RESPONSE TO PUBLIC COMMENTS
on
TENTATIVE DETERMINATIONS TO ADOPT THE VARIANCES
FOR COMBINED SEWER OVERFLOW DISCHARGES
to
ALEWIFE BROOK/UPPER MYSTIC RIVER
and
LOWER CHARLES RIVER/CHARLES BASIN

August 31, 2019

MassDEP acknowledges the receipt of written public comments received during the public period (June 10 – July 26, 2019) as well as verbal public comments heard during the July 18, 2019 public hearing. Below are responses to the comments received related to the adoption of the two CSO Variances.

CHARLES RIVER WATERSHED ASSOCIATION, ELIZABETH MASON

COMMENT 1
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.

RESPONSE 1
MassDEP acknowledges these comments.

COMMENT 2
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]

[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.

RESPONSE 2

MassDEP has endeavored to make public participation an important element of all CSO Variance-related projects and reports since the original Variances were issued. In that regard, the 2016 CSO Variance specifically required that MWRA post public notice of the draft scope of work for the Court-required Post Construction Compliance Monitoring Program ("PCCMP") in the Environmental Monitor in May 2017, which was followed by a public comment period where MassDEP solicited public comments. The PCCMP was a precursor to the Receiving Water Monitoring Workplans which followed. MassDEP considered CRWA and MyRWA comments on the PCCMP in subsequent actions on the workplans. MassDEP will work to strengthen public participation in moving forward. In the Final Variance documents, we have required that all submittals be posted on the permittee's public websites, and further required numerous progress reports and public meeting requirements.

COMMENT 3

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.

RESPONSE 3
MassDEP has affirmed in its Determination to Issue the CSO Variance, that elimination of CSOs system-wide would cause widespread social and economic impact, and also that the array of CSO Variance conditions represent the highest attainable conditions *during the period of the CSO Variance*. There is insufficient information at this time to render a determination on whether higher levels of CSO control, up to and including elimination of CSOs are feasible, in the Charles and Mystic/Alewife watersheds. The information being amassed pursuant to the Conditions of the CSO Variances is intended to provide MassDEP and EPA with the information upon which to base this determination.

COMMENT 4
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 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.

RESPONSE 4
This requirement is intended to parallel the requirements set forth in the Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control (March 15, 2006). This Second Stipulation affirms that MWRA has legal liability to meet the levels of CSO control in their Long-Term Control Plan, which was characterized in the Stipulation based on a tabular "Summary of Typical Year CSO Activation Frequency and Volume," with MassDEP and EPA to determine if this level of control has been achieved. MWRA's "Typical Year" has been defined in detail in their CSO planning documents. MassDEP acknowledges the difficulty in comparing actual data to the Typical Year activations and volumes, but such an engineering analysis must be undertaken and be subject to review. MWRA's first two Progress Reports include information that will help the agencies make informed decisions on the level of control achieved. These Reports also are available to public and the subject of public progress meetings as well.

COMMENT 5
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.

RESPONSE 5
MWRA's receiving water quality model will focus on bacteria and aesthetics because the Variances pertain to the Massachusetts water quality standards for these parameters. As the Variances do not address the water quality standards for nutrients, it would be outside the scope of these Variances for MWRA to include nutrients in their receiving water model. Therefore, MassDEP will not modify the Variances to require the receiving water quality model to address nutrients.

COMMENT 6
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 collects 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.

RESPONSE 6
MWRA's Receiving Water Model Work Plan has been updated since the Variances went out for public notice, which includes some updates to the data sources that will be used in the model. The most recent version of the Work Plan (dated July 18, 2019) has been posted with the Variances. MassDEP notes in particular that the CSO quality data will be collected from both Cottage Farm and Prison Point. MassDEP will not conduct a formal public comment period on the Work Plan, but it is publicly available and CRWA and others are welcome to submit comments to MassDEP and/or MWRA.

COMMENT 7
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.

RESPONSE 7
The Second Stipulation of the United States and Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow in 2006 provides the basis for MWRA's CSO control responsibilities for the Performance Assessment. The CSO activations and volumes referenced in that document are predicted on the "typical year" as established in the MWRA CSO Control Plan in 1997. Accordingly, MassDEP expects use of this "typical year" to be used in the Performance Assessment and associated Receiving Water Model.

However, MassDEP acknowledges the issue of climate change is a national and local concern for a number of reasons, including changing precipitation over time. MassDEP expects that when MWRA and Cambridge and Somerville do future CSO planning, they will utilize the NOAA 14 Atlas for precipitation data, which is the most current compilation of area rainfall data. MassDEP will continue to monitor the CSO activations and volumes, and the associated storm events to consider issues related to climate change. While storm recurrence frequencies have changed, especially for larger events, MassDEP does not expect the benefits of MWRA's CSO control plan to be compromised significantly for the events occurring in the "typical year" used to evaluate the effectiveness of CSO controls.

COMMENT 8
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.

RESPONSE 8

MWRA's Receiving Water Model Work Plan has been updated since the Variances went out for public notice, which includes some updates to the data sources that will be used in the model. The most recent version of the Work Plan (dated July 18, 2019) has been posted with the Variances. MWRA and the communities will be conducting new monitoring for stormwater quality at multiple sites. These sites will include both stormwater outfalls known to be "clean" and those that continue to be impacted by illicit connections. This is necessary so that MWRA can accurately calibrate the receiving water quality model. MWRA's final Work Plan for Stormwater and Combined Sewer Overflow Monitoring (dated August 27, 2019) has also been posted with the final Variances and includes the list of sites that will be monitored. The model will be able to simulate reduced bacteria concentrations from stormwater outfalls as illicit connections are removed and other activities to reduce bacteria under the MS4 permit are implemented.

MassDEP will rely on the extensive expertise of MassDEP and EPA staff to review the model and does not intend to convene an advisory committee or conduct a third party review. MassDEP will consider CRWA's suggestions on the additional modeling simulations when working with MWRA on determining these simulations.

COMMENT 9

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 MWRA 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.

RESPONSE 9

MassDEP and MWRA will ensure that the final Water Quality Sampling Program Workplan for this year and future years, as well as the final Receiving Water Model Workplan are made available to the public. CRWA and others are welcome to submit comments on these documents at any time, but MassDEP does not plan to have a formal public comment period for these documents.

COMMENT 10

CSO Performance Assessment. 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.

RESPONSE 10

The Second Stipulation of the United States and Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow in 2006 provides the basis for MWRA's CSO control responsibilities for the Performance Assessment. The CSO activations and volumes referenced in that document are predicted on the "typical year" as established in the MWRA CSO Control Plan in 1997. Accordingly, MassDEP expects use of this "typical year" in the Performance Assessment and associated Receiving Water Model. As noted above, the Updated CSO Control Plans to be developed pursuant to the Variance will be based on the updated rainfall information that is included in NOAA Atlas 14.

COMMENT 11

CSO Performance Assessment. 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.

RESPONSE 11

The CSO Performance Assessment and collection system model will be reviewed by MassDEP and EPA staff with extensive expertise in this area; therefore MassDEP does not intend to conduct a third party review. CRWA and others are welcome to submit comments on progress reports and through public meetings.

COMMENT 12

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.

RESPONSE 12

MassDEP staff has researched the CSO notification requirements of numerous other states, and the EPA Final Rule on Public Notification for CSOs to the Great Lakes, to gather information on the strengths and weaknesses of these programs. MassDEP has also gathered information on the challenges of deploying metering equipment to quantify CSO activations and volumes, and the reliability and need to verify metering data. Based on these reviews, MassDEP has structured the required CSO notification program so that the primary tool for generating CSO activation data will be metering of CSO regulator structures, and that notifications be provided within four hours of discovery of the discharge. Accordingly, MassDEP's expectation is that notifications will occur within four hours of an event, unless there is an unusual or complicating circumstance or condition, which results in later "discovery" of an event. In that case, notification cannot be done later than 12 hours from the onset of the discharge. MassDEP has determined that this notification protocol is both reasonable and timely.

These programs have many components, including deploying metering equipment properly, and providing for adequate O&M of the equipment; data transmission/telemetry systems; in some cases, verification procedures to ensure accurate reporting information; and management of cybersecurity issues associated with a subscriber-based system. Given these challenges, MassDEP has not altered the compliance date of December 31, 2020.

MassDEP also sees the merits of coordinating CSO notifications with the CRWA Water Quality Notification Program, and encourages this collaboration.

COMMENT 13

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.

[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.dcwater.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_ExecutiveSummary.pdf).

RESPONSE 13
MassDEP acknowledges these comments. MassDEP has added a requirement in both variances under Other Actions to Minimize CSO Discharges to consider use of green infrastructure.

COMMENT 14
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.).

RESPONSE 14
The results of the Performance Assessment will provide this information. The updated CSO Control Planning can reference the information from the Performance Assessment.

COMMENT 15
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 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.

RESPONSE 15
CRWA's requested change in language in Section F.2. has been made to both final Variances. Regarding Green Infrastructure, a requirement has been added for the Updated CSO Control Planning scope, for consideration of Green Infrastructure technologies.

COMMENT 16
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.

RESPONSE 16
The requirement for one public meeting and one public hearing is based on the SRF regulations at 310 CMR 44.09(3), so that CSO abatement work will meet SRF eligibility requirements. However, MassDEP agrees that the public participation program should be more rigorous for these critical CSO Planning projects. Accordingly, MassDEP has modified the requirement in the Variance to require submittal of public participation plan sufficient to provide for ample opportunities for the public to be informed about the development of the Plans at critical junctures, and to have opportunities to provide informed comments on the CSO abatement alternatives and recommendations. The scope of the plan, as an element of full scope of work, shall be subject to MassDEP review and approval.

As part of the process outlined in Section F, MassDEP has added language to both Variances that MWRA and the Cities propose a public participation process as part of the scope and schedule for an updated CSO Control Plan that will be approved by MassDEP. Though MassDEP will welcome outside input, MassDEP will not be convening an advisory panel board at this time.

COMMENT 17
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.

RESPONSE 17
See Responses 7 and 10.

COMMENT 18
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.

RESPONSE 18
MassDEP acknowledges this comment. MassDEP has added a reference to the more recent EPA memorandum which addresses the scope of affordability analyses – the November 24, 2014 Memo on Financial Capability Assessment Framework for Municipal Clean Water Act Requirements. This framework builds upon the information provided in EPA's 1997 Financial Guidance. MassDEP will be approving the Updated CSO Plan, which will include and affordability analysis.

COMMENT 19
Unacceptability of Class BCSO designation. CRWA is strongly opposed to a BCSO designation. We strongly believe that a Class BCSO 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 events, the Charles River Swim Club Race and City Splash, have become annual traditions. In short, a Class BCSO designation is not an acceptable outcome.

RESPONSE 19
MassDEP acknowledges these comments and notes that a WQS determination will not be made until after the end of the variance period.

CITY OF CAMBRIDGE (CHARLES RIVER BASIN VARIANCE), KATHERINE WATKINS

COMMENT 20
The City has been actively engaged in reducing the number of combined sewer overflows (CSOs) to the River, and in partnership with community groups and the Massachusetts Water Resources Authority (MWRA) the reduction of CSO discharges to the River has been reduced by 99%, as measured over a typical year. While this has resulted in significant improvements to water quality in the River, we understand that additional work remains. To this end, the DPW remains committed to its long-term goal to continue to support projects that aid in the further reduction of CSO flows to the Charles River.

Our ongoing partnership with MWRA, MassDEP, and our local community groups provides the framework to continue further improvements in water quality of the Charles River and to support the River coming into full compliance with the intent of the Federal Clean Water Act. To this end, and subject to our detailed comments below, the DPW fully supports extending the existing Variance through August 31, 2024, to allow MWRA, the City of Cambridge and others to complete the work originally envisioned to allow the Charles River to continue its path of significant water quality improvement.

RESPONSE 20
MassDEP acknowledges this comment.

COMMENT 21
Page 2 - Variance Conditions: The first sentence following the heading "Variance Conditions" states:

> *"The Variance is conditioned upon MWRA and the City of Cambridge complying with the following requirements: "*

This sentence is then followed by detailed requirements under sections A-F. We note that some of the detailed requirements listed are specific only to MWRA, some are specific only to the City, and some requirements are specific to both MWRA and the City. In order to provide clarity regarding individual responsibilities, we request the above sentence be modified as follows:

> *"The Variance is conditioned upon MWRA and the City of Cambridge complying with their individual and joint ~~the following~~ requirements, as identified below: "*

RESPONSE 21
MassDEP agrees to make this change in the final Variance document.

COMMENT 22
Page 1, paragraph 1: There appears to be a typographical error. Reference is made in the first paragraph to MA0101982, which is the NPDES permit for the Somerville Facility. We believe the correct Permit number should be MA0101947, which is the City of Cambridge NPDES permit.

RESPONSE 22
This comment correctly states that there is a typographical error in the permit number for the City of Cambridge's NPDES permit. However, the correct permit number is MA0101974. This correction has been made in the final Variance.

COMMENT 23
Page 3, Section B, paragraph 2: The last sentence of this paragraph states:

> *"The report shall include a summary of the receiving water sampling data collected over the past calendar year, including sampling locations and parameters, and comparisons between results during wet and dry weather, a characterization of rainfall events for which wet weather sampling was done, and a correlation of the sampling data with CSO activations and volumes."*

The DPW supports the Variance requirement for MWRA to prepare the report noted above, however we believe it would not be appropriate to attempt to establish a simple correlation between the sampling data with a single pollutant source - CSO, considering all the multiple pollutant sources that impact the in-stream water quality, such as stormwater and other non-CSO sources.

The DPW believes that the correlations between the sampling data and various pollutant sources (including CSOs) should be developed using a water quality modeling tool, in order to accurately represent relationships among the various water quality stressors and their associated impacts on water quality. This would ultimately prove to be much more valuable to MassDEP and others when evaluating the conditions and their causes in the Charles River.

We request the requirement be modified as shown below:

> *"The report shall include a summary of the receiving water sampling data collected over the past calendar year, including sampling locations and parameters, and comparisons between results during wet and dry weather, a characterization of rainfall events for which wet weather sampling was done, and a ~~correlation of the sampling data with~~ summary of CSO activations and volumes. This data will ultimately be used in a water quality model to assess the impacts and their effects to CSO discharges in the Charles River."*

RESPONSE 23
MassDEP agrees it is appropriate to clarify this requirement and will modify the text in the final Variance as shown below:

> *"The report shall include a summary of the receiving water sampling data collected over the past calendar year, including sampling locations and parameters, and comparisons between results during wet and dry weather, a characterization of rainfall events for which wet weather*

sampling was done, and an assessment of the water quality impacts of CSO and non-CSO sources."

COMMENT 24
Page 4 Section D.3 -Notification to the Public of CSO Discharges and Impacts: The DPW supports public notification to the fullest extent feasible, as well as a CSO Subscriber-Based Notification System, or other such system which provides the public with accurate, up-to-date information regarding the status of CSO discharges. For discharges to the Alewife Brook at CAM002 and CAM401B, the DPW currently utilizes a notification system, with subsequent notification on our website. Public notification of active CSO discharges to the Charles River are currently being addressed by MWRA, using the Cottage Farm CSO discharge as a proxy for other Charles River CSO discharges.

RESPONSE 24
MassDEP acknowledges this comment.

COMMENT 25
As written, the Variance seems to allow both the City and MWRA to develop independent, enhanced subscriber-based notification systems. For many reasons, including the ability to provide the most accurate information in the quickest manner feasible, the DPW believes that the public and other interested groups and agencies should have the ability to access a single website location to obtain information on the status of all CSOs in the Charles River, regardless of whether the CSO is monitored by MWRA or Cambridge. In this way, any member of the public can obtain information quickly and accurately regarding the status of all CSOs on the Charles River in a single location without the need to access multiple websites.

The DPW supports a collaborative approach with MWRA and would like the opportunity to explore enhanced alternatives available for public notification including the installation of telemetry at all of the Cambridge CSOs so that "real-time" information on CSO activations can be obtained and posted on a website, and to explore the feasibility of providing computer generated subscriber notifications emails quickly and accurately. Currently CAM017 is the only Cambridge CSO along the Charles River connected to our telemetry system.

To this end, we request the following modification to the first sentence of paragraph D.3 as follows:

"MWRA and the City of Cambridge shall, by December 31, 2020, cooperatively develop and implement a CSO Subscriber-Based Notification System to provide CSO Alert…"

RESPONSE 25
MassDEP supports MWRA and the City of Cambridge cooperatively developing a CSO notification system and will modify the language in the final Variance as shown below.

"*MWRA and the City of Cambridge shall, by December 31, 2020, develop and implement a CSO Subscriber-Based Notification System to provide CSO Alert Notifications…MWRA and the City of Cambridge may choose to develop the Notification System collaboratively."*

COMMENT 26
The DPW appreciates the timeline provided in Section D.3 (December 31, 2020) to develop and implement the CSO Subscriber-Based Notification System and CSO Alert Notifications. As discussed in a)

above, the DPW is exploring the feasibility of providing telemetry at all Cambridge CSOs that discharge to the Charles River. The use of an automated sensor system at each CSO can provide real-time information with regard to whether the CSO is active, the time it became active, the time the CSO ceased, and the volume of the CSO discharge. Potentially integrating this telemetry system with a website to allow the data to be posted, will provide the public with timely and detailed CSO information.

In order to provide this system, the DPW will need to determine the requirements and location of each telemetry unit and explore a web-based notification system. The Commonwealth of Massachusetts procedures for bidding and procurement are extensive and require time for each phase of development, design, bidding, award, construction and implementation process. These procedures include procurement of engineering services to assist in the program development and design, development of bidding documents and specifications, and advertising and contract award, all of which must occur before beginning work on the project. The DPW will strive to complete this process by December 31, 2020.

RESPONSE 26
MassDEP acknowledges these comments.

COMMENT 27
Paragraph D.3.b specifically requires that the City and MWRA independently establish websites that contain information such as CSO mapping, NPDES information, duration and volume of CSO discharge, rainfall data, and annual CSO discharge information, for their own CSOs.

The DPW fully supports the public availability of such information and is committed to providing the most accurate information available. We also support the City and MWRA each maintaining their own websites with respect to information on CSOs in the Charles River. However, as noted in our comment above, we do not believe the public should have to access multiple websites in order to obtain the information for all CSOs in the Charles River.

In order to address this issue, we suggest that the language in the paragraph D.3. be modified as follows:

> *"MWRA, and the City of Cambridge shall work cooperatively to ~~each~~ establish and maintain a public website(s) which shall include, at a minimum, the ~~following~~ information listed below, for their permitted CSO outfalls in the Charles River Basin. This requirement may be met by one entity compiling and posting the data on their website, and the second entity providing a link on their own website to the data."*

RESPONSE 27
MassDEP supports MWRA and the City of Cambridge establishing a website cooperatively and will modify the language in the final Variance as shown below.

> *"MWRA, and the City of Cambridge shall each establish and maintain a public website, or work collaboratively to establish one public website, which shall include, at a minimum, the information listed below, for their permitted CSO outfalls in the Charles River Basin. If agreed upon by MWRA and the City of Cambridge, this requirement may be met by one entity compiling and posting the data on their website, and the second entity providing a link on their own website to the data."*

COMMENT 28
Page 6 Section E - Other Actions to Minimize CSO Discharges: Paragraph E.1 of this section requires that:

> *"MWRA and the City of Cambridge shall….Any enhancements to the MWRA and community NMC programs identified during the CSO Performance Assessment can and shall be implemented as measures to further reduce CSO discharges so that highest attainable interim effluent conditions can be achieved and maintained during the Variance period."*

This language is vague and overly broad, and as such could delay implementation of needed projects, or conversely require implementation of projects that conflict with other requirements or legal authorities. Please consider modifying this language as shown below:

> *"MWRA and the City of Cambridge shall….Any enhancements to the MWRA and community NMC programs identified by MassDEP or the permittees during the CSO Performance Assessment can and shall be implemented after obtaining all necessary approvals and providing the enhancements do not conflict with the overall goals and requirements of the LTCP, as measures to further reduce CSO discharges so that highest attainable interim effluent conditions can be achieved and maintained during the Variance period."*

RESPONSE 28
MassDEP agrees to make this change in the final Variance.

COMMENT 29
Page 6 Section E.2: Since MWRA's system and the City's system are hydraulically connected, the impact of any "Additional System Optimization" measures by MWRA should be evaluated collaboratively by MWRA and the City so that the full effect on both systems performance can be evaluated in order to maximize the overall benefits. Please consider modifying this language as shown below:

> *"MWRA shall implement the Additional System Optimization measures as set forth in the scope and schedule of actions in attached Exhibit A. MWRA shall coordinate with the City of Cambridge to evaluate the impact of any Additional System Optimization measures on both systems performance."*

RESPONSE 29
MassDEP agrees to make this change in the final Variance, with a minor change as shown below.

> *"MWRA shall implement the Additional System Optimization measures as set forth in the scope and schedule of actions in attached Exhibit A. MWRA shall coordinate with the City of Cambridge to evaluate the impact of any Additional System Optimization measures on both systems' performance."*

COMMENT 30
Page 7 – Section F – Updated CSO Control Planning: While the DPW understands that a comprehensive Long-Term Control Plan is a critical component of CSO evaluation and both a federal and state requirement, we find the wording in this section unclear as to MassDEP's intent.
The first paragraph under Section F states:

"On or before April 1, 2022, MWRA and the City of Cambridge shall each submit for MassDEP review and approval, a scope and schedule for an updated CSO Control Plan for the CSO outfalls that each permittee owns and operates that discharge to the Charles River Basin. The updated CSO Control Plan shall conform to the EPA CSO Policy and MassDEP's 1997 Guidance for Abatement of Pollution from CSO Discharge…"

This paragraph appears to require that the City (and MWRA) develop an updated Long-Term Control Plan in accordance with the federal requirements under EPA's 1994 Combined Sewer Overflow Policy and MassDEP's 1997 Guidance – both of which are guidance documents for developing and implementing the Nine Minimum Controls and Long-Term Control Plans.

RESPONSE 30
The language quoted above is intended to require all of the permittees to make their updated CSO Control Plans consistent with both EPA and MassDEP CSO guidance.

COMMENT 31
The DPW has the following concerns:
<u>Coordination with Post Construction Monitoring</u>

<u>LTCP History</u>
MWRA developed a LTCP which included projects addressing all CSOs in the Charles River. In accordance with this plan, nearly 1 billion dollars have been invested in sewage system upgrades and improvements. Further the *Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control* (Stipulation) clearly identifies the existence of the 1997 MWRA LTCP and requires that all outfalls identified (which include the Charles River outfalls) be subject to this LTCP.

Both the DPW and MWRA are now fully engaged in the final step of this nine-step LTCP – post construction compliance monitoring.

In accordance with both the EPA and MassDEP guidance cited above (see Federal Register 18689 Part II.C.9) once CSO controls have been fully implemented, a post-construction monitoring program is to be conducted in order to verify compliance with water quality-based Clean Water Act requirements and ascertain the effectiveness of CSO controls.

<u>Submission of Post Compliance Monitoring</u>
Following completion of post-construction monitoring a determination will be made as to whether the goals of the CWA have been achieved in the waterbody, or additional measures need to be undertaken. Such a determination will be based upon the results of the post construction monitoring as to the water quality status of the Charles River, and whether the presence of CSOs (if any remaining) preclude the attainment of water quality.

The DPW remains fully committed to ongoing and future projects to reduce, and even eliminate where feasible, CSO discharges to the Charles River. To that end we will gladly provide a report or other similar summary of ongoing and future CSO abatement projects.

However, we are concerned that the Variance language in Section F, which requires both MWRA and the City to "each submit…an updated CSO Control Plan" requires the City, independent of MWRA, to

develop a component of a Long-Term Control Plan, and potentially do so in advance of the post construction monitoring results (see quote from MWRA letter, below).

We note that while the Stipulation requires MWRA to complete a CSO performance assessment and submit the resulting report to MassDEP and EPA in December 2020, we also note that in MWRA's letter to MassDEP, dated May 14, 2019, MWRA has:

"recently amended its performance assessment scope of work to add receiving water quality modeling of the Lower Charles River/Charles Basin…(and will) simulate enterococcus and E.coli in the Charlies River due to loadings from CSOs, stormwater discharges, and upstream boundary (Watertown Dam)…MWRA continues to coordinate with DEP and EPA on the timelines for submitting model assessments and reports as data collection to support the sampling plan is weather dependent."

MassDEP acknowledges in the Fact Sheet for this Variance, in section four which states: "One scheduled milestone remains: completion of post-construction monitoring and CSO Performance Assessment and submission of a related report verifying attainment of the long-term levels of control in MWRA's approved LTCP that was to have been completed by December 2020. As noted above, MWRA has recently requested additional time to complete the CSO Assessment Report."

The DPW supports the completion of the Lower Charles River water quality model and submission of results to MassDEP as early as is feasible in consideration of the important additional sampling that is underway. However, it appears that the data collection and date of submission of the report is still under discussion between MWRA and MassDEP and may be different than December 31, 2020.

Until the compliance monitoring is complete, it is not known which segments of the waterway (if any) do not meet the goals of the CWA, the extent and reasons those sections are not meeting water quality, and to then consider specific CSO control alternatives that may be required. Specifically, items F.2, F.4, F.5 and F.6 of the Variance, all require that the post construction monitoring be complete, prior to undertaking these tasks.

For example, item F.4 requires an affordability analysis to determine financial capacity to undertake projects which will result in the River meeting the goals of the CWA. The identification of what specific CSO reductions projects are necessary to meet water quality, and their associated costs, would not be known until after post construction monitoring provides the information needed to know specifically in the River where, and to what extent, water quality is not being met and what further improvements are appropriate.

Item F.5 requires the exploration of obtaining a Use Attainability Analysis (UAA). A UAA, which is a request to MassDEP and EPA to lower the allowable water quality criteria of the River as identified in the Massachusetts Administrative Code, is only appropriate when it has been shown there are no feasible alternative to meeting the current water quality criteria. Until MWRA completes their comprehensive post construction monitoring, we cannot know which segments of the River, if any, are not meeting water quality, and further for any segment that is not yet meeting water quality, the DPW would want an opportunity to explore all feasible measures to improve those segments, so that water quality can be met without the need to lower it through a UAA.

Request for Section F to Follow Submission of Report

In this Variance, MassDEP has allowed for a 16-month timeframe between submittal of the MWRA water quality report and submission of an updated CSO Control Plan (12/31/2020 to 4/1/2022), however, based upon MWRA's letter, it appears there is a possibility the water quality report for the Charles River may not be submitted on 12/31/2020.

For the reasons detailed above, the DPW requests that section F be modified such that submission of these items be required 16 months following MWRA's submission of a complete Receiving Water Modeling Report for the Lower Charles River/Charles Basin.

In the event that MWRA submits the water quality modeling analysis for the Charles River by 12/31/2020 (or even earlier) the subsequent components of item F will be submitted on a timeline as outlined in the Variance. However, in the event that the report is submitted at a later time, the 16-month timeframe following submission of the report will allow sufficient time to address the items in Section F.

In the interim the DPW will provide to MassDEP a report which describes ongoing projects in the City aimed toward CSO reduction, as well as planned future projects and other related items as MassDEP may require.

RESPONSE 31

MWRA has committed to completing the CSO Performance Assessment and Final CSO Water Quality Impact Reports by December 31, 2021, with this schedule also being incorporated into the federal court order. MassDEP's requirement on both MWRA and the City of Cambridge is only for a scope of work for the Updated CSO Control Plan to be submitted on April 1, 2022. MassDEP has not changed this requirement.

COMMENT 32

LTCPs that involve multiple sewage agencies need to be developed cooperatively

Whether the timeline for the submission of items identified under Section F is modified or remains the same, we believe the CSO plan required under Section F should be developed by both the City and MWRA as a supplement to the existing MWRA plan, and not developed in isolation by the City.

The Federal 1994 National CSO Control Policy, 59 Fed. Reg. 18688 (April 19, 1994) and the 1989 National CSO Control Strategy, 54 Fed. Reg. 37370 (Sept. 8, 1989) all emphasize the necessity and responsibility of the treating authority to assume an integral role in the development of LTCPs, whether or not it owns or operates a CSO outfall. Under the National CSO Policy *"when different parts of a single CSS are operated by more than one authority, permits issued to each authority should generally require joint preparation and implementation of the elements of this Policy and should specifically define the responsibilities and duties of each authority. Permittees should be required to coordinate system-wide implementation of the nine minimum controls and the development and implementation of the long-term CSO control plan."* Part IV.A, 59 Fed. Reg at 18695.

Further, in accordance with the Stipulation between MWRA and the United States, MWRA has certain responsibilities, which would preclude the City from developing an independent CSO Control Plan. Specifically, as stated in the Stipulation:

"With respect to all of the CSO outfalls within or hydraulically connected to the Authority's sewer system, including the outfalls identified in Exhibit "B" hereto, the Authority accepts legal liability to undertake such corrective action as may be necessary to implement the CSO control requirements set forth in Schedule Six and related orders of the Court in the above-captioned action, and to meet the levels of CSO control (including as to frequency of CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term Control Plan."

The City's development of a CSO plan, as separate and distinct from the MWRA LTCP, would conflict with the Stipulation.

In consideration of the requirements of the National CSO Policy, the Second Stipulation of Settlement, and the infeasibility of developing separate CSO Control plans, the DPW requests the following language modification:

"Upon MWRA's completion of the Post Construction Monitoring, for any segments of the Charles River which are determined to not meet the goals of the CWA, ~~On or before April 1, 2022,~~ MWRA ~~and the City of Cambridge~~ shall ~~each~~ submit for MassDEP review and approval, a scope and schedule for an updated CSO Control Plan for the CSO outfalls that ~~each permittee owns and operates that~~ discharge to the Charles River Basin. The updated CSO Control Plan shall conform to the EPA CSO Policy and MassDEP's 1997 Guidance for Abatement of Pollution from CSO Discharges,…"

RESPONSE 32

The Second Stipulation to the federal court, dated March 15, 2006, clearly imposes on MWRA the requirement for achieving the "levels of CSO control (including as to frequency of CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term Control Plan," as the comment notes. This is the intent of MWRA's CSO Performance Assessment, i.e., to ascertain whether this requirement has been met. Beyond this commitment, MWRA has also accepted further responsibilities for "all outfalls owned or operated by the Authority," as necessary to meet the CSO control requirements of the Clean Water Act. The implication of the Second Stipulation is that communities with NPDES-permitted CSOs also have obligations as well under the Clean Water Act, for CSO controls beyond those included in the MWRA's CSO Abatement Plan. Accordingly, the requirement for Updated CSO Control Planning extends beyond MWRA to the CSO communities in the CSO Variance areas. Should the City of Cambridge (and Somerville) wish to collaborate with MWRA in advancing a single CSO control plan, that approach may have merits and ultimately satisfy the requirements of the CSO Variance, but MassDEP will not require such an approach.

COMMENT 33

Cost Benefit Analysis should be inclusive of stormwater impacts: Section F.2 requires only that a cost benefit analysis be conducted with respect to CSO discharges in isolation of the impacts of stormwater only discharges. Stormwater standards are a significant component of meeting water quality standards, including Total Maximum Daily Loads. Further, the City's completed sewer separation projects and related reduction in CSOs needs to be evaluated holistically with stormwater discharges.

EPA has long been a proponent of the watershed approach to CSO planning. In EPA's document "Combined Sewer Overflows Guidance for Long-Term Control Plans" Section 1.6.5 it states:

The CSO Control Policy acknowledges the importance of watershed planning in the long-term control of CSO's by encouraging the permit writer to "…to evaluate water pollution control needs on a watershed management basis and coordinate CSO control efforts with other point source and nonpoint source control activities" (I.B). The watershed approach is also discussed in the section of the CSO Control Policy addressing the demonstration approach to CSO control (II.B.4.b; see also chapter 3 of this document) which, in recommending that NPDES permitting authorities allow a demonstration attainment of WQS, provides for consideration of natural background conditions and pollution sources other than CSOs, promoting the development of total maximum daily loads (TMDLs).

"EPA's Office of Water is committed to supporting States that want to implement a comprehensive statewide watershed management approach."

In addition to the above, EPA has created numerous resources to support the development of watershed planning, including the "Handbook for Developing Watershed Plans to Restore and Protect our Waters" which includes the following:

Using a watershed approach to restore impaired waterbodies is beneficial because it addresses the problems in a holistic manner and the stakeholders in the watershed are actively involved in selecting the management strategies that will be implemented to solve the problems. Nonpoint source pollution poses the greatest threat to water quality and is the most significant source of water quality impairment in the nation. Therefore, EPA is working with states, tribes, and watershed groups to realign its programs and strengthen support for watershed-based environmental protection programs." (section 2.1)

In accordance with the above, the DPW requests the following modification to Section F.2.

"An evaluation of the costs and water quality benefits of further CSO control alternatives, up to an including elimination of CSO discharges. <u>The evaluation of costs and water quality benefits must include stormwater discharges. Stormwater discharges are an important part of meeting the water quality standards, including TMDLs, and should be evaluated holistically on a watershed basis.</u>"

RESPONSE 33
MassDEP supports a watershed approach to CSO planning and will modify the language in Section F.2. of the final Variance as shown below.

"An evaluation of the costs and water quality benefits of further CSO control alternatives, up to an including elimination of CSO discharges. <u>The evaluation of costs and water quality benefits may include the impacts of stormwater discharges.</u>"

<u>MYSTIC RIVER WATERSHED ASSOCIATION, PATRICK HERRON</u>

COMMENT 34
Our organization has followed with great interest the mitigation measures applied to combined sewer overflows (CSOs) in the Mystic River watershed for several decades. In this time, we have worked with nearly every major public and private stakeholder concerned about this issue to advocate for the most

effective and efficient possible mitigation measures and to monitor progress towards improved water quality in the rivers of the watershed. MyRWA has also worked with these parties to directly address the effects of pollution on the Mystic and its tributaries, marshalling thousands of citizen volunteers to clean up the banks of the river and remove invasive species from its waters. Our goal is to completely end the discharge of sewage into the watershed as soon as possible and, until that time, to minimize the effects of sewage discharge on water quality, human health, and public benefit from our surface waters. MyRWA approaches this Tentative Determination with decidedly mixed feelings. It is disappointing in the sense that this proposed variance is a formal acknowledgment that we are not going to achieve Class B water quality standards in the Alewife and Upper Mystic for another five years despite much hard work and expense by the Massachusetts Water Resources Authority (MWRA), and the cities of Cambridge and Somerville and their ratepayers. At the same time, MyRWA offers its caveated support for the Tentative Determination because we believe the proposed variance conditions provide the opportunity to bring a fresher perspective to future decisions about CSO control in the Mystic River watershed. At the outset, MyRWA expresses its dismay at the lack of collaboration with watershed stakeholders and lack of transparency in the development of the Tentative Determination and in the public comment process. While it should have come as no surprise to MassDEP or MWRA that MyRWA would have a keen interest in a new variance, there was no prior consultation by MassDEP nor MWRA, at either the policy or scientific/technical level, with MyRWA in developing the Tentative Determination. Adding insult to injury, three important documents referenced in the Tentative Determination (described below) were not made available to the public at the time of public notice in the Environmental Monitor. The public should have been advised that supporting documents were available either physically at MassDEP or on a MassDEP website. Instead, MyRWA had to request them. While MyRWA appreciates that after being asked, MassDEP extended the comment period by one week, a tight schedule to issue a new variance before the current one expires is no excuse for making it harder to offer informed public comment.

RESPONSE 34
MassDEP acknowledges these comments. See Response 2 regarding public participation.

COMMENT 35
The remainder of this letter provides MyRWA's comments on the elements of the Tentative Determination in the order in which they appear. While MyRWA's comments here focus on the Tentative Determination for the Alewife Brook/Upper Mystic River Basin, we note that many of them are equally applicable to the Tentative Determination for the Lower Charles River/Charles Basin.

RESPONSE 35
MassDEP acknowledges this comment.

COMMENT 36
<u>Basis for Variance</u>
The Massachusetts Department of Environmental Protection (MassDEP) proposes to grant this 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 as specified in 314 CMR 4.03(4)(f) and 40 CFR 131.10(g)(6). This determination is poorly supported by the available record. It rests on a May 24, 2019 letter from MWRA that offers little more than an inflation adjustment to a 14-year-old analysis. We note also that MWRA's May 24 letter was one of the documents not readily available to the public. The underlying analysis does not consider whether CSO controls short of "system-wide elimination" would achieve water quality standards in any

of the variance waters and what the cost of this level of control would be. More troubling, the accompanying Fact Sheet provides no sense of whether DEP conducted an independent review of the MWRA's analysis. MyRWA considers this analysis to be deficient. However, if the proposed variance condition at F.4 (p. 7 in the Tentative Determination) for an affordability analysis consistent with EPA's guidance along with any other relevant information to assess financial capacity, comprises a brand new analysis that considers a range of alternatives, not merely another update to the limited analysis of the May 24 letter, then MyRWA can consider this deficiency resolved. (More comments on the analysis are provided below.) MassDEP notes that, once approved, the Variance and its conditions will be incorporated into the NPDES permits for the MWRA and the Cities of Cambridge and Somerville. As such, it is important that the variance conditions are written with an eye to enforceability. MyRWA notes that several of the proposed variance conditions are deficient in this regard. Below, we will cite particular conditions that need to be improved.

RESPONSE 36
MassDEP acknowledges these comments. See Response 18 regarding affordability.

COMMENT 37
Comments on Variance Conditions
A. Level of Required CSO Control During Variance
MyRWA supports the explicit limitation on CSO discharges to those set forth in Exhibit B. However, the enforceability of this condition is seriously compromised by the "...allowance for any conditions that exceed Typical Year conditions." How will MassDEP determine whether or when the Typical Year has been exceeded? Would it be rainfall in excess of an annual total of 46.8 inches? Or by more than 93 storms? MassDEP needs to clarify how this allowance will be determined in the Final Determination.

RESPONSE 37
As noted earlier in Responses 7 and 10, MassDEP acknowledges the difficulties in comparing rainfall years with the "typical year." It will be important to assess individual discharge events when there appear to be issues about whether the required level of control has been achieved. The rainfall information for individual events, and an assessment of their recurrence intervals will provide important information on the nature of events triggering a CSO discharge. MWRA's first two progress reports on their CSO Performance Assessment have provided this information and other valuable information on the level of control at CSO outfalls. MassDEP expects that further data analysis will help provide even more clarity on the level of control achieved.

COMMENT 38
B. Receiving Water Quality Monitoring
This condition says "MWRA shall continue and expand [emphasis added] the water quality monitoring program in the Alewife Brook/Upper Mystic River…" but provides no details or requirements regarding the expansion of the program. This renders the required expansion unenforceable. MyRWA asks that the final condition either include specific details of the expansion or refer to another enforceable condition containing the requirements. MyRWA also notes that this lack of detail has made it impossible for the public to review and comment on the adequacy of the expanded program.

RESPONSE 38
MassDEP and EPA have been continuing to scrutinize MWRA's scope of work for the Alewife/Mystic receiving water quality monitoring. MassDEP has asked that MWRA post the most up-to-date version of

this scope, as well as the scope for the receiving water modeling on their website. MassDEP, now and in the future, would welcome MyRWA comments on the scope and subsequent reports.

COMMENT 39

C. CSO Performance Assessment

C.1 CSO Activations and Volumes

MyRWA applauds the inclusion of public meeting requirements to keep the public informed about the progress of work and findings during and at the conclusion of the Performance Assessment. MyRWA found that the May 2019 meeting provided a very useful opportunity to better understand the progress and findings of the Performance Assessment to date. Building on the metering and telemetry in place for the Performance Assessment, MyRWA recommends that either this or another condition include requirements for flow measurement with telemetry at all active overflows throughout the variance period, and that the flow data be uploaded in real or near real time to a website with public access. Further, MyRWA recommends that MWRA, Cambridge and Somerville be required to provide a narrative description of each overflow event, including such things as particular features of the rainfall event and any hydraulic system problems of note, within 30 days or some other reasonable period that allows for contemporary analysis of the event. These narratives should be posted to the websites required in condition D.4.b. This has the potential to provide useful data to the sewer system operators, the public, regulators, and river samplers.

RESPONSE 39

See Response 12 regarding telemetry. MWRA's progress reports provide more detailed information on rainfall events, recurrence intervals, and any special conditions/events which may have contributed to activation of CSO outfalls (where the activations may be more frequent than the prediction in the MWRA CSO plan). Where discharges occur consistent with the predications of the MWRA CSO control plan, and sewer system model, such a rigorous evaluation of the system condition is not warranted.

COMMENT 40

C.2 Assessment of CSO Water Quality Impacts

MyRWA is most concerned about the absence of any consultation with watershed groups and other interested stakeholders in developing work plans for the Receiving Water Modeling and Water Quality Sampling Programs. These work plans include critical scientific and technical decisions and were also not readily available to the public. In fact, the Receiving Water Modeling work plan was revised for a second time on July 18, a month after the opening of the comment period and with just over a week until the end of the comment period. Receiving Water Modeling is a highly specialized craft and we encourage MassDEP, perhaps in partnership with EPA, to engage an independent third party expert who can provide the agencies with an unbiased review of the work and help improve public confidence in the model and its use. MyRWA is not suggesting this be included in a variance condition, but rather that MassDEP make a commitment to do this in its Final Determination or response to comments.

To further improve public confidence in the use of the model, MyRWA requests that MassDEP add a condition to require MWRA to host a public workshop when it comes time to determine the alternatives that will be evaluated with the model. As we understand the schedule in the modeling work plan, the workshop should be conducted sometime in 2021. Alternatively, or in addition, MassDEP could require MWRA to convene an advisory committee to provide input throughout the modeling effort.

RESPONSE 40
MassDEP and EPA together have a number of staff with the necessary expertise to review the Receiving Water Model, therefore we do not feel an independent third party expert is necessary. Also, see Response 2 regarding public participation.

COMMENT 41
In regards to sampling of Combined Sewer Overflow discharges, MyRWA is concerned that the number and frequency of sampling events is insufficient to provide a robust data set for model calibration and future testing of alternatives. While stormwater discharges can be informed by the literature, this is not the case for the CSO discharges. The drainage and infrastructure associated with each CSO is unique. These unique characteristics yield a unique timing and mix of stormwater and sewage that changes across and during storm and discharge events. MyRWA requests that the MWRA base the sampling frequency on the scientific literature. MyRWA is unaware of the scientific basis for characterizing discharges based on just 2 rounds of samples. Without having sampled numerous rounds throughout various storms, on what basis does MWRA determine the timing of a single sample that represents average discharge concentrations?

RESPONSE 41
MWRA amassed a very large amount of sampling data for CSO pollutant concentrations in developing their CSO abatement plan, which was used to derive event mean concentrations for CSO discharges for use in their receiving water model. This effort included data specifically gathered for the CSO abatement planning, influent data (still being collected) for their CSO treatment facilities, and data from the Boston Water & Sewer Commission on their CSOs. Even with all the past CSO data gathered, however, MassDEP agrees with MyRWA that CSOs have differing drainage areas and infrastructure that could yield some variation on CSO pollutant loads. MWRA's current Receiving Water Modeling Scope (dated July 18, 2019) includes sampling of a number of untreated CSOs in the Alewife/Mystic watershed, and sampling of treated CSO discharges at the Somerville Marginal CSO treatment facility. This information will help in calibrating and validating the receiving water model. MassDEP also acknowledges the difficulties in collecting CSO discharge samples. As an example, for the reporting year 2018, the City of Somerville reported 22 CSO discharge events at CSO SOM 01A, with the average duration of a discharge event of 0.83 hours, and longest duration discharge of 1.58 hours. This creates logistical challenges of being on site to take the sample during the times of discharge.

COMMENT 42
We would also request the inclusion of phosphorus sampling concurrent to the bacteria sampling. The draft Mystic River Alternative TMDL identifies that 11% of Total Phosphorus Loading is from CSO and SSO discharges. While it is fair to say 89% comes from other sources that should be addressed – it is also appropriate to examine the opportunity to reduce this source of phosphorus. Reducing phosphorus is expensive everywhere – consider that treatment of one acre of impervious surface for high density residential yields 2.32 lb/ac/year and costs as much as $75,000/acre (cost of $32,000 per lb of TP removed). Consider that based on an estimated TP concentration of 3.1 mg/l (Breault et al. 2012) – removing 39,000 gallons of CSO/discharge per years yields a 1 lb reduction. This calculation documents that CSO reductions yield significant co-benefits for addressing the cultural eutrophication issues at the Mystic River and Alewife Brook.

RESPONSE 42
See Response 5 regarding phosphorus.

COMMENT 43
We are also concerned that the majority of sampled stormwater outfalls are known to be influenced by illicit connections. There seems to be a pervasive assumption made by MWRA that cleaning up CSOs will not make the river healthier or safer for recreation because of the overriding effect of contamination from other sources, specifically non-CSO stormwater outfalls. Without a robust understanding of the relative contributions of the sampled outfalls to overall bacterial loading from all sources, it will be difficult to draw conclusions about what conditions would be if CSOs were eliminated. In addition, relying on data from outfalls with known illicit connections assumes a static environment where Belmont, Cambridge and Somerville are not investing in and improving their systems as well. We need to better understand the impact of these CSOs if they were discharging into a clean Alewife Brook. After all, sewage discharges from stormwater systems are in violation of the law and require the continued enforcement efforts of MassDEP and EPA until they are no longer part of the background. In that context, we need to understand the impact of CSOs to Alewife Brook and the Mystic River with much reduced illicit conditions. Therefore, MyRWA recommends that a greater effort be placed on sampling outfalls without major illicit connections. We want a measure of system performance in a world where the municipalities are in compliance with their MS4 obligations – that is, when they comply with all the requirement of the Clean Water Act.

RESPONSE 43
See Response 8 regarding MWRA and the communities' sampling of stormwater outfalls.

COMMENT 44
D. Notification to the Public of CSO Discharges and Impacts
D.2 The requirement should be for signage at Waldo (not Wald) Park in Arlington.

RESPONSE 44
MassDEP intended for the requirement to be for John Wald Memorial Park in East Arlington. Currently there is an old sign there that needs to be updated in an easier to read format for the public. This change will be made to the final Variance.

COMMENT 45
D. Notification to the Public of CSO Discharges and Impacts
D.4 MyRWA applauds inclusion of a requirement for MWRA, Cambridge and Somerville to develop a CSO Subscriber-Based Notification System. However, given all the metering and telemetry already in place for the Performance Assessment at the CSOs that are still discharging to the Alewife Brook/Upper Mystic, MyRWA believes it should not take 16 months to implement these systems. We agree with the Charles River Watershed Association (CRWA) that this notification system should be in place by June 2020. This notification system should be fully consistent with proposed CSO notification legislation reported out from the Joint Committee on Environmental, Natural Resources, and Agriculture (H.3976, July 18, 2019) that requires notification of the public within 2 hours of a CSO event. Timely notification advances the protection of public health for the hundreds of youth rowers on the Mystic River every day and others that come in contact with these water bodies. In the interim, MWRA, Cambridge and Somerville should be required to provide email notification to MassDEP, EPA, local Boards of Health and MyRWA within 24 hours of a CSO event. Somerville, Cambridge and MWRA should make a commitment to providing better notification. MyRWA is on the Cambridge subscriber list and in 2018 received only two notifications that year for CSOs for Alewife Brook. Yet the data indicate there are more than a dozen discharges a year at sites that don't have the telemetry on them. The current practice is no longer functioning to alert and protect the public.

MyRWA is pleased to see the expanded requirement that each entity establish and maintain a public website with information about their permitted CSO outfalls. These sites would be an ideal place to post the metering information and narrative we recommended in comments on condition C.1 above. To make this condition enforceable, MassDEP need should specify the date by which websites containing all the required information must be established.

RESPONSE 45
See Response 12 regarding public notifications.

COMMENT 46
E. Other Actions to Minimize CSO Discharges
E.2 MyRWA is pleased to see the details of the System Optimization projects that MWRA will undertake to satisfy the Variance Pollutant Minimization Program requirement during the variance as detailed in Exhibit A. However, to make this requirement enforceable, the last sentence in E.2. should say "... MWRA shall…" rather than "MWRA can."

On the other hand, while Cambridge and Somerville are also granted variances, the Tentative Determination provides no details of work that they will undertake during the variance to satisfy the requirement for a pollutant minimization program. MWRA's May 14, 2019 letter requesting the variance details significant work to be performed by Somerville (see pages 5-6 of MWRA's letter). Surely, Cambridge has relevant work planned as well. MyRWA recommends that key projects and decisions affecting the Alewife Brook and Upper Mystic for each city be itemized in separate exhibits to satisfy the requirement for pollutant minimization and provide for the same level of enforceability that MWRA is subject to.

RESPONSE 46
MassDEP will make the change in the last sentence in Section E.2 from "MWRA can…" to "MWRA will…" for both Variances.

The tasks outlined in Exhibit A to the Variance, the Additional Optimization Measures, especially task 3, will necessitate collaboration with the Cities of Cambridge and Somerville, since optimization measures in many cases may involve modification of City-owned CSO regulators or sewer infrastructure. MassDEP also considers these optimization measures a required element of the Nine Minimum Controls program set forth in the NPDES permits for Cambridge and Somerville, where system modifications will achieve further reductions in CSO activations and volumes.

Many of the potential improvements cited in the MWRA Variance request letter, in regard to Somerville, involve large-scale rehabilitation of the City's sewer and storm drain systems, in some cases being advanced on a timeline with development projects. These projects lie outside of an "optimization" measure, and can and must be addressed in the City's CSO Control Plan Update required under the Variance.

COMMENT 47
E. Other Actions to Minimize CSO Discharges
E.3 MyRWA appreciates the continued inclusion of the I/I condition. However, we urge MassDEP to not make provision of the metering data contingent on requests by MassDEP, EPA or MWRA member communities. We urge MassDEP to require that MWRA provide this information to MassDEP, EPA and the public for all storms that trigger CSO discharges. Our comments on condition C.1 regarding metering

and posting of data and narratives would likely satisfy the concerns expressed here. We hope that MassDEP would then use this information to require communities to address I/I where it is found to be essentially contributing to CSOs by straining the hydraulic capacity of the sewer system.

RESPONSE 47
The approach in the Variances is consistent with MassDEP's current practices related to Infiltration and Inflow for all sewer authorities. The requirement for I/I data that MyRWA is proposing would be overly burdensome for MWRA to provide for every rain event that triggers CSOs.

COMMENT 48
F. Updated CSO Control Planning
MyRWA is greatly encouraged by the inclusion of this requirement in the variance conditions.
We hope that this requirement marks a turning point, where we can all shift from a retrospective review of compliance with the old Long Term Control Plan, to a forward-looking view of when we can expect to achieve Class B standards in the Alewife Brook and Upper Mystic. This critical shift to a prospective view must include different thinking about control alternatives, affordability and the effects of our changing climate. MyRWA recommends that the scope and schedule required by April 1, 2022 be submitted for review and approval to EPA as well as MassDEP.

RESPONSE 48
MassDEP will modify both final Variances to include EPA review and approval of the scope and schedule.

COMMENT 49
F.2. MyRWA strongly supports evaluation of "...further CSO control alternatives up to and including elimination of discharges." [emphasis added] This evaluation scheme should not presuppose a binary choice between total elimination or the end result of compliance with the limited mitigation goals of the old Long Term Control Plan.

Green Infrastructure is being applied as a solution in all of the major CSO cities in the United States right now - whether in DC, New York or Philadelphia. MyRWA encourages MassDEP to specify that the alternatives must include both green and gray infrastructure (i.e., "...further CSO control alternatives, including green and gray infrastructure, up to and including elimination of CSO discharges;"). Updated CSO control evaluation must also address the reality that our current climate is different from the one we were experiencing when the "Typical Year" was identified for the old Long Term Control Plan. It is evident from the 2018 data MWRA has presented in the Post Construction Assessment project updates, that shorter but higher intensity rainfall events (e.g., rainfall rates of 0.4 inches/hour or greater) are perhaps just as or more important as storm duration or total rainfall in triggering sewage overflows in the Alewife and Upper Mystic.

Prospective planning must be based on an updated view of typical precipitation events. MyRWA strongly encourages MassDEP to include a specific requirement to update the "typical year" as part of this condition.

RESPONSE 49
See Responses 7, 10, 13, and 15.

COMMENT 50

F.3. MyRWA supports a robust public participation process. We expect that including this provision in both the Alewife/Upper Mystic and Lower Charles variances means there will be at least one public meeting and a public hearing in each watershed. Attempting to cover both watersheds in a single meeting or hearing would blur the focus and compromise available time for dialogue and comments. MassDEP should consider the potential benefits of convening an advisory committee that would include communities, watershed groups and other key stakeholders to assist the department in ensuring active and thoughtful public involvement throughout the planning process.

RESPONSE 50
See Response 16.

COMMENT 51
F.4. While MyRWA recognizes that an affordability analysis consistent with EPA's 1997 guidance is a necessary condition, we do not feel it is a sufficient condition. Thus, we strongly support MassDEP's inclusion of "other relevant information to assess financial capacity" as part of this variance condition.

EPA's financial capacity guidance is now 22 years old and in the intervening years there has been some excellent analysis right here in the Commonwealth about differing ways to approach infrastructure cost. The Water Infrastructure Finance Commission was established by the legislature in 2009 to analyze Massachusetts's water infrastructure funding needs and develop recommendations for financing these needs going forward. The Commission's report *Massachusetts's Water Infrastructure: Towards Financial Sustainability* (February, 2012), provides recommendations in a host of areas, including affordability. The Commission's report should be closely studied for alternative ways to define and address affordability for both municipalities and individual ratepayers. New thinking, such as using a progressive rate schedule to set the MWRA's Community Assessment fees, should be given serious consideration.

RESPONSE 51
See Response 18. MWRA and the communities are allowed to expand the affordability analyses to include analyses that go beyond the available EPA guidance. The full CSO Plan, including the affordability analysis, will be subject to public comment, and final review and approval by both EPA and MassDEP. MassDEP will review the Water Infrastructure Finance Commission Report cited.

COMMENT 52
In closing, we reiterate our confidence that Class B water quality standards will one day be attained throughout the Mystic River watershed. We are hopeful that the proposed variance and its conditions represent the opportunity to set new goals for CSO control that get us significantly closer to that vision. We thank MassDEP for the opportunity to comment on this issue which is of paramount importance to our membership.

RESPONSE 52
MassDEP acknowledges this comment.

CITY OF CAMBRIDGE (ALEWIFE BROOK/UPPER MYSTIC RIVER BASIN VARIANCE), KATHERINE WATKINS

COMMENT 53
The City has been actively engaged in reducing the number of combined sewer overflows (CSOs) to the Alewife Brook, and in partnership with community groups and the Massachusetts Water Resources

Authority (MWRA) the reduction of CSO discharges is anticipated to improve water quality in the Alewife Brook. To this end, the DPW remains committed to its goal to continue to support projects that aid in the further reduction of CSO flows to the Alewife Brook.

Our ongoing partnership with MWRA, MassDEP, and our local community groups provides the framework to continue further improvements in water quality of the Alewife Brook and to support the Alewife Brook coming into full compliance with the goal of the Federal Clean Water Act. To this end, and subject to our detailed comments below, the DPW fully supports extending the existing Variance through August 31, 2024, to allow MWRA, the City of Cambridge and others to complete the work originally envisioned to allow the Alewife Brook to continue its path of significant water quality improvement.

RESPONSE 53
MassDEP acknowledges this comment.

COMMENT 54
Page 2 - Variance Conditions: The first sentence following the heading "Variance Conditions" states:

> *"The Variance is conditioned upon MWRA and the Cities of Cambridge and Somerville complying with the following requirements:"*

This sentence is then followed by detailed requirements under sections A-F. We note that some of the detailed requirements listed are specific only to MWRA, some are specific only to the Cities, and some requirements are specific to both MWRA and the Cities. In order to provide clarity regarding individual responsibilities, we request the above sentence be modified as follows:

> *"The Variance is conditioned upon MWRA and the Cities of Cambridge and Somerville complying with their individual and joint ~~the following~~ requirements, as identified below:"*

RESPONSE 54
As with Response 21, MassDEP agrees to make this change to the Variance.

COMMENT 55
Page 3, Section B, paragraph 2: The last sentence of this paragraph states:

> *"The report shall include a summary of the receiving water sampling data collected over the past calendar year, including sampling locations and parameters, and comparisons between results during wet and dry weather, a characterization of rainfall events for which wet weather sampling was done, and a correlation of the sampling data with CSO activations and volumes."*

The DPW supports the Variance requirement for MWRA to prepare the report noted above, however we believe it would not be appropriate to attempt to establish a simple correlation between the sampling data with a single pollutant source - CSO, considering all the multiple pollutant sources that impact the in-stream water quality, such as stormwater and other non-CSO sources.

The DPW believes that the correlations between the sampling data and various pollutant sources (including CSOs) should be developed using a water quality modeling tool, in order to accurately represent relationships among the various water quality stressors and their associated impacts on water

quality. This would ultimately prove to be much more valuable to MassDEP and others when evaluating the conditions and their causes in the Alewife Brook.

We request the requirement be modified as shown below:

> "The report shall include a summary of the receiving water sampling data collected over the past calendar year, including sampling locations and parameters, and comparisons between results during wet and dry weather, a characterization of rainfall events for which wet weather sampling was done, and a ~~correlation of the sampling data with~~ summary of CSO activations and volumes. This data will ultimately be used in a water quality model to assess the impacts and their effects to CSO discharges in the Alewife Brook."

RESPONSE 55
See Response 23.

COMMENT 56
Page 5 Section D.4 -Notification to the Public of CSO Discharges and Impacts: The DPW supports public notification to the fullest extent feasible, as well as a CSO Subscriber-Based Notification System, or other such system which provides the public with accurate, up-to-date information regarding the status of CSO discharges.

RESPONSE 56
MassDEP acknowledges this comment.

COMMENT 57
As written, the Variance seems to allow the Cities of Somerville and Cambridge, and MWRA to develop independent, enhanced subscriber-based notification systems. For many reasons, including the ability to provide the most accurate information in the quickest manner feasible, the DPW believes that the public and other interested groups and agencies should have the ability to access a single website location to obtain information on the status of all CSO's in the Alewife Brook, regardless of which agency is responsible for monitoring that CSO. In this way, any member of the public can obtain information quickly and accurately regarding the status of all CSOs in the Alewife Brook in a single location without the need to access multiple websites.

The DPW supports a collaborative approach with MWRA and would like the opportunity to explore enhanced alternatives available for public notification including the installation of telemetry at all of the Cambridge CSOs so that "real-time" information on CSO activations can be obtained and posted on a website, and to explore the feasibility of providing computer generated subscriber notifications emails quickly and accurately. Currently CAM002 and CAM401B are the only Cambridge CSOs along the Alewife Brook connected to our telemetry system.

To this end, we request the following modification to the first sentence of paragraph D.3 as follows:

> *"MWRA and the Cities of Cambridge and Somerville shall, by December 31, 2020, cooperatively develop and implement a CSO Subscriber-Based Notification System to provide CSO Alert…"*

RESPONSE 57
See Response 25.

COMMENT 58
The DPW appreciates the timeline provided in Section D.4 (December 31, 2020) to develop and implement the CSO Subscriber-Based Notification System and CSO Alert Notifications. As discussed in a) above, the DPW is exploring the feasibility of providing telemetry at all Cambridge CSOs that discharge to the Alewife Brook. The use of an automated sensor system at each CSO can provide real-time information with regard to whether the CSO is active, the time it became active, the time the CSO ceased, and the volume of the CSO discharge. Potentially integrating this telemetry system with a website to allow the data to be posted, will provide the public with timely and detailed CSO information.

In order to provide this system, the DPW will need to determine the requirements and location of each telemetry unit and explore a web-based notification system. The Commonwealth of Massachusetts procedures for bidding and procurement are extensive and require time for each phase of development, design, bidding, award, construction and implementation process. These procedures include procurement of engineering services to assist in the program development and design, development of bidding documents and specifications, and advertising and contract award, all of which must occur before beginning work on the project. The DPW will strive to complete this process by December 31, 2020.

RESPONSE 58
See Response 26.

COMMENT 59
Paragraph D.4.b specifically requires that the Cities of Cambridge and Somerville and MWRA independently establish websites that contain information such as CSO mapping, NPDES information, duration and volume of CSO discharge, rainfall data, and annual CSO discharge information, for their own CSOs.

The DPW fully supports the public availability of such information and is committed to providing the most accurate information available. We also support the Cities and MWRA each maintaining their own websites with respect to information on CSOs in the Alewife Brook. However, as noted in our comment above, we do not believe the public should have to access multiple websites in order to obtain the information for all CSOs in the Alewife Brook.

In order to address this issue, we suggest that the language in the paragraph D.4. be modified as follows:

> *"MWRA, and the Cities of Cambridge and Somerville shall work cooperatively to ~~each~~ establish and maintain a public website(s) which shall include, at a minimum, the ~~following~~ information listed below, for their permitted CSO outfalls in the Alewife Brook Basin. This requirement may be met by one entity compiling and posting the data on their website, and other entities providing a link on their own website to the data."*

RESPONSE 59
See Response 27.

COMMENT 60
Page 6 Section E - Other Actions to Minimize CSO Discharges: Paragraph E.1 of this section requires that:

"MWRA and the Cities of Cambridge and Somerville shall….Any enhancements to the MWRA and community NMC programs identified during the CSO Performance Assessment can and shall be implemented as measures to further reduce CSO discharges so that highest attainable interim effluent conditions can be achieved and maintained during the Variance period."

This language is vague and overly broad, and as such could delay implementation of needed projects, or conversely require implementation of projects that conflict with other requirements or legal authorities.

Please consider modifying this language as shown below:

"MWRA and the Cities of Cambridge and Somerville shall….Any enhancements to the MWRA and community NMC programs identified by MassDEP or the permittees during the CSO Performance Assessment can and shall be implemented after obtaining all necessary approvals and providing the enhancements do not conflict with the overall goals and requirements of the LTCP, as measures to further reduce CSO discharges so that highest attainable interim effluent conditions can be achieved and maintained during the Variance period."

RESPONSE 60
As with Response 28, MassDEP agrees to make this change in the Variance.

COMMENT 61
Page 6 Section E.2: Since MWRA's system and the City's system are hydraulically connected, the impact of any "Additional System Optimization" measures by MWRA should be evaluated collaboratively by MWRA and the City so that the full effect on both systems performance can be evaluated in order to maximize the overall benefits. Please consider modifying this language as shown below:

"MWRA shall implement the Additional System Optimization measures as set forth in the scope and schedule of actions in attached Exhibit A. MWRA shall coordinate with the City of Cambridge to evaluate the impact of any Additional System Optimization measures on both systems performance."

RESPONSE 61
See Response 29.

COMMENT 62
Page 7 – Section F – Updated CSO Control Planning: While the DPW understands that a comprehensive Long-Term Control Plan is a critical component of CSO evaluation and both a federal and state requirement, we find the wording in this section unclear as to MassDEP's intent.

The first paragraph under Section F states:

"On or before April 1, 2022, MWRA and the Cities of Cambridge and Somerville shall each submit for MassDEP review and approval, a scope and schedule for an updated CSO Control Plan for the CSO outfalls that each permittee owns and operates that discharge to the Alewife Brook/Upper Mystic River. The updated CSO Control Plan shall conform to the EPA CSO Policy and MassDEP's 1997 Guidance for Abatement of Pollution from CSO Discharge…"

This paragraph appears to require that the Cities (and MWRA) develop an updated Long-Term Control Plan in accordance with the federal requirements under EPA's 1994 Combined Sewer Overflow Policy and MassDEP's 1997 Guidance – both of which are guidance documents for developing and implementing the Nine Minimum Controls and Long-Term Control Plans.

RESPONSE 62
See Response 30.

COMMENT 63
The DPW has the following concerns:
Coordination with Post Construction Monitoring

LTCP History
MWRA developed a LTCP which included addressing all CSOs in the Alewife Brook. In accordance with this plan, nearly 1 billion dollars have been invested in sewage system upgrades and improvements. Further the Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control (Stipulation) clearly identifies the existence of the 1997 MWRA LTCP and requires that all outfalls identified (which include the Alewife Brook outfalls) be subject to this LTCP.

Both the City and MWRA are now fully engaged in the final step of this nine-step LTCP – post construction compliance monitoring.

In accordance with both the EPA and MassDEP guidance cited above (see Federal Register 18689 Part II.C.9) once CSO controls have been fully implemented, a post-construction monitoring program is to be conducted in order to verify compliance with water quality-based Clean Water Act requirements and ascertain the effectiveness of CSO controls.

Submission of Post Compliance Monitoring
Following completion of post-construction monitoring a determination will be made as to whether the goals of the CWA have been achieved in the waterbody, or additional measures need to be undertaken. Such a determination will be based upon the results of the post construction monitoring as to the water quality status of the Alewife Brook, and whether the presence of CSOs (if any remaining) preclude the attainment of water quality.

The DPW remains fully committed to ongoing and future projects to reduce, and even eliminate where feasible, CSO discharges to the Alewife Brook. To that end we will gladly provide a report or other similar summary of ongoing and future CSO abatement projects.

However, we are concerned that the Variance language in Section F, which requires both MWRA and the Cities to "each submit..an updated CSO Control Plan" requires the City, independent of MWRA, to develop a component of a Long-Term Control Plan, and potentially do so in advance of the post construction monitoring results (see quote from MassDEP Alewife Brook Mystic Fact Sheet).

We note that while the Stipulation requires MWRA to complete a CSO performance assessment and submit the resulting report to MassDEP and EPA in December 2020, we also note that the following in the Alewife Brook Fact Sheet:

"MWRA, on June 4, 2019, filed a request with the Court to extend the deadline for submittal of the CSO Assessment to December 31, 2021…"

The DPW supports the completion of the Lower Alewife Brook water quality model and submission of results to MassDEP as early as is feasible in consideration of the important additional sampling that is underway. However, it appears that the data collection and date of submission of the report may be reevaluated and could be different than December 31, 2020.

Until the compliance monitoring is complete, it is not known which segments of the waterway (if any) do not meet the goals of the CWA, the extent and reasons those sections are not meeting water quality, and to then consider specific CSO control alternatives that may be required. Specifically, items F.2, F.4, F.5 and F.6 of the Variance, all require that the post construction monitoring be complete, prior to undertaking these tasks.

For example, item F.4 requires an affordability analysis to determine financial capacity to undertake projects which will result in the Alewife Brook meeting the goals of the CWA. The identification of what specific CSO reductions projects are necessary to meet water quality, and their associated costs, would not be known until after post construction monitoring provides the information needed to know specifically in the Alewife Brook where, and to what extent, water quality is not being met and what further improvements are appropriate.

Item F.5 requires the exploration of obtaining a Use Attainability Analysis (UAA). A UAA, which is a request to MassDEP and EPA to lower the allowable water quality criteria of the Alewife Brook as identified in the Massachusetts Administrative Code, is only appropriate when it has been shown there are no feasible alternative to meeting the current water quality criteria. Until MWRA completes their comprehensive post construction monitoring, we cannot know which segments of the Alewife Brook, if any, are not meeting water quality, and further for any segment that is not yet meeting water quality, the DPW would want an opportunity to explore all feasible measures to improve those segments, so that water quality can be met without the need to lower it through a UAA.

<u>Request for Section F to Follow Submission of Report</u>
In this Variance, MassDEP has allowed for a 16-month timeframe between submittal of the MWRA water quality report and submission of an updated CSO Control Plan (12/31/2020 to 4/1/2022), however, based upon new information in the Fact Sheet noted above, it appears there is a possibility the water quality report for the Alewife Brook may not be submitted on 12/31/2020.

For the reasons detailed above, the DPW requests that section F be modified such that submission of these items be required 16 months following MWRA's submission of a complete Receiving Water Modeling Report for the Lower Alewife Brook/Alewife Basin.

In the event that MWRA submits the water quality modeling analysis for the Alewife Brook by 12/31/2020 (or even earlier) the subsequent components of item F will be submitted on a timeline as outlined in the Variance. However, in the event that the report is submitted at a later time, the 16-month timeframe following submission of the report will allow sufficient time to address the items in Section F.

In the interim the DPW will provide to MassDEP a report which describes ongoing projects in the City aimed toward CSO reduction, as well as planned future projects and other related items as MassDEP may require.

RESPONSE 63
See Response 31.

COMMENT 64
LTCPs that involve multiple sewage agencies need to be developed cooperatively
Whether the timeline for the submission of items identified under Section F is modified or remains the same, we believe the CSO plan required under Section F should be developed by both the City and MWRA as a supplement to the existing MWRA plan, and not developed in isolation by the City.

The Federal 1994 National CSO Control Policy, 59 Fed. Reg. 18688 (April 19, 1994) and the 1989 National CSO Control Strategy, 54 Fed. Reg. 37370 (Sept. 8, 1989) all emphasize the necessity and responsibility of the treating authority to assume an integral role in the development of LTCPs, whether or not it owns or operates a CSO outfall. Under the National CSO Policy *"when different parts of a single CSS are operated by more than one authority, permits issued to each authority should generally require joint preparation and implementation of the elements of this Policy and should specifically define the responsibilities and duties of each authority. Permittees should be required to coordinate system-wide implementation of the nine minimum controls and the development and implementation of the long-term CSO control plan."* Part IV.A, 59 Fed. Reg at 18695.

Further, in accordance with the Stipulation between MWRA and the United States, dated March 15, 2006, MWRA has certain responsibilities, which would preclude the City from developing an independent CSO Control Plan. Specifically, as stated in the Stipulation:

> *"With respect to all of the CSO outfalls within or hydraulically connected to the Authority's sewer system, including the outfalls identified in Exhibit "B" hereto, the Authority accepts legal liability to undertake such corrective action as may be necessary to implement the CSO control requirements set forth in Schedule Six and related orders of the Court in the above-captioned action, and to meet the levels of CSO control (including as to frequency of CSO activation and as to volume of CSO discharge) described in the Authority's Long-Term Control Plan."*

The City's development of a CSO plan, as separate and distinct from the MWRA LTCP, would conflict with the Stipulation.

In consideration of the requirements of the National CSO Policy, the Second Stipulation of Settlement, and the infeasibility of developing separate CSO Control plans, the DPW requests the following language modification:

> *"Upon MWRA's completion of the Post Construction Monitoring, for any segments of the Alewife Brook which are determined to not meet the goals of the CWA, ~~On or before April 1, 2022,~~ MWRA ~~and the City of Cambridge~~ shall ~~each~~ submit for MassDEP review and approval, a scope and schedule for an updated CSO Control Plan for the CSO outfalls that ~~each permittee owns and operates that~~ discharge to the Alewife Brook/Upper Mystic River. The updated CSO Control Plan shall conform to the EPA CSO Policy and MassDEP's 1997 Guidance for Abatement of Pollution from CSO Discharges,…"*

RESPONSE 64
See Response 32.

COMMENT 65
Cost Benefit Analysis should be inclusive of stormwater impacts: Section F.2 requires only that a cost benefit analysis be conducted with respect to CSO discharges in isolation of the impacts of stormwater only discharges. Stormwater standards are a significant component of meeting water quality standards, including Total Maximum Daily Loads. Further, the City's completed sewer separation projects and related reduction in CSOs needs to be evaluated holistically with stormwater discharges.

EPA has long been a proponent of the watershed approach to CSO planning. In EPA's document "Combined Sewer Overflows Guidance for Long-Term Control Plans" Section 1.6.5 it states:

> *The CSO Control Policy acknowledges the importance of watershed planning in the long-term control of CSO's by encouraging the permit writer to "…to evaluate water pollution control needs on a watershed management basis and coordinate CSO control efforts with other point source and nonpoint source control activities" (I.B). The watershed approach is also discussed in the section of the CSO Control Policy addressing the demonstration approach to CSO control (II.B.4.b; see also chapter 3 of this document) which, in recommending that NPDES permitting authorities allow a demonstration attainment of WQS, provides for consideration of natural background conditions and pollution sources other than CSOs, promoting the development of total maximum daily loads (TMDLs).*
>
> *"EPA's Office of Water is committed to supporting States that want to implement a comprehensive statewide watershed management approach."*

In addition to the above, EPA has created numerous resources to support the development of watershed planning, including the "Handbook for Developing Watershed Plans to Restore and Protect our Waters" which includes the following:

> *Using a watershed approach to restore impaired waterbodies is beneficial because it addresses the problems in a holistic manner and the stakeholders in the watershed are actively involved in selecting the management strategies that will be implemented to solve the problems. Nonpoint source pollution poses the greatest threat to water quality and is the most significant source of water quality impairment in the nation. Therefore, EPA is working with states, tribes, and watershed groups to realign its programs and strengthen support for watershed-based environmental protection programs." (section 2.1)*

In accordance with the above, the DPW requests the following modification to Section F.2.

> *"An evaluation of the costs and water quality benefits of further CSO control alternatives, up to an including elimination of CSO discharges. The evaluation of costs and water quality benefits must include stormwater discharges. Stormwater discharges are an important part of meeting the water quality standards, including addressing Pollutants of Concern, and should be evaluated holistically on a watershed basis."*

RESPONSE 65
See Response 33.

CITY OF SOMERVILLE, JESSICA FOSBROOK AND RICHARD RAICHE

COMMENT 66
The City of Somerville supports allowing the 5-year variance on the Combined Sewer Overflow (CSO) discharges to the Alewife Brook/Upper Mystic River and appreciates the opportunity to comment on the CSO Variance Tentative Determination.

RESPONSE 66
MassDEP acknowledges this comment.

COMMENT 67
Page 5, Section D(4)(a): The City of Somerville is comfortable with the provisions proposed for the CSO Alert Notification system as long as it is understood that the information to be provided in the Alert Notification will be automated and that time constraints of the notification proposed will not allow for any data verification nor customization of the information for each CSO Alert.

RESPONSE 67
Wherever possible, a verification process should be carried out in the four-hour window, to attempt to make the CSO notifications as accurate as possible. However, if this is not possible, the notification should still be provided in this timeframe, with the verification procedures to follow.

COMMENT 68
Page 6, Section D(4)(b): Somerville has had discussions with vendors and has concerns related to the accuracy of volume estimates available within a five day timeframe. We understand and support the need to provide this information in a timely manner, but are skeptical that the technical issues can be adequately addressed by Dec 31st, 2020.

RESPONSE 68
MassDEP has also researched the challenges of accurately confirming CSO activations, and estimating CSO volumes. MassDEP concurs that accurately estimating CSO volumes is a more challenging aspect of the meter data assessment. However, providing for five business days (essentially a full week) to post the information on the City's website is sufficient to allow data review, and making a reasonable estimation of the CSO volume for an event.

COMMENT 69
Page 7, Section F: We propose that MWRA, Somerville, and Cambridge submit one collaborative CSO Plan instead of three individual CSO Control Plans. From a practical standpoint, the three systems interact making it impossible to evaluate the benefits of mitigation measures in isolation. Moreover, it is in the best interest of the regional rate payers to define an integrated plan. The management of the CSOs are already a collaborative effort and we propose that this be represented in a single Plan.

RESPONSE 69
See response 32. MassDEP encourages MWRA and the two communities to collaborate on one CSO Plan and will modify the Variance to state that MWRA and the communities may collaborate to develop one plan. The Variance will not require that the CSO Plan is developed collaboratively.

COMMENT 70
Page 7, Section F: Given the timeframe of the sampling period and reporting deadline of December 31st, 2021 we would propose that the submittal of the CSO Control Plan(s) scope and schedule to be delayed until June 30th, 2022 from April 1st, 2022 to allow for a more realistic timeframe for Cambridge, Somerville and MWRA to develop an Plan and the specific items each party will lead.

RESPONSE 70
MassDEP continues to believe this is an achievable deadline, and as such the deadline will remain the same in the final Variance.

COMMENT 71
Page 7, Section F(5): Evaluation of options and development of preferred mitigation measures is anticipated to be a technical challenge and will require significant public input from both Cambridge and Somerville constituents. We recommend a minimum of two years from the date of MassDEP and EPA approval of the scope of work for preparation of a draft report.

RESPONSE 71
MassDEP continues to believe this is an achievable deadline, and as such the deadline will remain the same in the final Variance.

COMMENT 72
Page 7, Section F(6): Similarly, finalization of the plan will require technical analysis, public involvement, and agreement between Cambridge, Somerville and MWRA on plan implementation specifics. We recommend a minimum of six months from the time MassDEP and EPA comments on the Draft Report to the submission of the final report.

RESPONSE 72
MassDEP continues to believe this is an achievable deadline, and as such the deadline will remain the same in the final Variance.

MWRA ADVISORY BOARD, JOSEPH FAVALORO

COMMENT 73
The MWRA Advisory Board appreciates the opportunity to comment on the proposed determinations to extend the variances for CSO discharges to the Lower Charles/Charles Basin and Alewife Brook/Upper Mystic River to August 31, 2024. We strongly support extending these variances. We understand that MassDEP cannot determine whether it is feasible for MWRA to achieve Class B water quality standards for bacteria for these surface waters until the CSO Performance Assessment, as part of the court-ordered Long Term Control Plan, has been completed.

We recognize that without the variances, the first CSO event beyond the court order would result in the MWRA being out of compliance. We believe it is important to consider a few things: 1) the feasibility of eliminating all CSOs, and 2) the long-term outlook for the variances.

Total elimination of CSOs would make the MWRA compliant with Class B standards. The MWRA estimates it would cost over $18 billion to fully close CSOs in the system and to complete associated

wastewater system improvements. As the group charged with representing the interests of MWRA communities and ratepayers, the Advisory Board does not believe this cost can be justified.

Communities have already footed the bill for the Boston Harbor Project at nearly $4 billion, as well as paid an additional $1 billion towards CSO projects. Fully eliminating CSOs has the potential to incrementally improve receiving surface water quality, but not at a level that is commensurate with this significant investment.

If it is not feasible to eliminate all CSOs, then by definition the MWRA can never be in compliance with Class B standards unless they have variances. Following the adoption of these proposed variances, we ask what it might take to evaluate what may be involved in changing the standards. We would argue that MWRA has taken all attainable actions towards improving water quality as related to CSOs.

RESPONSE 73
As noted in this comment, a determination on whether Class B water quality standards can be attained will not be made until after the end of the Variance period. Any water quality standards change must be based on a Use Attainability Analysis (UAA), which must be done in accordance with 40 CFR 131.10 and 314 CMR 4.03(4).

MWRA, DAVID COPPES

COMMENT 74
The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the tentative determinations to adopt variances made by the Massachusetts Department of Environmental Protection (MassDEP). These tentative determinations support allowing variances for Combined Sewer Overflow (CSO) discharges to the Lower Charles River/Charles Basin and to the Alewife Brook/Upper Mystic River. In response to the request made by MWRA on May 14, 2019, and as described in the tentative determinations, these variances will remain effective through August 31, 2024. MWRA is very appreciative of the on-going coordination with MassDEP as well as the Environmental Protection Agency Region 1 (EPA Region 1) staff throughout this variance process.

In addition to efforts related to variances, under the direction of the Federal District Court Order in the Boston Harbor Case (U.S. v. M.D.C. et al, No. 85-0489 MA) and milestones in the Court's Schedule Seven, MWRA is currently undertaking an extensive program of inspections, overflow metering, rainfall analyses, hydraulic modeling, wastewater system performance evaluations, and water quality impact assessments. These activities, which MWRA commenced in November 2017, will culminate in a report to DEP and EPA that will verify whether remaining CSO discharges meet the levels of CSO control in the MWRA's Long Term Control Plan (LTCP). Compliance with the LTCP levels of CSO control and the ongoing monitoring and performance assessment are required pursuant to the *Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control*, as amended on April 30, 2008 (the "Second Stipulation").

MWRA's performance assessment has two key related objectives: 1) demonstrate attainment of the court ordered levels of CSO control (*i.e.* discharge frequency and volume at each CSO outfall in the Typical Year); and (2) determine the effectiveness of the LTCP in attaining water quality standards by assessing the contribution of the remaining CSO discharges in the Typical Year to bacteria counts and duration of violations of Class B or SB bacteria criteria. CSO activations and volumes and compliance

with bacteria criteria together continue to form the primary basis for EPA and MassDEP's water quality standards determinations in the variances for the Lower Charles River/Charles Basin and the Alewife Brook/Upper Mystic River. Other pollutants, such as nutrients, are not the performance objectives of the LTCP and are not intended to be a part of the performance assessment or MWRA's CSO-related efforts under the terms of the variance.

Specifically, MWRA's CSO performance assessment includes the following key scope elements:

- Inspections at all CSO regulators addressed in the LTCP to confirm closed or active status and to confirm or update physical conditions;
- Overflow data collection at remaining active CSO regulators;
- Upgrade and improved calibration of MWRA's hydraulic model of the wastewater system using recent inspection information and overflow data;
- Assessments of system performance for CSO control and the consideration of performance improvements; and
- Assessment of the water quality impacts of remaining CSOs and compliance with the bacteria criteria in Massachusetts Water Quality Standards.

Details on the most recent efforts related to the performance assessment can be found at: http://www.mwra.state.ma.us/cso/pcmpa-reports/2_050319_MWRA_w_appendices.pdf

One key objective of the ongoing assessment efforts is to improve the system characterization and calibration of MWRA's hydraulic model to validate the model's CSO predictions for assessing attainment of the LTCP's Typical Year levels of control. Currently, MWRA is improving the calibration of its hydraulic model through updates to its characterization and simulation of existing system conditions. This involves using the results of the extensive CSO inspections conducted in 2018 and information collected through continuing coordination with the CSO communities. The data used for model calibration includes flow monitoring data collected in 2018, MWRA SCADA data, as well as rainfall, temperature and tide data that coincide with the flow monitoring data.

As the tentative determinations and fact sheets describe, MWRA has also recently amended its performance assessment scope of work to add receiving water quality modeling of the Charles River Basin and the Alewife Brook/Upper Mystic River Basin. The model results are intended to: (1) support the CSO performance assessment; (2) provide an assessment of the water quality impacts of remaining CSO discharges in a Typical Year; (3) evaluate the potential water quality benefits of higher levels of CSO control; and (4) ultimately inform the long-term water quality standards determinations for these receiving waters. The models for the Charles River Basin and the Alewife Brook/Upper Mystic River Basin will be based on previously developed models of these receiving waters, and will be updated with recent data and calibrated with receiving water quality data currently being collected by MWRA.

A 5-year variance extension will accommodate the evaluation, planning, design, and construction of additional, potentially cost-effective CSO control measures that MWRA is proposing to undertake toward maximum attainable control. In addition, the requested 5-year variance extension will provide the time necessary to complete the following tasks:

- the Court ordered CSO performance assessment;
- development, calibration, and verification of the receiving water model;

- production of water quality model results to assess baseline conditions; and
- evaluation of CSO control scenarios.

These efforts, which also support the eventual development of use attainability analyses, are described in detail in the tentative determinations issued by MassDEP. MWRA is supportive of the published variances and appreciates the opportunity to offer the suggested refinements below.

RESPONSE 74
MassDEP acknowledges these comments.

COMMENT 75
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 1, end of first paragraph: "MWRA remains subject to the orders of the United States District Court ….." This may be misunderstood to mean the Court order will remain in place through the variance period which ends August 31, 2024. Perhaps rephrase to say, "MWRA currently remains subject to the orders of the United States District Court…".

RESPONSE 75
MassDEP agrees to make this change to the final Variances.

COMMENT 76
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 3, Section B, first paragraph: Change "range of storms events" to "range of storm events."

RESPONSE 76
MassDEP agrees to make this change to the final Variances.

COMMENT 77
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 3, Section C(1), first paragraph: After "in regard to CSO activations and volumes," add "in the Typical Year, relative to the Second Stipulation levels of control (Exhibit B)."

RESPONSE 77
MassDEP agrees to make this change to the final Variances.

COMMENT 78
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 3, Section C(1)(a)(i): Change "October 1, 2019" to "October 31, 2019." Also, change "and shall be inclusive" to "and together shall be inclusive." MWRA notes that the first two progress reports required in this section have already been submitted and are available on MWRA's website at: http://www.mwra.com/cso/pcmapa.html.

RESPONSE 78
MassDEP agrees to make this change to the final Variances.

COMMENT 79

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Page 4, Section C(1)(a), last paragraph: Add "estimated CSO discharges from meter data and/or model simulations" after "integration with MWRA's sewer system model." Also, change "where metered data appears to exceed Second Stipulation levels of control" to "where metered and/or modeled CSO discharges appear to exceed Second Stipulation levels of control."

RESPONSE 79

MassDEP will change the language in the Variances to add "estimated CSO discharges from meter data (or model simulations when approved by MassDEP)" after "integration with MWRA's sewer system model." MassDEP will also change "where metered data appears to exceed Second Stipulation levels of control" to "where metered, or when approved by MassDEP, modeled CSO discharges appear to exceed Second Stipulation levels of control."

COMMENT 80

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Page 4, Section C(1)(b)(ii and iii): These sections require notice in the MEPA Monitor at least 30 days prior to a February 2022 public meeting on the December 2021 findings of the CSO Performance Assessment. This means notice no later than the late January Monitor, which notice must be submitted to MEPA by January 15. MWRA respectfully requests that DEP amend this by one month and allow the meeting to happen in March 2022.

RESPONSE 80

MassDEP continues to believe this is an achievable deadline, and as such the deadline will remain the same in the final Variance.

COMMENT 81

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Page 4, Section C(2): In the second paragraph, add "and the Typical Year" after "a range of design storms."

RESPONSE 81

MassDEP agrees to make this change to the final Variances.

COMMENT 82

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Page 4: since the issuance of the draft variances, MWRA has continued to review the Receiving Water Model Workplan, dated May 24, 2019, in consultation with DEP and EPA. As a result of this review, a clarifying statement is needed to confirm that one of the deliverables that will result from the model is reporting on the impact from remaining CSO discharges on bacteria concentrations over time and distance from the CSO discharge points in the Variance waterbodies. MWRA recommends that the Variance now reference the "Receiving Water Model Workplan, dated May 24, 2019, revised July 18, 2019."

RESPONSE 82
MassDEP agrees to make this change in the Variances and will reference the latest version dated July 18, 2019.

COMMENT 83
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 4: the title of the sampling workplan is officially "Receiving Water Modeling of Upper Mystic River/Alewife Brook and Charles River Basin: Work Plan for Stormwater and Combined Sewer Overflow Monitoring, 2019-2020."

RESPONSE 83
MassDEP agrees to make this change in the Variances and will reference the latest version dated August 27, 2019.

COMMENT 84
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 5, Section D(3)(a): The 4-hour notice requirement should be general, meaning that, upon alarm that one outfall has discharged, MWRA can give general notice of "likely or probable discharge from one or more CSO outfalls to (receiving water)" and list all of the outfalls and locations. Further, MWRA seeks confirmation from MassDEP that notification and reporting requirements identified in Section D may be made based on meter data or model predictions.

RESPONSE 84
MassDEP's position is that use of metering equipment is a more reliable indicator of a CSO activation than using a sewer system model. Accordingly, we have included this approach as a requirement, unless otherwise approved by MassDEP, where metering of CSO regulator(s) is particularly complex or may not provide accurate data.

Generally, MassDEP will allow MWRA (and the communities) to craft the CSO alert text, so long as the content includes the information set forth in the Variance. The intent of the requirement is also that individual outfalls which are discharging are identified, even if such reporting indicates that the discharge is "likely or probable."

COMMENT 85
Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin
Page 6 (Charles) and page 7 (Alewife), Section E(2): with regards to implementation of the Variance Pollutant Minimization Program recommend revising to say "MWRA, with assistance/support from Cambridge (Charles)…" and "MWRA, with assistance/support from Cambridge and Somerville…" (Alewife).

RESPONSE 85
MassDEP agrees to make this change in the final Variance.

COMMENT 86

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Page 6 (Charles) and page 7 (Alewife), Section E(2): regarding the January 31 progress reports on the "Additional System Optimization measures," Given the anticipated schedule for these efforts, there will be little to report on January 31, 2020. MWRA requests revising to, "beginning 2021 and on or before January 31 of each year…"

RESPONSE 86

MassDEP agrees to make this change in the final Variance.

COMMENT 87

Comments on Both Tentative Determinations – Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River Basin

Exhibit A: MWRA recommends making clear in the opening paragraph on additional system optimization measures that advancement to project construction is dependent on the feasibility evaluation demonstrating that the construction is technically feasible and will result in substantive water quality benefits, and that the costs alone or in conjunction with other activities specified in Exhibit A would not cause widespread social and economic impact. In this paragraph, MWRA also suggests stating that the activities are to be done with the assistance of Cambridge and Somerville, with the intention of furthering MWRA, Cambridge, and Somerville's goal of improving water quality.

RESPONSE 87

MassDEP acknowledges this comment, but declines to add the additional language to the Variance.

COMMENT 88

Comment on Fact Sheet – Lower Charles River/Charles Basin

We suggest updating the "Current Conditions" Typical Year activations and volumes in Figure 2 and Table 2 and the related text section from end-of-year 2015 system conditions to end-of-year 2017 system conditions. The 2017 values are presented in the Alewife Brook/Upper Mystic Fact Sheet, but not in the Lower Charles River/Charles Basin Fact Sheet. We have attached revised Figure 2, Table 2 and page 5 text with the 2017 values.

RESPONSE 88

MassDEP agrees to make this change to the final fact sheet.

COMMENT 89

Comment on Fact Sheet – Lower Charles River/Charles Basin

We also suggest adding Footnote 5 to Table 2, as shown in the attached update. In past LTCP and variance documentation, MWRA has presented Back Bay Fens CSO discharges along with Charles River discharges as acknowledgement that the water quality of the Fens can contribute to water quality conditions in the Charles River Basin. However, it should also be noted that CSO discharges to the Fens through Outfall BOS046 are limited because BOS046 serves the sole purpose of controlling flooding in very large storms in the large developed drainage area served by BWSC's Stony Brook Conduit. The limited discharges from BOS046 are reflected in its LTCP level of control and in the Back Bay Fens' B(cso) Water Quality Standards classification.

RESPONSE 89
MassDEP agrees to make this change to the final fact sheet.

COMMENT 90
Comment on Fact Sheet – Lower Charles River/Charles Basin
Page 12: the first line in Variance History should read, "In October 1998, MassDEP issued" - not September.

RESPONSE 90
MassDEP agrees to make this change to the final fact sheet.

COMMENT 91
Comment on Tentative Determination – Lower Charles River/Charles Basin
Page 1: in the first paragraph, the correct date of when the Variance was originally issued is October 1, 1998, not September. In the next sentence, the two permits that should be referenced are MA0103284 and MA0101974.

RESPONSE 91
MassDEP agrees to make this change to the final fact sheet.

COMMENT 92
Comment on Tentative Determination – Lower Charles River/Charles Basin
Page 1, end of first paragraph: There is a footnote "1" reference in this sentence that should be deleted. Footnote 1, which explains "Typical Year," is appropriately placed on page 3 in both variance determinations.

RESPONSE 92
MassDEP agrees to make this change to the final Variance.

COMMENT 93
Comment on Tentative Determination – Lower Charles River/Charles Basin
Page 2, end of fourth paragraph: Change "the receiving waters'" to "the receiving water's."

RESPONSE 93
MassDEP agrees to make this change to the final Variance.

COMMENT 94
Comment on Fact Sheet – Alewife Brook/Upper Mystic River Basin
Page 3: paragraph on Levels of CSO Control, in the second to last sentence it should read that MWRA's models predicted not predict.

RESPONSE 94
MassDEP agrees to make this change to the final fact sheet.

COMMENT 95
Comment on Fact Sheet – Alewife Brook/Upper Mystic River Basin
Page 5: Under Costs of the Long-Term Control Plan, change "funds MWRA provided to the City of Cambridge" to "funds MWRA provided to the cities of Cambridge and Somerville." Later in same

paragraph, change “City of Cambridge estimates that it will spend” to “City of Cambridge spent.” Later in same sentence, change “that Cambridge determined is necessary” to “that Cambridge determined was necessary.”

RESPONSE 95
MassDEP agrees to make this change to the final fact sheet.

COMMENT 96
Comment on Tentative Determination – Alewife Brook/Upper Mystic River Basin
Page 5: the section references CSO notification signage at Wald Park in Arlington. MWRA believes this is intended to be John Wald Memorial Park, which is located in Cambridge.

RESPONSE 96
MassDEP intended for the requirement to be for John Wald Memorial Park in East Arlington. Currently there is an old sign there that needs to be updated in an easier to read format for the public. This change will be made to the final Variance.

COMMENT 97
In conclusion, the issuance of final determinations to adopt variances will allow MWRA to conduct the final stage of its court-ordered CSO Long Term Control Plan – specifically the post-construction monitoring assessment - while also continuing to optimize its sewer system and enhance its public notifications. Further, MWRA notes the extensive opportunities for public involvement through notifications, MWRA presentations at public meetings, submittals to MassDEP and EPA, publication of progress reports, and a public comment period on CSO control planning will all enhance the work conducted under these variances. The results of this assessment, including the updated hydraulic and receiving water models, and the stakeholder input that will be received, will provide valuable information to the MWRA, its member communities, watershed advocacy groups and regulatory partners as we focus on the best approaches for continuing to improve water quality while taking care to make sound decisions about the right investments to make on behalf of MWRA ratepayers.

With all of MWRA’s CSO Long Term Control Plan’s major milestones completed, now is the time to evaluate prudent steps to take with regard to reassessing and targeting the attainment of water quality standards for the Lower Charles River/Charles Basin and the Alewife Brook/Upper Mystic River Basin. This evaluation of water quality standards was clearly contemplated by Federal Clean Water Act programs and policies. As described in US EPA’s 1994 CSO policy, a water quality standard variance may be appropriate, in limited circumstances on CSO impacted waters, where the State is uncertain as to whether a standard can be attained and time is needed for the State to conduct additional analyses on the attainability of the standard. MassDEP’s approach is also consistent with the most recent 2015 update to Federal water quality standards and US EPA’s goal of “ promoting the appropriate use of WQS variances when applicable WQS are not attainable in the near-term but may be attainable in the future, and providing regulatory certainty to states, tribes, the regulated community, stakeholders, and the public in making progress toward attaining designated uses and criteria that protect such uses.”

RESPONSE 97
MassDEP acknowledges these comments.

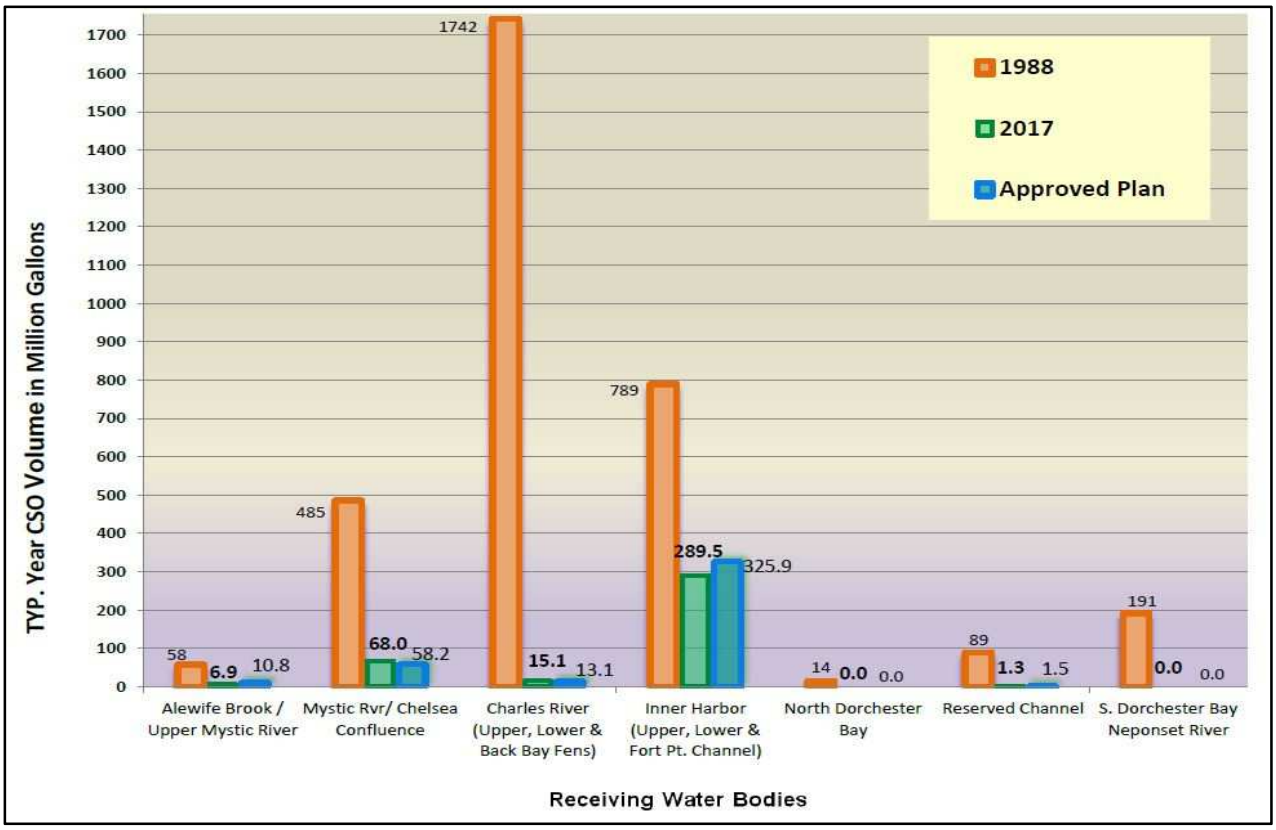
MWRA Variance Comment Letter Attachment

Achieved and Anticipated CSO Reductions in the Charles River Basin

With completion of the LTCP projects and the earlier major improvements to the Deer Island Wastewater Treatment Plant conveyance and treatment systems, MWRA has reduced Typical Year[1] CSO discharge volume to the Charles River (including Back Bay Fens) by 99 percent, from 1.74 billion gallons in 1988 to 15.10 million gallons today (see Figure 2 and Table 2). Of the current Typical Year discharge volume, 10.62 million gallons is treated at the Cottage Farm CSO facility. With the completion of ongoing sewer separation projects by the City of Cambridge, MWRA predicts that Typical Year CSO discharge volume to the Charles River will be reduced to approximately 7.76 million gallons, and 81.2 percent of this remaining volume will be treated at the Cottage Farm CSO facility.

The predictions of MWRA's hydraulic model updated for end-of-year 2017 conditions show that Typical Year CSO activation frequency in the Charles River watershed has been reduced from up to 40 events in the early 1990s to only 3 events today at the Cottage Farm facility and up to 3 events at remaining untreated outfalls.

Figure 2: CSO Discharge Reduction 1988-2017 by Receiving Water



[1] "Typical Year" rainfall has been the basis for development, recommendation and approval of MWRA's LTCP, the establishment of the federal court mandated levels of control, and the assessment of system performance toward attainment of the LTCP levels of control. The Typical Year was developed from 40 years of rainfall records (1949-1987, plus 1992), and it includes 93 storms with a total precipitation of 46.8 inches.

Table 2: Typical Year CSO Discharge Frequency and Volume to the Charles River 1988-2017

Outfall	Baseline Conditions (1988)		Current Conditions[1]		Long-Term Control Plan[2]	
	Activations	Volume (MG)	Activations	Volume (MG)	Activations	Volume (MG)
BOS032	4	3.17	Eliminated	N/A	Eliminated	N/A
BOS033	7	0.26	Eliminated	N/A	Eliminated	N/A
CAM005	6	9.17	3	1.36	3	0.84
CAM007	1	0.81	2	0.26	1	0.03
CAM009	19	0.19	Closed[3]	N/A	2	0.01
CAM011	1	0.07	Closed[3]	N/A	0	0.0
BOS028	4	0.02	Eliminated	N/A	Eliminated	N/A
BOS042	0	0.00	Eliminated	N/A	Eliminated	N/A
BOS049	1	0.01	Eliminated	N/A	Eliminated	N/A
CAM017	6	4.72	1	1.27	1	0.45
MWR010	16	0.08	0	0.00	0	0.0
MWR018	2	3.18	0	0.00	0	0.0
MWR019	2	1.32	0	0.00	0	0.0
MWR020	2	0.64	0	0.00	0	0.0
MWR021	2	0.5	Eliminated	N/A	Eliminated	N/A
MWR022	2	0.43	Eliminated	N/A	Eliminated	N/A
MWR201[4]	18+	1,547	3	10.62	2	6.3
MWR023	39	115	1	0.02	2	0.13
SOM010	18	3.38	Eliminated	N/A	Eliminated	N/A
Subtotal Charles Basin		1,690		13.53		7.76
BOS046 (Back Bay Fens)		52	1	1.57	2	5.38
TOTAL		1,742		15.10		13.14

[1] From MWRA modeling of 2017 year-end system conditions in a Typical Year. Includes the benefits of major improvements to Deer Island transport and treatment systems, implementation of system optimization measures (SOPs) recommended by MWRA in 1993 and 1994, and the CSO control projects in the approved LTCP.

[2] These are the required levels of control. Higher levels of control may be achieved (see, for instance, Outfall BOS046 Back Bay Fens current and Long Term Control Plan discharge levels). The LTCP levels of control on the Charles River Basin anticipate completion of ongoing sewer separation work (independent of MWRA's LTCP) by the City of Cambridge. These projects are a part of the City's long term capital improvements program, are contingent on funding and other factors, and thus are not on the schedule of MWRA's LTCP.

[3] Pending ongoing hydraulic performance evaluation by the City of Cambridge.

[4] MWR201 is the (treated) effluent discharge for the Cottage Farm CSO Facility. Flows are screened, disinfected and dechlorinated prior to discharge. Actual, measured Cottage Farm activations in 2017 was 2, with total discharge volume of 24.60 MG, of which 21.61 million gallons was discharged during the large storm on October 30, 2017.

(5) Back Bay Fens and CSO discharges at Outfall BOS046 is not subject to the variance for the Lower Charles River/Charles Basin. While Back Bay Fens is within the Charles River Watershed, its Water Quality Standards classification is B(cso), which limits CSO discharges at BOS046 to the LTCP level of control.