Combined Sewer Overflows (CSOs)

The MWRA recently filed its Annual Report on the CSO Long-Term Control Plan (LTCP). In it, the MWRA notes that:

> *This report is the second of three Annual Reports as required by the Court's compliance order which – extends until December 2024 to complete the time for, among other things, identified projects and further – evaluating alternatives to further reduce CSOs at the sixteen outfalls that did not meet the LTCP goals by December 31, 2021. As part of this extension, MWRA is required to provide estimates of combined sewer overflow (CSO) discharges in its service area during calendar year 2022.*

The report provides information on the performance of the Massachusetts Water Resources Authority's (MWRA's) combined sewer overflow (CSO) control program during calendar year 2022. The report includes estimates of CSO discharges, rainfall data, and a comparison of CSO performance to the Long-Term Control Plan (LTCP) levels of control.

The LTCP is a plan that was developed by the MWRA to reduce the number and volume of CSO discharges into the Boston Harbor and its tributaries. The plan was completed in 2015 and included 35 individual projects designed to capture and treat combined flows before discharging into the metropolitan Boston receiving waters or to separate combined systems to substantially reduce stormwater from entering the sewer system. The MWRA began its post-construction performance assessment in 2017, as required, to assess if the program had met the CSO and water quality goals as established by the 2006 second stipulated agreement under the Boston Harbor Case. The Final CSO Post Construction Performance Assessment was submitted in December 2021, which documented MWRA's substantial accomplishments. However 16 of the original 86 CSOs did not meet their goals. MWRA with the agreement from MassDEP and EPA and the court parties, requested and were granted a 3-year extension to further investigate and improve the performance of these remaining 16 sites. This annual report is the 2nd of 3 annual reports required by the court as part of the 3-year extension.

In general, the report finds that the MWRA's CSO control program is performing well overall in comparison with the LTCP Goals. Although not a direct measure of performance, given the year-to-year variation in rainfall, the number and total volume of CSOs discharging in 2022 was significantly lower than those in previous years.

The report reviews the rainfall data collected in 2022 and compares this data to the Typical Year using as the agreed upon measuring stick to determine compliance with the LTCP goals. In summary, 2022 was shown to be a dry year, with much fewer large/intense rain events. Measured and modeled CSO volumes in 2022 were noted to be only a little more than one fourth of those predicted by the model for the typical year.

The report reviews adjustments made to MWRA's hydraulic model to reflect improvements by MWRA and its CSO communities during calendar year 2022, as well as adjustments to reflect new system information acquired during the year. These modeling adjustments showed CSO improvements resulting from planned projects that closes an additional CSO and brought other CSOs into compliance with the LTCP goals. New modeling information also resulted in reductions at several CSOs, bringing them closer to their LTCP goals.

With the updated model, as done for many years, MWRA performed model simulations using the typical year to assess performance against the LTCP goals of activation frequency and volume for the 86 CSOs defined in the second stipulation. Of the 86 CSOs:

- 72 of the CSOs meet or materially meet their LTCP goals (BOS003 & BOS014 now meet in 2022)
- Of these 72 CSOs, 41 are closed or effectively closed (includes 5 South Boston CSOs) (BOS005 closed by BWSC in 2022), 11 more than required in second stipulated agreement.
- 14 CSOs are now shown to fall short of their LTCP activation frequency and/or volume goals (two less than last year with BOS003 and BOS014 now meeting)
- The total CSO discharge is now 8 MG below the LTCP target of 404 MG (2022 Total CSO Volume 396 MG)

Overall, the report finds that the MWRA's CSO control program and continued work, has and is making significant progress towards reducing CSO discharges. The report clearly shows MWRA and the CSO communities' efforts to further reduce CSOs in locations where it fell a little short of the LTCP levels of control. Including projects to advance 8 additional CSOs towards meeting their goals by the end of 2024, when the supplemental report to the court will be made, for the court's consideration. As well as working towards completing the alternative investigation and cost development of six challenging CSOs that will be used to assess the cost/benefit of further CSO abatement projects at these locations to satisfy the LTCP goals.

The MWRA is committed to reducing CSO discharges and protecting the Boston Harbor and its tributaries. The report provides a valuable overview of the MWRA's CSO control efforts and its progress in the past years, as well as improvements expected in the next few years.

Of particular concern to the Advisory Board are recent developments in the Commonwealth's surrounding CSOs. There have been a number of recent discussions with advocacy groups pushing for additional CSO work and commitments to complete elimination of CSOs. Furthermore, House Bill H.886 was recently filed: "**An Act Relative to Combined Sewer Overflows.**"

This proposed legislation would define terms related to combined sewer systems and overflows and prohibit untreated combined sewer overflows during a 25-year 24-hour storm event or smaller storms in the MWRA sewer service areas after January 1, 2035. It also directs the Massachusetts Department of Environmental Protection (MassDEP) to adopt regulations to implement this law within 18 months. This means that the Massachusetts Water Resources Authority will need to take steps to prevent untreated combined sewer overflows from occurring after that date. These regulations would likely require the Massachusetts Water Resources Authority to make substantial improvements to its sewer system, such as making large investments to increase the pumping and treatment capacity of its existing CSO and Deer Island Treatment facility, installing new pipes or upgrading existing conveyance pipes, adding substantial storage facilities, or funding further separation efforts. Given the expected substantial CSO volume in a 25-yr 24-hour storm event (note: the largest storm in the typical year is approximately a 2-yr 24-hour storm), these required modifications would be monumental.

Going even further than the proposed legislation, there have been some advocacy groups that have proposed a complete elimination of CSOs. The MWRA has already spent close to $1 billion on the LTCP. As a result of this spending, the MWRA has achieved a total treated and untreated CSO volume of 396 MG exceeding the LTCP's total volume goal of 404 MG. By the end of 2022, 32 outfalls meet or materially meet the LTCP goals. Projects are underway to meet the LTCP goals at 8 of the remaining 14 outfalls currently not meeting their targets. Investigations continue for the remaining 6 outfalls, with progress towards developing alternatives and costs to assess if further CSO projects are commensurate with the minimal water quality benefits expected. These further improvements by MWRA as well as additional work underway by its member CSO communities (sewer separation in all four communities) in the coming years will substantially further reduce CSO discharges.

The Advisory Board agrees that complete elimination of CSOs is a worthy goal; however, in our role as advocates for the communities and ratepayers, we cannot support such a proposal. The MWRA estimates that achieving area-wide CSO elimination by separating all remaining combined areas (with 80% inflow removal) would cost approximately $24.7 billion. The actual cost of sewer separation work is estimated at $5.4 billion, with the majority of the expenses stemming from the need to expand the system's capacity for transporting and treating larger flow rates during storm events, which amounts to $19.4 billion. It is important to note that the increased flows after sewer separation are attributed to a realistic estimate that only 80% of inflow can be removed. While the complete removal of CSOs would undoubtedly yield environmental benefits, the cost-benefit analysis does not favor such a measure, and the impact on ratepayers would be overwhelming.

Comment: Advisory Board, guided by its long-standing principle of "environmentally sound and ratepayer equitable," cannot endorse a plan that places a significant financial burden on ratepayers despite its environmental advantages – whether in the form of the proposed legislation's terms or the complete elimination of CSOs.

Perhaps the best way to summarize the Advisory Board's arguments is to quote Judge Stearns in the compliance order recently issued by Judge Stearns as it relates to the Annual Report submitted by MWRA for 2022:

> *I recognize, as the MWRA posits, that there may come a point of diminishing return at which spending an additional $100 for a $1 incremental benefit would make no sense from a public policy view. In the words of a distinguished former Justice: "The . . . reason that it matters whether the nation spends too much to buy a little extra safety is that the resources available to combat health risks are not limitless." Stephen Breyer, Breaking the Vicious Circle: Toward Effective Risk Regulation 18 (1993)*
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> *- The Honorable Richard G. Stearns*