UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA, Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, et al., Defendants.	CIVIL ACTION No. 85-0489-RGS
CONSERVATION LAW FOUNDATION OF NEW ENGLAND, INC., Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, Defendants.	CIVIL ACTION No. 83-1614-RGS

MWRA BIANNUAL COMPLIANCE AND
PROGRESS REPORT AS OF JUNE 14, 2019

The Massachusetts Water Resources Authority (the “Authority”) submits the following biannual compliance report for the period from December 18, 2018 to June 14, 2019, and supplementary compliance information in accordance with the Court's order of December 23, 1985, and subsequent orders of the Court.

I. Schedule Seven.

There were no scheduled activities for the past six-month period on the Court's Schedule Seven.

A. Progress Report.

1. Combined Sewer Overflow Program.

a. Performance Assessment of Long-Term CSO Control Plan.

On May 3, 2019, the Authority submitted to the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP") the second of a series of planned semiannual progress reports on the performance assessment of its $910 million approved Long-Term CSO Control Plan (the "LTCP"). A copy of the report is attached as Exhibit A. The Authority also submitted copies of the report to the Boston Water and Sewer Commission and the cities of Cambridge, Chelsea and Somerville (together, the "CSO Communities"), the Charles River Watershed Association, and the Mystic River Watershed Association, and posted it to its website. On May 31, 2019, the Authority hosted a public presentation on the report in the first of a series of annual public briefings on the progress of the performance assessment.

Like the first semiannual progress report issued by the Authority on November 30, 2018, the second semiannual report provides a description of the Authority's rainfall data collection program, its CSO metering program, and its

continued work in updating its hydraulic model and improving the model's calibration. The Authority expects that its consultant will complete calibrating the hydraulic model by the end of the summer of 2019. The Authority will then run the calibrated hydraulic model for the Typical Year[1] and include the model results in its third semiannual performance assessment report in November 2019. The Typical Year model run using the calibrated hydraulic model will give the Authority a better understanding of how the current Typical Year CSO discharge volumes and activations compare with the LTCP volume and activation goals at each of the remaining CSO outfalls.[2] It is important to note, however, that the Authority will continue to update the hydraulic model throughout the performance assessment period as new information is gathered and will continue to perform investigations where there are differences between the Typical Year model volume and activation numbers and the LTCP goals. Details on the assessment efforts, including the model calibration, are described below.

The second semiannual report includes a comparison of the characteristics of storms, including the number of storms, peak rainfall

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[1] The Typical Year is a series of storms (93 storms with total precipitation of 46.8 inches) developed by the Authority in 1992 from a 40-year rainfall record (1949-1987 plus 1992) and approved by EPA and DEP that has served as the basis for development, recommendation and approval of the Authority's LTCP, establishment of the Court-mandated levels of control, and assessment of system performance.

[2] In accordance with conditions in the current CSO variances for the Lower Charles River/Charles River Basin and the Alewife Brook/Upper Mystic River, MWRA submits, by April 30 each year, its estimates of CSO discharges for the previous calendar year, including number of activations, total duration, and total volume. On April 30, 2019, the Authority submitted estimates for 2018 using meter results. While discharge volumes were not measured – and therefore not reported – for every outfall, the Authority proposed to supplement its 2018 estimates with model predictions once the calibration of its hydraulic model is complete.

intensities, rainfall depths, and storm recurrence intervals (e.g., 3-month storm, 6-month storm, etc.) in the period of July 1, 2018 through December 31, 2018, to the characteristics of storms in the Typical Year. The second semiannual report builds on information presented in the first report by presenting rainfall data, rainfall analyses and estimated CSO discharges (activations and durations, and volumes where measured) at all 44 active CSO outfalls[3] based on data collected in that six-month period. The Authority estimated the CSO discharges from data it collected from more than 80 temporary overflow meters at 57 CSO regulators and more than two dozen existing CSO meters maintained by the Authority or the CSO Communities, including meters at the Authority's four CSO treatment facilities.

Rainfall and CSO discharges in 2018 differed from 2015 and 2016, when drought conditions persisted, and 2017 when rainfall and CSO discharges were more comparable to the Typical Year. The Authority measured 103 rainfall events in 2018 with total precipitation of approximately 54.3 inches, compared to the 93 storms and total rainfall of 46.8 inches in the Typical Year. Of the 103 storms in 2018, 40 storms had rainfall depths greater than 0.5 inch (compared to 30 storms in the Typical Year) and 14 storms had peak intensities greater than 0.4 inch per hour (compared to nine storms in the Typical Year). The comparison of rainfall and rainfall characteristics in 2018 (or any other year) to the Typical Year

[3] Of the original 84 CSO outfalls active in the 1980s and addressed by the Authority's CSO program, CSO discharges have been eliminated at 35 outfalls and have been effectively eliminated, i.e., prevented up to the 25-year storm, at the remaining five outfalls along the South Boston beaches.

helps to understand the measured CSO discharges in the context of the LTCP performance objectives.

The second semiannual report, like the first, describes the methodologies the Authority uses to quantify and validate the CSO discharges estimated from the meter data. In addition, it describes ongoing efforts that will continue over the next several months toward the planned submission of the third semiannual report in the fall of 2019. To that end, the Authority continues to collect rainfall, wastewater system and CSO data and analyze the data. The Authority also continues to update its hydraulic model with the results of the extensive regulator inspections it conducted in 2018 and with information it is collecting from supplemental site inspections and from CSO Community records. The Authority is also improving model calibration using wastewater system and CSO data it collected in the period April 15 2018, through September 20, 2018. The calibration includes adjusting hydrologic and hydraulic modeling parameters until the model is able to reasonably match meter measurements of depth and flow within the collection system and at the CSO regulators. The Authority plans to verify the calibration (the model's ability to match meter measurements), once complete, using data collected in the storms of October, November, and December 2018.

Additionally, the Authority is continuing to investigate a number of locations where the metered CSO discharge activations and/or volumes differ from the historical predictions of its hydraulic model and where meter data or metered discharges are otherwise questionable. The second semiannual report

identifies CSO outfalls and regulators where site-specific investigations are underway. With these investigations, the Authority intends to improve CSO discharge quantification and to build on the understanding of the operational and site conditions contributing to overflows at each location, potentially leading to adjustments that may improve performance.

In its December 2018 biannual compliance and progress report, the Authority explained that its CSO metering plan included temporary meters at 57 potentially active regulators compared to the 33 regulators it had originally planned to meter based on historical activation predictions. This change provided for metering at all active CSO outfalls and regulators regardless of earlier predicted activity. The Authority also explained that it would soon begin a process of selective meter removal. As a result of that process, on March 1, 2019, the Authority removed temporary meters from service at 21 of the 57 locations, where the Authority determined that adequate data had been collected for model calibration and that additional meter data would not be needed for other purposes. At the other 36 locations, meters will remain in place through June 2020. These meters will support water quality assessments and other requirements of the expected CSO variance extensions for the Lower Charles River and Alewife Brook/Upper Mystic River and the site-specific CSO regulator investigations and potential system adjustments that may improve performance and help meet the LTCP levels of control.

Future semiannual reports will continue to cover six-month data collection periods through the duration of the CSO performance assessment. The reports

will track and report the progress of the Authority's performance assessment activities and assess the quantity and quality of collected data. Once the Authority completes the updating of its hydraulic model and improved model calibration, the progress reports will also include comparisons of metered and model-predicted CSO discharges. The Court-ordered performance assessment of whether the Typical Year LTCP levels of CSO control has been met will be based on the full results of data collection, system evaluations, and model simulations that are included in the scope of the Authority's post-construction monitoring program.[4]

Lastly, as reported in the *Interim Update and Assented to Motion of the Massachusetts Water Resources Authority to Amend Schedule Seven with Respect to the Final Milestone Date* filed with the Court on June 4, 2019, over the past several months the Authority, EPA, and DEP have met on several occasions to discuss the water quality assessment scope of work, as well as the continuance of Water Quality Standards variances for the Lower Charles River/Charles River Basin and Alewife Brook/Upper Mystic River for a period beyond 2020. The parties have earnestly worked to resolve their differences and have reached agreement regarding the receiving water quality models that could be used and the process for extending the variances through August 31, 2024. The Court has

[4] The long-term levels of CSO control - as to frequency of CSO activation and volume of discharge in the Typical Year - at the CSO outfalls within or hydraulically connected to the Authority's sewer system are set forth in Exhibit "B" to the March 15, 2006, Second Stipulation, as amended on April 30, 2008 ("Second Stipulation").

scheduled a hearing on July 19 to give the parties an opportunity to provide the details of their agreement. On April 17, 2019, the Authority's Board of Directors authorized an amendment to the CSO Performance Assessment professional services contract to add, among other items, receiving water quality modeling, in lieu of a statistical analysis of sampling data, for the Lower Charles River/Charles River Basin and Alewife Brook/Upper Mystic River. Such amendment arose out of productive discussions between the Authority, EPA, and DEP regarding the Authority's approach for assessing the impacts of remaining CSOs on the water quality of the above waterbodies. The amendment also provides for the extended period of temporary CSO metering through June 2020 described above and for the Authority's eventual purchase of the meters installed at regulators associated with the Authority's outfalls, in order to allow for long term monitoring at these locations. In the meantime, the Authority continues to conduct water quality monitoring in the Lower Charles River/Charles River Basin and Alewife Brook/Upper Mystic River as part of the CSO performance assessment and in compliance with the current and anticipated future CSO variances to Water Quality Standards issued by DEP for these waterbodies.

Respectfully submitted,

/s/ Jonathan M. Ettinger
Jonathan M. Ettinger (BBO #552136)
Foley Hoag LLP
155 Seaport Boulevard
Boston, Massachusetts 02210
(617) 832-1000
jettinger@foleyhoag.com

Of Counsel:
Carolyn Francisco Murphy (BBO #567090)
General Counsel
Christopher L. John
Senior Staff Counsel
Massachusetts Water Resources Authority
100 First Avenue
Boston, Massachusetts 02129
(617) 242-6000

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of this document, which was filed via the Court's ECF system, will be sent electronically by the ECF system to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non-registered participants on June 14, 2019.

/s/ Jonathan M. Ettinger
Jonathan M. Ettinger (BBO #552136)
Jettinger@foleyhoag.com

Dated: June 14, 2019