



**United States Environmental Protection Agency
Region 1 – EPA New England
5 Post Office Square – Suite 100
Boston, MA 02109-3912**

Sent Via Email (dated as indicated in electronic signature)

Mr. Brian Kubaska, P.E.
Assistant Director, Engineering
MWRA, Wastewater O&M
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

Re: MWRA Updated CSO Control Plan – Draft Scope of Work and Schedule

Dear Mr. Kubaska:

The United States Environmental Protection Agency (“EPA”) has received and reviewed the “Updated CSO Control Plan - Scope of Work and Schedule” submitted by the Massachusetts Water Resources Authority (“MWRA”) in accordance with the Variance for Combined Sewer Overflow (“CSO”) Discharges to Alewife Brook/Upper Mystic River Basin and the Variance for Combined Sewer Overflow Discharges to the Charles River Basin (collectively referred to as the “Variance” or “Variances”).

EPA has reviewed the Updated Scope of Work and appreciates the thought and effort MWRA has put into the document. EPA has reviewed the separate but related Updated Scopes of Work produced by the City of Cambridge, MA and the City of Somerville, MA and will be sharing respective comments with all parties in an effort to encourage consistency amongst all parties.

If you have questions regarding these comments, please contact Todd Borci at 617-918-1358 or borci.todd@epa.gov.

Sincerely,

Todd J. Borci
Enforcement Officer
Environmental Compliance Assurance Division
US EPA Region 1

cc: David Coppes, MWRA
Richard Raiche, City of Somerville
Kathy Watkins, City of Cambridge
Eric Worrall, MassDEP
Kevin Brander, MassDEP
Michael Wagner/EPA
Jeff Kopf/EPA

Attachment

Section 2.2 - Typical Year/Climate Change Analysis

Continued collaboration between the MWRA, the City of Somerville, and the City of Cambridge in developing a revised “typical year” that incorporates future predicted precipitation events with respect to both overall storm size and storm intensity is warranted. As noted by recent National Oceanic and Atmospheric Association (“NOAA”) guidance¹ and peer-reviewed studies², precipitation events have increased in both event intensity and overall total precipitation, and acutely so here in the Northeast. These increased precipitation events, in both frequency and intensity, have already had a significant impact on area infrastructure and therefore must be incorporated into a revised typical year. EPA believes that an assessment incorporating the past 20 to 25 years of precipitation data, in addition to future projections regarding climate change impacts on storm intensity and precipitation volumes (up to certain set points such as anticipated conditions in 2050 or 2070) must be completed for this stage of CSO control design. EPA also expects MWRA to look at select precipitation events that coincide with high tide and how such events will be influenced by current climate change projections for sea level rise. EPA notes that such events have occurred several times over the past few years, and each has had an acute impact on respective CSO and SSO discharge events. EPA encourages MWRA to collaborate with the City of Cambridge, as it has conducted detailed analyses of precipitation events, storm surge, and operation of the Amelia Earhart Dam to determine flooding scenarios that will impact concurrent CSO discharges, as well as with the City of Somerville as it has looked at detailed climate change scenarios and how they affect Somerville. Such an approach would be consistent with both Somerville’s “Somerville Climate Forward” initiative³, as well as with Cambridge’s “Resilient Cambridge”⁴ and “Climate Change Preparedness and Resilience”⁵ efforts. EPA encourages MWRA to collaborate with Cambridge and Somerville to propose an appropriate “typical year” design scheme for further discussion with EPA and MassDEP. We know that our wastewater infrastructure will need to evolve over time as the climate continues to change; decisions about CSO control alternatives need to take this into account.

Section 2.6/2.7

EPA notes the Cities of Somerville and Cambridge will incorporate Phosphorous, TSS, and other pollutants of concern into their baseline pollutant loading evaluation. EPA encourages this approach, and would expect MWRA to coordinate with the Cities in their approach.

Section 4 – Alternatives Development and Evaluation

EPA notes the framework proposed by MWRA does not contain a significant level of detail as far as specific alternatives that will be evaluated. This effort is meant to be a forward-looking evaluation of additional CSO controls that may be achieved after the current Federal Court Order is satisfied for those CSO discharges within the Variance waters. EPA’s expectation is that

¹ https://www.weather.gov/media/owp/oh/hdsc/docs/Atlas14_Volume10.pdf

² https://journals.ametsoc.org/view/journals/hydr/18/6/jhm-d-16-0195_1.xml

³ <https://www.somervillema.gov/departments/programs/somerville-climate-forward>

⁴ <https://www.cambridgema.gov/CDD/Projects/Climate/climatechangeresilienceandadaptation>

⁵ https://www.cambridgema.gov/~media/Files/CDD/Climate/CCPR/ccprpreparednesshandbook_cambridge.pdf

MWRA, as the regional sewer authority, take a leadership role for the combined efforts of Somerville, Cambridge, and other interconnected member communities in the development of alternatives to reduce or eliminate CSO discharges to the Variance waters.

EPA strongly encourages MWRA, along with the City of Cambridge and the City of Somerville, to undertake a holistic evaluation regarding CSO discharges, flooding, and Inflow and Infiltration (“I/I”) within not only the Variance communities but also the upstream communities. The significant levels of I/I in those upstream communities create and compound the downstream CSO issues, particularly in the Alewife/Lower Mystic River.

The ultimate solution to these issues will involve not only separation of combined sanitary sewer systems or off-line storage of CSO volume, but also the removal of significant amounts of stormwater and groundwater that enter the sanitary sewers through direct connections, cracks, and other defects. Removal of I/I, which makes up a significant source of sanitary flows for many communities⁶, will also result in a significant amount of additional stormwater that will need to be managed to prevent flooding and other issues. The channelized nature of Alewife Brook, as well as the amount of sediment in the Alewife constructed channel that takes up flood storage capacity (this sediment volume was estimated by USGS in 2005 to take up approximately 0.5 million cubic feet⁷), exacerbates the flooding issue. MWRA has the technical staff and state public authority status to take a leadership role in convening additional agencies such as the Massachusetts Department of Conservation and Recreation (owner of the Alewife Brook and Mystic River Reservations) to start to identify potential projects.

EPA expects MWRA to closely examine wide-ranging projects, including those not in the immediate Alewife, Mystic, or Charles River areas, to include upstream storage and pump back facilities, upstream flow diversion/balancing, and emerging opportunities such as the Revere/Boston Water and Sewer Commission (“BWSC”) discussions on a new pump station and connection downstream of the Caruso Pump Station. Such a large regional project may have significant positive impact on not only those communities but regional north system capacity issues as well.

EPA would also encourage MWRA to include initial alternatives that combine major facility upgrades, such as expansion or rebuilding of the Caruso Pump Station. The Caruso Pump Station, the key connection point for the MWRA North System, is known to be a flow restriction in significant storm events. An examination of what size and type of events cause capacity issues, the magnitude of those capacity issues, and potential solutions and their effect on upstream CSO events would seem necessary (and MWRA may be able to use past work such as the draft North System Hydraulic Study). Even if such alternatives are excluded from further detailed study, initial estimates of these costs will also provide perspective of which regional alternatives are truly the most cost-effective. In addition, examination of which facilities are nearing the end of their expected life cycle may provide opportunities for expansion of system capacity as life cycle upgrades are implemented.

⁶ <https://www.mwra.com/harbor/pdf/infinf.pdf>

⁷ Breault, R.F., Durant, J.L., and Robbat, Albert, Jr., 2005, Sediment quality of lakes, rivers, and estuaries in the Mystic River Basin, eastern Massachusetts, 2001–03: U.S. Geological Survey Scientific Investigations Report 2005-5191, 110 p.

Finally, EPA is asking MWRA re-interpret its Regional Infiltration/Inflow Reduction Plan and its work under the I/I Task Force. These efforts were a significant undertaking by MWRA and numerous stakeholders in the late 1990s and early 2000s. Much has been learned since that undertaking - relining technologies and costs, a better understanding of the necessity of concurrent building lateral relining, and a much better understanding of MWRA and community infrastructure performance over time. MWRA's I/I Loan Program is a national model, and MWRA should leverage what we have learned with these resources into providing more specific recommendations and technical support within its member communities. MWRA should create the technical capacity to serve as a technical support clearinghouse on best practices, assist its member communities in identifying those sources of I/I that contribute to downstream capacity issues and local SSO issues, and leverage some portion of its I/I Loan Program to address those specific issues.

EPA will continue to work with MWRA, Cambridge, and Somerville, as well as all the MWRA member communities upstream of the Alewife/Lower Mystic area to address the collective issues that directly impact CSO volume discharged.

Section 5. Public Participation

EPA appreciates the detail MWRA has provided regarding how to engage the public during this process. EPA would expect MWRA to hold public meetings designed to solicit feedback from the public on proposals that are still in the draft stage, such that appropriate and meaningful feedback can be incorporated into the proposal prior to finalization. EPA routinely hears from stakeholders that they do not want to attend a public meeting where they are presented with a final plan with no opportunity for feedback. Based on stakeholder feedback to date, it appears the public would like an opportunity to weigh in on both the updated "typical year" and to have input on the early stages of CSO control alternatives development, before a sub-set is selected for detailed analysis. EPA is willing to discuss with MWRA, MassDEP, and other interested and related parties how to achieve the appropriate level of meaningful public engagement.

Section 6 – Affordability Analysis

EPA encourages MWRA to ensure that the cost/benefit analysis will capture any reductions in loadings of phosphorous and any other pollutants of concern that will be evaluated in Sub-Task 4.1(c), as those reductions will reduce the cost of compliance with the Mystic River Alternative TMDL as well as any potential future additional permitting costs.

EPA expects MWRA to explore a comprehensive financial capability analysis in accordance with existing EPA guidance and policies^{8,9}, and to work with its member communities to consider alternative or tiered rate structures to avoid adverse impacts on lower income residents.

Section 7. Recommended Plan and Schedule

EPA requests MWRA incorporate their proposed schedule into an appropriate chart, such as was provided by Somerville and Cambridge, for tracking and comparison of timelines.

⁸ https://www.epa.gov/sites/default/files/2015-10/documents/csofc_0.pdf

⁹ https://www.epa.gov/sites/default/files/2015-10/documents/municipal_fca_framework_0.pdf