



Water Quality Work Group Meeting

November 9, 2021

Location: Zoom (online only)

Minutes

Attendees: Brett Branco (Brooklyn College/SRIJB, STAC, co-chair), Rob Buchanan (NYC Water Trail Association/BOP, CAC), Jennifer Cherrier (Brooklyn College-CUNY), Lisa Congiu (NJDEP, co-chair), Rosana Da Silva (HRF/HEP), Mick DeGraeve (NJHDG/GLEC), Jason Fagel (NYSDEC), Brent Gaylord (EPA), Biswarup (Roop) Guha (NJDEP), Siddhartha Hayes (HRP River Project), Wayne Jackson (EPA), Lingard Knutson (EPA), Michele Langa (NY/NJ Baykeeper, Hackensack Riverkeeper), Tom Laustsen (PVSC), Amanda Levy (NYCDOHMH), Jim Lodge (HRF), Keith Mahoney (NYCDEP), Rosella O'Connor (EPA), Rob Pirani (HRF/HEP), Evelyn Powers (IEC), Clay Sherman (NJDEP), Isabelle Stinnette (HEP, RWG), Shino Tanikawa (NYC Soil & Water Conservation District, CAC), Judy Weis (Rutgers, STAC)

Next Meeting: TBD

1) Overview of Agenda, Introductions, and Minutes Approval

Brett Branco opened the meeting and provided an overview of the agenda and introduced the August minutes. Minutes were motioned for approval by Mick DeGraeve and seconded by Siddhartha Hayes.

2) ecoWEIR Tech: a Nature-Based Approach for Integrated Water Management

Jennifer Cherrier provided a brief summary overview of the challenges faced by highly urbanized communities from climate change impacts, including increased precipitation (5-10% increase by 2050), intensity of storms, and sea level rise. As a result, pollutant loading is a concern for storm related surface runoff (in addition to CSOs) and subsurface inputs (groundwater discharges when mixed with septic systems). Loadings can lead to harmful algal blooms (HABs) which further impact drinking water supplies, beach closures, and fish kills. Several studies by Dr. Cherrier students were shared. Studies showed HABs consume sewage (taking up nitrogen and phosphorus) at a much faster rate and yield higher toxin rates when looking at *K. Brevis* sp. Keith Mahoney suggested future studies to consider looking at carbon. Dr. Cherrier added that we need to use all the tools in the toolbox as we start to think about integrated water management; the way water flows in and out, but also drinking water, grey water, groundwater, etc. Grey infrastructure (pipes/pumps/wastewater recovery facilities/storage) and green infrastructure each have their own limits. The challenge green infrastructure poses is that they are uncontained systems and that water can move through the urban karst and we really need a better understanding of subsurface movement of water.

ecoWEIR is a hybrid green infrastructure system from which the system is sealed to intercept surface and subsurface flows and controls the water retention time. A two layer system, it includes a well drained

aerobic layer (vegetation decomposes nutrients) and the water-saturated anaerobic layer which is right below the root systems (enhanced removal of nitrogen and phosphorus). Sensors can be placed to monitor in real time and a smart-sensored valve can be triggered to empty the system before a storm. Several research projects and papers have been written to look at the feasibility, scalability, and stormwater offset that these systems can provide in NYC. For example, identification of a 100 acres in Newtown Creek to implement ecoWEIR systems across sewershed (equivalent to 0.66% impervious surface) found that 1-acre intercepts and stores 120,000 gallons of stormwater and when looking at the full 100-acres of ecoWEIR systems can capture 2.5MG per storm event (represents ~10% of WWRF storm inflows). Greenhouse studies (A. Bolques) demonstrated 87% removal of nitrate and 100% removal of phosphate in planted systems. Looking at septic systems, replacing the drip irrigation with an ecoWEIR showed that 99% effluent was treated and the nitrate had reduced by 5x in comparison to the drip irrigation system (N. Rene). Mick DeGraeve asked if the studies used new soil or dealt with any legacy concentrations within the system. Dr. Cherrier clarified that legacy nitrogen and phosphorus were not found largely because of the two layered systems. Mick DeGraeve asked whether total suspended solids would eventually clog the system. Dr. Cherrier indicated suspended solids are largely captured earlier in the system, but yes, eventually it could and long term maintenance would need to be further studied.

A pilot project was installed in Prospect Park (R. LeVea, E. Poncyliusz, M. Dos Santos) with the goal to help remove phosphorus from the feed water in the urban lakes (municipal water supplies feed these lakes). Two sites were installed, a lawn and meadow site, and successful collaborators are seeking to install the systems at other locations like under the baseball fields, a Brooklyn College site, and seek to extend community outreach. Mick DeGraeve noted thinking about agriculture, the biggest source of sedimentation in the country from nutrients and DO, and how this concept may have some applications in agriculture. Dr. Cherrier agreed, a colleague has been working on this, but focusing the use of this system in largely urban and suburban areas.

3) Moving Forward on Water Quality

Rosana Da Silva updated A-2 language will be voted on at the next Management Committee meeting in December followed by adoption from the Policy Committee. Once adopted, we will begin to reference the new A-2 language on our agendas moving forward. From the last meeting, a Shared Waters Communication Task was shared for comments to this work group as well as to the Management Committee and the Citizen Advisory Committee. Work Group members were asked to review and provide any last comments to the requested collective changes. Rob Pirani and Evelyn Powers indicated the parenthesis in reference to IEC could be removed. Evelyn noted that IEC is a willing partner and expressed interest in IEC's involvement in this effort. Mick DeGraeve indicated for number 2, in explaining the past, frankly the answer is that it has always been done this way as the states did not collaborate as effectively during that time and likely not based on much science on why the standards are different. Brett Branco asked whether it would be fair to say during that time there was no one body to help coordinate the efforts between the two states. Mick agreed. Wayne Jackson added that there are similarities between standards between the states that are not too far off when in comparison, particularly when looking at NJ's Class SE2 and 3 and NY's Class SD and I. Rosana Da Silva shared some communications on shared

waters by the Delaware River Basin Commission and Save the Sound Study as part of the preliminary research. Shino Tanikawa indicated a report from Save the Sound would be worth reviewing: https://www.savethesound.org/wp-content/uploads/2020/10/2020_Save_the_Sound_LIS_Report_Card_FINAL.pdf.

Action: Rosana Da Silva to share the updated task list, and if any objections, please email Rosana and the co-chairs no later than November 30th.

4) Year In Review

NY-Chair Nominations: Brett Branco notified the work group that his role as NY co-Chair is coming to a close. Brett aided in the development of our bylaws in which we have two co-chairs that serve two-year terms. Brett welcomed anyone interested in taking on the role, to please email him and Rosana, and indicated that the role as chair is not too time consuming. Jim Lodge was nominated. Rosana Da Silva and Brett Branco will reach out to individuals to fill the role and a vote will be conducted via email.

Action: Nominations are being accepted for a NY co-chair. Votes will be conducted via email by the end of the year.

Frontiers of Monitoring, Modeling, and Management Series: Lisa Congiu indicated that this series started earlier this year with the intention of inviting guest speakers to highlight new efforts and research surrounding water quality. To reflect on this series and whether this should continue, we created a mentimeter poll to collect responses. Brett Branco noted that largely the work group identified the series as informative but on the next question indicated that they did not intend to integrate it into their organization's work. Siddhartha Hayes shared that while the presentations were informative and interesting about what is going on in the region, their projects are typically fixed and may not be able to put new ideas into practice right away.

Action: Work Group members are encouraged to take the survey to share their thoughts on the series by visiting <https://www.menti.com/p4ooqftkhw>.

Core Topics of Interest for 2022: Brett Branco opened the discussion by wanting to hear from members about what topics we should focus on for the coming year as we think about themes and any guest speakers we may want to bring to meetings. Brett shared he is interested in climate change and continuing to dig into LTCP/MS4 initiatives. Lisa Congiu added climate change certainly is an interest for NJDEP, and of personal interest are the history of the UAA and the tools or practical implications the process would provide. Shino Tanikawa shared an [article](#) and indicated interest in learning about the impacts on water quality from sea gates as well as understanding flood water quality (the water people have to wade through right after events such as Ida and not the runoff discharged into the harbor). Rob Pirani indicated climate change impacts whether it's impacts of the change itself or the proposed measures like the gates. USACE will be starting the HATS study if they haven't started already and the Foundation has funded research in this realm. Another thing to note, in the bipartisan infrastructure package, the National Estuary

Programs will receive a significant update in funding for next year. We'll have the opportunity within HEP to direct funding to answer questions such as climate change that the Work Group will have the opportunity to way in. Mick DeGraeve added interest in engaging the public on the issues beyond water quality, but also how the public can mitigate and improve the situation around climate change. Siddhartha Hayes agreed with Shino and is also interested in general coastal resiliency of NYC as a focus of the climate change subject. Evelyn Powers shared an interest to explore or highlight habitat restoration projects in the harbor and their impacts to water quality, perhaps a joint meeting between the both Water Quality and Restoration Work Groups.

Action: Work group members are encouraged to email the co-chairs regarding topics of interest to be explored next year.

5) NYSDEC Criteria Updates

Jason Fagel shared that on [October 6 NYSDEC proposed new guidance values for PFOA/PFOS/1,4-D](#), which include numeric interpretations of narrative toxic standards and can be used the same as water quality standards for effluent limits if adopted. The amendment, different from the MCLs, includes the human health guidance values (GVs) that will apply to class A and groundwater for the protection of drinking water along with the guidance values for aquatic life (acute and chronic). Due to insufficient toxicology research, an aquatic protection limit for PFOA has not been set at this time. Public comment period has been extended till December 6, 2021 and although there will not be a hearing, written comments can be submitted. Mick DeGraeve asked if these numbers will be used in permit limits. Jason indicated that once adopted, yes the GV's can be included in permit limits. Fish consumption values have not been included, and DEC is waiting on more information at this time. Shino Tanikawa expressed concern that the DOH Drinking water MCLs are so much higher than the proposed DEC values. Jason indicated the MCLs look at human health dose response (cancer risk) and that the DOH includes this but also considers treatability and cost. When DEC looks at concentration numbers, they look at it as low as possible to prevent exposure. Jason shared that, also on October 6, amendments to Class I and SD waters have also been adopted and effective as of October 6th. The [link](#) provides the full information on what has changed and about the adopted rules. Rob Buchanan asked if the geomean is based on samples taken by the NYCDEP at their normal locations. Could samples taken by other groups at other locations (but still in those waterbodies) also be considered in judging whether a waterbody was meeting the standard? Jason indicated that data in compliance with DOW Quality Assurance requirements can be considered for assessments against WQS <https://www.dec.ny.gov/chemical/23850.html>.

6) Partner Updates

Rosana Da Silva shared that the Harbor-Wide Water Quality Monitoring Report brochures have been published and available online: <https://www.hudsonriver.org/article/harborwidewq>. Rather than printing the full report, we will be printing copies of each of the 10 regional waterbody summaries. If anyone would like copies, please contact Rosana.



Amanda Levy shared that NYDOHMH has published this year's beach report online and is available here: <https://www1.nyc.gov/assets/doh/downloads/pdf/beach/beach-report-2021.pdf>

Siddhartha Hayes shared that Hudson River Park River Project has been working with experts to develop a dashboard that makes the collected environmental data accessible to broader audiences. Working with Cantina and Dr. Wade McGillis of Columbia University, the [new water quality model](#) uses actual and historic data to predict, in close to real time, occasions when water quality is degraded due to pollution events.

Shino Tanikawa asked if the Work Group has registered for the HEP Conference: <https://www.hudsonriver.org/article/hep-2021-conference>. Rosana Da Silva elaborated further on the conference which will take place the week of November 15th virtually and is free. The conference theme is on Waterway Stories: Water Quality, Access and Community.