Delaware River Basin Commission
Regulated Flow Advisory Committee
April 29, 2024

Meeting Summary

A meeting of the Regulated Flow Advisory Committee (RFAC) was held on April 29, 2024, via Zoom. Jennifer Garigliano was the chair for this meeting. The RFAC members introduced themselves. The summary from August 16, 2023, meeting was approved. Steve Dember noted that Joe Miri retired in January and passed away in March. Members of RFAC acknowledged and expressed appreciation for Joe's 40 years of significant contribution to the evolution of flow management in the Delaware River Basin. He will be missed.

Jen Garigliano (NYCDEP) summarized the release work at Cannonsville and Neversink

Between December 2023 through April 2024, NYC conducted a series of four shutdowns, beginning at Cannonsville. Line repairs were needed to replace two hydro cylinders. Remote operated vehicles were placed in hydro lines at Cannonsville and Neversink to assist with monitoring the repairs. They have been pulled out, and new hydro cylinders will be re-installed. NYC turned on releases after the shutdowns were completed. During the shutdown, NYDEC helped fisheries to ensure enough flow in the river was retained during the shutdown. Currently, NYC is not anticipating additional shutdowns. Information is available on NYC social media and their website.

Jen Garigliano (NYCDEP) presented on the delay of the Delaware Aqueduct Repair Project Update

Jennifer Garigliano provided an update on the status of the Delaware Aqueduct Repair. The Delaware Aqueduct is the longest tunnel in the world and NYC and provides approximately 500 of water per day to the City and eight counties along the aqueduct north of the city. In 1992, leaks were discovered in the aqueduct near Newburgh and Wawarsing, N.Y. The leaks are caused by faulted limestone and cracks in the pipe and the amount of water lost was estimated to be a combined 30 million gallons per day. NYC is undertaking a $1.1 Million project to repair the leaks by grouting in Warwarsing and building a by-pass tunnel to replace the leaking section in Newburgh. The replaced section will be decommissioned and left in place.

Many predecessor projects are required to complete the project because more than half of the City's water supply is conveyed through the aqueduct. The aqueduct must remain closed for approximately 9 months to grout the pipe and connect the by-pass. The predecessor projects are required to ensure that NYC can meet its demand from the rest of its system during that period. In addition, constant pumping will be required to remove the groundwater infiltration. The shutdown of the aqueduct was originally scheduled for 2022 but was postponed in both 2022 and 2023 due to difficulties encountered with a few of the predecessor projects. The known issues have been resolved project is scheduled to proceed in 2024.

While the aqueduct is closed for the project, the reservoirs will operate in accordance with the FFMP. The only difference from normal operation during the project is when water is diverted from the reservoirs. The Delaware system will be used heavily in June – September to maintain the storage in the

remainder of their water supply system. Then no water will be withdrawn during the 6 to 9-month period while the aqueduct is closed. The potential impacts in the Delaware Basin were evaluated in a full environmental impact review, conducted for the project. Jen presented the results of the analyses which demonstrated that the impacts of reservoir storage would be within the normal range of reservoir operations under the FFMP. She provided information about the waterfowl management program and explained that the project was unlikely to impact recreation in and near the reservoirs. Jen will provide another update on the project at a fall 2024 RFAC meeting, prior to closure of the aqueduct. Additional information and resources and links to related materials are available on the RFAC Aqueduct Resources website.

In response to questions, Jen noted that the abandoned tunnel will remain in place and will eventually be filled with groundwater. An inquiry regarding the material used for the tunnel "plugs" was made. Jen indicated she will ask and report back. Questions were answered about the Croton system capacity.

Amy Shallcross (DRBC) presented on the Delaware Aqueduct Shutdown Analysis

DRBC performed an evaluation of the potential effect operations during the shutdown would have on drought, conservation releases and flooding. An ensemble modeling approach was used to estimate the probability of different outcomes for operations during the shutdown compared to typical operations under the Flexible Flow Management Program. Each program was simulated with 90 years of data that represent a range of hydrologic conditions. Three different diversions were simulated to reflect the potential reservoir withdrawals for a dry, normal, and wet year.

The potential impacts are largely the result of the timing of withdrawals from the reservoirs and the resulting storage. NYC will rely heavily on the DRB system from June-September in preparation for the shutdown so water in the non-Delaware portion of their system can be preserved. However, the amount of water that NYC diverts from the Delaware River Basin is shifted from its normal seasonal pattern. During the shutdown, beginning in October and lasting 6-8 months, no water will be diverted from the reservoirs because the only way water leaves the reservoirs is through the release works or over the spillway. Reservoir storage will most likely be at their lowest levels in late September or early October because NYC intends to take more than normal amounts of water during the pre-shutdown period. The reservoirs are likely to refill sooner, mid-winter, because no water will be diverted from the reservoirs during the shutdown.

Drought-related impacts are unlikely. The combination of diversions and releases are not anticipated to decrease the combined storage by more than 30 percent, which is above the drought watch line. Even if the storage approaches or is below the drought watch line, the reservoirs will begin to refill immediately after the shutdown and would recover to above the drought watch line quickly.

Reservoir releases are dependent upon forecast available water, which considers the current storage, target storage on June 1, 2023 (full), the anticipated demand from today to May 31, and NWS predicted inflow from today until May 31. Although the demand will be high during the pre-shutdown period, water that would normally be used during October through the end of the shutdown can be used for

releases in advance and while the aqueduct is closed. It is anticipated that the conservation releases on Table 4G can be made during the pre-shutdown and aqueduct closure.

The risk of minor flooding is marginally increased, but the risk of moderate to major flooding is typical compared with normal operations. During the shutdown, less water will be used for releases and diversions than normal. The reservoirs are expected to fill sooner and thus be above the Conditional Seasonal Storage Objective, which allows for flood mitigation releases to maintain a void. The risk of moderate and major flooding is similar to the FFMP because voids only capture so much flood water.

The FFMP has the flexibility to manage the system leading up to and during the shutdown. Drought conditions are unlikely to occur as the result of the pre-shutdown diversions. Releases are likely to remain the same or better than they would be under the FFMP. During the shutdown, the risk of moderate to major flooding is largely unchanged compared to the FFMP, but the risk of minor flooding is slightly increased.

In response to a question, Amy explained that the limit of NYC diversion (800 mgd) is based on a running average beginning on June first and not an annual average. Although the daily diversion may be more than 800 mgd, the amount of water that New York City diverts from the reservoirs cannot cause the running average to exceed the total volume of water that they could have used up to that day of the year.

Amy McHugh (ODRM) presented an Update on Progress of FFMP 2017 Studies

Amy McHugh provided a status update on the FFMP 2017 studies. Five specific studies are outlined in the FFMP 2017 agreement to inform discussions of potential modifications to the agreement. An additional study was added when the agreement was amended in May of 2023. Work is underway or completed on four of the five studies: Detachment, NJ Diversion, Lower Basin Storage Optimization, and the Balancing Adjustment (which Amy summarized at the August 16, 2023 meeting). The Lower Basin Storage and NJ Diversion study scopes will be posted for comment when approved. The Balancing Adjustment Study was completed, and the draft report was posted on the ODRM and RFAC websites. The ERQ and new Synthesis Study have not yet been initiated.

A member requested to be informed when information or documents are posted on the ODRM website.

Public Comment Session

Responses to comments were summarized above.

For information about upcoming meetings, sign up for the DRBC list serves for notices on topics of interest to you.

Adjournment

The meeting concluded at 11:45 am.

Committee Members in attendance

Regulated Flow Advisory Committee
Meeting Summary

- Jen Garigliano, NYCDEP (chair)
- Stefanie Baxter, DGS
- Patty Murray, DNREC
- Hoss Liaghat, PADEP
- Ian Snook, NJDEP
- Kelly Anderson, PWD
- Steven Domber, NJDEP
- Brenan Tarrier, NYSDEC
- Amy McHugh, ODRM