



## Water Quality Work Group Meeting

October 8, 2020

Location: Zoom (online only)

### Minutes

**Attendees:** Greg Alber (PVSC/NJHDG), Marco Alebus (NJDEP), Linda Allen (NYSDEC/NEIWPC), Helena Andreyko (HRF), Pinar Balci (NYCDEP), Brett Branco (Brooklyn College-STAC, co-chair), Rob Buchanan (NYC Water Trail Association, CAC), Elizabeth Butler (EPA), Lisa Congiu (NJDEP), Rosana Da Silva (HEP), Mick DeGraeve (NJHDG/GLEC), Mike Dulong (Riverkeeper), Jason Fagel (NYSDEC), Brent Gaylord (EPA), Roop Guha (NJDEP, co-chair), Michael Hope (PVSC/NJHDG), Wayne Jackson (EPA), Tom Laustsen (PVSC/NJHDG), Amanda Levy (NYCDOH), Hildegaard Link (Rutgers), Keith Mahonney (NYCDEP), Joe Mannick (NJDEP), Rosella O'Connor (EPA), Neel Patel (NYCDOH), Rob Pirani (HEP), Evelyn Powers (IEC), Susan Rosenwinkel (NJDEP), Isabelle Stinnette (HEP, RWG), Stan Stephenson (EPA), Shino Tanikawa (NYC Soil & Water Conservation District, CAC), Ryan Waldron (NYSDEC), and Judy Weis (Rutgers-STAC)

#### **Next Meeting:** 2021

#### **1) Overview of Agenda, Introductions, and Minutes Approval**

Brett Branco provided an overview of the agenda focused on looking ahead for the future of water quality in the shared waters.

July 2020 minutes were motioned for approval by Shino Tanikawa and seconded by Mick DeGraeve. Minutes were approved. Brett Branco announced Lisa Congiu's nomination as NJ co-chair has been approved by the Management Committee during the September meeting. Lisa will begin her two-year term starting in 2021. We thanked Roop Guha for his leadership and commitment to this group as the first NJ co-chair; we look forward to his continued participation in the work group.

Rosana Da Silva informed the draft Harbor-Wide Water Quality Report will be released for the work group's review on October 15<sup>th</sup> with a 30-day review period.

#### **2) Managing Shared Waters - State Updates**

Linda Allen discussed the challenges that the city faces to address different pollution sources in its jurisdiction. This includes multiple waterbodies with multiple pollution sources, and tributaries are influenced more so by different pollution sources. Overall, it is a complex series of waterbodies and standards (all have a fecal coliform and DO criteria, while coastal waters have an enterococcus standard) between 14 WWTPs, 96 pump stations, 7,500 miles of sewers, and ~410 CSOs. Efforts to address water quality in NYC predates the CSO policy. To deal with nitrogen loadings, efforts in the 1990s began to look at secondary treatment and biological nutrient removal (BNR) specifically looking at Long Island Sound and Jamaica Bay. Long term monitoring is ongoing to look at past and present BNR improvements, this includes ambient water quality and at the WWTP. There is a decreasing trend for nitrogen in the East River. The state and city are also looking at DO, largely driven by Long Island Sound. DO monitoring is ongoing in the Long Island Sound and Jamaica Bay. A similar downward trend is seen for nitrogen loads in

Jamaica Bay. Data for the phase I of post-construction monitoring in Jamaica Bay has not been analyzed yet, but this will inform on the BNR upgrades to the WWTP and how effective these controls have been.

As for the CSO efforts, Linda explained that NYC has already gone through three phases of CSO planning and implementation which has gotten us to today. All 11 LTCPs have been submitted to DEC and will be implemented in various waterbodies through 2045. In order to understand the impacts, there has to be a specific waterbody monitoring which includes pre and post construction monitoring where data will be reported annually in post-construction monitoring reports. Attainment levels for fecal and DO over time look good to achieve standards per NYCDEP's models. Separate stormwater has been more of a recent effort where in 2015, individual MS4 SPDES permits have been issued under 5 year terms that include minimum control measures and monitoring stormwater embayments.

Susan Rosenwinkel discussed New Jersey's fractured ownership between WWTPs, sewer networks, and outfalls. There are 209 CSO outfalls and prior to the 2015 permit, 64 CSOs were able to be closed; these were obviously the easier ones to do and funding was provided for the embayments. Aggressive solid floatable controls were also completed where 98% of the CSOs were equipped with Solid Floatable Nets, but the 2% that do not have these nets are complicated with legal access. Unlike most cities in the county, New Jersey decided to go through a permit process rather than a CSO consent decree. Based on feedback received, NJDEP broke up the LTCPs into 5-year cycles to allow for permit holders to learn from the previous work. Getting municipalities to do a requirement that had not been done before was a heavy lift, but being able to create an interactive map is a way to be able to access data on the number of days discharged, floatables removed, precipitation, etc. per each CSO. All permittees in New Jersey are choosing the presumption approach and are going for an 85% capture (wet weather flow volume will be captured and treated). Of the seven required CSO control alternatives, the most popularly used alternatives thus far include green infrastructure, increased storage capacity in the collection system, STP expansion, and bypass of secondary treatment. There have been some early project wins, which included permittees working to begin implementing green infrastructure, underground detention basins, and upgrades at STPs that would increase wet weather capture. NJDEP is expecting water quality improvements from these earlier efforts as well as the implementation of the LTCP. The next CSO permit, phase two, will be issued next year.

### **3) Current Modeling Efforts**

Keith Mahoney discussed the post construction monitoring plan where the sampling program looks to validate and calibrate the water quality models; this includes water column and landside sampling. Focused on fecal, enterococcus, and DO each year to see how each tributary is doing. Once a CSO control is completed, NYCDEP implements a 5 to 10-year sampling program to report on how the water quality responds to the CSO control. This sampling program goes beyond the Harbor Survey and there is a significant effort to sample in tributaries, such as Newtown Creek, and consideration to additional samples to get a complete picture of the waterbody. Low and high tide sampling is also taken to be able to see the die off of the bacteria and calibrate the model. This helps NYCDEP get a statistical threshold value for each waterbody for each parameter. Once significant baseline projects are implemented from the LTCPs, post monitoring begins. Max/min, seasonal/monthly, and 95<sup>th</sup> percentiles are modeled and then the data is inputted to be able to look at how well the control is doing and if the model projection is running accurately to help predict future attainments.

### **4) Q&A Discussion of Shared Waters**

Rob Buchanan asked what the findings were from phase 1 of post-construction monitoring in Jamaica Bay and Brett Branco followed asking if a timeline could be shared regarding the data. Keith Mahoney informed that the monitoring is completed and NYCDEP will be submitting a report and data at the end of the month to NYSDEC. Linda Allen noted that she was unsure of the process in making the data public. Rob Buchanan stated that there was a significant investment here and it would be great to be able to publish a public-facing report on whether it is working. Brett Branco agreed and added that it would be great if the Science and Resilience Institute at Jamaica Bay and HEP could work with NYSDEC and NYCDEP on a joint workshop or symposium of the data as it is such a vast data set which would be helpful to Rob's point but also to researchers.

Rob Buchanan asked if the DO attainment in Newtown Creek is dependent on aeration? Keith Mahoney confirmed that the aeration significantly improves DO during the summer months which is really the driver for getting the waterbody in attainment to the waterbody standard. Roop Guha asked if DO deficits were caused by sediment oxygen demand.

Shino Tanikawa stated that given the projected water quality attainment with LTCPs in some tributaries, why do we not do a formal TMDL for some of these tributaries? Jason Fagel noted that a TMDL works best when there is no holistic approach to managing the source of pollution as it would place a budget on the parameter from all sources. With the LTCPs, NYSDEC and NYCDEP are managing all the sources (nothing is left on the table), so the TMDL is not necessarily going to do more than what is being done now.

Rob Buchanan asked to clarify waters that NYSDEC does not consider recreational and why, particularly how actual recreational use is figured in. In addition, Rob asked whether NYSDEC considers public notification to be part of the process and how could a model for every CSO be created to better inform the public? Jason Fagel noted that the best uses are outlined in the waterbody standards and criteria; he would not recommend other uses outside of the regulation. Keith Mahoney stated that it is difficult to time storms and bring the data in regarding each CSO. Instead, NYCDEP attempts to get the statistical correlations to project the CSO volume. The current model is difficult to run in real-time as there is still a lot of human-directed input that occurs. Currently, the model runs on a monthly basis for some water bodies. Keith hopes that as technology advances that NYCDEP could get there and should be the goal.

Judith Weis asked if the planned tunnel for Newtown Creek takes sea level rise into consideration and Brett Branco added how is future climate/rainfall predictions and sewage loading (land use and population) taken into account for the LTCPs? Keith Mahoney noted that NYCDEP did not factor this into the LTCP as it is focused on existing conditions. When the projects go to a design engineer, there are different guidelines that they include. For example, if the project lifetime is 100 years, then the design phase would use 2080 sea level to design the project. Linda Allen also noted that when NYSDEC and NYCDEP developed the baseline conditions, they had to determine the planning horizon and chose 2045. Sewer and population growth were considered and NYSDEC also had NYCDEP reevaluate the rainfall data for precipitation for a typical year; 2008 was selected and then a 2002-2011 timeline was used to capture more recent periods of rainfall for future predictions. Judith noted that when the sea level rises, it would impact the tunnel just based purely on how water naturally flows. Keith clarified that the tunnel would divert water to the tunnels where the water would be held to avoid flooding in the streets. A pumpout station would be needed to be able to push the flow out of the tunnels and a barrier would likely be also associated with the project.

Rob Pirani asked if both NY and NJ could talk about timelines for water quality and if Jamaica Bay could be a model waterbody for the rest of the estuary. Sue Rosenwinkel noted that it is too early to say for

New Jersey. Permittees will need to implement projects in order for post construction monitoring to occur to see how pathogen parameters are responding to controls. This will happen later along with the modeling. Brent Gaylord added he found it interesting that NY (demonstrative approach) and NJ (presumption approach) are using different approaches. When NYSDEC and NYCDEP made the decision to proceed with the demonstrative approach, what was the reason? Brent explained that with the presumption approach, the LTFCP focuses on 85% capture of wet weather flow. Keith Mahoney explained that NYCDEP had the models already and thought jumping into projects would make the most sense, therefore taking the demonstrative approach. Sue clarified that the permittees choose presumption and could see that if your baseline was set and models available, that a demonstrative approach would make sense. Marco Alebus also added that he was glad that the presumption was chosen by New Jersey permittees as a demonstrative approach for the Hudson River, for example, would not show that no additional measures would be needed without the standards being changed. Brent agreed and stated the standards are a mess and have not been revisited by the states in a long, long time. Brent is concerned that the investment efforts being made will not fully achieve the Clean Water Act if the standards are not being reviewed and using the best available science.

#### **5) NYC's Stormwater Rule**

Pinar Balci reported on the unified stormwater rule, something that NYCDEP has been considering and given the number of regulations felt that this was a good time to begin this process. With the City Council approval of Intro 1851, NYCDEP is looking at two administrative codes under this new rule; Chapter 31 and Chapter 19.1 to bring them together and focus on water quality by requiring treatment, detention, or removal of stormwater runoff, CSO volume, flow in the system, and conveyance on-site, aligning with the 2019 Climate Mobilization Act. The new rule will combine these two chapters to require on-site detention, a more stringent trigger of 20,000 SF of soil disturbance or 5,000 SF or more of impervious surface. A green infrastructure project would provide credits for the site, an incentive for developers to add this to their design. Many meetings with developers have led NYCDEP to work on a design manual for them to follow (developers prefer to go through the permit process once).

Pinar discussed, regardless of the site being in a CSO or MS4 area, retention is the primary goal. If the developer can prove that vegetated retention will not work on the site, then the NYCDEP would allow the developer to proceed to the next tier of projects. Filtration is only allowed in MS4 areas while detention is only allowed in the CSO area, but NYCDEP is allowing for a hybrid approach. NYCDEP will include potential constraints to projects in the design manual, sharing the department's experience with green infrastructure and a hierarchy checklist of other types of project. Under this change, NYCDEP has also streamlined equations for calculating total volume requirements, reducing the number from 30 to 5, and updated stormwater release rates. For example, stricter requirements in CSO areas require 200-250% more capture than the existing system. The next steps will be to release a draft rule for interagency review by the end of November and in the meantime, continue stakeholder outreach. NYCDEP hopes to release the draft rule in March of 2021 and full adoption by 2022.

Hildegard Link asked What developer groups have NYCDEP been discussing with? Rob Pirani added whether NYCDEP has been in communication with the Realtor Board. Pinar stated that NYCDEP has been doing more than two years of outreach, really, and has been discussing with realtors and developers to understand the pros and cons of this approach. The design manual has been a key request from each of those meetings to help developers expedite their projects while also providing flexibility for types of

projects. Hildegaard echoed that this is really exciting and excellent work, but fears that BOMA and REBNY will oppose this and the result will be a truncated and less effective set of rules.

## 6) Partner Updates

- Rob Buchanan shared that the Citizens' Water Quality Testing Program was able to monitor 40 sites for 18 weeks. Although a slow start due to COVID-19, the group is happy that they were able to collect this data, particularly in areas where known on-water recreation occurs.
- Isabelle Stinnette announced the HEP Conference will take place virtually from Nov 9-13. The week long virtual conference is on Reflecting our Community. HEP will be working on including the community lens and efforts to advance DEI shared goals. Day and evening sessions will be shared and will also include our standard topics on water quality, habitat, and public access.
- Brett Branco announced that Helen Polanco, who presented on microplastics to this group, has had her work accepted for publication in the Marine Pollution Bulletin. Brett will share this when it is published.
- Brett Branco shared that a faculty member at PACE is working with a graduate student looking at nitrogen loading, CSOs, and the role of green infrastructure. The goal of the research is to create a spatially explicit city-wide nitrogen budget for New York City waterways that outlines the major sources and sinks of nitrogen, quantifies the loading rates to rivers and streams, and evaluates the processing rates of green infrastructure. She is focused on the Newtown Creek right now. If anyone has data or knows where to access data pertaining to CSOs and their contributions to nitrogen loading, please contact Brett. Keith Mahoney mentioned that the student did reach out to him and is waiting to hear back from his department in how to proceed.
- Rosana Da Silva reminded everyone that the Harbor-Wide Water Quality Report will be released on October 15<sup>th</sup> for the work group's review.