



July 26, 2019

By Email (DEP.Talks@state.ma.us)

MassDEP
Regulatory Comment Box
1 Winter Street, 5th floor
Boston, MA 02108

Re: Comments of Charles River Watershed Association on Tentative Determination to Adopt a Variance for CSO Discharges to Lower Charles River/Charles River Basin

Dear Reviewers:

Charles River Watershed Association (“CRWA”) is one of the country’s oldest watershed organizations, having been formed in 1965 in response to public concern about the declining condition of the Charles River. Our mission is to protect, restore and enhance the river and its watershed through science, advocacy and the law. CRWA develops science-based strategies to increase resilience, protect public health, and promote environmental equity as we confront a changing climate. CRWA has reviewed the Massachusetts Department of Environmental Protection’s (“MassDEP’s”) Tentative Determination to Adopt a Variance for Combined Sewer Overflow Discharges to Lower Charles River/Charles River Basin and submits the following comments.

We acknowledge the work of the Massachusetts Water Resources Authority (“MWRA”) and the City of Cambridge in implementing the Long-Term Combined Sewer Overflow Control Plan (“LTCP”) and, more importantly, improving conditions in the Charles River. CRWA is proud to have been a partner in this process and to continue to work with MWRA, MassDEP and our watershed communities to meet the goal of a clean, healthy Charles River that meets Class B water quality standards and existing and designated uses.

CRWA conditionally supports MassDEP’s decision to adopt the proposed new five-year variance from Class B water quality standards for bacteria, solids, color and turbidity, and taste and odor for the Lower Charles River/Charles River Basin (the “Variance”). As the Tentative Determination states, the Variance authorizes limited CSO discharges from MWRA and the City of Cambridge outfalls to the Charles River during certain wet weather events, subject to specific conditions. The Variance requires MWRA to take some meaningful steps to evaluate further reduction of CSO discharges to the Lower Charles River/Charles River Basin. Due to the extensive use and enjoyment of the Charles River as a beloved recreational water body and an important natural habitat in an urban area, the ultimate goal should be nothing less than complete or functional elimination of the CSO discharges to the Lower Charles River/Charles River Basin.

While CRWA supports the Variance subject to our specific comments below, we do have significant concerns about the transparency of the process by which the Variance was developed. For example, two critical work plans required to be implemented by the Variance—the Receiving Water Model Workplan dated May 24, 2019, and the June 6, 2019 work plan entitled *Receiving Water Modeling of Upper Mystic River/Alewife Brook and Charles River Basin: Work Plan for Stormwater and Combined Sewer Overflow Monitoring, 2019-2020* (“Water Quality Sampling Program Workplan”)—apparently were reviewed and approved prior to the issuance of the Tentative Determination, without any public or CRWA involvement. Moreover, neither of these work plans was made available to the public, on the MassDEP website or otherwise, with the Tentative Determination and accompanying Fact Sheet. They were also not provided directly to CRWA despite our longstanding and well-known general interest in Charles River water quality and particular interest in MWRA’s efforts to control and eliminate CSO discharges to the river in accordance with the orders of the United States District Court for the District of Massachusetts, Civil Action Nos. 85-0489-MA and 83-1614-MA, including amended Schedule Seven, dated October 19, 2011 (the “Federal Court Order”).

Moving forward, we request that MWRA be required to increase transparency around its work required by the Variance and the Federal Court Order. Specifically, we request that MWRA be required to provide for more public involvement, review and comment through the use of technical advisory committees, additional public meetings, direct communication with CRWA (and our counterpart in the Mystic River, MyRWA) and independent third-party review of key draft and proposed final documents. CRWA also requests further information about the timeline for each of the analyses and evaluations that MWRA is and will be conducting as required by the Variance, and additional details regarding how these analyses and evaluations will inform one another.¹

CRWA provides the following detailed comments on the Tentative Determination:

1. Stated Basis for the Variance. MassDEP states in its Tentative Determination (on Page 1) that it is granting the Variance “based on its determination . . . that implementation of more stringent CSO controls to meet the underlying designated use and criteria at this time would result in substantial and widespread social and economic impact . . .” It further states, in the Fact Sheet for the Tentative Determination (on Page 12) that this “substantial and widespread social and economic impact” determination is based on an economic analysis, submitted by MWRA on May 24, 2019, that documents “an estimated cost of \$18.6 billion to completely eliminate CSO discharges.” It appears that this economic analysis consists solely of an updating of the 2005 cost estimates to account for inflation, and lacks any evaluation of whether CSO controls short of “system-wide elimination” would achieve Class B water quality standards in the Lower Charles River/Charles River Basin, and if so, what the cost of this level of control would be.

2. Level of Required CSO Control during Variance. The statement that “CSO discharges shall be limited to those set forth in attached Exhibit B, with allowances for any conditions that

¹ For example, it is not clear what the relationship is between the CSO Optimization Report and the Updated CSO Control Plan. Additionally, the schedule for the Updated Control Plan is not clear.

exceed Typical Year conditions” is vague to the point of unenforceability, because the Variance does not define or delineate what conditions or storm event characteristics would qualify as “conditions that exceed Typical Year conditions.” It is not clear if these would include storm volume, annual volume, storm intensity, antecedent conditions or all such characteristics. Moreover, it is not clear whether an individual storm’s “exceedance” of a single “Typical Year” characteristic but not others would be allowed or a violation of the Variance.

3. Water Quality Monitoring/Modeling. CRWA supports both the expansion of MWRA’s water quality monitoring program as required by the Variance, and the receiving water quality model requirement. We understand why the receiving water quality model will focus on bacteria, but we request that MWRA also look at nutrient impacts—particularly phosphorus—in the model, given that the Charles River is subject to two nutrient Total Maximum Daily Loads (“TMDLs”), and CSOs have a wasteload allocation in the Lower Charles Nutrient TMDL.

We provide the following comments on the May 24, 2019 Receiving Water Model Work Plan. First, MWRA should provide an opportunity for public review and comment on this document, as it did for the CSO Assessment Monitoring Plan. Until then, CSO sampling should be conducted from more than just the Cottage Farm CSO facility. We assume that water quality would vary at different points in the system based on varying levels of dilutions from stormwater. We request that samples of “raw” CSO flow be conducted at multiple locations in the Charles River system. Second, much of the data, information and contributing models listed in the Receiving Water Model Work Plan are considerably out of date given the growth and development that has occurred in the Charles River watershed in recent years. We request that MWRA use updated data on Lower Basin bathymetry and upstream pollution contributions, and if these are not available, that MWRA collect such data. We also request that the USGS model be reviewed and updated as necessary, noting in particular the changes to the Muddy River system due to the Army Corp of Engineers ongoing work in that tributary.

CRWA further requests that the water quality model consider the impacts of climate change by modeling larger storms, such as those predicted by the City of Boston in its Climate Ready Boston work and by the City of Cambridge in its Climate Vulnerability Assessment. We also request that the model be run for actual current year conditions, as is MWRA’s practice with the collection system model.

In the case of the water quality model sensitivity analysis to determine the benefits of further pollutant reductions in stormwater sources, new requirements in the 2016 MS4 permit must be taken into account. The sampling and modeling effort will be conducted during Phase I of the MS4 permit, which, as you know, requires Charles River watershed communities to plan for significant phosphorus reductions to be achieved over a twenty-year period, primarily through the use of green infrastructure systems that will also help control bacteria concentrations in stormwater runoff. Additionally, the MS4 permit has many requirements for addressing illicit discharges, so it is reasonable to consider that additional illegal sanitary sewage discharges will be identified and removed from the stormwater systems that discharge to the Charles River. Any modeling effort should include the likely impacts of these investments, which in this case will be a reduction in stormwater runoff pollution. Likewise, communities and MWRA continue to make investments in

I/I reduction, and these activities should be included in the model. Additionally, we request that a stakeholder process be required to inform development of the 15 additional simulations. In addition to the model scenario additions requested above, we specifically request a scenario in which CSO flow is zero and 0/25 year level of control. Finally, and importantly, to increase transparency we request both that a technical advisory committee that includes representatives outside MassDEP, EPA and MWRA be convened regularly throughout the model development, calibration and use processes, and that an independent third-party review of the water quality model be required.

With respect to the Water Quality Sampling Program Workplan, we request that this document also be subject to public review and comment via a brief public comment period. While we note and appreciate that MRWA did alert CRWA that it would be developing a water quality model and increasing its own monitoring effort, we did not receive this work plan (or the Receiving Water Model Workplan) until the comment period on the Tentative Determination was underway.

4. CSO Performance Assessment.

a. Inclusion of Climate Change Impacts in CSO Performance Assessment. MassDEP should require MWRA to run its collection system model using scenarios that reflect future rainfall and sea level rise conditions expected as a result of climate change, and to evaluate the potential impacts on the level of CSO control achieved (in regard to the total number of CSO activations and the volume and duration of those activations). In the 52-year period from 1958 to 2010, our area has experienced a more than 70% increase in the highest 1% occurrences of daily precipitation, and unfortunately these are the types of rain events that are associated with combined sewer overflows. We cannot let an increase in extreme weather events set us back 20 years in the CSO mitigation process.

b. CSO Performance Assessment Reporting and Review. CRWA requests that the CSO Performance Assessment and MWRA collection system model be required to undergo a third-party review. The collection system model is a highly technical tool that MWRA is using to assess the results of an extremely important effort, and therefore a third-party review is necessary. CRWA additionally requests that MWRA expressly reaffirm its commitment to update the collection system model on an ongoing basis as it receives information about work within the MWRA system. For example, there is still sewer and stormwater infrastructure work ongoing in the City of Cambridge.

CRWA further requests that more detailed and specific information be provided in the Progress Reports, including a list of overflow events by location and date, a characterization of rainfall event and preceding conditions that triggered the overflow, results of any follow-up investigation or maintenance work affecting the system, and a narrative description of the conditions that caused each overflow (storm conditions and system conditions). Finally, we request that meter data being collected as part of the CSO Assessment be made available in real time or close to real time.

5. CSO Notification to the Public. CRWA strongly supports the requirement for a CSO Subscriber-Based Notification System to alert the public to CSOs in real time. We request that this

system be operational, at least in a pilot phase, by June 30, 2020 instead of December 31, 2020, as the system is most needed during the spring and fall seasons when boating activity peaks, especially youth boating programs. We further request that notifications be issued no later than two hours after the onset of the CSO discharge, as 12 hours is too long a delay. Moreover, a two-hour notification requirement would be consistent with proposed legislation that requires notification of the public within two hours of a CSO event. Finally, we request that MWRA and the City of Cambridge be required to incorporate CSO notifications into the existing Charles River Water Quality Notification Program (which is managed by CRWA and is the current resources for boaters and boathouses with respect to real-time water quality conditions). We would be more than happy to work with MWRA on this, and we anticipate it would not require a large amount of resources but would have a tremendous benefit as well as result in meaningful public outreach.

6. Other Actions to Minimize CSO Discharges. Green infrastructure technologies are playing a more and more prominent role in CSO compliance measures in urban areas across the country and particularly in the northeast. Washington, D.C., Philadelphia and New York City have all determined that they can meet CSO discharge reduction goals at a lower cost using green infrastructure in conjunction with other system changes compared to grey solutions alone.² Green infrastructure can likely play a major role in reducing CSOs in the MWRA system as well, and therefore opportunities to further reduce CSOs with green infrastructure should be extensively analyzed. One of the Nine Minimum Controls states “maximum use of the collection system for storage.” MWRA and the City of Cambridge should take an expansive view of the MWRA system and consider aboveground storage opportunities through green infrastructure as part of this requirement. We support the continued investment to reduce I/I across the MWRA system.

7. Updated CSO Control Planning. CRWA fully supports the development of an updated CSO Control Plan. We offer the following comments with respect to its development:

a. The description of the existing levels of CSO control should include detailed narrative descriptions of each overflow location and the conditions observed to trigger an overflow there (i.e., rainfall volume, intensity, system conditions, etc.).

b. The Variance requires that the Updated CSO Control Plan include, among other things, “[a]n evaluation of the costs and water quality benefits of further CSO control alternatives, up to and including elimination of CSO discharges.” CRWA requests that this be revised to more properly require “an evaluation of the costs and performance (i.e., effectiveness in reducing CSO

² See, for example, *Long Term Control Plan Modification for Green Infrastructure* (D.C. Water and Sewer Authority 2015) (can be found at <https://www.dewater.com/sites/default/files/Green%20Infrastructure%20Executive%20Summary.pdf>); *A Triple Bottom Line Assessment of Traditional and Green Infrastructure Options for Controlling CSO Events in Philadelphia's Watersheds* (Stratus Consulting, Inc. 2009) (can be found at https://www.michigan.gov/documents/dnr/TBL.AssessmentGreenVsTraditionalStormwaterMgt_293337_7.pdf); *NYC Green Infrastructure Plan* (PlaNYC and New York Department of Environmental Conservation 2010) (can be found at http://www.nyc.gov/html/dep/pdf/green_infrastructure/NYCGreenInfrastructurePlan_Executive_Summary.pdf).

discharge frequency and/or volume) of, and water quality improvements achieved by, additional CSO control alternatives, up to and including elimination of CSO discharges.”

In addition, this evaluation should include a comprehensive evaluation of the use of green infrastructure on both public and private property. Specifically, the evaluation required by the Variance should identify and examine specific opportunities for installing and using green infrastructure technologies—including but not limited to green roofs, biofiltration, constructed wetlands, rain gardens, infiltration trenches, porous pavement, subsurface infiltration, depaving, swales and additional tree cover—to achieve additional CSO discharge reductions.

c. The public participation process described in Section F.3 of the Variance falls short, as the public participation proposed—only one public meeting and one public hearing—is woefully inadequate for a project of this scale and importance. MWRA should hold at least one public meeting in each CSO community to discuss CSO control alternatives prior to preparation of the Draft Recommended Plan. In addition, MWRA and MassDEP should convene an advisory board—which should include representatives from the communities, CRWA, MyRWA and other key stakeholders—that will meet throughout the process to discuss and evaluate CSO control alternatives and make its own recommendations, as part of the updated CSO Control Plan scoping process. Given that the Variance extends until 2024, it seems reasonable that public participation in this process may need to extend beyond April 2022.

d. The updated CSO Control Plan must take into account the effects of climate change on current and future rainfall patterns. The Plan cannot rely on a “Typical Year” rainfall scenario as such a thing no longer exists. MWRA should engage an advisory panel to develop a new method for testing CSO discharges into the future. Multiple rainfall scenarios should be considered and the plan be updated at regular intervals (shorter than the current twenty-year interval) to assess and anticipate whether there is a risk of backsliding in CSO controls due to weather changes.

e. The required affordability analysis should take into account the many different funding sources for water infrastructure projects that have been developed or expanded since the issuance of EPA’s 1997 *Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development*. Financing options that should be considered in the assessment of financial capacity include, for example, low fixed-interest loans through the federal Water Infrastructure Finance and Innovation Act program, Green Project Reserve funds through the State Revolving Fund Clean Water program, public-public and public-private partnerships, and foundation grants.

8. Unacceptability of Class B_{CSO} designation. CRWA is strongly opposed to a B_{CSO} designation. We strongly believe that a Class B_{CSO} designation would constitute a downgrading of the Charles River, and a significant and potentially permanent step backwards after all the forward progress that has been made and will be made through implementation of the MS4 permit. The river is very close to meeting Class B water quality standards 100% of the time—from meeting swimming standards 19% of the time in 1995, it now meets the swimming standard over 60% of the time. Moreover, swimming in the Charles is no longer a theoretical use. Rather, two major

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events, the Charles River Swim Club Race and City Splash, have become annual traditions. In short, a Class B_{CSO} designation is not an acceptable outcome.

If you have any questions, please do not hesitate to contact me at bmason@crwa.org or 781-788-0007.

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth F. Mason", followed by a long horizontal flourish.

Elizabeth F. Mason

General Counsel and Policy Director

cc: Patrick Herron, Mystic River Watershed Association
Kathy Watkins, City of Cambridge