



Water Quality Work Group Meeting

February 29, 2024

Location: Zoom (online only)

Minutes

Attendees: Elizabeth Balladares (HEP, UWFP), Jessica Bonamusa (NYCDOHMH), Brett Branco (SRIJB/Brooklyn College, STAC), Elizabeth Butler (EPA), Lisa Congiu (NJDEP), Philip DeGaetano (IEC), Mick DeGraeve (NJHDG/GLEC), Jason Fagel (NYSDEC), Kate Finkelstein (USGS), Kathryn Flynn (EPA), Biswarup (Roop) Guha (NJDEP, NJ co-chair), Kristina Gutches (USGS), Siddartha Hayes (HRP), Jonathan Kennen (USGS), Tyler Linton (NJHDG/GLEC), Valeria Lzeppi (IEC), Gregory O'Mullan (Queens College CUNY, NY co-chair), Rosana Pedra Nobre (HRF/HEP), Rob Pirani (HRF/HEP), Pam Reilly (USGS), Emily Ruby (Riverkeeper), Candace Schermerhorn (NYSDEC), Dan Shapley (Riverkeeper), Isabelle Stinnette (HEP/HRF), Shino Tanikawa (NYC Soil & Water Conservation District), Makini Valentine-Turton (EPA), Ryan Van Manen (EPA), Judith Weis (Rutgers, STAC), Dale White (NJHDG/GLEC)

Next Meeting: Thursday, May 30th (in-person)

1. Overview of Agenda, Introductions, NY co-Chair, and Minutes Approval

Roop Guha opened the meeting and provided an overview of the agenda. Roop shared, with unanimous support by the work group, Gregory O'Mullan has been nominated as the NY co-chair with his nomination submitted for approval for the March Management Committee. December minutes were introduced and motioned for approval by Mick DeGraeve and seconded by Brett Branco.

Action: December 2023 minutes were approved.

Action: NY co-chair will be submitted to the Management Committee for approval in March.

2. Partner Updates

- IEC is hiring for seasonal interns to assist with the monitoring season, please share the posting with your networks: <https://www.iec-nynjct.org/join-our-team>.
- Dan Shapley flagged that New York State will be advancing several water quality standard rulemakings this year and to be on the lookout for those notifications as they get released. Dan added that Riverkeeper is also working in Westchester County to improve connections between smaller water systems to their wastewater treatment plants. Future campaigns will be released and shared by Riverkeeper as this work progresses.
- Roop Guha shared that EPA has approved NJDEP triannual review including Water Quality Standard updates to primary contact recreational criteria that follows EPA's 2012 RWQC, freshwater ammonia criteria, and water quality standards variance polices based on EPA recommendations. The updated standards are available here: https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_9b.pdf. Roop

also shared the work that NJDEP has been partnering with IEC, which will continue this year. IEC will continue the discrete monitoring for conventional parameters, toxics, metals, and bacteria at 23 sites in the shared waters and NJ waters of the estuary. IEC will also conduct continuous monitoring at four locations for dissolved oxygen, temperature, salinity, pH, turbidity, and chlorophyll-a this year.

- Siddhartha Hayes shared that Hudson River Park has several seasonal positions open and would appreciate this group sharing the postings for an Environmental Educator and Field Science Assistant. Details available here: <https://hudsonriverpark.org/about-us/work-with-us/careers/>. Siddhartha also added that Submerge, an annual interactive science festival to bring marine science to life around NYC's coastal waters, has been moved to the spring and will be held this year on May 17-18th. If you are interested in participating, please contact Siddhartha.
- Rosana Pedra Nobre shared that the Hudson River Foundation has opened applications for the Tibor T. Polgar Fellowships, which provide a summertime grant (\$5,500 for each fellowship) for students to conduct research on the Hudson River. The objectives of the program are to enhance opportunities for students to conduct scientific and public policy research with a specific focus on those who wish to study aspects of the Hudson River, its watershed, and the people who live there. Applications are due March 4th and details are available here: <https://www.hudsonriver.org/article/polgar-fellowship>.
- Pam Reilly shared USGS is improving the way that sample data are stored and served to the public. These changes will affect our back-end data management systems, web services, application programming interfaces (APIs), computational tools, and user interfaces for accessing data. Additional details are available here: <https://waterdata.usgs.gov/blog/changes-to-sample-data/>
- Jason Fagel shared that NYSDEC will be completing water quality standards in waves with the anticipation of advancing a Use Attainability Analysis. More details to come.
- Rob Pirani shared that the Public Access Work Group has been working with Chris Boyd and +Pool in exploring bringing swimming back to the Hudson. With Governor Hochul's announcement to support swimming, including nontraditional bathing beaches, HEP funded a report to look at the current guidelines and potential next steps for opening river and non-traditional bathing beaches in New York. The report was released shortly after the meeting and now available here: <https://www.hudsonriver.org/wp-content/uploads/2024/03/Review-Bathing-Beach-Regulatory-Framework-NY-State-and-NYC-Beaches.pdf>.

3. Vertical Profiles and Near Surface Water Quality Transects for Dissolved Oxygen Monitoring of the Arthur Kill

With funding from HEP, Kate Finkelstein updated the group on the results of a one-day synoptic monitoring assessment of dissolved oxygen (DO) in the Arthur Kill. Working with HEP and the two states, there were several questions that led to the development of the pilot program. The goal was to generate a baseline dataset to see the range of DO, locations where DO falls, and the time of day DO is more stressed. With two teams, one conducting transects of near-surface continuous water quality data through a flow-through system while the boat was moving taking samples every 5 seconds and one conducting vertical profiles of water-quality parameters at depth, the 24-hour period on the Arthur Kill was successful. The continuous data was collected using a ladder approach while the other team used a stratified random sampling approach to cover more river lengths over the 24-hour period.

Data was collected from September 7, 2023, at 8:30am to September 8, 2023, at 8:30am. Conditions leading up to the collection day were ideal, with high temperatures (in the 90s) and no measurable precipitation the entire week beforehand. A total of nine runs (full river length) were completed collecting 14,153 data points with approximately 95 miles covered. The vertical profiles completed 7 runs were 14,606 data points and 81 vertical profiles were taken. A stationary sonde was also placed for the entirety of study at Captain Carlsen Park dock located in Woodbridge on the southern end of the Arthur Kill.

Kate shared statistics of all the data collected, where lowest DO value was near surface at 3.23 mg/L but when comparing to all the data, the percentage of lower than 4.8 mg/L was found more frequently in the vertical profile data set. A virtual animation was shared as a fly through of the vertical profiles for DO. Shifting to water temperature, Goethals Bridge was consistently over 28 degrees Celsius for the first four runs of the day from 8am to 6:20pm and the mouth of the Rahway River was consistently above 28 degrees Celsius for the first five runs from 8am to 10:30pm. The highest observed pH was 8.17 and found slightly into the Elizabeth River; pH values under 7.30 were observed in Mill Creek, Fresh Kills, and Piles Creek. Overall, the data showed that water temperature decreases with depth (as expected) and the warmest temperatures were seen mid-river. Specific conductance was most variable at the southern end where the highest levels were also found near Raritan Bay (as expected as you near the ocean) and typically increases with depth. pH was variable at the southern end, with lower levels found in the mid-river and a little higher near the north and south ends. Turbidity was highest around point G but may have been an outlier. Excluding this point, turbidity is highest and more variable in the southern end. The data has been released through a USGS ScienceBase Data Release available here: <https://doi.org/10.5066/P9OBE13S> along with the web map that was shared here: <https://ny.water.usgs.gov/maps/arthurkillwaterquality/>.

Following the presentation, several questions were asked around validation of flow-through versus outside the craft data measurements. Kate indicated that she had done both flow-through and outside the craft previously. She indicated that the outside of the craft limits the speed of the boat and increases debris clogging into the system. Additional work has been done to compare the two methods and would share additional information with this group. Judith Weis shared some of her work from the 1970-80s in Piles Creek where there was significant industry and was surprised by the area's low DO. IEC had conducted a similar study in the 1950s in the Arthur Kill that would be an interesting comparison study. It would also be interesting to look at the tributaries where the data would look different.

Several members indicated this was an impressive amount of data collected/analysis in just a few months and were interested in exploring how the data compares to past studies and how the stationary sonde compared to other parts of the pilot. USGS NJWSC suggested that at Perth Amboy under the USGS Water Data for the Nation, a at depth sonde to a buoy could be placed in the waterway with permission for a longer period of record. Additionally, future work suggested included analyzing the data relationship with the tidal cycle, given that USGS has a tide sonde in Perth Amboy with data available here: <https://waterdata.usgs.gov/monitoring-location/01396060/#parameterCode=00010&period=P7D&showMedian=true>, tributary exploration to spatially see the impacts of the tributaries to the main stem, CSO impacts given the number of CSOs located along the Arthur Kill, and lastly further exploring what is causing the persistently high temperatures in certain areas of the Arthur Kill. A discussion around the stationary sonde was held and



USGS indicated adding the stationary sonde was a useful component for a QA/QC point of reference and the location was based on accessibility. Lastly, the web map is a useful tool to identify where to place a near-surface sonde to capture worse scenarios but difficult to engage landowners.

HEP and the members thanked Kate and the USGS NY and NJ team for their work and presentation. Greg O'Mullan ended the discussion highlighting how this work demonstrates the value in this type of mix of short-term detailed study linked to continuous DO to better interpret longer term discrete monitoring efforts.

Action: USGS to share information on the comparison of flow-through vs. outside the craft methods

Action: Recording of the presentation will be made available to the Work Group members by HEP.

4. HEP Action Agenda Revisions Process

Rob Pirani shared that HEP is in the process of revising its Action Agenda and laid out the tactics the program staff is working through. HEP is currently engaged in one-on-one meetings with core partners, reviewing how we have advanced the current Action Agenda which will be shared with the Management/Policy Committee in March, and look to engage the work groups on furthering discussions around actions. The goal will be to have a draft released for public comment during HEP's November 2024 Annual Conference. Elizabeth Balladares outlined how this process was developed and will be releasing an RfP for partners to work with HEP on community outreach meetings to develop the revision of the Action Agenda across sectors and programs. Elizabeth shared a preview of questions that HEP staff will be asking to this work group at its next meeting. Judith Weis suggested including that our estuary has been designated as a Hope Spot to increase the awareness of how far our estuary has come and a great reminder for community members to understand.

Action: Questions regarding the Action Agenda process should be directed to Elizabeth Balladares at eballadares@hudsonriver.org.

5. Water Quality Actions & Workplan FY 2025

Rosana Pedra Nobre provided an overview looking back at HEP's current Action Agenda and the progress that has been made thus far. Detailed in her presentation are a few highlights covering only the Water Quality goal across the five objectives led by HEP and its partners across the estuary. The remainder of the meeting was left for questions and discussions of where to advance the Action Agenda in developing HEP's FY 2025 Workplan. Roop Guha shared that this Work Group is a forum from which we can bring together different ideas and advance pilots like the Arthur Kill together and encouraged participants to engage and bring ideas forward to further advance the collective goals of the Action Agenda.

Action: Members are recommended to continue and share preliminary ideas with the HEP staff.