as the Barnegat Bay partnership. They also do flyovers to scout for fires and algal blooms. If sampling turns up high chlorophyll or if they see anything from the aircraft, they sample for HABs. Main object is to find toxins, using ELISA. Fly down whole coast of NJ. During summer months, it's 6 days a week. Starting in April, they try to go weekly. If toxins are found, they do a beach closure. More info on flyover available at: <http://njdep.rutgers.edu/aircraft/>

Continuous monitors are also deployed via buoys at Keyport and Keansburg. Data is available via website: <http://njdep.rutgers.edu/continuous/>

NJDEP is also using ABRAXIS ELISA method to analyze shellfish tissue for cyanotoxins. Roop Guha also mentioned that NJDEP is developing in-house tools to manage a database which is uploaded to the Rutgers website linked above.

- Connecticut: Out every other week sampling up to 45 sites looking at hypoxia in Long Island Sound. CTDEEP is working with UCONN to develop hypoxia volume estimates for Long Island Sound, and then generate it for previous years. Working with Mark Altabet (UMass) to collect samples for dissolved gas composition as well as a CUNY researcher studying the relationship between cDOM and phytoplankton communities. Penny Vlahos (UConn) is also working with CTDEEP looking at respiration rates and BOD in LIS. CTDEEP is also looking at the utility of adding pCO₂ and Alkalinity to the LIS monitoring program in order to characterize the carbonate system in LIS.
- NYCDEP: Their large boat is down, using small boats to complete surveys and may be borrowing the Jamaica Bay Resiliency Institute boat. No additional stations being added. They are also working with CUNY. CDOM/phytoplankton study. They have four probes or sensors that can go to new sites. They are solar powered so they need to be in the sun—there are operational difficulties when they are in shaded areas like tributaries. All EXO2s They have 4 more sensors but those are in fixed points—Harlem River (Roberto Clemente State Park), Upper Bay (Yankee Pier at Governor’s Island), Upper Bay (Redhook WPCP @ Brooklyn Navy Yard), Broad Channel. Plan to do some tests at Newtown Creek Plant and Jamaica Bay aeration facility. They are also experimenting with Fluidion to test for bacteria enterococcus, which only takes 10 hours and has the potential to report more “real-time” entero levels. Recently acquired the equipment, and the company is still working on getting EPA certification. One concern Beau mentioned with IDEXX is the lower detection level is 10 so geometric means are easily exceeded. Harbor Survey data is online at NYS Open Data. Not entirely user-friendly but is available. Multiple databases may have value, even if the info is duplicated as some databases may not be maintained or be discontinued. NYCDEP data is not entered into WQX. NYCDEP is also developing waterbody advisories that will be relayed through Notify NYC.
- NYCDOH: Monitor beaches (left, center, right and post the average on website. Raw data is available on NYC Open Data (<https://opendata.cityofnewyork.us/>) with about a 6 day delay. They are about 8 weeks out from beginning sampling. Still use standard plate (membrane filtration) method. They also have the capability to do harmful algae bloom surveys, but it's rare and not a big problem for NYC beaches They don't sample for it unless someone reports a bloom.
- HEP: "Stopping trash where it starts" program. Working with NGO’s in the Bronx/Harlem River Watershed as well as the Hackensack River Watershed. Data on floatables which might be able to connect to Bronx River Alliance’s boom and other floatable studies.
- Water Trail Association: Starts in May, weekly sampling (Thursdays) at 60-70 sites. Last year more than half of the sites ‘failed’ (Had bacteria levels higher than EPA standard). This may be related to the wet summer and also impacted by where volunteers are choosing to sample. They have a total between 60-70 sites. WTA has two goals – engage with NYCDEP’s open water long term control plan and support the opening of a bathing beach in upper harbor. How is water

quality/public access in harbor recreational areas going to be regulated? Which agency is responsible?

- Randall's Island: Limited capacity, work with Water Trail and professors and Baruch. Salt marsh on island, boat launch, seining and angling. Located at the Nexus of the East River/Harlem River/LIS. Unique location.
- Save the Sound: Bacteria sampling for pathogen indicator-Enterococcus (63 sites). 5th year. Looking into source tracking within NYC tributaries and communicates with NYCDEP, Westchester, CTDEEP regarding trackdowns.
- Unified Water Study: QAPP submitted. WQX entries should be done by end of month. 2019 there are two new groups for a total of 35 embayments participating in at least Tier 1 monitoring. Tier 2 monitoring: continuous monitoring and nutrient monitoring. Tier monitoring planned in 14 (of 35) embayments by 7 groups in 2019. They are also doing some bottom surveys and they invited states to come perform field audits. Consolidated lab analyses to be performed by IEC (ELAP certified lab). They did do an inter-laboratory comparison of chlorophyll a analyses by 3 labs last summer and found about an 8% RPD

Parameters and discussion

- Microplastic suggested as a parameter, but requires protocol. Interest in measuring as part of NCCA in 2020. Plastic-free Waters partnerships has workgroup that has looked at developing consistent methodologies.
- Brooklyn Bridge Park has very low DOs and that it might be a nice place to put a HRECOS probe
- Interest in continuous sensor inventory and validation.
- Zooplankton suggested as a parameter, along with a probe called Phytofind which can ID phytoplankton by species.
- Carbon/chlorophyll a ratio can vary by a factor of 10 and chlorophyll is commonly used as a surrogate for carbon.

IEC's Strategic Monitoring Plan

- EPA has been encouraging IEC to develop Strategic Monitoring Plan, to guide the use of 106 special monitoring funds-currently \$36,000 allocated to IEC annually. Similar to what is required by states. The monitoring plan will be a framework for selecting, designing and implementing monitoring initiatives. NY-NJ HEP has developed a monitoring plan, including regional monitoring recommendations part of its CCMP revision which aligns well with IEC's monitoring capabilities and can help inform IEC's strategic monitoring plan. IEC is looking for input/recommendations into what monitoring considerations should be incorporated into its strategic monitoring plan.

HEP's Environmental Monitoring Plan

- 3 parts: Map of monitoring activities, Storymap, Monitoring Recommendations. Utilized a series of surveys to list monitoring priorities and recommendations across HEP's themes of water quality, public access and stewardship, habitat and ecological health, port and maritime (toxics), community engagement. Top two monitoring recommendations/priorities:

- 1) Launch a near-shore pathogen monitoring program for regulatory compliance that provides high quality data to inform recreational water quality criteria.
- 2) Expand existing continuous monitoring program(s) for dissolved oxygen to include the Upper/Lower New York Bay and the Arthur Kill.

Regional water quality database

- Essential goal: one tool, used by many
- Link to GIS maps and databases: HEP, PEP, LISS, etc.
- What can we achieve and how?
- May have a role that's different to STORET, more user friendly, regional focus
- USGS Long Island WQDB utilizes Amazon web server with online entry form, pulls from WQX. Somewhat designed to be unique to LINAP.
- NJDEP is developing smaller "app" type databases for internal use.
- IEC spans three states so it's placed to accept data from three states.
- Would be good to include for citizen science
- Entering in non-qc'd data has problems because there are often errors and inconsistencies. Someone needs to QC data for minimum alignment with consistent units, coordinates, etc., how non-detects are handles, taxonomic identification inconsistencies with benthic data.
- A whole other meeting needed to deal with QC-ing and the complexities of the incoming data.
- Overall objectives of database? Map or just data. Who is the audience?
- Interest and support for follow up meeting/webinar about databases

Announcement: EPA advisories for water bodies. 45 water bodies in and around NY harbor.

Frequency of this meeting, any other focus for this meeting?