CAMBRIDGE COMBINED SEWER OVERFLOW (CSO) REAL-TIME, ONSITE NOTIFICATION SYSTEM EVALUATION REPORT

CAMBRIDGE, MA

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CAMBRIDGE, MA

1 EXECUTIVE SUMMARY

In response to the 2024 Water Quality Standards Variance issued by MassDEP and the U.S. EPA, the City of Cambridge (the City) conducted a feasibility evaluation for implementing a real-time, onsite public notification system to alert the public of Combined Sewer Overflow (CSO) events. The goal is to enhance public awareness and protect health while continuing to comply with regulatory requirements under 314 CMR 16.00.

The report evaluated a range of notification technologies, but primarily focused on beacon light systems, which can offer automated, visible alerts at public access points along the Charles River and Alewife Brook. An example of a beacon light system is shown in **Figure ES-1**. The City (alongside Somerville and MWRA) collaborated with the watershed advocacy and stakeholder groups to further understand the specific concerns related to existing CSO Public Notification activities and to identify opportunities for enhancements, which included an interim measure for public awareness signage during flooding events along the Alewife Brook Greenway.

Figure ES-1 – Beacon Indicator Light

Seven public access locations were selected for potential beacon installation. These seven locations are all on public land (DCR or City-owned), minimizing permitting complexity, and were identified as public access locations to the Charles River or Alewife Brook in the approved Cambridge Public Notification Plan. The City of Cambridge has already installed CSO public information signage for CSO discharges and posts advisory notices for events lasting longer than 2 hours at these locations in compliance with the requirements of 314 CMR 16.00: Notification Requirements to Promote Public Awareness of Sewage Pollution. The estimated purchase and installation cost per beacon system is approximately $15,660, including contingency. The feasibility evaluation concludes that beacon light systems are a practical and implementable solution for real-time, onsite CSO public notifications.

As next steps, the City will proceed with the following activities:

1. Continue reviewing the City's existing SCADA infrastructure, software, and telemetry systems for opportunities to optimize the beacon light system's integration. The goal is to not rely on manual operation of these alerts, as the City does not have staff coverage 24/7.
2. Write the scope of work and specifications for the beacon light systems to work with our existing operational systems for procurement.
3. Continue to coordinate with MWRA, Somerville, and Chelsea to ensure the beacon light system operates with consistent aesthetics and functionality across jurisdictions.
4. Collaborating with the public stakeholders to launch a public awareness and education campaign for the beacon light system.
5. Continue engaging MassDEP to advocate for the development of standardized guidelines for any enhancements to CSO public notifications.
6. Any future locations will be coordinated with public and private stakeholder groups.

2 BACKGROUND ON EXISTING CSO PUBLIC NOTIFICATIONS

2.1 OVERVIEW ON CSO PUBLIC NOTIFICATIONS

In January 2021, the CSO Public Notification Law (also known as the Sewer Right to Know Law) went into effect in Massachusetts, requiring public notification of when untreated, treated, and blended wastewater flows into the surface waters of Massachusetts. The regulations (314 CMR 16.00: Notification Requirements to Promote Public Awareness of Sewage Pollution) governing this law detail the requirements for notification as they relate to releases from combined sewer overflows (CSOs) and certain sanitary sewer overflows (SSOs). A CSO occurs when a large storm overwhelms the combined sewerage system, causing rainwater to mix with wastewater and discharge to a nearby water body. This relief measure prevents sewage backups into homes and businesses.

Massachusetts communities and entities that manage wastewater collection systems with CSO facilities were required to develop a CSO Public Notification Plan that details how these CSO permittees will comply with the requirements of 314 CMR 16:00. The City of Cambridge is a CSO permittee with combined sewer outfalls that discharge to the Charles River and Alewife Brook. As such, the City has developed a final CSO Public Notification Plan in accordance with the law. The City's plan and notifications about CSO/SSO activity are publicly posted on their website:

https://www.cambridgema.gov/Departments/publicworks/combinedseweroverflowreporting.

As part of the City's 2023 Combined Sewer Overflow Final Public Notification Plan (Plan), the City provides multilingual notifications in Amharic, Arabic, Chinese, French Creole, Nepali, Portuguese, Russian, Spanish, and Vietnamese, ensuring accessibility for its diverse population. Notifications are disseminated through multiple channels, including the City's website, email alerts, and physical signage posted at designated locations. The public can subscribe to the CSO notification alerts from the City using the following link: https://www.cambridgema.gov/Subscribe.

2.2 EXISTING CSO DISCHARGE NOTIFICATION PROCESS

The notification process is initiated by automated alarms triggered by flow meters within CSO regulators, which detect overflow events and send alerts directly to Department of Public Works (DPW) staff. Upon receiving an alarm, staff verify the alarm's accuracy to ensure it is not a technological error and confirm

that a CSO event has occurred. Once verified, staff update the website, send email notifications, and coordinate the posting of onsite signage to inform the public of the event and associated health risks. All notifications are sent out within 4 hours of the event, in alignment with regulatory requirements.

2.2.1 Website Updates

https://www.cambridgema.gov/Departments/publicworks/combinedseweroverflowreporting

Website updates are issued for any CSO event. These updates include the outfall involved and the duration, and an estimated average volume of the overflow over the past 3 years. The website also maintains a historical record of all past CSO events, allowing residents and stakeholders to view data on past overflows. Clear and accessible language is used to explain the public health concerns associated with CSO discharges, helping users understand the importance of avoiding contact with affected water bodies during and after overflow events. The City also provides notification updates to the MassDEP CSO Data System for publishing to the Public Portal: https://eeaonline.eea.state.ma.us/portal/dep/cso-data-portal/.

2.2.2 Email Notification

In addition to website updates, the City provides real-time email notifications to residents and stakeholders. Individuals can sign up for these alerts through the City's website. Email notifications are sent within four hours of a CSO activation alarm, ensuring timely communication of potential health risks. These emails are also distributed to all entities required under 314 CMR 16.04(4), including relevant municipal departments, boards of health, and local, state, and federal environmental agencies.

2.2.3 Onsite Signage

The City maintains seven (7) signage locations along the Charles River and Alewife Brook where physical notices are posted following a CSO event lasting two hours or longer. Posted information remains in place for 48 hours after the overflow to ensure that the public is adequately informed of potential health risks. Each sign includes information about the nature of CSOs, the associated health hazards, and guidance on avoiding contact with the affected water. **Table 1** depicts the locations within the City of Cambridge with public access point signage.

Table 1 - Public Access Signage Locations

Public Access Point	*Municipality*	*Location*
Fitchburg cutoff bike path	Cambridge	42.39659, -71.143800
Mass Ave at Rte. 16	Cambridge	42.40120, -71.136045
Magazine Beach cartop launch	Cambridge	42.35391, -71.112722
Poor Man's Dock	Cambridge	42.36232, -71.078325
Public docks across from Front Park	Cambridge	42.36472, -71.076195
Lechmere Canal	Cambridge	42.36914, -71.076436
North Point Park	Cambridge	42.36869, -71.069497

The current process involves the City's DWP staff going out to post the alerts at the signage locations. The City has identified a need to automate this notification process for over 2-hour CSO events and potentially not rely on staff.

2.3 VARIANCE-REQUIRED CSO PUBLIC NOTIFICATION EVALUATION

In 2024, the Massachusetts Department of Environmental Protection (MassDEP) in concert with the US Environmental Protection Agency (EPA) issued the Water Quality Standards Variance for CSO Discharges to the Lower Charles River/Charles Basin and the Alewife Brook/Upper Mystic River Basin (Variance) to the City of Cambridge (as well as to Somerville and MWRA) for the City's CSOs along Charles River and Alewife Brook. The Variance requires the City to conduct a review of available technologies and to evaluate the feasibility of providing real-time, onsite notification of CSO discharges. The example technology mentioned in the Variance is that of a "warning light system". Technologies under consideration include flagging systems, indicator beacons (or beacon lights), LED screens, and buoy systems, among others.

The Variance requires that (at a minimum) the evaluation include the following analyses:

- An assessment of cost
- Coordination with property owners and abutting municipalities
- Power supply needs
- Permitting requirements
- Logistics of installation and implementation
- Success of similar systems in other cities

The City's goal for this evaluation is to identify feasible and effective solutions for timely public notification of CSO discharges, and to enhance transparency and environmental stewardship.

2.4 REPORT CONTENTS

This report is split into the following sections:

- *Section 2: Background on Existing CSO Public Notifications* – This section details the existing notification measures in place for CSO overflows in the City of Cambridge. It outlines the staffing requirements to maintain these notification systems and the regulatory framework governing them.
- *Section 3: Public Outreach and Engagement* – This section details the efforts of soliciting and incorporating public stakeholders' input into the development of planning solutions. This includes the concerns from watershed advocacy groups and other organizations.
- *Section 4: Real-time, Onsite Notification Systems* – This section describes a variety of real-time, onsite notification systems that have been installed at CSO locations in other municipalities. It also introduces novel systems that have not yet been implemented but may offer future potential. The section includes an assessment of each system's costs, permitting requirements, power needs, and the logistical considerations involved in installation and implementation.
- *Section 5: Onsite Notification System Evaluation* – This section evaluates the feasibility of installing beacon lights at seven public access point locations along the Alewife Brook and Charles River. This section describes the cost, coordination needs, potential power sources, permitting requirements, and implementation logistics for the chosen locations.
- *Section 6: Regulatory Considerations* – This section details the regulatory landscape for real-time notification systems and considerations for further review and discussion by the regulatory agencies.
- *Section 7: Summary and Conclusion* – This section summarizes the key findings from the feasibility evaluation and outlines recommendations for next steps.

3 PUBLIC OUTREACH AND ENGAGEMENT

Public outreach and engagement are integral parts of the City's overall CSO control planning efforts. Including public voices in the decision-making process and incorporating public feedback in the development of planning solutions has been a longstanding part of the City's approach for effective project implementation. And while collaboration with the public (via the established watershed advocacy groups) was included as a Variance requirement, the City wanted to better understand the public concern related to the existing CSO Public Notification activities. Through the outreach and coordination efforts with stakeholders (as described below), the City incorporated public feedback into the overall scope for the CSO public notification system evaluation, as well as the approach for the interim measure for enhanced public notification.

3.1 PUBLIC COMMENTS TO CSO VARIANCE

During the public comment period following the issuance of the draft 2024 CSO Variance, the written public commentary related to CSO Public Notification included the following:

- "…the public using the Alewife Brook Greenway and abutters of the Brook need much clearer warning when there are active CSO discharges, and for at least 24 hours after a discharge has ended (e.g., red light when discharging, yellow light for 24 hours after discharge ends)."
- "…enhance notification by installing warning beacons or similar, highly visible signage when the outfalls on the Alewife Brook are discharging."
- "…implement an enhanced notification system for CSO events in the Alewife Reservation, including flashing lights and warning signs for users."
- "An on-site warning-light notification of untreated sewage discharges along the Alewife Path, where the brook floods."
- "On site postings are needed in the [Alewife Brook] park and along Alewife Brook Parkway as soon as possible."

The full comments and responses to the CSO variance are included in **Appendix A**. The main takeaways from these comments include:

1. The focus for the implementation of an enhanced CSO public notification system appears to mainly relate to issues along the Alewife Brook. However, the approach to the City's evaluation will consider the Alewife Brook and Charles River.

2. The commentary on the specifics related to this enhanced CSO public notification system is not uniform. Therefore, the City used the requirements included in the Variance as a basis for the evaluation scope.

3.2 COORDINATION WITH WATERSHED GROUPS AND STAKEHOLDERS

To further understand the specific concerns related to existing CSO Public Notification activities, the City (alongside Somerville and MWRA) held an initial collaboration meeting with the Charles River Watershed Association (CRWA), the Mystic River Watershed Association (MyRWA), Save the Alewife Brook (StAB), and the Department of Conservation and Recreation (DCR) in November 2024. During this meeting, the City described the activities involved with implementing their CSO Public Notification Plan and the detailed process for broadcasting the notification of a CSO event. The group also discussed interim measures for enhanced notification of potential flooding events along the Alewife Brook Greenway. The City received input about specific areas of concern, including:

- The Boardwalk near Pond/Route 2 (Google Link)
- The entire Bike Path from Massachusetts Ave to the Boardwalk (Google Link)
- The Bike Path near Sunnyside Ave (Google Link)

The group also discussed general considerations for improving public notifications and the scope regarding the feasibility evaluation for an onsite public notification system for CSO events.

In May 2025, the City (alongside Somerville and MWRA) held a follow-up meeting with the watershed advocacy and stakeholder groups (CRWA, MyRWA, StAB, and DCR) and discussed:

- the progress made on the interim measures for onsite public signage regarding flooding along the Alewife Brook Greenway (as shown in **Figure 1**),
- the research conducted into existing onsite public notification systems and options for alternative technologies that may be translatable for the purpose of notifying the public of CSO events (presented in **Section 5**),
- the proposed beacon light pilot by MWRA at Assembly Row in Somerville, MA, and
- the approach to the onsite public notification system feasibility evaluation, which is initially focused on installations at public access locations.

The meeting concluded with a request for feedback from the watershed advocacy and stakeholder groups on the preferences and considerations about the notification system that could be incorporated into the feasibility evaluation. The feedback received suggested that the City consider enhanced CSO public notification systems at user points along the Mystic River and Charles River, including boathouses, marinas, and businesses supported by water recreation.

Figure 2 - Onsite Signage Alerting Public of Flooding Concerns on the Alewife Brook Greenway

(Photo taken on December 10, 2024)

Throughout the feasibility evaluation process and the development of this report, the City has been (and continues to be) receptive to any commentary provided by the public regarding the concept of onsite public notification systems. The presentation slides from the November 2024 and May 2025 meetings with the watershed advocacy and stakeholder groups are included in **Appendix B**.

3.3 FUTURE PUBLIC OUTREACH AND COLLABORATION

The City will continue to collaborate with the watershed advocacy and stakeholder groups to review and discuss enhancements to the current CSO Public Notification activities. As the planning and implementation process moves forward, the City's efforts will include additional outreach to constituents along the banks of the received waters, including private boathouse/marinas, commercial recreational businesses, and associated interest groups.

4 RESEARCH INTO REAL-TIME, ONSITE NOTIFICATION SYSTEMS

4.1 EXISTING REAL-TIME, ONSITE NOTIFICATION SYSTEMS

From January through March 2025, Kleinfelder researched and conducted outreach to other entities across the US that currently manage real-time, onsite notification systems for the purposes of CSO public notification. The research concluded that there are only five entities with real-time and onsite CSO public notification systems, and these systems were either flagging systems or consisted of beacon lights. The five entities identified included:

- District of Columbia (DC) Water — Beacon Lights
- Lancaster, PA — Beacon Lights
- Chelsea, MA — Beacon Lights
- Allegheny County, PA — Flagging System
- CRWA — Flagging System

Through outreach and correspondence with each entity, Kleinfelder cataloged the details of each entity's systems. Kleinfelder also researched other alternative technologies that could be used for the purposes of CSO public notification. This section summarizes the research conducted into real-time and onsite public notification systems. Further details may be found in the memorandum included in **Appendix C**.

4.1.1 Beacon Light Systems

Indicator beacons (or beacon light systems) are comprised of a pole-mounted, illuminated beacon that is triggered to turn on when a CSO event occurs. The beacon lights are turned on and off by signaling telemetry (either radio or cellular communication). This telemetry is typically provided by way of the communications panel that is also mounted on the pole. The beacon light and telemetry system can be powered by either grid power or solar power. If solar power is used, a battery (similar to a car battery is also installed on the pole. Beacon lights are often outfitted with signage explaining the purpose of the beacon light and providing additional information on CSOs. Three case studies were evaluated for this report: DC Water, the City of Lancaster, PA, and the City of Chelsea, MA. An example of a beacon light system is shown in **Figure 2**.

Figure 2 - Beacon Light in the City of Chelsea, MA

When compared to flagging systems, beacon light systems have the following benefits and tradeoffs:

Benefits

- Potential for immediate notifications
- Can control the system remotely
- System can be connected to existing CSO monitoring systems (flow meters, etc.)
- System can be automated (less burden on staff)

Tradeoffs

- Higher installation costs
- Higher maintenance cost
- Requires a power supply
- May require robust public awareness/education

4.1.2 Flagging Systems

Flagging systems consist of flags deployed manually at the onset of a CSO event and remain raised after the conclusion of the event to warn the public of the recent CSO event. Flags are brightly colored to draw attention to the ongoing or recent CSO overflow (as shown in **Figure 3**). Signage is also placed near where flags are raised to provide information about the flag and CSOs. Two flagging programs were evaluated in the development of this report: the Allegheny County Sanitary Authority (ALCOSAN) and the CRWA.

Figure 3 - ALCOSAN CSO Notification Flag

When compared to beacon light systems, flagging systems have the following benefits and tradeoffs:

Benefits

- Cost for flags is minimal
- Lower maintenance cost
- No power supply required
- No telemetry required

Tradeoffs

- Requires personnel to raise and lower flags (added burden on staff)
- A delay will exist between the CSO event and flag raising (not real-time)

4.2 EXISTING SYSTEM PUBLIC RECEPTION

The three beacon light systems reviewed received limited to mixed feedback from their respective public constituents regarding the beacon light's functionality as a CSO public notification system. Outside of the recreational users of the waterways, the general public's understanding of these beacon light systems appears limited. This highlights a need for robust public awareness and education efforts to accompany the implementation of a beacon light system. Conversely, the two flagging systems reviewed were well-supported by their recreational communities. This is likely due to the flagging systems being integral parts of recreational user activity along the waterways. These users are also often the same volunteers who provide support for the flagging systems.

4.3 OTHER TECHNOLOGIES

In addition to beacon lights and flagging systems, Kleinfelder researched other technologies that could potentially be translated and/or developed into a CSO public notification system. These other technologies identified may have some relative applicability to CSOs, but do not have a current demonstrative example of their use for the purpose of CSO public notification. The list of other technologies reviewed included:

- Indicator Lanterns – these are 3D printed smart lights/lamps that can be placed in a storefront or household window. They require cellular/wireless communications to trigger their illumination upon water quality advisory notices. The identified example for this technology is the GLOWanus project in New York City (https://www.vanalen.org/project/glowanus/). This technology does not appear to have applicability as an onsite system and therefore was not included in the feasibility evaluation.
- Water Quality Buoys – these are floatation buoys affixed with in-situ water quality sampling devices. The identified example of this technology is the YSI EMM68 Buoy (https://www.ysi.com/FileLibrary/Documents/SpecificationSheets/EMM68-Spec-Sheet.pdf). The sampling capabilities currently do not include those for bacteria/pathogens or other indicators typically associated with CSOs. This technology also requires a depth of water greater than six feet to function properly, which does not match the conditions in portions of the Alewife Brook. Although this technology provides robust sampling capabilities and can be deployed onsite, its limited application for purposes of CSO public notifications became the basis for not including it in the feasibility evaluation.
- Alternative Systems – other alternative technologies reviewed included LED displays, audible systems, drones, and remote-controlled boats. While these alternatives offer certain flexibilities, they often involve more complex design development and engineering for integration. Pre-engineered systems with proven success may offer more reliable and cost-effective outcomes.

4.4 SUMMARY

For the City of Cambridge, a beacon light system is recommended for real-time notifications of CSO events due to its automation potential and the reduced burden on staff. Additionally, since the CRWA already manages a flagging system along the Charles River, a duplicative effort by the City would only complicate the effective messaging from the existing flagging system. This makes beacon lights a more practical approach for the enhanced public notification of CSO events.

5 EVALUATION OF REAL-TIME, ONSITE NOTIFICATIONS

In an effort to synergize the feasibility evaluation with existing CSO Public Notification activities, the City (in coordination with MWRA and Somerville) concluded that the public access sites where CSO signage exists will be the sites included in the evaluation as a starting point. Further site evaluation considerations are described below.

5.1 SITE SELECTION

The City identified seven (7) public access sites for the potential installation of CSO beacon lights. These locations correspond with existing signage areas where the City currently posts physical notices about CSO overflows. By selecting these established signage sites for beacon installation, the City can streamline its notification process while maintaining consistency in public communication. These locations are well-established sources of CSO information for the public, which will help ensure that a transition to automated beacons can be intuitive and well understood. Individual maps of the proposed sites are included in **Appendix D**.

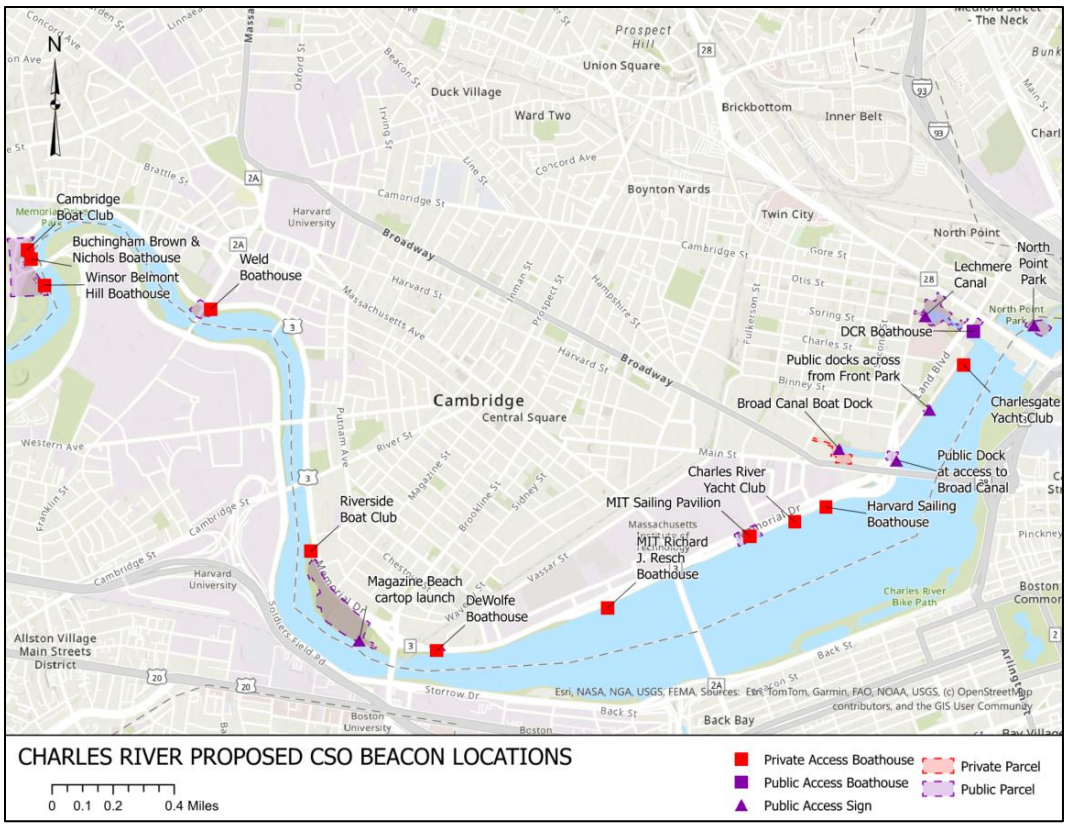

Figure 4 - Public Access and Private Boathouse Locations along the Charles River

There are several key benefits to using these existing signage sites for real-time beacon notifications. First, the City is already mandated to post CSO information and advisories at these locations, making them logical candidates for infrastructure upgrades. Transitioning from a manual posting system to an automated beacon system will significantly reduce the operational burden on City staff while providing the public with more timely and reliable information. Additionally, maintaining the same notification locations reinforces public familiarity and trust in the system. Residents and visitors who are accustomed to seeing CSO alerts at these sites will more easily recognize and interpret the new beacon signals, improving overall effectiveness of the public health messaging. The proposed site locations are shown in **Figures 4 and 5**.

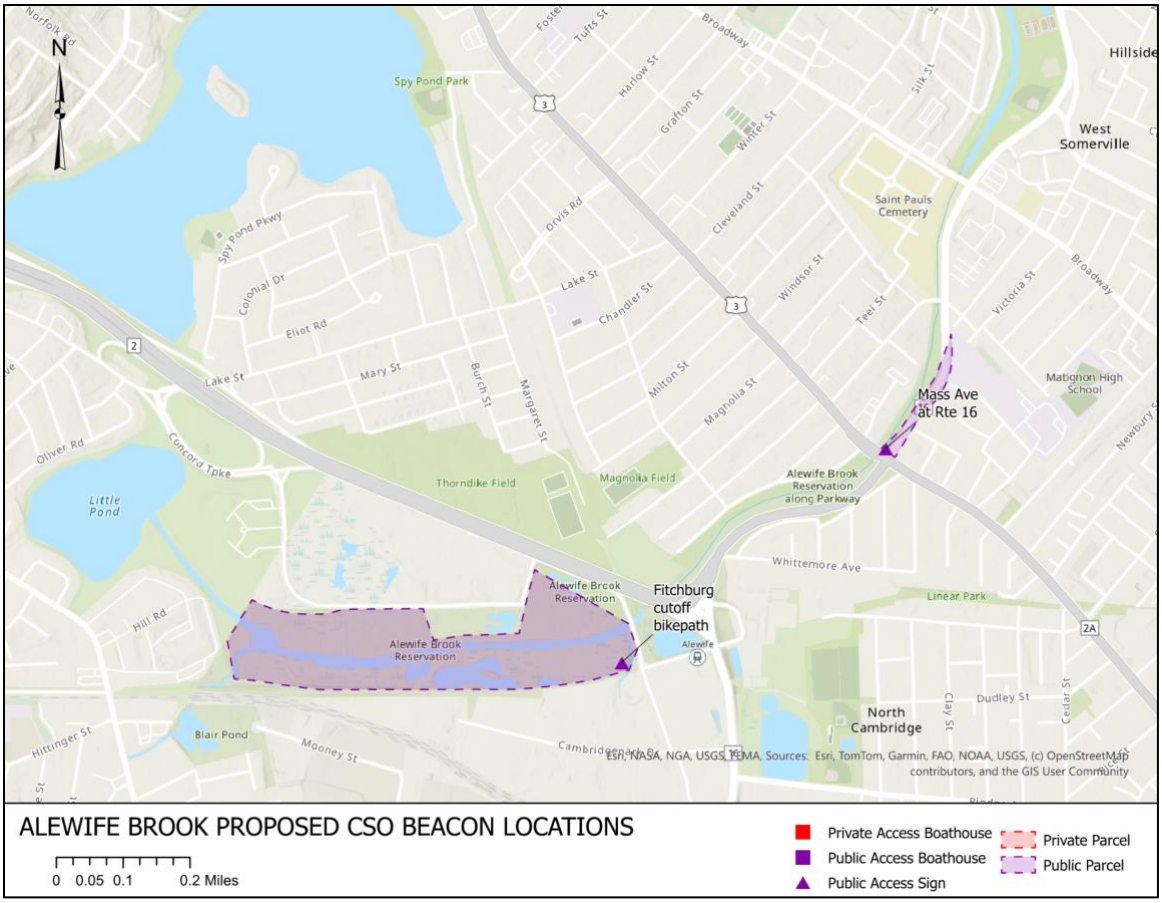

Figure 5 - Public Access Locations along the Alewife Brook

Feedback from the watershed advocacy groups suggested the inclusion of boathouse locations along the Charles River as part of the beacon light feasibility evaluation. Most of the boathouses are private sites

and do not provide public access to the receiving waters. For these reasons, the private boathouse locations along the Charles River were not included in the evaluation at this time.

5.2 PROPERTY OWNERSHIP

The 7 locations for the proposed CSO beacon lights that currently contain signage are all located on public property, owned and operated by either DCR or the City of Cambridge. All locations include public access to either the Charles River or Alewife Brook. A summary of each location, its respective waterway, property ownership, and coordinates is shown in **Table 1**.

Table 1 - Property Ownership for Proposed Real-Time, On-Site Notification Systems

Location	***Waterway***	***Lat / Long***	***Property Owner***	***Waterway Access***
Fitchburg cutoff	Alewife Brook	42.3966, -71.1438	DCR	Public
Mass Ave at Rte. 16	Alewife Brook	42.4012, -71.1361	DCR	Public
Magazine Beach Cartop Launch	Charles River	42.3539, -71.1127	DCR	Public
Public Dock at Broad Canal	Charles River	42.3623, -71.0783	DCR	Public
Public Docks across from Front Park	Charles River	42.3647, -71.0762	DCR	Public
Lechmere Canal	Charles River	42.3691, -71.0764	City of Cambridge	Public
North Point Park	Charles River	42.3687, -71.0695	DCR	Public

Because all proposed beacon light locations are public property, there are few barriers to constructing the beacons, and coordination with property owners and managers is limited to DCR. Construction of a CSO notification beacon for the 6 locations on DCR-managed property will require coordination and permitting with DCR (**Section 6.4**).

A general site review was also performed on the boathouse locations along the Charles River. **Table 2** presents each boathouse along with its property ownership, waterway access, and coordinates.

Table 2 - Property Ownership for Boathouse Locations along the Charles River

Location	Lat / Long	Property Owner	Waterway Access
DCR Boathouse	42.368390, -71.0734	DCR	Restricted
Charlesgate Yacht Club	42.366800, -71.0740	Charlesgate Yacht Club	Private
Harvard Sailing Boathouse	42.360095, -71.0828	Harvard University	Private
Charles River Yacht Club	42.374641, -71.0451	Charles River Yacht Club	Private
MIT Sailing Pavilion	42.358736, -71.0877	MIT	Private
MIT Richard J. Resch Boathouse	42.355378, -71.0968	MIT	Private
DeWolfe Boathouse	42.353402, -71.1078	Boston University	Private
Riverside Boat Club	42.358129, -71.1158	DCR	Private
Weld Boathouse	42.369606, -71.1221	Harvard University	Private
Cambridge Boat Club	42.372458, -71.1338	Cambridge Boat Club	Private
Buckingham Brown & Nichols Boathouse	42.372017, -71.1336	Buckingham Brown & Nichols	Private
Winsor Belmont Hill Boathouse	42.370777, -71.1328	Belmont Hill Boathouse	Private
Paddle Boston - Broad Canal Dock	42.362868, -71.0820	Rreef Property Trust	Private

5.3 POWER SUPPLY NEEDS

There are advantages and limitations to both solar and grid-powered beacon systems. Grid-powered beacon lights offer high reliability and require no power storage, making them easier to maintain over time. Since they are connected to the existing electrical infrastructure, they can operate continuously without concern for weather conditions or battery life.

On the other hand, solar-powered beacon lights eliminate utility bills and the need to run electrical wiring to the beacon site. However, they require electrical storage systems, such as batteries, which increase procurement costs and introduce maintenance challenges. Additionally, careful site selection is necessary to ensure adequate sunlight exposure. While solar systems offer sustainability benefits, grid power may be the more dependable and lower-maintenance choice.

Both grid and solar power are feasible at all proposed beacon locations in Cambridge. No proposed beacon location is more than 200 feet from a source of grid power or entirely covered by a tree canopy

that would inhibit solar panels from charging. As a result, the choice between grid and solar-powered options is largely up to the City's preference.

5.4 PERMITTING CONSIDERATIONS

The 7 proposed locations for CSO notification beacons are located on public property, owned either by DCR or the City of Cambridge (**Table 1**). As such, the installations will be subject to Cambridge city ordinances and will require permits to allow construction on DCR-managed property.

For all beacon locations located on DCR property, a permit is required to access areas managed by DCR to perform maintenance or construction. Permits for access to DCR property for construction can be submitted through DCR's online portal and are required anytime that access is required for installing equipment, performing maintenance, or doing construction work. The following documents are required as part of the DCR permit application:

- Construction and engineering plans
- Photos of existing work location conditions (minimum of 3)
- Locus plan of the work area

Following installation of the beacons, any maintenance work completed by City of Cambridge staff would also need to be coordinated with DCR through an access permit.

While there is no clear precedent in the City of Cambridge for the installation of CSO beacons, there are several ordinance measures that can help guide limitations on the installation of beacons. Utility poles, which are defined as poles that support or contain electrical wires, are regulated by the City through Cambridge's Pole and Conduit Commission (City ordinance 15.16.160). New utility poles require a permit to be submitted through the commission's online portal and be approved by the commission, which meets on a monthly basis. However, because the utility poles are regulated internally by the city, the permitting burden is expected to be light as they are serving a regulatory-required purpose for the City.

Cambridge ordinances require that new utility poles not be more than 10% than any adjacent poles or structures. With the maximum standard utility pole detailed by the City being 30 feet, this would be the reasonable height limit for any beacon light affixed to a new utility pole. Preliminary beacon light concepts provided in a prior feasibility study by CDM (**Appendix E**) were affixed to 15-foot poles, which, based on City ordinances, are not expected to pose a problem for approval. Within the "open space"

zone that all proposed beacons are located in, a maximum height for any structure is 35 feet and will therefore not impose any issues for construction of the CSO beacons (City ordinance 5.30.1).

5.5 INSTALLATION LOGISTICS

Major logistics considerations for beacon installations in the City of Cambridge include power needs, beacon visibility, coordination with other involved entities, and public education. The installation of CSO beacon lights in the City of Cambridge is logistically feasible from a power supply perspective. All proposed beacon locations are within 200 feet of existing grid infrastructure, allowing for straightforward electrical connections without the need for extensive trenching or new utility installations. Additionally, each site has sufficient open space and sunlight exposure to support solar-powered beacons, should that option be preferred. The availability of both power sources provides flexibility in design and budgeting, allowing the City to choose the most cost-effective and sustainable solution for each location.

From a visibility standpoint, all proposed beacon sites are strategically located to ensure clear public access and visibility. Each location is positioned near walkways, parks, or roadways where residents and visitors are likely to see the beacon during a CSO event. The proposed beacon locations do not allow for visibility of beacons from every point along the Alewife Brook and Charles River. However, installing beacon lights at every CSO site along the river is not feasible due to the high cost and the City's limited staffing capacity to maintain a large network of devices. A full-scale deployment would be cost-prohibitive and operationally unsustainable. Therefore, a focused installation plan targeting high-visibility, high-impact locations is recommended to balance public health protection with logistical and financial constraints.

The City of Cambridge will need to coordinate closely with DCR, the City of Somerville, and the MWRA on beacon design and installation. Coordination with DCR will involve securing necessary permits, aligning with DCR's land use policies, and ensuring that installation activities do not interfere with recreational or ecological functions of the sites. In addition, collaboration with the City of Somerville and the Massachusetts Water Resources Authority (MWRA) is critical to promote consistency across municipal boundaries to the extent possible. While each of the three entities will develop its own notification systems, coordination will allow for more similar aesthetic and messaging strategies for the beacons, ensuring that the public can easily recognize and understand the alerts regardless of which municipality they are in. A consistent design will enhance regional awareness and reduce confusion, especially in areas where jurisdictional boundaries are not immediately apparent to residents and visitors.

To support the effectiveness of the beacon system, the City must also launch a comprehensive public education campaign. This campaign should inform residents and recreational users about the purpose of the beacons, what the signals mean, and how to respond during a CSO event. Outreach efforts could include signage, social media posts, community workshops, and informational materials distributed through local organizations and schools. Special attention should be given to multilingual communication to reflect the City's diverse population. Educating the public will be critical to ensuring that the beacon system not only meets regulatory requirements but also serves its intended purpose of protecting public health and promoting environmental awareness.

5.6 IMPLEMENTATION CONSIDERATIONS

To ensure that the beacon light system functions properly once added into the City's existing CSO Public Notification activities, the system will need to be integrated with the City's existing monitoring systems and telemetry platforms. Automation is desired as it minimizes the burden on staff time. Therefore, beacon lights should be triggered by real-time data from SCADA systems or CSO monitoring devices (such as flow meters and/or level sensors). The beacon light system will need to be compatible with the City's existing communication infrastructure to ensure accurate event detection and timely activation.

As the proposed beacon light locations are not at the CSO regulators or outfalls (where the monitoring devices exist), an effective communication telemetry approach will be critical towards providing public notification (i.e. flashing light) as quickly and reliably as possible. The prior feasibility study by CDM evaluated turnkey (proprietary) communication systems as well as custom-built systems based on the City's existing SCADA protocols. The City will benefit from a more robust telemetry system (one that can communicate with the City's SCADA system as well as capture/log data about the beacon lights' activity). A simple trigger beacon light system may not assimilate well into the City's notification activities, as operating logs (indicating when the beacon lights turn on and for how long) will be needed to ensure that the system operates in accordance with actual CSO event occurrences. Without the ability to perform diagnostics, the City will have to perform a more manual verification of the beacon light system's operations.

It will be important to limit the amount of 3rd party telemetry systems involved in the triggering process, as each element could add a delay to the triggering of the beacon light, and each part would present one manner in which the beacon light's system's operation can fail if there are faults or errors in the programming. Additionally, as the City modifies and updates its SCADA system, the telemetry for the beacon light system will need to be flexible enough to accommodate the system modifications.

5.7 ESTIMATED COST

The cost of installing a beacon light system was researched as part of the review of existing beacon light case studies across the US. The most recent local example from Chelsea, MA (installed in 2023) had a rough overall cost of $32,600 for six beacon lights (or about $5,500 per light). This cost covers the beacon light, solar panel, communications panel, and telemetry setup, but it does not include the cost for the mast/pole installation, which was completed separately by the City of Chelsea. The other case study in Lancaster, PA (installed in 2021) has a rough overall "as bid" cost of $72,950 for 4 beacon lights (or about $18,250 per light). This range of costs is likely representative of differing site conditions (i.e., mast/pole install needs) and approaches in telemetry. The cost for a 15-foot mast/pole was investigated through online research to range from roughly $750 - $2,000 (depending on pipe material and diameter). For the cost analysis, an approximate cost of $1,500 was used for the mast/pole. Also, it is anticipated that a crew can install two beacons per day.

The City can anticipate the cost of each beacon light system to be approximately $15,660, as broken down below in **Table 3**.

Table 3 - Approximate Cost of a Beacon Light

Cost Item	***Cost***	***Cost for 7 Sites***	***Source***
Beacon Light + Comms Panel	$3,000	$21,000	CDM Study
Solar Power Package	$2,100	$14,700	CDM Study
Mast/Pole	$1,500	$10,500	Online Research
Material Subtotal Cost	***$6,600***	**$46,200**	
Crew Day Cost (2 Sites/Day)	$5,000	$20,000	Estm. Crew Day Cost
Subtotal Cost	***$11,600***	***$66,200***	
35% Contingency	*$4,060*	*$23,170*	
Total Cost	**$15,660**	**$89,370**	

6 REGULATORY CONSIDERAITONS

The current Variance issued to the City of Cambridge requires that the City "complete an evaluation of the feasibility of installing and implementing a real-time, on site public notification system for CSO discharges, such as a warning light". While the results of the feasibility study indicate that solutions like the CSO beacon are feasible and realistic to implement, the absence of clear guidance from MassDEP on details of a system presents unique challenges in implementing a system that effectively keeps the public informed on the safety of recreating on the Charles River and Alewife Brook.

While the intent behind public notification is broadly supported, the lack of standardized design criteria, performance expectations, or aesthetic guidelines has left municipalities to interpret and implement these systems independently. This fragmented approach not only increases the burden on individual cities to design systems from scratch but also introduces unnecessary inefficiencies and inconsistencies. Additionally, a lack of standard notification procedure across municipalities can lead to confusion on the part of the public without municipalities completing extensive public education programs to ensure that their systems are effective.

As currently required, real-time and on-site public notification systems, such as the beacon lights, would indicate to the public that a CSO activation has occurred. However, these public notification systems would not incorporate information about other pollutant sources that could impact the safety of the river, including cyanobacteria blooms, bacteria from sources other than CSO activations, and separated stormwater discharges.

7 SUMMARY AND CONCLUSION

In summary, this report evaluates the feasibility of implementing a real-time, onsite notification system (specifically a beacon light system) to alert the public of CSO events along the Charles River and Alewife Brook. This evaluation is in response to the 2024 CSO Variance issued by MassDEP and EPA, requiring enhanced public notification measures.

Some of the key points discussed through this evaluation include:

- **Public feedback** strongly supports enhancements for visible, real-time alerts to notify the public of CSO discharges to the receiving waters.
- **Beacon lights** are favored over flagging and other systems due to their automation, reliability, and reduced staffing needs.
- **Seven public access locations** were selected for potential beacon installation, all on public land (DCR or City-owned), minimizing permitting complexity.
- **Estimated cost** per beacon system is approximately **$15,660**, including contingency.
- **Regulatory ambiguity** remains a challenge due to the lack of standardized design or performance criteria from MassDEP.

The feasibility evaluation concludes that beacon light systems are a practical and implementable solution for real-time, onsite CSO public notifications. These systems align with regulatory intent, address public concerns, and can be integrated into existing infrastructure with manageable cost and logistical effort. However, while beacon light systems are feasible, the City will coordinate with regulators and public stakeholders to understand if other alternatives for enhanced public notification can prove to be more effective than beacon lights.

As next steps, the City will proceed with the following activities:

1. Continue reviewing the City's existing SCADA infrastructure, software, and telemetry systems for opportunities to optimize the beacon light system's integration. The goal is to not rely on manual operation of these alerts, as the City does not have staff coverage 24/7.
2. Write the scope of work and specifications for the beacon light systems to work with our existing operational systems for procurement.
3. Continue to coordinate with MWRA, Somerville, and Chelsea to ensure the beacon light system operates with consistent aesthetics and functionality across jurisdictions.

4. Collaborating with the public stakeholders to launch a public awareness and education campaign for the beacon light system.
5. Continue engaging MassDEP to advocate for the development of standardized guidelines for any enhancements to CSO public notifications.
6. Any future locations will be coordinated with public and private stakeholder groups.

APPENDIX A

Public Comments to the 2024 CSO Variance

RESPONSE TO PUBLIC COMMENTS
on
TENTATIVE DETERMINATIONS TO ADOPT WATER QUALITY STANDARDS VARIANCES
FOR COMBINED SEWER OVERFLOW DISCHARGES
to
ALEWIFE BROOK/UPPER MYSTIC RIVER
and
LOWER CHARLES RIVER/CHARLES BASIN
August 30, 2024

MassDEP acknowledges the receipt of written public comments received during the 45-day public notice period (March 8 to April 22, 2024) as well as verbal public comments heard during three public hearings, two of which were held on March 28, 2024, and the third held on April 9, 2024. Below are comments received related to the adoption of the two Variances and MassDEP's responses. Please note that MassDEP is not responsible for any errors in the Zoom transcriptions of the three public hearings.

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SUMMARY OF CHANGES TO THE FINAL VARIANCES BASED ON PUBLIC COMMENTS

1. Replaced "Plan" with "Program" in the last paragraph in first section of both Variances (comment 128).

2. In both Variances, added a footnote to the bottom of the first page, which states "In the event of any future amendment by the court in the aforementioned actions, MassDEP will determine whether the court's actions will require a change to Variance requirements." (comment 3)

3. In the Alewife/Upper Mystic River Variance Section A., deleted "unless modified in subsequent actions of the Court" from the second sentence. Added a new sentence: "In the event of any future amendment by the court in the aforementioned actions, MassDEP will determine whether the court's actions will require a change to the Variance requirements." Made similar changes to the Lower Charles River/Charles Basin Variance (comment 3).

4. In the Alewife/Upper Mystic River Variance Section C.2 (ii), changed "based on most recently approved rainfall data" to "based on NOAA Atlas 14, Volume 10, or as updated." In Section C.2 (i), added "based on NOAA Atlas 14, Volume 10, or as updated," Made similar changes to the Lower Charles River/Charles Basin Variance (comment 7).

5. In the Alewife/Upper Mystic River Variance Section D.3. added "By August 31, 2025, MWRA and the Cities of Cambridge and Somerville shall complete an evaluation of the feasibility of installing and implementing a real time, on site public notification system for CSO discharges, such as a warning light system. The evaluation shall include, but not be limited to, an assessment of costs, coordination with property owners and abutting municipalities, power needs, permitting requirements, logistics of installation and implementation, and success of similar systems in other cities. Simultaneously, MWRA and the Cities of Cambridge and Somerville shall identify and implement interim measures for enhanced notification to the public of CSO discharges. MWRA and the Cities of Cambridge and Somerville shall consult with watershed advocacy groups to inform development of the scope of the evaluation and identification of interim

measures." Added similar language to the Lower Charles River/Charles Basin Variance (comment 35 and others).

6. In the Alewife/Upper Mystic River Variance Section D.4. added "MWRA and the Cities of Cambridge and Somerville shall post all final reports and all draft reports that are going out for public notice, that are required by the Variance, on a publicly accessible website at the same time they are submitted to MassDEP." Added similar language to the Lower Charles River/Charles Basin Variance (comment 24 and others).

7. In the Alewife/Upper Mystic River Variance Section F.2. added "Use of Green Infrastructure technologies shall be considered." Added similar language to the Lower Charles River/Charles Basin Variance (comment 9 and others).

8. In the Alewife/Upper Mystic River Variance Section F.3. added "A 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. In addition to public meetings already held, MWRA, Cambridge, and Somerville, shall hold public meetings to present on Alternatives Screening/Affordability Analysis (anticipated Fall 2024/Winter 2025) and Results of Alternative Analysis (anticipated Spring 2025)." Added similar language to the Lower Charles River/Charles Basin Variance (comment 22 and others).

9. In the Alewife/Upper Mystic River Variance Section F.3. added "MWRA, Cambridge, and Somerville shall conduct robust public outreach to Environmental Justice communities that abut the Water Quality Standards Variance waters." Added similar language to the Lower Charles River/Charles Basin Variance (comment 66 and others).

10. In the Alewife/Upper Mystic River Variance Section F.4. added "MWRA, Cambridge, and Somerville shall each complete their own affordability analysis." Added similar language to the Lower Charles River/Charles Basin Variance (comment 14 and others).

11. In the Alewife/Upper Mystic River Variance Exhibit A.3. added "By October 1, 2025, complete an evaluation of floatables control for each of MWRA's outfalls that discharges to Alewife Brook or the Upper Mystic River and submit a written report to MassDEP. The evaluation shall assess the effectiveness of the current controls and identify recommendations for improvements. MWRA shall implement the recommendations identified by the evaluation." Same requirement was added as Exhibit B.2. for Cambridge and Exhibit C.2. for Somerville. Similar language was added to the Lower Charles River/Charles Basin Variance (comment 37 and others).

12. In the Alewife/Upper Mystic River Variance Exhibit A.4. added "By June 1, 2025, complete an evaluation of odors emanating from the collection system in the vicinity of CSO structures, identify potential best management practices (BMPs) for reducing odors near CSO structures, and submit a written report to MassDEP. MWRA shall implement any BMPs identified by the evaluation." Same requirement was added as Exhibit B.3 for Cambridge and Exhibit C.3 for Somerville. Similar language was added to the Lower Charles River/Charles Basin Variance (comment 37 and others).

13. In the Alewife/Upper Mystic River Variance Exhibit A. 5, Exhibit B.4, and Exhibit C.4, added anticipated dates of completion for each of the projects. In addition, in Exhibit A.5, added “At the same time MWRA submits the Annual CSO Discharge Reports required by C.2(ii), MWRA shall submit a report describing progress on each project.” Similar language was added for Cambridge in Exhibit B.4 and for Somerville in Exhibit C.4. Similar language was added to the Lower Charles River/Charles Basin Variance (comment 40 and others).

WRITTEN COMMENTS FROM PERMITTEES AND MASSDEP RESPONSES

MASSACHUSETTS WATER RESOURCES AUTHORITY - DAVID W. COPPES, CHIEF OPERATING OFFICER

COMMENT 1

The Massachusetts Water Resources Authority ("MWRA") appreciates the opportunity to comment on the Massachusetts Department of Environmental Protection's ("MassDEP") *Tentative Determinations to Adopt Variances for Combined Sewer Overflow Discharges to the Lower Charles River/Charles Basin and to the Alewife Brook/Upper Mystic River Basin*, from August 30, 2024, to August 29, 2029 (collectively the "Variances"). The Variances are discharger specific and will allow limited combined sewer overflow ("CSO") discharges to the named waterbodies from CSO outfalls permitted to the MWRA, the City of Cambridge, and the City of Somerville. In addition to efforts related to the 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) and milestones in the Court's Schedule Seven, MWRA is engaged in efforts under its Long Term Control Plan ("LTCP") to further reduce CSO discharges. These activities will culminate in a Supplemental Report to be filed with the Court in December 2024.

The Variances' five-year terms will accommodate the evaluation and planning of any additional CSO control measures documented in the MWRA's Updated CSO Control Plan. In particular, the five-year window will accommodate the need to develop alternatives, and to implement a public process to review and comment on MWRA's Updated CSO Control Plan. In addition to public briefings held by MWRA, Cambridge and Somerville, MWRA will follow any Massachusetts Environmental Policy Act requirements for public review and comment on the CSO projects. Accordingly, MWRA is supportive of the MassDEP's tentative determinations to adopt the Variances, which are supported by their respective Technical Fact Sheets. Nevertheless, MWRA offers a small collection of important comments and proposed revisions, in order to clarify a number of conditions.

MASSDEP RESPONSE 1

MassDEP acknowledges these comments.

COMMENT 2

Comments on Both Variances

The MWRA and the MWRA Advisory Board submitted detailed comments for the draft NPDES and surface water discharge permits for the Deer Island Treatment Plant (permit # MA0103284) regarding the inclusion of Co-permittees in these draft permits, which comments are incorporated herein by reference. *See e.g.*, MWRA Comments at pp. 4-5 https://www3.epa.gov/region1/npdes/mwra/pdf/2023/mwra-ditp-mwra-comments-11282023.pdf and MWRA Advisory Board Comments at pp 5-10 https://www3.epa.gov/region1/npdes/mwra/pdf/2023/mwra-ditp-advisory-board-comments-11282023.pdf. Consistent with these Draft Permit Comments, MWRA requests that the redline additions to page two of the Variances set forth below be incorporated in order to maintain consistent clarity of the several liability for the MWRA under these Variances and any future permitting actions.

> ….Once finalized by MassDEP and approved by EPA under CWA section 303(c), this Variance and its conditions will be incorporated into NPDES and Surface Water Discharge permits for the MWRA and the Cities of Cambridge and Somerville at the time of reissuance of those permits,

consistent with 40 CFR 131.14(c) and 314 CMR 4.03. Failure by the MWRA and/or the Cities of Cambridge or Somerville to comply with the conditions of this Variance following its effective date and as implemented in their NPDES and Surface Water Discharge permits will constitute a violation of the permit, as well as the Massachusetts SWQS (314 CMR 4.00) and the Surface Water Discharge Permit Program regulations (314 CMR 3.00). Provided that MWRA and/or the Cities of Cambridge and Somerville are in compliance with the conditions of this Variance from water quality standards (as it may be extended, amended or replaced), or any subsequently issued variance from the same receiving waters, MWRA and the Cities of Cambridge and Somerville shall be deemed to be in compliance with all aspects of their NPDES and Surface Water Discharge permits relating to the CSO discharges and deviations from water quality standards for those CSO outfalls that discharge to such waters. In no event shall the MWRA, the City of Cambridge, and the City of Somerville (each referred to in this paragraph as a "Variance Party") be liable under the CWA (including, but not limited to, any liability arising under 33 U.S.C. §§ 1319, 1321, & 1365), the Massachusetts Clean Waters Act, or otherwise be responsible for: (a) any act or failure to act of any other Variance Party; (b) any failure to properly operate or maintain any collection system or portion of a collection system that a Variance Party does not own or operate; or (c) enforcing the terms of this Variance against any other Variance Party. In the event of any conflict between the above provisions and any other term or provision of this Variance, the provisions of this paragraph shall control.

MASSDEP RESPONSE 2

It would not be appropriate for MassDEP to make a statement in the Variances regarding compliance with NPDES permit requirements, as only EPA has authority to make such a determination. Further, the NPDES and Surface Water Discharge permits have not been finalized and may contain other CSO-related requirements beyond what is required in the Variance, which must be evaluated separately. In the event that any one of the three permittees do not comply with one or more terms of the Variance, MassDEP does not intend to hold the other permittees responsible for that permittee's non-compliance. However, given that the three permittees' collection systems are hydraulically connected and that some of the Variance deliverables are being developed through collaborative efforts, MassDEP does not feel it is appropriate to make the blanket statement requested by the permittees. Should any non-compliance occur, MassDEP will review on a case-by-case basis to determine the responsible party or parties.

COMMENT 3

A. Level of Required CSO Control During Variance

MWRA recently submitted extensive comments on the draft NPDES and surface water discharge permits for Deer Island. In significant part, these comments detailed the basis of MWRA's position that it is inappropriate to use the Second Stipulation CSO discharge volumes and activations outside of the ongoing District Court case, which comments are incorporated herein by reference. *See MWRA comments* at pp. 19-31 https://www3.epa.gov/region1/npdes/mwra/pdf/2023/mwra-ditp-mwra-comments-11282023.pdf. The same points hold true for the Variances and therefore the Second Stipulation CSO discharge volumes and activations should not be included. As stressed in MWRA's Draft Permit Comments (pp. 29-31), if volumes and activations are to be retained as part of the Variances, then the following modifications should be made to Exhibit D:

(a) the volume figures for the Exhibit D outfalls should be modified to remove one significant digit after the decimal point, because the additional digit reflects possible false precision and fails to acknowledge the computational variability, unrelated to changes in the physical condition of the system, in MWRA's complex system model. MWRA recommends rounding (either up or down, as is customary) to the nearest 100,000 gallons, which is reflected below; and

(b) as set forth in the chart below, the following outfalls discharging to the Alewife Brook and Mystic River should reflect Q4-2022 Typical Year System Conditions.

	Activation Frequency	Volume (MG)
SOM007A/MWR205A	5	4.5
SOM001A	8	4.5

The outfalls discharging to the Charles River for which we would request application of the Q4 2022 conditions are:

	Activation Frequency	Volume (MG)
CAM007	2	0.5
CAM005	8	0.8
MWR018	2	0.4
MWR019	2	0.2
MWR020	2	0.1
MWR201	2	7.8

For example, as explained in *CSO Annual Report – January 1 to December 31, 2022: CSO Discharge Estimates and Rainfall Analyses*, at Table 3-1, April 28, 2023 (Revised May 17, 2023) available at: https://www.mwra.com/cso/pcmpa-reports/042823-annualcso.pdf CSO outfall SOM007A/MWRA205A has model predictions greater than the Second Stipulation levels of control. As detailed in Table 3-3 of the 2022 *Annual Report*, due to ongoing MWRA system improvements outfall SOM007A/MWRA205A is forecasted to materially meet Second Stipulation goals in the coming year(s). SOM001A however, is not forecasted to meet its respective goals. Accordingly, and for the reasons detailed in the NPDES Draft Permit Comments (pp. 29-31), these outfalls should reflect the Q4-2022 system conditions.

Further, if volumes and activations are to be retained as part of the Variances, in order to preserve the integrity of the judicial process and avoid placing MWRA in an untenable position, the Variances should, at a minimum, acknowledge that compliance for the above referenced Variance Outfalls should not be assessed until after the District Court makes its decision following the December 2024 supplemental report. Finally, MWRA's model is subject to periodic refinements, corrections and recalibrations unrelated to changes in the physical condition of the system. As such, if MassDEP includes numerical limits in Exhibit D, it should include a provision that MWRA, Cambridge and Somerville shall not be in violation of the Variances for any exceedances of the volume and/or activation limits caused by model refinements, corrections and/or recalibrations that are unrelated to changes to physical conditions of the system.

MASSDEP RESPONSE 3

The Second Stipulation and the 2008 amendment were incorporated into the court case by the Judge's compliance orders in 2006 and 2008 respectively. MassDEP notes that the consent of the United States and MWRA on the terms of the Second Stipulation included the agreement that, MassDEP would issue, and EPA would approve, CSO Variances in the Lower Charles River/Charles Basin, and Mystic River/Alewife Brook watershed through 2020, thus these actions were related.

The requirements in the Stipulation are explicit about MWRA's responsibilities to meet the CSO controls – specifically the activations and volumes - at each CSO. An action by MassDEP to relieve MWRA from this requirement or alter it in any substantive way under the Variance would undermine this action by the Court. This required level of CSO control also aligns with the MassDEP-approved MWRA CSO planning documents, which are essential to support the issuance of the Water Quality Standards Variances. The Variance notes that the Exhibit D limits apply to the Typical Year developed under the LTCP, and not to the future-projected Typical Year recently developed collectively by the parties, which should clarify the framework of the Variance limitations on the activations and volumes.

Lastly, MassDEP acknowledges that the Court is expected to act on the upcoming MWRA Supplemental Report due in December 2024; it is not possible to predict the outcome of that action at this time. However, it is reasonable and appropriate for MassDEP to retain the levels of control in the Second Stipulation and approved 1997 LTCP and ensuing CSO planning documents as a condition of the Variances given that no decision about the Court Order will be made until after the issuance of the Variances. Further CSO abatement work will be determined based upon the information developed in the Updated CSO Control Plans. However, given it is unknown what the Court's decision will be in this matter, MassDEP has included the following statement in the Variances (see footnote on page 1 and paragraph A): "In the event of any future amendment by the court in the aforementioned actions, MassDEP will determine whether the court's actions will require a change to the Variance requirements."

COMMENT 4

F. Updated CSO Control Planning

MWRA requests that the provision of information to support a recommendation for changing the classification of any CSO-impacted receiving waters be deferred until after the Draft Updated CSO Control Plan ("Draft Recommended Plan") is determined. The need for reclassification will rely on the results of the Draft Recommended Plan and on financial agreements between the entities, for apportioning costs of implementing the plan and thereby determining the economic impacts that will need to be developed. Therefore, MWRA requests that this requirement be delayed to July 31, 2026.

MASSDEP RESPONSE 4

In order to support any action to modify the water quality standard, one or more of the criteria at 314 CMR 4.03(4)(a) and 40 CFR 131.10(g) must be met. This would involve a Use Attainability Analysis, which considers all of the factors affecting the attainment of the use, including physical, chemical, biological, and economic factors, the documentation for which needs to be included in the LTCP. Without this full array of information, including the financial impact/affordability assessment, the public, MassDEP, and EPA will not be able to make the necessary informed comments on the Draft Updated CSO Control Plans.

MassDEP acknowledges the challenges in coordinating this assessment, as well as the entire planning effort, amongst the three permittees. We have continued to favor an approach where the three permittees work together in developing a single Updated CSO Control Plan. Whether MWRA pursues this approach or not, developing financial agreements with the Cities of Cambridge and Somerville will be essential to successfully moving forward, as the work done to date has clearly indicated the hydraulic connectivity of the MWRA and community CSO outfalls.

COMMENT 5

Comments on Factsheets:

Alewife Brook and Upper Mystic River Technical Fact Sheet:

- Financial Data provided on Attachment A Table – missing header "Section 3 Financial Alternatives Analysis"

Lower Charles River Technical Fact Sheet:

- Financial Data provided on Attachment A Table – missing header "Section 3 Financial Alternatives Analysis"

MASSDEP RESPONSE 5

MassDEP acknowledges the heading was inadvertently omitted; however, this does not have any bearing on the accuracy of the facts provided in the spreadsheet.

CITY OF SOMERVILLE - LUCICA S. HILLER, STORMWATER PROGRAM MANAGER

COMMENT 6

The City of Somerville (City) appreciates the opportunity to comment on the tentative determination to adopt variances made by the Massachusetts Department of Environmental Protection (MassDEP). This tentative determination supports allowing a variance for combined sewer overflow (CSO) discharges to Alewife Brook and the Mystic River (the Variance) until August 2029. The City supports MassDEP's utilization of this regulatory tool and strongly supports the extension of the Variance.

A 5-year variance extension will accommodate the continued development of the Updated CSO Control Plan, which the City of Somerville has been working on in close collaboration with the City of Cambridge and the Massachusetts Water Resources Authority (MWRA). As MassDEP is aware, CSO control for the Alewife Brook and Mystic River CSO discharges requires rigorous planning, a robust public outreach and involvement process, and most importantly, a team of interdisciplinary experts to work toward solving such a complicated technical challenge. Evaluating these challenges and opportunities and identifying technically feasible solutions takes a tremendous amount of work and time.

We are also encouraged by MassDEP's understanding and acknowledgement of the dependencies of and interconnections between the conveyance systems of Somerville, Cambridge, and MWRA (the three entities). This is evident in the inclusion in Section F.5. of the option to submit one joint Draft Updated CSO Plan. During the development of the Draft Updated CSO Plan, the three entities have learned that the interactions between the CSO outfalls along Alewife Brook are significant. For example, some isolated Somerville alternative solutions for SOM001A in the absence of additional regional work will

have negative CSO impacts on the CSOs owned and operated by Cambridge and MWRA in the Alewife Brook. Conversely, many alternative solutions that Cambridge or MWRA could undertake would reduce CSO frequency and volumes at SOM001A. These interdependencies underscore the need to evaluate the system as a whole and support the logic for a unified report.

The three entities have also been learning valuable lessons regarding the efficacy of various CSO mitigation tools during their work on the Draft Updated CSO Plan thus far. As such, the City requests that the variance itself not dictate or prioritize specific CSO control technologies to be implemented. The three entities are following EPA's guidance to evaluate varying levels of CSO control and technologies, and we request that the variance allow that process to continue without bias or prejudice in the form of a Variance requirement until the Draft Updated CSO Control Plan is reviewed and alternatives can be discussed in collaboration with all watershed stakeholders in light of all relevant data.

We want to reaffirm our commitment to improving water quality in the Alewife Brook and the Mystic River by:

- implementing the projects identified in Exhibit C: City of Somerville Variance Additional System Optimization Measures
- continuing to implement our existing policy and processes for permitting major redevelopment projects that require stormwater runoff reduction such that the 10-year proposed peak flow is attenuated to less than the existing 2-year peak flow.

MASSDEP RESPONSE 6

MassDEP acknowledges these comments.

COMMENT 7

The City appreciates the opportunity to offer the following suggested addition:

- Section C.2 (i) - add 'based on the most recently approved rainfall data' at the end of the paragraph.

The City is appreciative of the on-going coordination with MassDEP, as well as the Environmental Protection Agency Region 1 (EPA), staff throughout the current variance and throughout this variance extension process, and we look forward to continued partnership on implementation of the variance conditions in the years ahead.

MASSDEP RESPONSE 7

MassDEP has revised the language already incorporated into C.2(ii) for clarity, so that it now reads "based on NOAA Atlas 14, Volume 10, or as updated." For consistency, this language has also been added to C.2(i) in the final variances.

CITY OF CAMBRIDGE - CATHERINE DALY WOODBURY, SENIOR PROJECT MANAGER

COMMENT 8

The City of Cambridge (City) appreciates the opportunity to comment on the Tentative Determination to Adopt Variances for CSO Discharges to Lower Charles River/Charles Basin and to Alewife Brook/Upper Mystic River (the Variances) made by the Massachusetts Department of Environmental Protection

(MassDEP). The City supports MassDEP's utilization of the Variance regulatory tool and strongly supports the extension of both Variances through August 2029.

The additional time provided in the Variances allows the City and the City of Somerville (Somerville) and the Massachusetts Water Resources Authority (MWRA) to continue the close collaboration that is required to develop effective and meaningful Updated CSO Control Plans. Our collaborative efforts have resulted in the creation of a unified model that represents an extensive detailed model of our collection systems that enables us to equally model and compare alternatives; a future looking typical year that considers the projected impacts of climate change on precipitation in the coming decades; and a robust public participation and involvement plan. Each of these steps takes extensive coordination, cooperation, and time to advance.

MASSDEP RESPONSE 8

MassDEP acknowledges these comments.

COMMENT 9

The City requests that the variance itself not dictate nor give preference towards the implementation of any specific CSO control technology. The planning process already requires the evaluation of technologies that are most conducive to CSO control given the environmental, social, and economic conditions of each watershed. We are following EPA's guidance to evaluate varying levels of CSO control and technologies, and we request that the variance allow that process to continue until the Draft Updated CSO Control Plan is reviewed and alternatives can be discussed and vetted through the mutual collaboration of each watershed's stakeholders.

MASSDEP RESPONSE 9

MassDEP agrees that the Variance should not dictate any specific CSO control technology to be implemented and that the permittees should be evaluating multiple options as part of the development of the Updated CSO Control Plans. That being said, the 2019 Variances included in Section F, the following statement: "For the Cities of Cambridge and Somerville, use of Green Infrastructure technologies shall be considered." MassDEP inadvertently excluded this statement from the 2024 draft determinations, but had not intended to remove this requirement. MassDEP has included the statement "Use of Green Infrastructure shall be considered" in the final determinations; however, MassDEP notes that the requirement is only for the permittees to *consider* Green Infrastructure technologies and does not dictate they must be used. MassDEP is aware that the permittees are already considering these technologies as part of their planning; therefore, including this requirement in the final variances will not change the work that is already ongoing. Determinations on inclusion of specific Green Infrastructure projects will be incorporated into the Updated CSO Control Plans, which are subject to MassDEP review and approval.

COMMENT 10

As the City has been individually and jointly developing CSO control alternatives it is our opinion that one joint Draft Updated CSO Control Plan will result in a superior, equitable, and more resilient and sustainable plan for the region. The development of separate (individual) Updated CSO Control Plans has significant limitations and will yield a less beneficial CSO Control plan. Due to the high level of interconnectedness and the interdependencies of each of the CSOs and the collection system changes at

any of Cambridge, Somervile or MWRA's facilities can result City of Cambridge RE: Comments on Tentative Determination to Adopt Variances for CSO Discharges to Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River in the shifting and rebalance of flows that can negatively impact the CSOs throughout the region. We are encouraged by MassDEP's acknowledgement of these dependencies as reflected in the inclusion in Section F.5. of the option to submit one joint Draft Updated CSO Plan. Cambridge recommends that a single Updated CSO Control Plan be the requirement and not an option.

MASSDEP RESPONSE 10

Due to the fact that the three CSO systems are hydraulically connected and actions in one system can impact the other systems, MassDEP agrees it would be preferable to develop one joint Updated CSO Control Plan that is a collaborative effort of all three parties. However, MassDEP lacks the authority to make this a requirement through the Variances. MassDEP continues to encourage the three parties to collaborate on development of one comprehensive plan.

COMMENT 11

In addition to the System optimization Measures outlined in Exhibit B of the Variance the City would like to reiterate our ongoing and continued commitment to collection system and water quality improvements in the Variance waters. Since the MWRA LTCP work was completed in 2015, the City has continued to invest in sewer separation and other I/I removal projects, including green infrastructure. Just a few of these projects are listed below:

- Partial sewer separation of over 250 acres in the Cambridgeport neighborhood, resulting in reductions of CSO activations and volume at Cottage Farm while maintaining treatment for over 85% of the stormwater that falls on the catchment area.
- 35 acres of sewer separation in CAM017 catchment.
- Installation of stormwater infiltration system in Rogers Park
- Installation of stormwater infiltration system in Longfellow Park.
- Infiltrating catch basins in CAM401A catchment for I/I projects and Chapter 90 roadway improvements
- In addition, the City of Cambridge has one of the most stringent stormwater control policies in the country. The requirements to store and treat stormwater onsite for projects greater than 50,000 sf or 1 acre of disturbance. Since 2008 this requirement has resulted in significant reductions in flow to the MWRA system and improvements to stormwater quality in already separated areas.

MASSDEP RESPONSE 11

MassDEP acknowledges these comments.

COMMENT 12

In addition to the comments submitted yesterday please accept the following additional comments from the City of Cambridge (City) on the draft Variances:

The City of Cambridge (City) requests that due to yet unresolved comments on the Draft DI NPDES Permit that Exhibit D should not be used as the means to evaluate CSO system compliance during the Variance period. Exhibit D is based upon a report prepared by MWRA using their previous LTCP model

developed for the District Court case that the City is not a party to. Cambridge's meter data and model is not in agreement with how the MWRA model predicted activations and volumes for Cambridge's CSOs and has been discussed in our annual NPDES reporting; and, is further reflected in the requirement of Exhibit A and B of the draft Variance for further system metering and hydraulic model calibration to improve CAM401A system understanding and address differences in current hydraulic models. Furthermore, the City would like to reiterate our position that the LTCP projects were implemented in a manner that reduced overall activations and volumes to the Variance waters and was not focused on individual outfall goals developed long ago. For example, the underflow connection was increased at SOM001A to reduce overall discharges to the Alewife Brook at the expense of increases in Cambridge outfalls, including 401A. Decisions like this were made in the spirit of attaining the highest water quality possible for the Variance waters within the LTCP projects. Similar to our reason for requesting for a single Updated CSO plan, the complexity of an interconnected system requires evaluating the overall system performance, and not focusing on individual outfall pipe discharges or jurisdictional boundaries. Including Exhibit D in the Variances puts decades of collaboration between the cities of Cambridge and Somerville and MWRA at risk for the sake of individual permit compliance that will not improve water quality during the period of the Variances. If volumes and activations are to be retained as part of this Variance determination, then we request that Exhibit D use the levels in the latest Annual CSO report for each outfall, respectively, that more accurately reflect interim and evolving system and model improvements over the variance period.

MASSDEP RESPONSE 12

See MassDEP Response 3 with regard to CSO activation and volume limits. MassDEP agrees that it is optimal that a unified, single Updated CSO Control Plan be developed, and if permittees are unable or unwilling to undertake such an effort, the three Plans must be closely coordinated, since the MWRA and community systems are hydraulically connected. The CSO Control planning process must result in the best and highest level of CSO control and water quality improvements for the overall system.

WRITTEN COMMENTS FROM WATERSHED GROUPS AND MASSDEP RESPONSES

CHARLES RIVER WATERSHED ASSOCIATION - MAX ROME, STORMWATER PROGRAM MANAGER AND ZEUS SMITH, ASSOCIATE ATTORNEY

COMMENT 13

Charles River Watershed Association ("CRWA") provides the following comments on the Massachusetts Department of Environmental Protection's ("MassDEP") Tentative Determination to Adopt a Variance for Combined Sewer Overflow ("CSO") Discharges to Lower Charles River/Charles Basin ("the Tentative Variance"). Our comments concern the water quality variance for the Charles River that allows for the continued discharge of raw and partially treated sewage in the Charles River's Lower Basin by the City of Cambridge and the Massachusetts Water Resources Authority ("MWRA"). In 1997, MassDEP issued a temporary change in the State Surface Water Quality Standards (in the form of a variance) to allow MWRA and the City of Cambridge to exceed the water quality standards for bacteria in the Lower Charles River and Charles River Basin for a limited time while projects were designed and constructed to reduce or eliminate CSO discharges. The current variance expires on August 30, 2024. Since there is still work to be done by MWRA and the City of Cambridge, MassDEP has started the public process of

renewing this variance for up to five years. This will be the seventh water quality variance for the Charles River's lower basin. While we recognize that this variance and the Long-Term Combined Sewer Overflow Control Plan ("LTCP") process have facilitated substantial improvements to CSO control, we are deeply concerned that the proposed variance is failing to protect a valuable natural resource and is not delivering continued, meaningful progress. As drafted, the Tentative Variance is inadequate as it allows for **continued pollution without requiring substantive corrective actions** during the variance period.

We acknowledge the work of MWRA and the City of Cambridge in implementing the LTCP and, more importantly, improving conditions in the Charles River. We appreciate the thorough analysis that has gone into post-construction monitoring and the forward-looking steps MWRA and the City of Cambridge have taken to consider climate change in a revised typical year. CRWA is proud to have been a partner in this process. We 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, including achieving the goal of a swimmable Charles River

This is the third variance since the substantial competition of the Phase III LTCP in 2015. From CRWA's perspective, the Variance process was appropriately utilized during Phases I, II, and III, to address the illegality of CSOs while progress to reduce and end them was ongoing and while reductions were occurring. In recent years this progress has stalled. Furthermore, climate change is already causing us to lose some of the progress we made. **The variance process must ensure progress continues**, or it is not being appropriately applied. As written this variance fails to ensure that the resulting LTCP will deliver meaningful progress toward the elimination of CSOs in the Charles River. CRWA does not support this continued cycle of variances and incremental progress toward existing LTCP goals. **We do not support the Tentative Variance as written.**

Strong conditions must be added to ensure that the LTCP drafted during this variance period will be protective of water quality (e.g., virtual elimination of CSOs from the lower basin). As CRWA has stated in 1998, 2000, 2010, 2013, 2016, and 2019, 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**. If variances are invariably issued every five years that goal may never be achieved. Water quality standards should not be changed - either temporarily or permanently - **they should be achieved**. CRWA believes that this is possible if the variance process is applied as designed and meaningful progress is a clear condition of this Tentative Variance. CRWA is committed to engaging with MWRA and the broader community throughout this process.

<u>Charles River as a precious resource</u>

Fifty years have passed since the passage of the United States Clean Water Act ("CWA") which established national criteria for pollutants in surface waters. The CWA set ambitious goals, aiming to achieve "fishable and swimmable" waters by 1983, and the complete elimination of pollution into navigable waters by 1985. In 1995, the EPA's "Clean Charles Initiative" recommitted to the CWA goals spurring major investments in pollution control but failing to achieve its stated goal. Before 1948 the Charles River's lower basin included seven public bathing beaches. Older residents of Cambridge and Boston can still remember gathering at the river to learn to swim and to find refuge from the summer heat. Swimming is not possible when we use our river as an outlet for untreated sewage. Climate change exacerbates the need for urban bathing and the urgency to eliminate CSO discharges into the Charles River.

MASSDEP RESPONSE 13

MassDEP acknowledges these comments. As CRWA is aware, the new 5-year Variance term allows the MWRA and the City of Cambridge to properly develop their Updated CSO Control Plans that include planning for feasible projects that can effectively reduce or eliminate CSO discharges to the Charles River; modeling the potential effects of climate change to understand how storms with increasing frequency and intensity affect the combined sewer system; continuing to involve the public in meetings with robust outreach to Environmental Justice communities affected by CSO discharges; incorporating a public comment period, public meeting, and public hearing for the draft Updated CSO Control Plans, and submitting the final Updated CSO Control Plans to the Massachusetts Environmental Policy Act (MEPA) office for public review. The Variance is the mechanism by which MassDEP is requiring development of the Updated CSO Control Plans. Through MassDEP's review and approval of the Updated CSO Control Plans, the next phase(s) of CSO control projects will be determined. Issuing the new 5-year Variance does not mean that progress on reducing or eliminating CSO discharges is on hold. Projects such as sewer separation and Green Stormwater Infrastructure installations are ongoing, including the projects detailed in Exhibits A, B, and C of the Alewife Brook/Upper Mystic River Basin Variance and Exhibits A and B of the Lower Charles River/Charles Basin Variance.

COMMENT 14

Financial Analysis

Section F of the Tentative Variance requires MWRA and the City of Cambridge to implement Updated CSO Control Plans that specifically include "[a]n evaluation of the costs and water quality benefits of further CSO control alternatives, up to and including elimination of CSO discharges." As written, this requirement is ineffective and we request the following condition be added: "**The evaluation must include cost comparisons to Philadelphia, New York, Kansas City, Narragansett Bay, and Milwaukee** for the potential cost to reduce and eliminate CSOs. Furthermore, MWRA and Cambridge must fund third-party reviews of cost analyses overseen by MassDEP." As an initial matter, MassDEP should have required separate findings from MWRA, Cambridge, and Somerville. These entities have different means of raising funds. Accordingly, we request that **future financial analysis be conducted for each entity and each receiving water individually.**

The current financial analysis is inadequate for determining the economic feasibility of CSO elimination. The current "Update to Financial Capability Analysis for variance" dated August 8, 2023 (Attachment 1, Cost of System-wide CSO Elimination) estimates a total cost of $22,390,470,229 for CSO elimination from the 5,920 acre combined sewer system. This cost includes $3 billion for sewer separation and a staggering $19 billion to upgrade conveyance and treatment at Deer Island including construction of a second effluent outfall tunnel.

For reference, the construction of MWRA's Deer Island Treatment Plant in 1995 cost a total of $3.8 billion. Adjusted for inflation this is the equivalent of $7.8 billion[1] today. Deer Island receives sanitary flows from a service area of 405 square miles (North system: 168 mi^2, South system 237 mi2)2. It does not appear credible that the cost to treat an additional area equivalent to 2% of the existing service area should result in a cost >3X the inflation-adjusted cost of constructing the Deer Island Facility.

Table 1: Cost comparison of cost and service area for Deer Island and CSO elimination

System	Service Area	Cost*
Deer Island	43.8	$7.8 B
CSO elimination	9.3	$22.4 B

*Cost in Billion USD, adjusted for inflation

While we accept the MWRA's sewer separation cost estimate, their approach to potential inflow after sewer separation cannot be justified. In their analysis, MWRA states that "System-wide sewer separation… would not provide the necessary relief because 100% inflow removal would not be feasible." In essence, the MWRA states that even after sewer separation, the quantity of stormwater entering the sanitary system would be so great as to require a $19 billion investment in conveyance, treatment, and discharge. While we accept that 100% inflow removal may not be possible, modern sanitary sewers are typically able to substantially limit inflow. MWRA's reporting shows that system-wide inflow has been less than 14% of average daily flow between 2012 and 2020.[3] MWRA and the City of Cambridge should have recent data on percentage inflow reduction from the successful implementation of sewer separation projects throughout Boston and Cambridge, including those involved in the construction of Alewife Constructed Wetland. Assumptions about additional flows to sanitary systems must be stated explicitly and based on recent experience with completed projects. Furthermore, alternate solutions exist for addressing high sanitary flows during wet weather. This analysis fails to evaluate cost-effective strategies to reduce and manage inflow like source control, green infrastructure, or distributed storage and treatment.

The analysis also does not account for federal funds that may be available from the Inflation Reduction Act or other federal sources. Furthermore, this analysis has not been updated, other than for inflation, since 2005 (accounting for the specificity of the total dollar amount). This practice fails to meet the intent of the law under 314 CMR 4.03(4) and 40 CFR 131.10(g)(6). 314 CMR 4.03(4) states that MassDEP may "remove a national goal use….or issue a variance where: (f) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact." This provision can only effectively function where accurate financial analyses of economic and social impacts are conducted.

MASSDEP RESPONSE 14

MassDEP has evaluated MWRA cost estimates for CSO reduction and/or elimination for decades. The cost estimate provided by MWRA is consistent with prior cost estimates, taking into account inflation. MWRA based its inflation estimates on the Engineering News-Record Construction Cost Index. It additionally considered recent sewer separation costs incurred by the Boston Water and Sewer Commission to gain a more geographically-nuanced understanding of costs. The Financial Capability Analysis (FCA) conducted to justify the Variances mirrored the approach taken in the Federal Judicial Court Order, which has been the guiding authority for addressing CSOs in these watersheds. In the Second Stipulation (2006), MWRA accepts legal liability to implement the CSO control requirements identified therein and the LTCP.

For the purpose of justifying the Variances it is not the appropriate time to conduct community specific FCAs, but such analyses will be conducted in the near future as part of the development of Updated CSO Control Plans. The Variances are focused in part on completing updated CSO Control Plans for MWRA, Cambridge, and Somerville. Those updated Plans will propose a suite of alternatives, which will then undergo an FCA. Essentially, the work under the proposed Variances must occur first, and then separate FCAs will need to be conducted for the developed alternatives

within each separate entity. Most communities utilize a public process when developing their CSO Control Plans. This mirrors the approach MWRA has historically adopted to allow public input for its CSO Control Plans. The process for developing Updated CSO Control Plans includes multiple public meetings, with the next public meeting slated for late fall 2024 or early winter 2024/2025.

Consistent with EPA's 2023 FCA guidance, MWRA completed a Financial Alternatives Analysis Worksheet to support the FCA analysis. MWRA detailed their efforts to seek and obtain financing options, potential grants or forgiveness, with the State Revolving Fund (SRF) or other such options. MWRA documented that it recently received limited principal forgiveness from the SRF. However, the amount needed for full CSO elimination far exceeds the capacity of the SRF. For FY2024, the Massachusetts Clean Water Trust Final Intended Use Plan (IUP) is providing $932 million in loans and loan forgiveness to over 50 projects throughout the State of Massachusetts (https://www.mass.gov/lists/2024-final-srf-intended-use-plans). The funding is competitive and subject to strict requirements. This funding includes in excess of $77 million from the Bipartisan Infrastructure Law (BIL). BIL funding will only be available through FY2026, after which the total annual amount available each year may decrease. Further, nearly all of the available funding is in the form of loans. While the loans are "low-interest," there is still a cost to the communities for this funding, and taking on such costs is typically subject to Town or City approvals. Thus, there are multiple levels of uncertainty and including such funding would be inappropriate in this financial analysis. MWRA is not eligible to directly receive American Rescue Plan Act (ARPA) funding. MWRA reports regularly seeking out and applying for grants. Given this history and the magnitude of the costs, the availability of grants or funding was not considered to materially alter the FCA analysis.

MassDEP does not believe it is necessary or appropriate to include cost comparisons with other cities given that affordability analyses use community-specific data.

COMMENT 15

Current status of CSOs and Environmental Justice

In 2023 the Charles River received over 70 million gallons of raw and partially treated combined sewage from 39 unique CSO activations. This greatly exceeded the allowance for a typical year of 13.13 MG. CSO discharges were triggered by 14 separate rain events. After CSOs the river is considered unsafe for 48 hours, which means that CSOs directly restricted recreation on the river for roughly one month. This has a large impact on both water quality and public perception.

Dr. Nathan Sanders, a data scientist and Climate Justice Design Fellow at Harvard University has found that in Massachusetts, watersheds with socially vulnerable populations are disproportionately affected by the occurrence of CSOs. Across the state's 31 watersheds, CSO volumes are greatest in watersheds with the highest proportion of non-white, linguistically isolated, or low-income households. When comparing any two watersheds, on average, a watershed with twice the percentage of non-white residents will receive three times the CSO volume. The Greater Boston Area is typical of this trend. **Combined Sewer Overflow is an Environmental Justice issue.**

Environmental Justice (EJ) is a stated priority for the federal government and the Healey-Driscoll administration. Governor Healey has stated that her "administration is committed to securing clean air and water for every resident," while Secretary Rebecca Tepper of the Executive Office of Energy and Environmental Affairs ("EEA") has similarly noted EEA's commitment to "reverse the environmental

burdens that have plagued communities of color and economically marginalized residents for decades." CSOs negatively impact the lives of our most vulnerable populations in both apparent and less apparent ways. For example, access to swimmable, clean water might relieve low-income residents without air conditioning on hot days - but not if that water is polluted by sewage. Today, on average, Bostonians experience 10 days each year over 90 degrees. By 2070 this frequency is expected to reach as many as **46 days above 90 degrees per year[4].** While residents of Concord, Swampscott, and Belmont enjoy access to safe local outdoor bathing, CSO denies this opportunity to residents near the Charles River. In the Charles River's lower basin organizations like Community Boating and Community Rowing are dedicated to democratizing access to boating and exposing individuals and youth of all backgrounds to rowing and sailing. CSOs restrict this access.

Table 2: Summary of verified CSO activations and volumes to the Charles River in 2023.

CSO Date	CAM 005	CAM 007	CAM 017	BOS 046	MWR 201	MWR 023	MWR 018	MWR 019	MWR 020	Event Total*
12/18	0.06	~	0.03	~	6.1	0.06	~	~	~	6.2
12/11	0.01	~	~	~	2.3	~	~	~	~	2.3
9/18	0.01	~	~	~	~	~	~	~	~	0.01
8/25	0.01	~	~	~	1.8	~	~	~	~	1.8
8/18	~	~	~	~	~	0.07	~	~	~	0.1
8/8	0.63	0.92	~	0.03	12.7	0.11	0.125	~	~	14.5
7/29	~	~	0.35	3.56	16.8	0.72	0.28	0.13	0.09	22.0
7/25	~	~	~	0.36	~	0.008	~	~	~	0.4
7/21	0.06	0.33	1.38	0.35	8.3	0.17	0.15	0.06	0.04	10.8
7/10	0.01	~	~	~	~	~	~	~	~	0.0
7/3	0.04	~	~	~	~	~	~	~	~	0.0
5/21	~	~	~	~	1.8	~	~	~	~	1.8
5/20	0.04	~	~	~	~	~	~	~	~	0.04
3/14	~	~	~	~	12.1	~	~	~	~	12.1
CSOs (#)	9	2	3	4	8	6	3	2	2	39
Totals*	**0.87**	**1.25**	**1.76**	**4.30**	**61.83**	**1.13**	**0.56**	**0.19**	**0.13**	**72.02**

*All CSO volumes in MG.

As Dr. Sanders has said, "in a just Commonwealth, your zip code would not determine your sewage exposure, but in Massachusetts today, it does." Our state can do better for our EJ communities by adding strict and specific requirements to this variance as we suggest to ensure we have an equitable plan, developed with community input, that results in all sewage being fully and effectively treated, not dumped into our rivers. Requirements need to be added to ensure that meaningful progress to measurably reduce overflows is made during the variance period.

MASSDEP RESPONSE 15

MassDEP acknowledges CRWA's comments related to Environmental Justice (EJ). MassDEP, as part of the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) is committed to implementing the following Environmental Justice Strategy: https://www.mass.gov/doc/february-2024-environmental-justice-strategy-english/download. A critical component of EEA's EJ Strategy is to increase public participation and promote

meaningful community engagement from those living in marginalized communities. MassDEP conducted extensive EJ outreach in preparation for and during the 45-day public comment period and three public hearings. MassDEP also commends MWRA and the Cities of Cambridge and Somerville on their EJ outreach efforts when planning for public meetings. MWRA, Cambridge, and Somerville have put tremendous effort into reaching out to the EJ populations throughout the planning process.

Regarding EJ and CSO mitigation, MassDEP agrees that those disproportionally affected by pollution deserve clean water. However, projects to further reduce or eliminate CSO discharges such as underground storage, sewer separation, and Green Stormwater Infrastructure in heavily developed areas such as the Boston area take time to properly plan, fund, and execute.

COMMENT 16

Critique of Variance Criteria and Conditions

A critical aspect of the variance process is that it does not entail a pause or delay in CSO control projects. Ongoing CSO control projects are described in Exhibits A and B of the Tentative Variance. In these exhibits, the City of Cambridge has committed to sewer separation of 25 acres of combined sewer that contribute to the North Charles Sewer. These are tangible projects that will result in reduced CSOs, however, they represent **less than 1% of Cambridge's total Combined Sewer System ("CSS")** area (2,600 acres). At this rate (25 acres over 5 years) **complete sewer separation would occur in the year 2544**. This pace of progress is unacceptable. The city of Cambridge must identify additional control measures including source control to enact during the variance period.

MWRA has failed to identify any concrete project to enact during the variance period. Exhibit A. 3 lists a single item described as "further investigate… the CAM005 Regulator to determine if the… weir can be raised to reduce activations." CRWA is unwilling to support a variance period in which no commitment is made to reducing CSO flow from Boston's 1,200-acre combined sewer system.

MASSDEP RESPONSE 16

In addition to implementing the CSO control projects in the 1997 Long-Term Control Plan, and related modifications to that plan, both MWRA and the Cities of Cambridge and Somerville have evaluated additional measures to optimize their collection system infrastructure to minimize CSO discharges through Nine Minimum Controls Programs and through Optimization and Infrastructure Studies and their recommendations. Based on those studies, the permittees have also designed, and in some cases advanced projects to improve their collection systems. Those projects that are in the implementation phase are those in Exhibits A and B, as noted in the comment. No further small-scale projects have been identified at this time.

MassDEP concurs that more CSO abatement work needs to be done. However, meaningful work to address remaining CSO discharges is now understood to be large-scale, capital improvements that will be the focus of the Updated CSO Control Plans, which are a key element of the Variance requirements. Completion of the long-term CSO planning process will be essential to implementing the most comprehensive and efficient CSO control plan, which will also maximize the water quality benefits.

COMMENT 17

Requests for Additional Criteria

Green Infrastructure: At the request of CRWA and other stakeholders, 2019's variance included multiple provisions referencing the implementation of green infrastructure ("GI"). In Section E, the 2019 variance required the City of Cambridge to consider the use of "Green Infrastructure technologies." In Section F, the 2019 variance included a specific requirement that "[t]he City of Cambridge shall consider use of Green Infrastructure technologies where feasible to increase stormwater infiltration." The current Tentative Variance contains no mentions of GI or requirements that the City of Cambridge or MWRA consider novel ways of reducing CSO discharges. **We request this be added to the Tentative Variance in Section F**; failure to do so is akin to backsliding.

The City of Cambridge and MWRA should thoroughly evaluate the use of GI following EPA guidance and building upon recent analysis performed in peer cities. For example, the Narragansett Bay Commission's ("NBC") 2017 amended re-evaluation report identified >600 public and private sites where GI could be used, concluding that GI could be used to reduce CSO volumes by 36%. In selecting CSO control solutions the NBC included a triple bottom line analysis. Most recent CSO control plans (e.g., Kansas City, Milwaukee, New York City) include the systematic use of green infrastructure including incentives for adoption on private property (e.g., Philadelphia's stormwater grants program). Slides from a recent presentation on the Milwaukee Metropolitan Sewerage District's ("MMSD") CSO progress and planning are included as an attachment to this letter. **[MassDEP notes that these slides are available on pages 114-123 of this document.]**

A specific and detailed requirement that MWRA and the City of Cambridge shall consider the use of GI in a manner consistent with New York, Philadelphia, and Milwaukee is necessary as demonstrated by the planning process to date. In 2023, Cambridge, MWRA, and Somerville presented a "bookend analysis" stating a maximum possible use of GI to capture the first inch from just 10% of impervious area, excluding roofs. This is not in line with current practices in CSO planning where GI is used as a tool to reduce the volume of gray infrastructure while providing numerous benefits to the community. For example, the MMSD has a goal of using GI to capture the first 0.5 inches of rain from ALL impervious surfaces by 2035. Philadelphia is working toward managing the first inch or greater of rain for 34% of its CSS using GI. MWRA and the City of Cambridge's current approach is not in line with stormwater management planning in communities across the Commonwealth. It is a gross underestimate of the theoretical maximum use of green infrastructure and demonstrates the need for this requirement. MWRA and the City of Cambridge, as principal beneficiaries of reduced loads on their sewer systems, should continue to actively explore GI as a solution.

MassDEP should also require **MWRA and Cambridge to spend a minimum of $5 million on green stormwater infrastructure in CSO drainage areas during the variance period.** As it stands, we are facing the possibility of a 12-year period from 2017 to 2029 where no progress will be made on CSOs which is unacceptable. While larger planning is taking place, the parties can and must begin to act. CRWA believes that $5 million - $1 million a year over 5 years - is a reasonable request. If the variance term is 6 shortened to 3 years, we request that the requirement be changed to $3 million for green stormwater infrastructure. **We request that the following project requirement be added to either Section E, or to both Exhibits A and B:**

Project Name	Potentially Impacted Outfall(s)/Regulators	Project Description
Implementation of Green Infrastructure for Source Control	Various (CAM005, CAM007, CAM017, MWR018, MWR019, MWR020, MWR023, MWR201)	The City of Cambridge and MWRA recognize the role that GSI can play in reducing stormwater flows into the existing CSS. A fund of $5 million shall be created for the implementation of GSI projects on public or private property within existing CSS areas.

Over the currently proposed five-year duration of the Tentative Variance, GI advances will continue to be made and our understanding of how best to utilize them will continue to improve.

MASSDEP RESPONSE 17

See MassDEP Response 9. It was an oversight on MassDEP's part to remove the requirement from Section F of the 2019 Variances "For the Cities of Cambridge and Somerville, use of Green Infrastructure technologies shall be considered." This requirement was not intended to be removed and the statement "Use of Green Infrastructure shall be considered" has been added to the final Variance documents. MassDEP has not included any more specific requirements for methodologies for considering green infrastructure as this will be addressed as part of the Updated CSO Control Planning.

Given that Green Infrastructure is being considered as part of the overall CSO planning, it would be premature for MassDEP to require implementation of Green Infrastructure projects prior to completion of the Updated CSO Control Plans. Further, MassDEP does not dictate specific dollar amounts that permittees must spend on projects nor is it necessary to compare the use of Green Infrastructure with other communities such as New York, Philadelphia, or Milwaukee given that Green Infrastructure is most likely site specific and unique to the respective community. The Financial Capability Analysis that each permittee will complete as part of the CSO planning will inform how much can be spent on projects.

COMMENT 18

Reduce the Term of the Variance from Five Years to Three Years

Under 40 CFR 131.14(1)(b)(iv), the term of a given water quality standards variance must only be as long as necessary to achieve the highest attainable condition. CRWA believes that in this case, a three-year variance is necessary to provide more opportunities for public comment and reduce confusion with the current LTCP review periods. To the extent permissible by law, CRWA requests that MassDEP shorten the length of the Variance.

MASSDEP RESPONSE 18

See MassDEP Response 13. MassDEP has determined that Variances with 5-year terms are appropriate.

COMMENT 19

LTCPs Should Evaluate and Achieve Control of Design Storms

If the Tentative Variance's term is not shortened, we request the following condition be added to Section F: **The draft and final updated LTCP will achieve control of the 2070 25-year design storm or some other design target agreed upon by a citizen advisory committee of affected residents and groups for all outfalls into the Charles River Lower Basin.**

MASSDEP RESPONSE 19

Both MassDEP and EPA regulations require a CSO permittee to assess a full range of CSO control alternatives in the long-term CSO planning process, up to and including elimination of CSOs, and that the recommended plan achieve the highest feasible level of CSO control and water quality benefits. The Updated CSO Control Plans required under the Variances must meet this requirement. MassDEP notes that for the purpose of developing and evaluating CSO control alternatives, MWRA, Cambridge, and Somerville are evaluating the 2050 Typical Year, 2050 5-year storm, and the 2050 25-year storm.

EPA and MassDEP also have guidance on how LTCPs must be structured, which the agencies apply to all CSO permittees. The three permittees, whether they produce a single, unified Plan, or separate Plans, must include alternatives such as the one referenced in the comment, which will be fully evaluated in the LTCP development, review, and approval process. Lastly, MassDEP notes that public participation is a key element of that process, and MassDEP fully expects the watershed groups and other advocates to be engaged in this process.

COMMENT 20

Level of Required CSO Control During Variance

As Mystic River Watershed Association notes in its comments, the final variance should make it clear that the CSO discharge limits in Exhibit C shall remain in effect during the term of the variance, regardless of whether the Court determines the original case to be closed during the variance period. Notably, 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 conditions have 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.

MASSDEP RESPONSE 20

MWRA's obligations to address Clean Water Act violations related to CSO discharges, both those permitted to MWRA and those permitted to member communities, continue to be set forth in Civil Action No. 85-489-RGS. Included in that Action are a *Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflow Control*. MassDEP has strived to make the Water Quality Standards Variance requirements consistent with actions by the Court, and the 2024 CSO Variance has accordingly included these obligations for the Variance waters in Exhibit C. MWRA is also required by the Court Order to submit a Supplemental Report on the levels of CSO control achieved by December 31, 2024. MassDEP, along with EPA, has been assigned by the Court to determine "*Whether the Authority has met the levels of CSO Control in its Long-Term CSO Control Plan*…" Actions in that case that follow MWRA's submittal, and agency determinations on the Report, are yet to be determined. MassDEP acknowledges that the Court is expected to act

on the upcoming MWRA Supplemental Report due in December 2024; it is not possible to predict the outcome of that action at this time. However, it is reasonable and appropriate for MassDEP to retain the levels of control in the Second Stipulation and approved 1997 LTCP and ensuing CSO planning documents as a condition of Water Quality Standards Variances given that no decision about the Court Order will be made until after the issuances of the Variances. Further CSO abatement work will be determined based upon the information developed in the Updated CSO Control Plans. However, given it is unknown what the Court's decision will be in this matter, MassDEP has included the following statement in the Variances (see footnote on page 1 and paragraph A): "In the event of any future amendment by the court in the aforementioned actions, MassDEP will determine whether the court's actions will require a change to the Variance requirements."

MWRA's annual CSO Report each year compares the annual rainfall, and in some cases data on individual storm events for the prior year with those events in the Typical Year which served as the basis for the 1997 LTCP. The annual report notes where the rainfall diverges from that baseline. It also includes use of the MWRA's calibrated sewer system model in assessing the system performance. MassDEP acknowledges the challenges in making data comparisons on levels of CSO control between years, which may widely vary in the number of, and intensity of precipitation events, however, such a data assessment will remain necessary where CSO discharges have not been eliminated. MWRA's assessment is subject to regulatory review.

Most importantly, in regard to establishing a level of CSO control and final water quality standard, MassDEP fully expects that the Updated CSO Control Plans, required under the Variance, will provide the means to render these determinations, and that steps to implement the approved LTCP(s) will form the basis for further regulatory actions.

COMMENT 21

Additional CSO Reduction Projects

In 2023 CRWA worked with undergraduate civil and environmental engineering students from Northeastern University to identify CSO control projects to protect the Charles River.[5] This project produced 24 conceptual designs that would reduce flows to the outfalls CAM017, MWR018, and MWR020. **CRWA requests that MassDEP include the 24 projects generated by the Northeastern Capstone Projects in Exhibit A and Exhibit B as additional system optimization measures for outfalls.** Projects on private property could be funded through a CSO source control grant program as proposed above.

Project Name	Potentially Impacted Outfall(s)/Regulators	Project Description
Distributed GI and storage	CAM017, MWR018, MWR020	Investigate and adapt the "Green Infrastructure Solutions for the Charles River Combined Sewer Overflow Reduction Plan," prepared by Northeastern Civil Engineering Students.

MASSDEP RESPONSE 21

As part of the development of Updated CSO Control Plans, the three parties are evaluating potential Green Infrastructure projects and their anticipated benefits for CSO reduction. The permittees can review the projects designed by the Northeastern University students as part of development of the Plans, but it would be premature for MassDEP to require the permittees to implement the projects when they have not been evaluated by the permittees and compared against other alternatives being considered.

COMMENT 22

Insufficient Public Engagement

The Clean Water Act mandates that "public participation… shall be provided for, encouraged, and assisted" (33 U.S.C. §1251(e)). As currently drafted, the Tentative Variance fails this clear mandate. Section F of the Tentative Variance includes a requirement that MWRA and the City of Cambridge "shall implement their Scopes and Schedules for Updated CSO Control Plans, which were submitted to MassDEP and EPA on April 1, 2022 and approved by MassDEP on July 22, 2022." The Tentative Variance notes that these plans should include various elements including a "public participation process that includes, at a minimum, one public meeting to discuss CSO control alternatives and one public hearing on the recommended plan, and also including any submittals to comply with the Massachusetts Environmental Policy Act (MEPA), 301 CMR 11.00." This is the same form language that was used in 2019. Following public comments, this requirement was updated to emphasize the importance of public engagement: "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." MWRA, Cambridge, and Somerville have already committed to four more public meetings per their website. **CRWA requests that language be added to the Tentative Variance to require these four meetings and two additional public meetings on the Alternatives Screening and Affordability Analysis.** As noted throughout these comments, work by the parties to date has demonstrated a lack of commitment to identifying cost-effective solutions that will reduce CSOs and benefit the community. Furthermore, past meetings have demonstrated strong public interest and engagement in this process. We expect MassDEP has attended the meetings or seen the recordings. One meeting is completely inadequate to address this part of the project.

MASSDEP RESPONSE 22

MassDEP has made changes to the final Variance determinations to incorporate the public meetings that MWRA, Cambridge, and Somerville have already committed to. These include presentations on Alternatives Screening/Affordability Analysis (anticipated late Fall 2024/early Winter 2025), Results of Alternative Analysis (anticipated Spring 2025), and Draft Updated CSO Control Plan (anticipated Winter 2026). Further, the Variances require a public comment period, and public hearing associated with the draft Updated CSO Control Plans.

COMMENT 23

Beyond that, CRWA recommends that a Citizen Advisory Committee be convened in 2024 that would include interested stakeholders that would be more closely involved in the remainder of the updated LTCP planning effort. We request the following language be added to Section F: "MWRA and the City of Cambridge will convene a Citizen Advisory Committee to meet regularly throughout the process beginning in 2024 and continuing through the variance period. In addition to general topics relating to the Variance, the Citizens Advisory Committee shall review the LTCP. The Citizens Advisory Committee

will be given meaningful opportunities to comment on the draft LTCP that can and will be incorporated into the final LTCP. The Citizens Advisory Committee will meet a minimum of four (4) times a year. Meetings relevant to the LTCP must occur prior to the public hearing required in Section F(5). The Citizens Advisory Committee will include at a minimum Charles River Watershed Association, Mystic River Watershed Association, Save the Alewife Brook, planners/engineers from peer CSO cities, and groups identified by MWRA, Cambridge, and Somerville that represent EJ communities living near the Charles River and Alewife Brook. For meetings relating to the LTCP, MWRA and the City of Cambridge shall hire a third-party expert on CSO reduction to serve on this panel and provide outside expertise for evaluating and improving the development of the LTCP."

MASSDEP RESPONSE 23

See MassDEP Responses 19 and 22.

COMMENT 24

Furthermore, the Nine Minimum Controls for CSOs established by EPA recognize that characterization of the combined sewer system requires the creation of accurate maps. Section E of the Variance should clearly state that **all system mapping is to be available to the public so that community-based organizations and citizens can understand and effectively advocate for CSO controls**. For example, the City of Cambridge has useful public GIS maps that show and label the individual CSO pipes and their connection to outfalls into the Charles River. This mapping approach should be expanded throughout the combined sewer system and include upstream stormwater flows and sanitary flows that contribute to CSOs. Similarly, the finalized Tentative Variance should include a provision that **all reports and data generated as part of the obligations established by Section C "CSO Performance Assessment" should be made available to the public.** We specifically request that CRWA be copied on all reports and analyses submitted to DEP under this variance.

MASSDEP RESPONSE 24

Wastewater infrastructure is considered critical infrastructure and making maps of such infrastructure available to the public could create a risk to public safety or cyber security. Communities and sewer authorities may choose to make their mapping available to the public, but MassDEP does not feel it is appropriate to make it a requirement to do so. MassDEP notes that the locations of all CSO outfalls in Massachusetts are shown in an online interactive map here: https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=08c0019270254f0095a0806b155abcde. Regarding reports and data generated by Variance requirements, MassDEP has added a requirement to the Variances that all final reports and all draft reports that are going out for public notice, required by the Variances, will be made available on a public website.

COMMENT 25

Unacceptability of Class B(CSO) designation.

CRWA is strongly opposed to a B(CSO) designation. We strongly believe that a Class B(CSO) designation would constitute a downgrading of the Charles River, and a significant and potentially permanent step backward after all the forward progress that has been made and will be made through the 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 B(CSO) designation is not an acceptable outcome.

MASSDEP RESPONSE 25

MassDEP acknowledges this comment and notes that any consideration of water quality standards changes would not occur until after the Updated CSO Control Plans are complete.

COMMENT 26

Conclusion

We request that all of the conditions included above in bold be included in the finalized variance. These are:

- A cost evaluation of CSO control efforts compared to CSO peer cities, as well as a third-party review of that cost analysis funded by MWRA and Cambridge and overseen by MassDEP.
    - To Section F: "The evaluation must include cost comparisons to Philadelphia, New York, Kansas City, Narragansett Bay, and Milwaukee for the potential cost to reduce and eliminate CSOs. Furthermore, MWRA and Cambridge must fund a third-party review of the cost analysis that is overseen by MassDEP. The MWRA and Cambridge must fund a third-party review of the cost analysis that is overseen by MassDEP."
- Requirements to invest in and explore GI in Sections E and F.
    - To Section F: "The City of Cambridge shall consider the use of Green Infrastructure technologies where feasible to increase stormwater infiltration."
    - To Section E: "The City of Cambridge and MWRA recognize the role that GSI can play in reducing stormwater flows into the existing CSS. A fund of $5 million shall be created to fund the implementation of GSI projects on public or private property within existing CSS areas," added to Section E.
- Design storm control standards if the variance timeline is not shortened.
    - To Section F: "The draft and final updated LTCP will achieve control of the 2070 25-year design storm or some other design target agreed upon by a citizen advisory committee of affected residents and groups for all outfalls into the Charles River Lower Basin."
- Increased public participation.
    - To Section F(3): "MWRA and Cambridge hold four meetings and two additional public meetings on the Alternatives Screening and Affordability Analysis."
- Creation of a Citizens Advisory Committee to discuss variance issues and the development of the LTCP.
    - To Section F: "MWRA and the City of Cambridge will convene a Citizen Advisory Committee to meet regularly throughout the process beginning in 2024 and continuing through the variance period. In addition to general topics relating to the Variance, the Citizens Advisory Committee shall review the LTCP. The Citizens Advisory Committee will be given meaningful opportunities to comment on the draft LTCP that can and will be incorporated into the final LTCP. The Citizens Advisory Committee will meet a minimum of four (4) times a year. Meetings relevant to the LTCP must occur prior to the public hearing required in Section F(5). The Citizens Advisory Committee will include at a minimum Charles River Watershed Association, Mystic River Watershed Association, Save the Alewife Brook, planners/engineers from peer CSO cities, and groups identified by MWRA, Cambridge, and Somerville that represent EJ communities living near the Charles River and Alewife Brook. For meetings relating to the LTCP, MWRA and the City of Cambridge shall hire a third-party expert on CSO reduction to serve on this panel

and provide outside expertise for evaluating and improving the development of the LTCP."

- Increased public availability of information.
    - To Section E: "All system mapping, reports and data generated as part of the obligations established by Section C "CSO Performance Assessment" should be made available to the public."

Massachusetts is currently losing some of the hard-fought gains our state obtained with previous CSO control efforts. As our climate changes and heavy or intense rain events become the norm, we are seeing CSOs occur more frequently. The Charles River is a beloved and heavily utilized recreational watersheet that is regularly impacted by CSOs. Through this variance process, we are looking at more than a decade of no to minimal CSO improvements on the ground as LTCP work mostly wrapped up in 2017, and very minimal on-the-ground work is required in the 5-year term of the Variance which will take us into 2029. To continue to approve minimal or marginal gains while allowing ongoing pollution is increasingly unacceptable, arbitrary, and capricious. CRWA hopes the above comments will help reverse this trend and put the Charles River back on track toward the CWA's original goal of ensuring fishable, swimmable water bodies for all to enjoy.

_____

1 Inflation calculated per Bureau of Labor Statistics: https://data.bls.gov/cgi-bin/cpicalc.pl
2 Service area from: https://www.mwra.com/harbor/enquad/pdf/2001-04_overview.pdf
3 https://www3.epa.gov/region1/npdes/mwra/pdf/2023/mwra-2023-fact-sheet.pdf
4 Source: Climate Ready Boston:
https://www.boston.gov/environment-and-energy/heat-resilience-solutions-boston#heat-analysis
5 https://www.crwa.org/s/FINAL-CAPSTONE-REPORT-CSCE.pdf

MASSDEP RESPONSE 26

See MassDEP Responses 14, 17, 19, 22, and 24.

MYSTIC RIVER WATERSHED ASSOCIATION - PATRICK HERRON, EXECUTIVE DIRECTOR

COMMENT 27

The Mystic River Watershed Association (MyRWA) is a non-profit organization dedicated to the preservation and enhancement of the Mystic River Watershed. Its mission is to protect and restore the Mystic River, its tributaries, and watershed lands for the benefit of present and future generations and to celebrate the value, importance, and great beauty of these natural resources. This includes working to improve the water quality in the Mystic River and all of its tributaries.

Our organization has followed with great interest the mitigation measures applied to combined sewer overflows (CSOs) in the Mystic River watershed for several decades. During 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 toward 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, marshaling 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.

In this matter, MyRWA is particularly concerned about the Alewife Brook. The Alewife is a regional recreation and environmental resource that has long been under assault from combined sewer overflows (CSOs). It is, in fact, the scene of the largest completely untreated CSO discharges of any freshwater river or stream in greater Boston. Many people use the Greenway Path in the Alewife Brook Reservation for recreation and to get to and from the Alewife MBTA Station. During some heavy rainstorms, when CSOs are releasing untreated sewage into the Alewife Brook, the brook overflows its bank into Arlington, covering parts of the Greenway Path with untreated human and industrial waste. This is an immediate and long-term concern.

Alewife Brook flows through environmental justice neighborhoods (as defined by MassEEA). According to the US-EPA's EJScreen mapping tool, Alewife-adjacent neighborhoods are among the top 10% in the country in terms of their exposure to and proximity to toxic wastewater in streams (using EPA's Risk-Screening Environmental Indicators methodology). The Alewife Brook Reservation is the local state park for residents of these neighborhoods. A clean Alewife Brook would enhance their enjoyment of the park, provide more recreational opportunities and protect public health. The Tentative Determination does not indicate how MassDEP considered environmental justice in determining whether to issue the variance, the conditions required, or any appropriate mitigation measures.

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 Brook and Upper Mystic River 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 qualified support for a strengthened Final Determination because we believe that, with enhancements, the proposed variance provides the opportunity to maintain a sharp focus on CSO control and public health protection while completing the updated CSO planning required by the current variance.

The remainder of this letter provides MyRWA's comments on the elements of the Tentative Determination in the order in which they appear. We also provide comments on relevant parallel sections of the Fact Sheet that accompanies the Tentative Determination. While MyRWA's comments here focus on the Tentative Determination for the Alewife Brook/Upper Mystic River Basin, many of them are equally applicable to the Tentative Determination for the Lower Charles River/Charles Basin.

MASSDEP RESPONSE 27

MassDEP acknowledges these comments. Variances are a tool that agencies can use to require projects that reduce or eliminate CSO discharges in any community, including Environmental Justice communities. MassDEP worked diligently on public outreach to engage residents of Environmental Justice communities so their voices could be heard during the public comment period for the Variances. Additionally, see MassDEP Response 15.

COMMENT 28
Basis for Variance

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). In a number of respects, this determination is not well supported by the available record.

The finding rests on an August 8, 2023 letter from MWRA that offers little more than an inflation adjustment to a 18 year-old analysis. 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. It seems unlikely that all of the system elements included in MWRA's original 2005 cost estimate would be required to eliminate CSO discharges at some or perhaps many of the outfalls covered by the variance.

MyRWA also notes that the current variance (2019) assigns requirements and responsibilities for CSO discharges separately to the owners of the outfalls in the variance waters. As such, MassDEP should have required separate findings from MWRA, Cambridge, and Somerville. These three entities have different means of raising funds and additional regulatory environmental demands. MyRWA also notes that it is unclear whether the financial capability analysis performed by MassDEP aggregates the census-based household data at the municipality level to determine the impact on households. It is our understanding that each municipality has the flexibility to set different rates that could, for instance, cap the rates on low-income households.

While MyRWA considers this analysis to be deficient, if system-wide elimination of CSO is considered to be the threshold for this variance, then it is vital that there is a clear understanding of the affordability threshold and the analysis required for the updated control plan. As described further below, the affordability analysis required in the proposed variance conditions must comprise a brand new analysis that considers a range of alternatives, not merely another update to the 2005 analysis. Furthermore, MWRA, Cambridge, and Somerville must each determine their own portion of the costs and their ability to fund their proposed updated CSO plans.

MASSDEP RESPONSE 28

See MassDEP Response 14.

COMMENT 29

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, the variance conditions must be written with an eye to enforceability. Several of the proposed variance conditions are deficient in this regard. Below, we will cite particular conditions that need to be improved. It is also unclear whether the variance conditions are automatically considered incorporated into the NPDES permits, or whether the permits need to be formally revised to incorporate the conditions.

MASSDEP RESPONSE 29

The final Variance determinations will be issued prior to the pending final NPDES permit for MWRA, which also incorporates Cambridge and Somerville as co-permittees. This will allow

Variance conditions to be incorporated into the final NPDES permit. Specific concerns about individual conditions are addressed in responses to comments below.

COMMENT 30

MyRWA disagrees with MassDEP's conclusion that a five-year variance is needed. The development of the draft updated CSO plans and the reviews and approvals by MassDEP, EPA, and MEPA should be completed by the end of 2026 according to the Gantt chart submitted by MWRA in September 2022 as part of the request to extend the schedule. It makes sense that MEPA would be reviewing a draft plan (with alternatives) with input from MassDEP and outreach to the public, including Environmental Justice communities. That would leave sufficient time for MassDEP to issue another variance incorporating the approved implementation milestones by the end of August, 2027. We note that MWRA's letter reflects the same timing: "At a minimum, 8 months should be added beyond the new submission date for the Final Updated CSO Control Plans, bringing the Variances to at least August, 2027." Thus it appears that a three-year variance would be more appropriate.

MASSDEP RESPONSE 30

See MassDEP Response 18. It is MassDEP's intention that these Variances include sufficient time for the full long-term CSO control planning process to reach completion. Any Variance schedule that terminates with submittal of the Final Updated CSO Control Plan will fail to account for the rigorous public and agency review period which must follow the submittal, as well as any submittals or actions needed to comply with MEPA requirements. MassDEP anticipates that there will continue to be a very high level of public interest, and efforts toward establishing a schedule with unduly short review timeframes would threaten to undermine the public review process, the agency review process, or both. Thus, the final Variances allow for adequate review time for both the Draft and Final Updated CSO Control Plans.

COMMENT 31

Comments on Variance Conditions

A. Level of Required CSO Control During Variance

The final variance should make it clear that the CSO discharge limits in Exhibit D shall remain in effect during the term of the variance, regardless of whether the Court determines the original case to be closed during the variance period. We request that MassDEP note that outfalls CAM004 (2015) and CAM400 (2011) are now closed, so no CSO discharges are allowed at those outfalls.

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 conditions have 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.

MASSDEP RESPONSE 31

See MassDEP Response 20.

COMMENT 32

B. Receiving Water Quality Monitoring

MyRWA fully supports this condition.

MASSDEP RESPONSE 32

MassDEP acknowledges this comment.

COMMENT 33

C. CSO Performance Assessment

C.1 CSO Activations and Volumes

MWRA's supplemental report on activations and volumes, due to MassDEP and EPA by Dec 31, 2024, should be copied to the watershed advocate groups (i.e., MyRWA and Save the Alewife Brook).

MASSDEP RESPONSE 33

See MassDEP Response 24.

COMMENT 34

C.2 Annual CSO Discharge Report

Similarly, the Annual CSO Discharge Reports by MWRA, Cambridge and Somerville should be copied to the watershed advocate groups. We suggest that the final clause at (ii) ["based on the most recently approved rainfall data"] be deleted or explained.

MASSDEP RESPONSE 34

See MassDEP Response 24.

COMMENT 35

D. Notification to the Public of CSO Discharges and Impacts

Since we expect there will be very little to no improvement in how the sewage systems operate over the course of the variance, MyRWA believes that the public using the Alewife Brook Greenway and abutters of the Brook need much clearer warning when there are active CSO discharges, and for at least 24 hours after a discharge has ended (e.g., red light when discharging, yellow light for 24 hours after discharge ends). Subscriber-based notifications are insufficient for those who may be using the greenway. It is imperative to add requirements for MWRA, Cambridge, and Somerville to enhance notification by installing warning beacons or similar, highly visible signage when the outfalls on the Alewife Brook are discharging. MWRA, Cambridge and Somerville should be required to work together to agree on a common approach along the Alewife. We urge MassDEP to coordinate with the Department of Conservation and Recreation (MassDCR) to expedite any required approvals.

Furthermore, because we know that Alewife Brook is prone to localized flooding over the bank into Greenway paths in exactly the extreme precipitation events that activate CSOs (multiple events were documented in 2023), MyRWA urges DEP to consider another condition in addition to signage. MassDEP

should require MWRA, Somerville, and Cambridge to engage MassDCR, local residents, and other stakeholders in a public engagement process with the goal of creating a plan to physically protect users of the Greenway in these flood conditions. Projects should reflect input from the community, but potential projects might involve elevating paths, or building boardwalks over frequently affected portions of path in order to reduce the likelihood of physical contact with CSO-contaminated water.
Other Actions to Minimize CSO Discharges

MASSDEP RESPONSE 35

MassDEP has added a requirement in the Variances that in addition to signage, MWRA and the Cities of Cambridge and Somerville shall evaluate the feasibility of installing and implementing a real time, on site public notification system for CSO discharges, such as a warning light system. MassDEP also added a requirement for MWRA and the Cities of Cambridge and Somerville to identify and implement interim measures for enhanced notification to the public of CSO discharges. The Variances require the permittees to consult with watershed advocacy groups to inform development of the scope of their evaluation and identification of interim measures.

COMMENT 36

MassDEP should add a condition requiring Cambridge and Somerville to limit future increases in sewage flows to current combined sewers discharging to the Alewife Brook/Upper Mystic during the term of the variance. This could take the form of a prohibition on new hook ups to the combined system, or a prohibition on more than de minimis increases in current flows.

MASSDEP RESPONSE 36

Putting in place a sewer connection limit or moratorium could have far-reaching and adverse impacts on economic and social issues throughout the planning area, and will run counter to important programs such as those creating affordable housing or economic opportunities. However, MassDEP agrees that increasing flows to the sewer system without proper mitigation will exacerbate the frequency and impacts of CSO discharges. MassDEP regulations at 314 CMR 12.04(2)(d) specifically addresses mitigation required for new connections in systems which flow into, or include combined sewer overflows. In these systems, for any new connections or flows exceeding 15,000 gallons per day, the sewer authority is required to provide for removal of four gallons per day for each gallon of the design flow. This mitigation is intended to ensure that proper mitigation is provided for new connections.

COMMENT 37

a. MyRWA notes that these conditions are only effective if they are enforced. Save the Alewife Brook has documented instances of failures of floatable controls at SOM001A. Odor control has also been an issue at manholes along the Greenway Path. MassDEP and EPA must commit to better enforcement of these measures.

MASSDEP RESPONSE 37

In June 2024, MassDEP conducted an inspection of SOM001A during dry weather conditions. Floatables were observed in Alewife Brook downstream of the outfall. MassDEP notes that the outfall is a likely source of floatables, but not the only source. Upstream CSO and stormwater outfalls, as well as littering, likely also contribute to the problem. However, to ensure the effectiveness of existing controls, MassDEP has added a requirement to the final Variances for

each of the permittees to conduct an evaluation of the effectiveness of floatables control, identify recommendations for improvement, and implement the recommendations. MassDEP has also added a requirement for each of the permittees to investigate and address sources of odors in the collection system in the area of Variance waters.

COMMENT 38

MyRWA offers comments on the individual Additional System Optimization Measures below.

Exhibit A - MWRA

1. Summary of Metering Data for CSO and SSO Events.

MyRWA encourages MassDEP to make this a standing requirement, rather than just upon requests from MassDEP or EPA.

MASSDEP RESPONSE 38

MassDEP acknowledges the enormous efforts by MWRA, working with the member communities, in developing and calibrating their "unified" sewer system model, which will serve well in projecting the benefits of further CSO control alternatives. That effort included MWRA's extensive permanent meters, temporary metering, and community metering data, along with collaborative efforts of MWRA staff, City staff, and their consultants. The intent of this requirement in the Variance is to better understand the MWRA and member community collection system conditions during actual rain events where CSOs (and possibly SSOs) are confirmed to be active. This information may be helpful in informing strategies for not only CSO control, but for targeting infiltration and inflow abatement in tributary areas. However, the requisite tasks to assemble this data, perform quality assurance, and compile the data are substantial, encompassing upwards of 100 metered subareas in MWRA's case. Effecting this requirement for only targeted rainfall events will serve to provide MassDEP and EPA discretion so that only the most useful data can be gathered, and so that the goal of better understanding system conditions during high flows can be met without demanding that extensive staff and consultant resources be directed to these tasks for events which may yield only very limited information.

COMMENT 39

2. Regional Inflow and Infiltration Abatement Plan

Since I/I is a well-known contributor to overflows in the Alewife Brook and Upper Mystic, the required scope and implementation plan due within 90 days of the effective date of the variance, should require MWRA to analyze CSO events over the past 5 years in the Alewife Brook to identify instances where there was concurrent excess flow from separate sewer lines connecting to the Alewife Brook Sewer and/or Alewife Brook Conduit. Where there is such evidence, MWRA should be required to provide technical assistance and require communities contributing excess flow to prioritize this I/I work to reduce these flows. MWRA should identify how much I/I reduction will be achieved during the term of the variance and report annually on progress.

MASSDEP RESPONSE 39

MassDEP agrees that community infiltration and inflow (I/I) play an important role in both CSO and SSO discharges, even where communities do not have permitted CSO outfalls. In any regional system, such as the MWRA system, both the regional authority and the member communities must work together to make I/I abatement programs most successful. In that regard, MWRA has awarded over $500 million toward I/I abatement projects as part of their I/I Local Financial Assistance Program, for which all member communities have received benefits. MWRA has also at times participated in outreach and technical assistance programs, and their goals and related actions for I/I abatement are included in MWRA's Annual I/I Report, which is required under their NPDES and Surface Water Discharge permits. For their part, communities are required to have an active I/I abatement program under MassDEP regulations at 314 CMR 12.04(2).

In regard to assessing meter data during CSO (or SSO) events, the Variance condition at Exhibit A.1 will provide more event-based meter data, and thus be helpful in identifying areas and even subareas with excessive infiltration and inflow during actual overflow events. The Variance conditions at Exhibit A.2 are expected to strengthen community I/I abatement programs, with further technical assistance from and coordination with MWRA, which must be included in the MWRA's required Regional I/I Plan. MWRA's Annual I/I Report will detail the scope of that effort each year, noting the work completed, underway, and planned with member communities.

COMMENT 40

Specific Projects

The projects must include milestone dates and the status of the projects should be included in the annual discharge reports required at C.2. We request that the technical work on the third project - CAM401A metering and model calibration - be completed within 12 months and that a report be submitted no more than 90 days later.

MASSDEP RESPONSE 40

MassDEP has included anticipated dates of completion for each of the projects. Additionally, MassDEP is requiring the permittees to submit annual reports to describe progress on each project at the same time they submit their Annual CSO Discharge Reports (April 30 of each year).

COMMENT 41

Exhibit B - City of Cambridge

1. Summary of Metering Data for CSO and SSO Events.

MyRWA encourages MassDEP to make this a standing requirement, rather than just upon request from MassDEP or EPA.

MASSDEP RESPONSE 41

See MassDEP Response 38.

COMMENT 42

2. Specific Projects

The projects must include milestone dates and the status of the projects should be included in the annual discharge reports required at C.2. We request that the technical work on the first project - CAM401A metering and model calibration - be completed within 12 months and that a report be submitted no more than 90 days later

Is there no I/I work Cambridge should be required to do?

MASSDEP RESPONSE 42

See MassDEP Response 40. Regarding I/I work for Cambridge, MassDEP is not requiring specific I/I projects as part of the Variances, but Cambridge has multiple sewer separation projects going on during the term of the Variances, and I/I removal is typically a component of sewer separation.

COMMENT 43

Exhibit B - City of Somerville

1. Summary of Metering Data for CSO and SSO Events.

MyRWA encourages MassDEP to make this a standing requirement, rather than just upon requests from MassDEP or EPA.

MASSDEP RESPONSE 43

See MassDEP Response 38.

COMMENT 44

2. Specific Projects

The projects must include milestone dates and the status of the projects in the annual discharge reports required at C.2.

MASSDEP RESPONSE 44

See MassDEP Response 40.

COMMENT 45

F. Updated CSO Control Planning

The schedule approved by MassDEP on July 22, 2022 has been superseded. The first sentence needs to be revised to reflect the new schedule contained in the September 2022 letters from MWRA, Cambridge and Somerville and concurred on by MassDEP and EPA in May 2023.

MassDEP should require that all required analyses, reports and draft plans be copied to MyRWA and Save the Alewife Brook.

MASSDEP RESPONSE 45

MassDEP has revised the final Variances to remove reference to the schedule approved on July 22, 2022 as it has been revised and the final Variances now dictate the schedule for completion. See MassDEP Response 24 regarding analyses, reports, and draft plans.

COMMENT 46

F.2 There is no reason or rationale provided for removing the language regarding green infrastructure that is included in the current variance at F.2. The following sentence should be included: "For the Cities of Cambridge and Somerville, use of Green Stormwater Infrastructure technologies shall be considered."

MASSDEP RESPONSE 46

See MassDEP Response 17.

COMMENT 47

F.3. The first sentence should be revised to replace the minimum requirements language with text that reflects the public meetings and hearings included in the Gantt chart submitted by MWRA, Cambridge and Somerville in the request to extend the schedule. Part of the rationale for the extension was to be able to provide robust public participation. We appreciated the meetings that have been held to date.

We note that the Fact Sheet references a requirement for "...active public engagement from Environmental Justice communities.." (p. 12, 1st bullet). There is no such language in the Tentative Determination. We request that it be included in this condition.

MASSDEP RESPONSE 47

See MassDEP Response 22.

COMMENT 48

F.4. MyRWA appreciates the explicit requirement that the affordability analysis be consistent with EPA's 2023 guidance. We request that MassDEP explicitly require that MWRA, Cambridge and Somerville each conduct and submit affordability analyses. MWRA's cost should no longer be pegged to a "system wide elimination" threshold, but rather include only the costs associated with eliminating discharges at the outfalls in the variance waters.

MASSDEP RESPONSE 48

See MassDEP Response 14. MassDEP has clarified in the final Variances that each community must conduct a separate affordability analysis.

COMMENT 49

F.6. MWRA's September 2022 request to extend the schedule contains a December 31, 2026 deadline for submitting the Final Updated CSO control plan, not January 31, 2027. The same request envisioned that MEPA review would occur during 2026, concurrent with, or overlapping with reviews of the Draft Plans by MassDEP and EPA.

MASSDEP RESPONSE 49

Given the level of public interest in the Updated CSO Control Plans and in anticipation that a large volume of comments will be received on the draft Plans, MassDEP felt it was appropriate to shift the deadline for the submittal of the Final Updated CSO Control Plan to January 31, 2027 instead of the December 31, 2026 date previously requested. The series of public meetings that has been planned allows for robust public participation leading up to completion of the draft Plans.

COMMENT 50

In closing, we reiterate our vision 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.

MASSDEP RESPONSE 50

MassDEP acknowledges these comments.

SAVE THE ALEWIFE BROOK - EUGENE BENSON, DAVID STOFF, DAVID WHITE, KRISTIN ANDERSON

COMMENT 51

These are the comments of Save the Alewife Brook on the MassDEP Tentative Determination to Adopt a Variance for Combined Sewer Overflow Discharges to Alewife Brook/Upper Mystic River Basin. Our comments concern the proposed variance of water quality standards for Alewife Brook. That variance would allow the cities of Cambridge and Somerville and the Massachusetts Water Resources Authority (MWRA) to continue to dump untreated human and industrial waste sewage pollution into Alewife Brook for an additional five years from six Combined Sewer Overflows (CSOs): CAM001, CAM002, CAM401A, CAM401B, SOM001A, and MWR003.

Alewife Brook is a Regional Recreational and Environmental Resource Being Degraded by CSOs.

Alewife Brook is a shallow and narrow stream of about 1 ½ miles in length that separates the town of Arlington on its west from the cities of Cambridge and Someville on its east. It flows from its tributary, the Little River, at the MBTA Alewife Station, and empties into the Mystic River. It is part of the Department of Conservation and Recreation (DCR) Alewife Brook Reservation, a public park.[1]

In 2021, the MWRA and the cities of Cambridge and Somerville dumped a total of 50.74 million gallons of untreated sewage pollution into Alewife Brook from their CSOs.[2] In 2023, those same entities dumped more than 25 million gallons of untreated sewage pollution into Alewife Brook from their CSOs.[3] Those pollution totals are significantly more than the allowable amount in a typical year.[4]

During rainstorms when CSOs are dumping untreated sewage pollution into Alewife Brook, the brook overflows its bank into Arlington, covering parts of the Alewife Brook Reservation with untreated human and industrial sewage wastes from CSOs. We saw that flooding five times in 2023.[5] Many people use the Greenway path in the Reservation to get to and from the Alewife MBTA Station and for recreation. When Alewife Brook has flooded, people have pushed babies in strollers[6] and biked through contaminated waters[7] on the Greenway with no knowledge of the contamination because there is no onsite notification that a rainstorm has caused CSO contaminated waters to flood onto the Reservation.

Especially troubling, in very large storms CSO sewage contaminated waters from Alewife Brook have flooded into the yards and homes of people who live near the Brook. Flooding of the Greenway and into residential areas creates public health dangers.[8] Climate Change threatens to exacerbate the flooding problem, with wetter rain seasons, more frequent and more severe storms, and sea level rise.

A review of FEMA flood maps reveals an estimated 1,200 east Arlington residents, 3,500 Cambridge residents, and 300 Belmont residents live in the Little River – Alewife Brook 100-year flood plain,[9] including many in Environmental Justice neighborhoods.[10] They may all be subjected to CSO contaminated floodwaters. In addition, the Alewife Reservation is their local park as well as a necessary path to public transportation. CSO contaminated floodwaters hamper that use.

Save the Alewife Brook Seeks to Improve the Condition of Alewife Brook.

Save the Alewife Brook is a growing grassroots environmental group with supporters in Arlington, Belmont, Cambridge, Medford, and Somerville. We work to address flooding and water quality problems in Alewife Brook. We are especially concerned with the CSOs that dump untreated sewage into Alewife Brook because they degrade the brook environment, harm the public health, curtail recreational uses of the brook and the Alewife Brook Reservation, and impede an important walking and biking pathway to public transit.

MASSDEP RESPONSE 51

MassDEP acknowledges these comments.

COMMENT 52

Criteria for Granting the Variance Have Not Been Met.

We think it is important to note that granting a variance is at the discretion of MassDEP. It is not mandatory even if the applicant meets a criterion for allowing a variance to be granted. 314 CMR 4.03(4) ("The Department may … grant a variance…." The use of the word, "may," rather than "shall," provides discretion to MassDEP.).

MASSDEP RESPONSE 52

A Variance is a temporary modification of state surface water quality standards (see Massachusetts regulations at 314 CMR 4.02 and 4.03(4) and Federal regulations at 40 CFR 131.14) while work is being undertaken to improve receiving water quality. The MWRA and the Cities of Cambridge and Somerville have been parties to several Water Quality Standards Variances since the late 1990s.

These Variances have included requirements for additional public works projects and system optimization to reduce or eliminate CSO discharges as well as requirements to improve public notification when CSOs discharge. They also provide an opportunity for the public to learn about the Variances and the work that MWRA and the Cities have been doing and are required to do so that the receiving water quality improves.

Variances are tools that agencies can use to require projects that reduce or eliminate CSO discharges in a thoughtful and cost effective manner. Variances also require public outreach and engagement. For these reasons, MassDEP is moving forward with the Variances because they

are the best tool available to ensure that improvement projects are completed with public transparency.

COMMENT 53

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)(a)(6) and 40 CFR 131.10(g)(6). That determination appears to be based on an August 8, 2023, letter from MWRA that does little more than offer an inflation adjustment to an 18-year-old analysis for complete elimination of CSOs through sewer separation throughout the entire MWRA sewer service area. It is inadequate to support a determination of widespread social and economic harm for these reasons:

- Some CSOs now discharge into waters that have been designated B-CSO, where such discharges are permitted and no longer required to be eliminated. The data should be reconfigured to eliminate the costs related to those CSOs.
- Complete sewer separation is not the only method to achieve CSO elimination. Use of green infrastructure and storage are two other options. Green infrastructure has co-benefits that would offset some of the costs. MWRA uses storage at the South Boston beaches for five CSOs. Milwaukee is an example where storage can be more cost effective than sewer separation to reduce and eliminate CSOs.[11]
- The current variance assigns requirements and responsibilities for CSO discharges separately to the owners of the CSOs in the variance waters. Thus, MassDEP should have required separate findings from MWRA, Cambridge, and Somerville for each of the variance waters. Those three entities have different means of raising funds and distributing costs.
- The financial capability analysis performed by MassDEP aggregates the census-based household data at the municipality level in determining the impact to households – but Cambridge and Somerville have the flexibility to set different sewer rates that could cap rates or provide subsidies for low-income households that might not be able to afford higher rates. MWRA also has options it has chosen not to implement. Requiring an analysis at the local level is required by 314 CMR 4.03(4)(a)6., which indicates that the financial analysis be for "the affected area," which is Cambridge and Somerville for the proposed Variance for Alewife Brook.
- The financial capability analysis does not take into consideration federal funds that are available under the Inflation Reduction Act and other programs that could be used.
- It is likely that costs included in MWRA's letter are for actions it will need to undertake due to the increased storm flows caused by climate change. For example, MWRA cannot continue to have Sanitary Sewer Overflows, which will get worse with climate change and will require system capacity improvements by MWRA. Those costs should be broken out from the total and not considered for CSO elimination.

Consequently, the CSO entities have not met their burden of demonstrating that "Controls more stringent than those required by sections 301(b) and 306 of the Federal Act for the Alewife Brook would result in widespread social and economic harm," 314 CMR 4.03(4)(a)6. It would therefore be inappropriate to grant another variance of water quality standards for Alewife Brook based on the information provided by MWRA in its August 8, 2023, letter.

MASSDEP RESPONSE 53

See MassDEP Response 14.

COMMENT 54

In addition, the CSO entities should not be awarded a new variance if they have failed to meet the requirements of the current variance. SOM001A has failed to meet discharge and floatable controls requirements. There must be some consequence for that. CAM401A continues to fail to conform to the hydraulic models. MWRA fails to adequately maintain its sewers to prevent odors. Further, granting the variance would undermine environmental justice principles, which call for enforcement of environmental standards and protection of environmental neighborhoods from environmental harms.

MASSDEP RESPONSE 54

See MassDEP Response 37 regarding floatables control and odors. As described in the Variance, MWRA and Cambridge will be working to address the metering and modeling discrepancies for CAM401A during the Variance term. MassDEP believes that issuance of the variance does protect environmental justice neighborhoods by putting in place requirements that will result in additional CSO reductions.

COMMENT 55

The Conditions Set Forth in the Proposed Variance Are Inadequate.

If MassDEP nonetheless will grant the variance to water quality standards for Alewife Brook, we urge these conditions be included in the variance:

1. At the meeting of the CSO entities (Cambridge, Somerville, and MWRA), watershed advocacy groups (Charles River Watershed Association, Mystic River Watershed Association, and Save the Alewife Brook), and representatives of MassDEP, the CSO entities stated that there would be no improvements in CSOs until after there is a new CSO Long Term Control Plan (LTCP) in place and implemented. In effect, they said the status quo would remain in effect for the next few years. Our position is that MassDEP must add conditions to the Variance so that CSO discharges do not get worse -- and to require improvements for CSOs while waiting for the new LTCP to be approved and implemented.
   The most obvious and necessary conditions to add to the variance are: 1) a prohibition on new hook ups to the combined sewers in Cambridge and Somerville that contribute to the CSOs in Alewife Brook; and 2) a prohibition on more than de minimis increases to current flows to those combined sewers. Those prohibitions would help limit increases in CSO activations and sewage pollution discharge amounts into Alewife Brook during the term of the variance (other than those caused by increasing storms and storm intensities due to climate change).[12]

   Those prohibitions would not result in "widespread social and economic harm" and instead would help ameliorate conditions in Alewife Brook. They will help ensure "that highest attainable interim effluent conditions can be achieved and maintained during the Variance period."[13] The prohibitions are necessary to meet the federal standard for a water quality variance: that the requirements of the variance shall represent the highest attainable condition of the water body applicable during the variance. 40 CFR 131.14.

MASSDEP RESPONSE 55

See MassDEP Response 36.

COMMENT 56

2. The Regional Inflow and Infiltration Abatement Plan set forth in the Tentative Variance, Exhibit A section 2, should require MWRA to determine the current amount of I/I contributing to the CSOs at Alewife Brook for various storms, to identify how much I/I reduction it will achieve during the term of the variance, and to file annual reports on how the plan is being implemented and the outcomes, including I/I reductions, achieved. This is especially important in an era of climate change.[14]

MASSDEP RESPONSE 56

See MassDEP Response 39.

COMMENT 57

3. Because there will be very little or no improvement in CSO sewage dumping to Alewife Brook during the course of the variance -- and it may even get worse – people using the Greenway path in the Alewife Brook Reservation and abutters of the brook require timely and clear warnings when CSOs are discharging into the brook and for at least 48 hours after a discharge has ended (e.g., red light when discharging and for 24 hours after discharge ends, yellow light for 24-48 hours after discharge ends, and green light if no discharges for more than 48 hours).[15] Subscriber-based notifications are insufficient for those who may be using the Greenway. MWRA, Cambridge, and Somerville must be required to install warning beacons or similar highly visible signage when CSOs on the Alewife Brook are discharging, and they must be required to work together to agree on a common notification approach. Those beacons should be on the Greenway path closest to each CSO and on the Greenway where flooding often occurs. We urge MassDEP to coordinate with the DCR to expedite any required approvals.

MASSDEP RESPONSE 57

See MassDEP Response 35.

COMMENT 58

4. The tentative variance requires that certain reports and plans be provided to MassDEP and EPA during the variance. The variance should require that the advocacy groups be copied on those reports and plans so they have them when they are filed with MassDEP and EPA. Those reports include, but should not be limited to: Receiving Water Quality Monitoring sampling reports (variance condition B); CSO Performance Evaluation supplemental report (variance condition C.1); Annual CSO Discharge Report (variance condition C.2); A Draft Updated CSO Control Plan including a Recommended Plan (variance condition F.5); A Final Updated CSO Control Plan, which addresses comments received on the Draft Updated CSO Control Plan (variance condition F.6); any affordability analysis consistent with EPA's 2023 Clean Water Act Financial Capability Assessment Guidance, along with any other relevant information to assess financial capacity (variance condition F.4); Regional Inflow and Infiltration Abatement Plan (variance Exhibit A, section 2); and Summary of Metering Data for CSO and SSO events (variance Exhibits A, B, and C, section 1).

MASSDEP RESPONSE 58

See MassDEP Response 24.

COMMENT 59

5. The variance should require that the project, "perform further system metering and hydraulic model calibration to improve CAM401A system understanding and address differences in current hydraulic models," (variance Exhibit A, section 3, and Exhibit B, section 2.) be completed within one year and require a report from MWRA and Cambridge within one month after that. It makes no sense to us that MWRA and Cambridge have the duration of the variance to complete the project. Completing the project sooner may provide new information to help them reduce discharges from CAM401A during the variance and help inform their next LTCP.

MASSDEP RESPONSE 59

The project information in Exhibits A, B, and C has been updated to include anticipated dates of completion for projects. The CAM401 project is anticipated to be completed in October 2024. MassDEP is also requiring that each permittee submit annual reports describing the progress of each project. MassDEP does not find it necessary to require a separate report following completion of this project.

COMMENT 60

6. The variance must require MWRA to create and implement an odor control program for its assets along Alewife Brook within six months and to file a copy of that program a month after that, with annual reports thereafter. Odors coming from the sewer system are a constant source of complaints for those using the Greenway. In July 2022, after a discussion with a member of Save the Alewife Brook, MWRA sealed openings on a MWRA siphon structure on the Alewife Brook Reservation. The terrible odor emanating from that structure was gone. Yet, this spring, MWRA performed some work in the area, the seal was removed, and the horrible odor is back. This is a failure to implement one of the nine minimum controls – proper maintenance of a sewer system.

MASSDEP RESPONSE 60

MassDEP acknowledges that maintenance-related activities can exacerbate odors emanating from CSO structures, especially under dry conditions. Thus, MassDEP has added a requirement in both Variances for MWRA and the Cities of Somerville and Cambridge to evaluate odor issues and potential best management practices to reduce odors near CSO structures, and to implement the most feasible BMPs identified by the evaluation.

COMMENT 61

Other Portions of the Tentative Variance Need Amendment[16]

1. Section A of the Variance, Level of Required CSO Control During Variance, should make it clear that the CSO discharge limits in Exhibit D shall remain in effect during the term of the variance, regardless of whether the Court determines the original case to be closed during the variance period.

   The enforceability of this condition is seriously compromised by the phrase, "...allowance for any conditions that exceed Typical Year conditions." How will MassDEP determine whether or when the Typical Year conditions have been exceeded? Would it be rainfall greater than 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. In doing so, MassDEP cannot rely on the Typical Year that has been used by the CSO entities. It is over forty years old, based on past rainfall data, and does not reflect recent conditions, much less future ones. MassDEP instead must take climate change into account. "In considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise." MGL c. 30, sec 61.

MASSDEP RESPONSE 61

See MassDEP Response 20.

COMMENT 62

2. A five-year variance is too long in this instance. The development of the draft updated CSO plans and the reviews and approvals by MassDEP, EPA, and MEPA should be completed by the middle of 2027 according to Section F.6 of the tentative Variance. That would leave sufficient time for MassDEP to issue another variance incorporating the approved implementation milestones by the end of 2027. MWRA's letter reflects the same timing: "At a minimum, 8 months should be added beyond the new submission date for the Final Updated CSO Control Plans, bringing the variance to at least August 2027." With that timeframe, we do not understand why Section F of the tentative Variance notes that it will take Mass DEP and EPA from January 2027 to August 2029 to decide whether to approve the new LTCP. Thus, it appears that a three-year variance would be more appropriate.

MASSDEP RESPONSE 62

See MassDEP Response 18.

COMMENT 63

3. Section F. The schedule approved by MassDEP on July 22, 2022, has been superseded. The first sentence needs to be revised to reflect the new schedule contained in the September 2022 letters from MWRA, Cambridge, and Somerville and concurred by MassDEP and EPA in May 2023.

MASSDEP RESPONSE 63

See MassDEP Response 45.

COMMENT 64

4. Section F.2. There is no reason or rationale provided for removing the language regarding green infrastructure that is included in the current variance at F.2. The following sentence should be included: "For the Cities of Cambridge and Somerville, use of Green Infrastructure technologies shall be considered."

MASSDEP RESPONSE 64

See MassDEP Response 17.

COMMENT 65

5. Section F.3. The first sentence should be revised to replace the minimum requirements language with text that reflects the public meetings and hearings included in the Gantt chart submitted by MWRA, Cambridge and Somerville in the request to extend the schedule. Part of the rationale for the extension was to be able to provide robust public participation. We appreciate the meetings that have been held to date.

MASSDEP RESPONSE 65

See MassDEP Response 22.

COMMENT 66

6. The Fact Sheet for the tentative Variance references a requirement for "...active public engagement from Environmental Justice communities." (p. 12, 1st bullet). There is no such language in the tentative variance. It should be included.

MASSDEP RESPONSE 66

MassDEP has revised the final Variances to include this language.

COMMENT 67

7. Section F.4. We appreciate the explicit requirement that the affordability analysis be consistent with EPA's 2023 guidance. As we noted earlier in this comment, MWRA, Cambridge and Somerville should each be required to conduct and submit affordability analyses for Alewife Brook for their CSOs. MWRA's cost should no longer be limited to a "system wide elimination" threshold, but rather include only the costs associated with eliminating discharges at the CSOs in the variance waters, with Alewife Brook costs shown separately, and should consider not only complete sewer separation but also storage and green infrastructure options.

MASSDEP RESPONSE 67

See MassDEP Response 14.

COMMENT 68

8. Section F.6. MWRA's September 2022 request to extend the schedule contains a December 31, 2026, deadline for submitting the Final Updated CSO control plan, not January 31, 2027. The same request envisioned that MEPA review would occur during 2026, concurrent with, or overlapping with reviews of the Draft Plans by MassDEP and EPA. The schedule for MEPA filings needs to include time for pre-filing outreach for Environmental Justice, as required by MEPA. MEPA filing should not be a final plan but a draft plan with alternatives after review by MassDEP and EPA.

MASSDEP RESPONSE 68

See MassDEP Response 49. Given the significant public outreach that has already occurred and will occur in the future, MassDEP has determined that it is appropriate to require MEPA filing only for the final Updated CSO Control Plans. Given the Variances cover areas with environmental justice populations, MassDEP already has requirements for extensive public outreach and engagement. Throughout the process of developing the Updated CSO Control

Plans, MWRA and the two cities have already been conducting extensive public engagement, including multiple public meetings. Additional public meetings are planned leading up to the completion of the draft Updated CSO Control Plans. Given the level of engagement that has already been occurring, and the requirements for a public comment period, public meeting, and public hearing associated with the draft Updated CSO Control Plans, MassDEP is ensuring that there will be robust opportunities for the public, including environmental justice populations, to have a voice in the development of the Updated CSO Control Plans.

COMMENT 69

9. The tentative Variance states that the CSOs listed in Exhibit D may discharge under the variance but Exhibit D is silent on whether there can be permitted discharges from the CSOs listed as closed or to be closed. For Alewife Brook, it would be best to list in Exhibit D only the six CSOs that currently discharge to Alewife Brook: CAM001, CAM002, CAM401A, CAM401B, SOM001A, and MWR003, and to remove the other CSOs from the list. If, for some reason, MassDEP wishes to list the closed and to be closed CSOs, then Exhibit D should specifically indicate that the six CSOs (CAM001, CAM002, CAM401A, CAM401B, SOM001A, and MWR003) are the only ones authorized to discharge into Alewife Brook.

MASSDEP RESPONSE 69

When a CSO is closed, upstream regulator(s) is (are) closed and the outfall is physically plugged with brick and mortar or other means and can no longer discharge under any circumstances. As mentioned in the comment above, the only CSOs allowed to discharge to Alewife Brook are CAM001, CAM002, CAM401A, CAM401B, SOM001A, and MWR003. MassDEP will not be revising Exhibit D.

COMMENT 70

10. Cambridge, Somerville, and MWRA should be required to have sewer maps online that show the combined sewers and the sewers that contribute to the Alewife Brook CSOs. We, and others who are interested in this issue, need access to those maps to participate fully in the process and to review the upcoming proposed LTCP. The public should not be required to file public records requests, with the inconvenience, additional time, and expense, to have access to important information it needs for its meaningful involvement throughout the LTCP review.

MASSDEP RESPONSE 70

See MassDEP Response 24.

COMMENT 71

Environmental Justice Must Be an Integral Consideration.

As mentioned earlier in these comments, Alewife Brook is adjacent to many environmental justice neighborhoods as defined by Massachusetts law.[17] The Alewife Brook Reservation is their local state park. A clean Alewife Brook, not contaminated with sewage overflows, would enhance their enjoyment of the park and provide more recreational opportunities.

The Environmental Justice Strategy (EJ Strategy) of the Executive Office of Energy and Environmental Affairs (EEA) (issued February 2024) notes:

> It is the policy of EEA that environmental justice and equity principles will be an integral consideration, to the extent applicable and allowable by law, in the implementation of all EEA programs, including but not limited to, the grant of financial resources or technical assistance, the promulgation, implementation and enforcement of laws, regulations, and policies, the provision of access to both active and passive open space, and the diversification of energy sources, including energy efficiency and renewable energy generation. Further, any agency, department, division, board, and office within EEA that is making any policy, determination, or taking any other action related to a project that is subject to review under the Massachusetts Environmental Policies Act ("MEPA"), must consider "environmental justice principles," as defined in M.G.L. c. 30 section 62.[18]
>
> Environmental justice is based on the principle that all people have a right to be protected from environmental hazards and to live in and enjoy a clean and healthful environment regardless of race, color, national origin, income, or English language proficiency. Environmental justice is the equal protection and meaningful involvement of all people and communities with respect to the development, implementation, and enforcement of energy, climate change, and environmental laws, regulations, and policies and the equitable distribution of energy and environmental benefits and burdens.

MassDEP's EJ Strategy, as set forth in the EEA EJ Strategy, includes "Identifying permitting or other applicable regulatory authority over development projects, brownfield remediation, industrial operations, and commercial facilities, which may impact EJ populations and mechanisms to ensure that EJ populations are protected." EJ Strategy at 92.

In this matter, MassDEP appropriately offered interpretation services at the three public hearings on the tentative Variance and held a very well attended third public hearing at the request of advocacy groups. We appreciate that. The tentative Variance and the accompanying fact sheets mention outreach to Environmental Justice groups and neighborhoods, but the links from there go to websites of Cambridge, Somerville, and MWRA that mention the need to be involved but do not show any other level of outreach to Environmental Justice groups and neighborhoods. Simply having a notice on a CSO website is not outreach to Environmental Justice groups and neighborhoods.[19]

The tentative Variance does not indicate how MassDEP took environmental justice into consideration in determining whether to issue the variance, the conditions it would require in the variance, and mitigation measures for continued pollution dumping into Alewife Brook.

We suggest that Environmental Justice must include these measures that are discussed earlier in these comments:

- Requiring separate financial analyses from Cambridge, Somerville, and MWRA for their CSOs in Alewife Brook and how they might set different sewer rates that could cap rates or provide subsidies for low-income households that might not be able to afford higher rates, as discussed earlier in these comments. This is consistent with longstanding environmental justice principles that environmental justice communities should not bear the burden or costs of pollution that are beyond their control. This also allows MassDEP to reject the variance under its discretionary authority for variances as discussed earlier in these comments.

- Prohibiting new hook ups to the combined sewers that contribute to the CSOs and prohibiting no more than de minimis increases in flows to those sewers, as discussed earlier in these comments. That is consistent with not allowing an increase in environmental burdens to Environmental Justice neighborhoods.
- Clear and timely warnings when CSO activate, and odor control measures, as discussed earlier in these comments. These are important notice and mitigation measures.
- Providing reports to advocacy groups and online sewer maps, as discussed earlier in these comments. Notice and ability to participate depends on timely and complete access to information.
- The use of green infrastructure can enhance neighborhoods, especially those with little green space or trees. As discussed earlier, green infrastructure must be a consideration in meeting CSO goals.

Alewife Brook without CSO discharges would provide greater important environmental and recreational benefits to the community. It must be our goal. That goal requires MassDEP to designate Alewife Brook as a Class B water. The tentative variance does not get us there. If, however, MassDEP chooses to issue the variance it should include strong and enforceable conditions in the variance that will get us closer to an Alewife Brook that is no longer used as an overflow sewer by Cambridge, Somerville, and the MWRA for their human and industrial sewage wastewaters.

_____

1 This sprawling urban forest is filled with wetlands and a variety of birds. Walk along limited trails to see a rare side of nature without leaving the city. https://www.mass.gov/locations/alewife-brook-reservation. Accessed 4/17/24

2 MWRA annual CSO report for 2021, dated April 29, 2022.

3 RPubs - Mystic River Watershed CSOs 2023. Accessed 4/17/24.

4 Exhibit B to Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows, as amended by the Federal District Court on May 7, 2008 (the "Second CSO Stipulation"). The Long Term Control Plan permitted annual total for Alewife Brook is 7.29 MG. That represents an annual average limit because there will always be variations from year to year. Significantly, for the past nine years, the average annual discharges have been more than twice the permitted level – showing the impacts of climate change and the inadequate capacity of the sewer system to handle flows and highlighting the disutility of relying on typical year modeling as a substitute for real conditions.

5 No entity is required to monitor, document, and report flooding of the brook. It is seen and experienced by those who live near Alewife Brook and by those who use the DCR park.

6 https://youtu.be/FQL_M5UWSKs?si=5r0EXRN0azUdK5bl

7 https://youtu.be/U7eueqNOuSo?si=WxYk1c6y8iOSP-WR

8 Public health officials recommend avoiding contact with active CSO receiving waters during rainstorms and for 48 hours afterwards as there may be increased risks due to bacteria and pollutants associated with urban stormwater runoff and CSOs. https://www.mwra.com/03sewer/html/sewcso.htm. Accessed 4/17/24.

9 https://www.mapsonline.net/arlingtonma/index.html (click on FEMA Flood Hazard Layers tab). Accessed 4/18/24.

10 Summary Fact Sheet for the tentative Variance at 2.

11 https://www.bloomberg.com/news/articles/2019-12-05/how-milwaukee-built-a-superlative-sewer-system. Accessed 4/19/24.

12 In making this determination, MassDEP is required to take climate change into account. "In considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise." MGL c. 30, sec 61. Climate change threatens to make the CSOs much worse.

13 See, tentative variance, condition E.

14 See footnote 12.
15 See footnote 8.
16 We are grateful to the Mystic River Watershed Association for identifying some of these issues and for assisting Save the Alewife Brook in our review of the tentative Variance.
17 Summary Fact Sheet for the tentative Variance at 2.
18 … principles that support protection from environmental pollution and the ability to live in and enjoy a clean and healthy environment, regardless of race, color, income, class, handicap, gender identity, sexual orientation, national origin, ethnicity or ancestry, religious belief or English language proficiency, which includes: (i) the meaningful involvement of all people with respect to the development, implementation and enforcement of environmental laws, regulations and policies, including climate change policies; and (ii) the equitable distribution of energy and environmental benefits and environmental burdens.
19 Compare that to the much more extensive outreach required by MEPA: https://www.mass.gov/doc/final-mepa-public-involvement-protocol-for-environmental-justice-populations-effective-date-of-january-1-2022/download.

MASSDEP RESPONSE 71

See MassDEP Responses 14, 15, 17, 18, 24, 27, 30, 35, 36, 37, and 68. In preparation for the public notice period for the Water Quality Standards Variances, MassDEP prepared an Environmental Justice (EJ) outreach plan. Staff utilized the Massachusetts 2020 (with 2022 Update) Environmental Justice Populations tool (https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=1d6f63e7762a48e5930de84ed4849212) to identify EJ populations living near the Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River. Using this tool, in addition to English, staff identified 11 languages spoken in the areas near the Variance waters. The translated public notice and summary fact sheets were posted on the MassDEP Public Comments page as well as published in Spanish and Portuguese news media. A notification for the public notice period and public hearings was sent by email to many EJ and environmental groups and included a link to the MassDEP Public Comments page. Registration for the three public hearings allowed registrants to request translators in any of the 11 languages. MassDEP did not receive requests for translators but did have Spanish and Portuguese translators translating the public hearings in real time.

WRITTEN COMMENTS FROM OTHER GROUPS AND MASSDEP RESPONSES

MWRA ADVISORY BOARD - MATTHEW A. ROMERO, EXECUTIVE DIRECTOR

COMMENT 72

The Massachusetts Water Resource Authority Advisory Board (the Advisory Board) appreciates the opportunity to comment on the Tentative Determinations to Adopt Variances for Combined Sewer Overflow Discharges to the Lower Charles River/Charles Basin and to the Alewife Brook/Upper Mystic River Basin, from August 30, 2024, to August 29, 2029 (collectively the "Variances") put forth by the Massachusetts Department of Environmental Protection (MassDEP). The Advisory Board is generally supportive of the tentative determinations to extend the current variances.

The Advisory Board is statutorily required to represent the interests of the Massachusetts Water Resource Authority (MWRA) ratepayers. It bears noting that these ratepayers have spent close to $1 billion on implementing the Long-Term Control Plan (LTCP). As a result of this spending, MWRA and its community partners have exceeded the LTCP's total volume goal of 404 MG, achieving a total treated and untreated CSO volume of 396 MG in 2021. With 10 additional MWRA projects either recently

completed or in construction, a further 53 MG reduction in the total CSO volume entering receiving waters is predicted. In the near future this will leave only six CSOs not meeting LTCP goals.
In the U.S. District Court's May 11, 2023 decision to grant a three-extension of the Schedule Seven milestones relating to the Boston Harbor Case (U.S. v. M.D.C. et al, No.85-0489 MA) these problem CSO's are characterized as "incorrigible." The Honorable Judge Stearns writes in this decision that he "recognize(s), as MWRA posits, that there may come a point of diminishing return at which spending an additional $100 for a $1 incremental benefit would make no sense from a public policy view." This conforms with the Advisory Board's guiding principle to seek solutions that are environmentally sound and rate-payer equitable.

Our comments are as follows.

MASSDEP RESPONSE 72

MassDEP acknowledges these comments.

COMMENT 73

A.) Level of Required CSO Control During Variance.

MWRA's CSO work currently continues under a three-year extension of Schedule 7. A supplement to the 2021 December Final Performance Assessment report will be submitted to the court by December 2024. We request that incorporation of CSO activation frequency and volumes from the Second Stipulation as amended into the Variances be postponed until after the court's final ruling.

MASSDEP RESPONSE 73

See MassDEP Response 3.

COMMENT 74

F.) Updated CSO Control Planning.

The Advisory Board requests that the deadline within provision 5 be modified to be no earlier than July 31, 2026 so as to coincide with the revised deadline for an Updated CSO Control Plan contained within the Court's 2023 decision to extend Schedule Seven. Performing such a study would be extremely expensive and may ultimately be unnecessary, as the determination for reclassification will rely on the results of the recommended plan.

MASSDEP RESPONSE 74

The Judge in the MWRA federal court case has not extended any date for Updated CSO Control Plans. The next and currently final action required in the federal court order is that MWRA must submit a Supplemental CSO Performance Report by December 31, 2024 which documents the level of CSO control at all 86 outfalls as compared to 1992 system conditions and the 1997 LTCP goals, and also address the final results and conclusions as to the 16 outfalls which have been identified as not meeting the 1997 LTCP goals.

In the recent May 31, 2024 Compliance Order, Judge Stearns has indicated that "…..*the court will reserve any comment on a final resolution of the longstanding decree in this case until it has*

the opportunity, with the assistance of the parties, to review the final Report to be filed at the end of this year."

GREEN CAMBRIDGE - CYNTHIA HIBBARD, BOARD PRESIDENT

COMMENT 75

Green Cambridge (including the Friends of the Alewife Reservation) is a non-profit organization that runs environmental programs in the Alewife Reservation, including trail maintenance, bank restoration and invasive species removal, volunteer clean-up days, and the Mayor's Summer Youth Program (https://www.greencambridge.org/alewife). We are dedicated to preserving, restoring the ecological value of, and enhancing public access to, this important "urban wild." The Alewife Reservation is a heavily used natural resource for the communities of Cambridge, Arlington, Belmont, Somerville, and Medford, and especially for the environmental justice neighborhoods along the Alewife Brook (see the EJ map in: https://www.mass.gov/doc/tentative-determination-to-adopt-variances-for-cso-discharges-alewife-brook-upper-mystic-river-variance-summary-fact-sheet/download).

MASSDEP RESPONSE 75

MassDEP acknowledges this comment.

COMMENT 76

Green Cambridge is concerned about the direct contact to contaminated waters that our staff, volunteers, Reservation users and the unhoused people who live there can have during the few times each year the Alewife Brook floods and CSOs are released. CSO #CAM401A is adjacent to a small piece of property owned by Green Cambridge in the Alewife Reservation. There has been an encampment of unhoused people nearby. These people were relocated this past November, but it is an attractive spot adjacent to the MBTA station, and it is likely to be occupied again. We have seen this area flooded by the CSO recently, and we believe other low-lying encampments in the Reservation are being flooded by CSOs.

Green Cambridge supports the request of our coalition partners, Save the Alewife Brook and the Mystic River Watershed Association, for MWRA to implement an enhanced notification system for CSO events in the Alewife Reservation, including flashing lights and warning signs for users. This should be a condition of MassDEP's variance approval. In addition, we would like to request that the MWRA's CSO warning system notify the Cambridge Health Department directly – specifically the people responsible for the health of the unhoused. This warning should be provided with enough advance notice of the overflow so that Cambridge Health Department personnel can go to the Alewife Reservation and help relocate the unhoused and their possessions before they are flooded with contaminated water.

MASSDEP RESPONSE 76

See MassDEP Response 35. Additionally, MassDEP notes that MWRA notifies the Cambridge Public Health Department of all CSO discharges that impact Cambridge, within two hours of discovery of the discharge, as required by MassDEP regulations 314 CMR 16.00.

COMMENT 77

We urge the Mass DEP to require that the MWRA and the City of Cambridge remedy the CSO situation as rapidly as possible, regardless of whether or not a variance is granted. In addition to the ongoing health risk to the community, the CSOs adversely affect the Alewife Reservation's water and sediment quality, which in turn impact aquatic organisms, the food chain, and plant life, postponing the recovery of the entire ecosystem. Perpetuating the current conditions indefinitely is an unacceptable state of affairs.

MASSDEP RESPONSE 77

MassDEP acknowledges this comment.

ARLINGTON SELECT BOARD - DIANE M. MAHON, VICE CHAIR

COMMENT 78

Protect our brook, our park, and our homes from pathogens in the sewage flood water by enforcing the existing Class B Water Quality Standard - the standard that ensures that contact with the waters of the Alewife Brook is safe. Please use the Department's regulatory authority to require that out-of-compliance CSOs in the Alewife Brook and Charles River meet existing goals. Make sure that MassDEP is a forceful advocate for Supplemental Environmental Projects for all out-of-compliance CSOs in the Alewife Brook and Charles River in Federal Court proceedings.

MASSDEP RESPONSE 78

The Updated CSO Control planning process requires that all permittees assess the full range of CSO control alternatives, up to and including elimination of CSO discharges, which is the level of control associated with the Class B water quality standard. Thus, the MWRA, and Cities of Cambridge and Somerville would need to document elimination is infeasible by meeting criteria at 314 CMR 4.03(4)(a) in order for the plan to be approved by EPA or MassDEP. It is MassDEP's intention to ensure that the Updated CSO Control Plan(s) result in the highest feasible level of CSO control and water quality benefits, including elimination of CSOs if determined to be technically feasible and affordable.

COMMENT 79

There must be real scrutiny of the documentation MWRA has already provided for the cost of CSO elimination. MassDEP must require MWRA, Cambridge, and Somerville each to provide a separate financial analysis explaining why they say they can't afford to eliminate sewage discharges. These independent analyses should include costs for various alternatives, such as local CSO treatment, CSO detention tunnels and tanks, and Green Stormwater Infrastructure.

MASSDEP RESPONSE 79

See MassDEP Response 14.

COMMENT 80

The public has a role in protecting the waters of Massachusetts. As the hearing on Tuesday, April 9, 2024 demonstrated, there is keen interest if the public is provided meaningful opportunities for participation. A single meeting and hearing is inadequate. Ongoing robust public participation must be part of the

variance, particularly regarding the performance assessment of CSO controls based on 'typical year' modeling. The community must have a seat at the table when compliance is reviewed so that actual measured data and human experience inform that assessment. That court-ordered performance goals remain unmet after 20 years is ample evidence of the need for public scrutiny.

MASSDEP RESPONSE 80

According to 314 CMR 4.03(4)(c), "*Prior to granting a variance, the Department will provide or require public notice and provide an opportunity for **a** public hearing in accordance with 314 CMR 2.00: Permit Procedures.*" 314 CMR 2.06(3) states that "*Public notice shall afford a public comment period of at least **30** days after the date of publication...*" MassDEP conducted robust public outreach by holding a **45**-day public comment period, posting information on the MassDEP website, publishing information in the Boston Globe, sending email blasts to numerous environmental and Environmental Justice groups and other interested parties, reaching out to watershed groups, and translating the public notice and informational fact sheets into 11 languages for web posting and publication in non-English media. In addition, MassDEP went to considerable effort to publicize and host **three** public hearings, two on March 28, 2024 and one on April 9, 2024. Spanish and Portuguese interpreters provided live interpretation at all three hearings and participants had the opportunity to request an interpreter in additional languages during registration.

MWRA and the Cities of Cambridge and Somerville have been holding periodic public meetings to present updates current work regarding evaluating controls and developing the new Typical Year. These meetings are well attended by the public, MassDEP, and EPA. For more information go to: https://voice.somervillema.gov/joint-cso-planning.

Regarding the comment about "the community must have a seat at the table when compliance is reviewed," compliance review is enforcement sensitive and is therefore not open to public participation. However, public information on flooding events related to CSOs in the Variance waters can be submitted to MassDEP. In addition, any reporting requirements related to CSO discharges under the Variances are available to the public.

COMMENT 81

I am asking the Department of Environmental Protection to require:

1. An on-site warning-light notification of untreated sewage discharges along the Alewife Path, where the brook floods.
2. Action now at Somerville's out-of-compliance Tannery Brook CSO, including:
   a) A boom or netting to collect toilet paper, feces, and other "floatables"
   b) Post-discharge clean-up of toilet paper, feces, and other "floatables"

1. A Supplemental Environmental Project now of Green Stormwater Infrastructure to reduce CSOs and flooding
2. Bring Somerville's Tannery Brook CSO in compliance with the decades-old court-mandated level of CSO control now
3. Massachusetts Environmental Policy Act (MEPA) review of the new draft Sewage Control Plan before the plan is set in stone
4. A requirement that the polluters continue to work to eliminate sewage discharges in the brook even if the Boston Harbor Court Case is resolved

5. Independent financial analysis of the costs of Alewife Brook sewage pollution control that includes a CSO treatment facility and Green Stormwater Infrastructure

MASSDEP RESPONSE 81

See MassDEP Responses 14, 16, 17, 35, 37, 48, 49, and 68.

WRITTEN COMMENTS FROM THE PUBLIC AND MASSDEP RESPONSES

COMMENT 82
JENNIFER PIESZAK, BROOKLINE

I am a longtime resident of Brookline and an avid rower, rowing out of Community Rowing Inc. in Brighton. As a result of my experiences while rowing on the Charles, I have become an advocate for the Charles River for better access, water quality, thoughtful improved transportation, and development on adjacent properties. The Charles River is one of the most heavily recreated urban waterways in the country and dumping human waste into the water represents an unnecessary risk to public health. I support eliminating CSOs as quickly as possible and I support public investment to get us there!

I appreciate the substantial progress that the MWRA has made on reducing CSOs and want to acknowledge the critical role regulators like DEP also played in that process. I appreciate that MWRA and Cambridge are taking climate change into account as part of this process and are the first in the country to do so.

Regarding the Tentative Determination to Adopt Variances for CSO Discharges to Lower Charles River / Charles Basin and Alewife Brook/Upper Mystic River, I am requesting that DEP add specific conditions to this variance that will ensure that MWRA and Cambridge invest in implementing distributed green stormwater infrastructure (GSI) to reduce CSOs, use the most recent technology and practices available to them, and engage in a robust public process. Specifically, I would like to see the following (pick some of these suggestions to include in your comments or say you support CRWA's specific asks and just end here):

- Require a single platform or system for the public to be notified about CSOs in the Charles River, don't make us sign up with three different entities: MWRA, Cambridge, and Boston Water and Sewer Commission (BWSC) to be notified in real-time when an overflow occurs.
- Requirements to ensure green stormwater infrastructure is used to achieve cost-effective CSO reductions. In 2023, MWRA produced a "bookends analysis" that stated the maximum possible use of GSI would capture the first inch of runoff from just 10% of impervious area, which is extremely minimal and in fact should be the absolute minimum, not maximum, the parties implement. GSI is a low-cost tool that can be optimized to reduce CSOs and provide numerous benefits to the community.
- Explicitly require the public engagement process that MWRA and Cambridge have already committed to a minimum of 4 public meetings before January 31, 2027. Add a requirement that the parties engage an advisory committee of technical experts and engaged citizens to serve as advisors on the project, this should include representatives from peer CSO cities that have used new technologies like smart sewers and GSI to effectively address CSO issues.
- As Watertown pursues a new plan to the redesign of Watertown Square and is currently experiencing an explosive growth in new development, include them in this variance so there are no negative CSO impacts nor increased stormwater discharges .

MASSDEP RESPONSE 82

MassDEP acknowledges these comments. See MassDEP Responses 9, 17, and 19 regarding Green Stormwater Infrastructure and the formation of an advisory committee. Though MassDEP encourages the development of a single platform for all of the permittees to report CSO discharges, MassDEP cannot mandate this in the Variances. As for the new development in Watertown, stormwater from these sites would not exacerbate CSO discharges because Watertown does not have combined sewers. Stormwater is regulated under the NPDES Small Municipal Separate Storm Sewer Systems (MS4) General Permit. Cities and towns must meet the requirements in this permit for proper stormwater management. For more information go to: https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit. Construction sites greater than one acre are required to apply for coverage under the NPDES Construction General Permit. This permit has specific requirements for stormwater management at construction sites. For more information go to: https://www.epa.gov/npdes/2022-construction-general-permit-cgp.

COMMENT 83
TRICIA CARNEY

I would like to respond to the request for public comment on a Variance, a temporary amnesty from water quality standard violations, to MWRA and the City of Cambridge. The Variance allows Combined Sewage Overflows (CSOs) to continue discharging while agencies work to reduce and eliminate them. As a rower on the Charles River, I dislike when I am splashed by river water with a mix of untreated sewage and stormwater. I agree with Charles River Watershed Association (CRWA) in asking MassDEP to ensure MWRA and the City of Cambridge work quickly and aggressively to end sewage discharges into the Charles River.

- I appreciate the substantial progress that the MWRA has made on reducing CSOs and want to acknowledge the critical role regulators like DEP also played in that process. I appreciate that MWRA and Cambridge are taking climate change into account as part of this process and are the first in the country to do so.
- Unfortunately, progress in reducing CSOs to the Charles is now stalled and I find it disgusting that in 2024, sewage is still regularly entering the river.
- The Charles River is one of the most heavily recreated urban waterways in the country and dumping human waste into the water represents an unnecessary risk to public health. I support eliminating CSOs as quickly as possible and I support public investment to get us there!
- I am requesting that DEP add specific conditions to this variance that will ensure that MWRA and Cambridge invest in implementing distributed green stormwater infrastructure (GSI) to reduce CSOs, use the most recent technology and practices available to them, and engage in a robust public process.
- I support the Charles River Watershed Association's requested list of actions:
    - Require a single platform or system for the public to be notified about CSOs in the Charles River, please don't make us sign up with three different entities: MWRA, Cambridge, and Boston Water and Sewer Commission (BWSC) to be notified in real-time when an overflow occurs.
    - Add requirements to ensure green stormwater infrastructure (GSI) is used to achieve cost-effective CSO reductions. In 2023, MWRA produced a "bookends analysis" that stated the maximum possible use of GSI would capture the first inch of runoff from just 10% of impervious area, which is extremely minimal and in fact should be the absolute

minimum, not maximum, the parties implement. GSI is a low-cost tool that can be optimized to reduce CSOs and provide numerous benefits to the community.

- Explicitly require the public engagement process for both MWRA and Cambridge to have a minimum of 4 public meetings before January 31, 2027. Add a requirement that the parties engage an advisory committee of technical experts and engaged citizens to serve as advisors on the project. The advisory committee should also include representatives from peer CSO cities that have used new technologies like smart sewers and GSI to effectively address CSO issues.

MASSDEP RESPONSE 83

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 84

PATRICIA ROBINSON, WABAN

As a recreational user of the Charles River, I wholeheartedly support the Charles River Watershed Association's requests that DEP add specific conditions to this variance that will ensure that MWRA and Cambridge invest in implementing distributed green stormwater infrastructure (GSI) to reduce CSOs, use the most recent technology and practices available to them, and engage in a robust public process.

And how fitting and salient The New York Times should run an article today about "dangerously high levels of E. coli in the River Themes". "What Lies Beneath: London Boat Race Marred by Sewage Concerns" https://www.nytimes.com/2024/03/27/world/europe/oxford-cambridge-boat-race-ecoli.html?ugrp=u&unlocked_article_code=1.gE0.1CRb.He6-66x-JudI&smid=url-share

As CRWA requests: There should be requirements to ensure green stormwater infrastructure is used to achieve cost-effective CSO reductions. In 2023, MWRA produced a "bookends analysis" that stated the maximum possible use of GSI would capture the first inch of runoff from just 10% of impervious area, which is extremely minimal and in fact should be the absolute minimum, not maximum, the parties implement. GSI is a low-cost tool that can be optimized to reduce CSOs and provide numerous benefits to the community.

MASSDEP RESPONSE 84

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 85

JENNIFER FIRNENO

I would like to respond to the request for public comment on a Variance to MWRA and the City of Cambridge, a temporary amnesty from water quality standard violations. The Variance allows Combined Sewage Overflows (CSOs), a mix of untreated sewage and stormwater, to continue discharging while agencies work to reduce and eliminate them. As a rower on the Charles River, I come in contact with river water frequently and fall into it from time to time. It's time to make our river safe and clean for everyone's benefit. I agree with Charles River Watershed Association (CRWA) in asking MassDEP to ensure MWRA and the City of Cambridge work quickly and aggressively to end sewage discharges into the Charles River. I also support CRWA's list of requests.

MASSDEP RESPONSE 85

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 86
KAREN CHENAUSKY

I would like to respond to the request for public comment on a Variance to MWRA and the City of Cambridge, a temporary amnesty from water quality standard violations. The Variance allows Combined Sewage Overflows (CSOs), a mix of untreated sewage and stormwater, to continue discharging while agencies work to reduce and eliminate them. I am a member of Riverside Boat Club, a rowing club on the Charles River. Many of my fellow members come in contact with river water, and any toxins in it, daily. I agree with Charles River Watershed Association (CRWA) in asking MassDEP to ensure MWRA and the City of Cambridge work quickly and aggressively to end sewage discharges into the Charles River. I also support CRWA's list of requests.

MASSDEP RESPONSE 86

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 87
LIANE DOUGLAS, JERRY ZADOW, STEVEN LEE, SARAH CUDDY, HANNAH GLUCKSMAN

I would like to respond to the request for public comment on a Variance to MWRA and the City of Cambridge, a temporary amnesty from water quality standard violations. The Variance allows Combined Sewage Overflows (CSOs), a mix of untreated sewage and stormwater, to continue discharging while agencies work to reduce and eliminate them. As a rower on the Charles River, I come in contact with river water frequently. I agree with Charles River Watershed Association (CRWA) in asking MassDEP to ensure MWRA and the City of Cambridge work quickly and aggressively to end sewage discharges into the Charles River. I also support CRWA's list of requests.

MASSDEP RESPONSE 87

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 88
MARIA LANE, WATERTOWN

I am responding to the request for public comment on a Variance to MWRA and the City of Cambridge, a temporary amnesty from water quality standard violations. The Variance allows Combined Sewage Overflows (CSOs), a mix of untreated sewage and stormwater, to continue discharging while agencies work to reduce and eliminate them.

As a rower on the Charles River for 40 years, I have come in contact with river water frequently. I agree with Charles River Watershed Association (CRWA) in asking MassDEP to ensure MWRA and the City of Cambridge work quickly and aggressively to end sewage discharges into the Charles River. I also support CRWA's list of requests.

The Charles River is one of the great city rivers of the world. People are attracted to it as well as its vibrant wildlife. It is for us to preserve this treasure.

MASSDEP RESPONSE 88

MassDEP acknowledges these comments. See MassDEP Responses 13 through 26 to CRWA's comments.

COMMENT 89
ROB ST. GERMAIN, ASHLAND

Let me be blunt — this day and age, knowing what we know about the effects and dangers of CSOs, knowing that we have the technology to end this problem, there is ZERO excuse to allow raw sewage to flow into the river.

I do realize the solving the problem takes money. I do realize that transition time is required and that progress has been made, but it is NOT ENOUGH.

The DEP should be assessing high fines for every gallon of sewage that outflows as a CSO. Once these fines are high enough, the agencies and municipalities will see that funding a solution is a MUST.

I urge you to allow NO VARIANCE. I also urge you to put in place a system of public notice and robust public engagement.

I like to kayak on the Charles. It is a vital resource for this whole area. We should no longer permit it to be sullied by entities that have failed to get their act together to correct the problem.

MASSDEP RESPONSE 89

See MassDEP Response 52.

COMMENT 90
PETER GAILITIS

I oppose any variances. The initials DEP stand for department of environmental protection. How can you instead seek to permit the dumping of raw effluent into the watershed? That is not protecting. The presence of E. coli is not the only problem, as anyone knows. Cleaning products, industrial and business waste all combine in a cso. Many people dispose of unwanted medicines and solvents in the toilet. This proposal is unthinkable. It is raining heavily right now. The Alewife Path is a sewer. All the bikers, walkers, nature lovers, and wildlife who visit it are being misled. I can't bring myself to go there anymore, after 11 years of living near it. The DEP doesn't deserve to have dumping excused.

Please add Belmont to the list in your letter of towns and the MWRA that should have financial scrutiny applied to their pollution remediation efforts. In eleven years I have seen no improvement to little pond and little river, which connect to Alewife Brook. The more that we learn about the water the more disgusted we get.

MASSDEP RESPONSE 90

See MassDEP Responses 52 and 35. Also, MassDEP notes that Belmont is not subject to the Variances because they do not have CSO discharges.

COMMENT 91
FREDERICK HEWETT, CAMBRIDGE

I appreciate the substantial progress that the MWRA has made on reducing Combined Sewer Overflows (CSOs) and want to acknowledge the critical role regulators like DEP have played in that process. Furthermore, I commend MWRA and Cambridge for being the first in the country to consider climate change in this context.

However, it is deeply concerning that progress in reducing CSOs to the Charles River has stalled, leading to the continued discharge of sewage into the river in 2024. The Charles River is not only a vital ecological resource but also one of the most heavily recreated urban waterways in the country. Dumping human waste into the river poses an unnecessary risk to public health and contradicts our responsibility to protect our environment.

I firmly support the swift elimination of CSOs and advocate for public investment to achieve this goal. No entity should be permitted to compromise water quality standards. Therefore, any variance allowing CSOs should come with much stricter requirements for addressing CSOs in the near term, utilizing all available tools.

Specifically, I urge DEP to mandate the following conditions:

1. Enforce requirements to ensure the use of green stormwater infrastructure (GSI) to achieve cost-effective CSO reductions. MWRA's "bookends analysis" in 2023 suggested minimal utilization of GSI, which should be considered the absolute minimum, not the maximum. GSI presents a low-cost tool with numerous community benefits.

2. Implement a single platform or system for public notification of CSOs in the Charles River, eliminating the need for residents to sign up with multiple entities such as MWRA, Cambridge, and BWSC.

3. Mandate a robust public engagement process, including a minimum of four public meetings before January 31, 2027. Additionally, require the formation of an advisory committee comprising technical experts and engaged citizens, including representatives from peer CSO cities that have effectively employed technologies like smart sewers and GSI to address CSO issues.

MASSDEP RESPONSE 91

See MassDEP Responses 17, 19, 22, and 82.

COMMENT 92
VICTORIA SLIWA, SOMERVILLE

I object to the variance. The sewage overflows onto public recreation areas including the Somerville Community Path is a public hazard. Unwitting residents have pushed baby carriages, walked and allowed pets to be exposed to this raw sewage mixture. It’s appalling that this occurs regularly during and after heavy rain. We live in one of the richest and most well educated areas of the nation- we need to resolve

this problem far before 2035 and honestly should have solved it already! We need better enforcement, we need to mitigate this problem now, and we need to stop exposing our neighbors to raw sewage!

MASSDEP RESPONSE 92

See MassDEP Response 52.

COMMENT 93

LEAH BRODER, ARLINGTON

I am a resident of East Arlington, Massachusetts, and live about 250 feet from the Alewife Brook. My family and I observe the Brook and use the Greenway frequently. The Greenway is a critical ecological and multi-modal corridor for commuters, school children, distance bike riders, and a variety of wildlife species and migratory birds.

We are appalled by the untreated sewage pollution that is released during almost every storm, literally poisioning the waters and this habitat. The condition of the Alewife Brook is shocking. There are literally broken drain pipes choking this narrow waterway in multiple locations. Sedimentation caused by all of the sewage discharge has left a thick dark brown silt that makes the Brook opaque. Ducks, swans, and turtles emerge from the Brook coated in brown muck. Downed trees criss-cross the Brook, and stay there for years, reducing capacity for water flow and increasing flooding. Unhoused people who live on the banks of the Brook are literally exposed to raw sewage during every storm. All summer long the stench of raw sewage permeates the Greenway.

Furthermore, the Brook goes through the most densely populated and hottest portion of the Town. In our current climate of rising temperatures, the residents of the neighborhood, many from subsidized housing, seek the shade and cooling of the Greenway. Allowing this open space to be a functional toilet for Somerville and Cambridge is absolutely unacceptable. This is a public health hazard and a reflection of policies that prioritize industry over the health of humans, plants and animal species of this waterway.

This is unacceptable in the 21st century in one of the wealthiest areas in the country.

It is time for the MassDEP to demand the water districts meet the requirements of the Clean Water Act that were developed for our protection. Mitigation strategies need to happen NOW, we cannot wait another 25 years.

It is the role of the Mass DEP to protect the public health of the residents of the Commonwealth. The proposed variance allows the offending water districts to continue to use our waterway as a sewer when their municipal systems fail.

I stand in opposition to the proposed variance and call for immediate action to eliminate ALL CSO outfalls in the Alewife Brook.

MASSDEP RESPONSE 93

See MassDEP Response 52.

COMMENT 94
MICHAEL CERONE, ARLINGTON
I am an Arlington resident and live next to the Alewife brook.

I strongly oppose the proposed CSO variances.

The issue of open sewage in my neighborhood, a densely populated neighborhood, is not something that can wait decades to fix. This is an immediate and urgent need. There is an immediate threat to public health.

At the very least more visible alert systems be included. Lighted signs and audible signals should be used to warn everyone of CSO events.

And wardens should be sent out during these events to ensure people are protected and assisted as needed.

There should be mitigations around the Tannery Brook CSO, including; a boom or netting to collect toilet paper and other floatables, a "supplemental Environmental Project" now of Green Stormwater infrastructure to reduce CSOs and flooding, requirement to Somerville's Tannery brook CSO in compliance with decades-old court-mandated level of CSO control.

Mass Environmental Policy Act review of the new draft Sewage Control Plan before the plan is set in stone. A requirement that the polluters continue to work to eliminate sewage discharges in the brook even if the Boston Harbor Court Case is resolved.

And independent financial analysis of the costs of Alewife Brook sewage pollution control that includes a CSO treatment facility and Green Stormwater Infrastructure.

MASSDEP RESPONSE 94
See MassDEP Responses 14, 16, 17, 35, 37, 48, 49, and 52.

COMMENT 95
MICHELLE GULEN, ARLINGTON
I am a resident of East Arlington who is deeply concerned about the CSO Variances in the Alewife Brook. I live along Alewife Brook, walk my dog on the path every day and use the path on my commute to work. My friends and neighbors use this path and it is a critical transportation corridor and green space in our community. It angers me to see and smell the CSOs occurring too frequently and I fear for the health of those who unknowingly walk through the raw sewage flooding.

I am opposed to the Variances and demand the removal of CSOs to end dumping of raw sewage into the Alewife Brook. I support the proposals of Save the Alewife Brook including an on-site warning notification, action now to get Tannery Brook into compliance, requirement for polluters to work to eliminate discharges, and independent financial analysis for treatment facility and stormwater infrastructure.

MASSDEP RESPONSE 95
See MassDEP Responses 14, 16, 17, 35, 37, 48, 49, and 52.

COMMENT 96
TODD BEARSON, ARLINGTON
I am writing to you about the variance requested by the cities of Cambridge and Somerville regarding the CSO Discharges to Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River. I am disgusted that this variance has been renewed many times in the past. Long term solutions should have already been implemented by now. This is a considerable public health issue and needs to dealt with in a concrete way immediately. Please do not renew the variance.

MASSDEP RESPONSE 96
See MassDEP Response 52.

COMMENT 97
JOHN TORTELLI, ARLINGTON
As someone who lives within 100 feet of the Alewife on Sunnyside Ave in Arlington and has had raw sewage on my property and in my basement I am writing to urge your agency not to grant another variance to communities dumping their raw sewage into the Alewife. These communities Cambridge, Somerville as well as the MWRA have had more than ample opportunity to clean up their situation. We are talking about very affluent cities that just keep ignoring the problem and add more housing and business buildings to contribute to the problem. Enough is enough.

Your agency should be enforcing state laws and not looking for loopholes to grant more time to polluters. At the very least fines, a deadline as well as responsibility for the clean up cost of any public and private property touched by the raw sewage overflow should be imposed
I don't think you would want this in your backyard or home.

MASSDEP RESPONSE 97
See MassDEP Response 52.

COMMENT 98
ELENA TOGASHI, ARLINGTON
We are vehemently opposed to the granting of a variance to Somerville, Cambridge and the MWRA. We live with our back yard against the Alewife Mystic brook and to think that we are going to allow sewage to continue to be dumped into the river is horrible!!!

MASSDEP RESPONSE 98
See MassDEP Response 52.

COMMENT 99
NILI PEARLMUTTER, ARLINGTON
I am writing to you about the variance requested by the MWRA and the cities of Cambridge and Somerville regarding the CSO Discharges to Lower Charles River/Charles Basin and Alewife Brook/Upper Mystic River. I am disgusted that this variance has been renewed many times in the past. Long term solutions should have already been implemented by now. This is a considerable public health issue and needs to be dealt with in a concrete way immediately. Please do not renew the variances.

MASSDEP RESPONSE 99

See MassDEP Response 52.

COMMENT 100

CAROLYN A. WHITE, ARLINGTON

It is so far beyond time for Cambridge, Somerville and the Commonwealth of MA to pay for new Sewage Pipes along the Alewife Brook it is appalling. With the growth of Biotech and Computer Science in Cambridge the city has more money that they know what to do with. Somerville is starting to see revenue benefits from commercial and multi-unit residential growth. Cambridge in particular, continues to pollute the area around Alewife MBTA station, Arlington playing fields for children, homes, and the walking/cycling paths for commuters to use along the Alewife Brook.

MASSDEP RESPONSE 100

See MassDEP Responses 16 and 52.

COMMENT 101

JEREMY MARIN, ARLINGTON

At its most basic I would simply like to say that the existing situation should not be considered acceptable by anyone, and the idea of allowing it to get worse is the wrong direction.

It is shocking that in Massachusetts in 2024, raw sewage is allowed to flow in such great quantities and such great frequency in public waterways. It is frustrating that a variance seems inevitable. Please include teeth in the variance so Arlington won't continue to be a toilet for neighboring communities.

This should be the last variance - by the time this variance ends there should be no more overflows.

MASSDEP RESPONSE 101

See MassDEP Response 52.

COMMENT 102

ROBERT COLLINS

I am writing this in addition to signing a petition through the Save the Alewife Brook organization.

I feel as though you should be ashamed of yourselves for allowing the Brook to look the way it does. I am 34 years old and all of my life the Brook has looked bad. 34 years! What the hell do you do for a job to allow over 34 years to go by without cleaning this body of water. Are you too busy? Are you gonna get to it next year? You got to much on your plate?

I could clean the Brook myself with my bare hands in less time then the time you have had. So are we gonna wait another 34 years. Do you think people don’t care and we just assume it will always be disgusting? We deserve a clean well functioning Alewife Brook and Mystic River.

Honestly I am making it my life mission to one day see a clean Mystic River where people can swim and be proud of. So tell whoever you need to and do what should be done to clean the Brook. And I’ll refrain from using colorful language in this email but just know that is what I’m thinking.

Prove to me you are capable of doing it.

MASSDEP RESPONSE 102

See MassDEP Responses 16 and 52.

COMMENT 103

LINDA MOUSSOURIS, CAMBRIDGE

I moved to my current home in N. Cambridge 5 years ago from another community. When I learned about what has been happening in Alewife Brook (& nearby homes in Arlington) with sewage runoff, I was rather astonished to learn that progressive Cambridge (& Somerville) are pressing to put off for 5 more years addressing this important environmental issue.

Thus, I hope that there will be a multi-community effort to do something about addressing sewage problems. Given how climate change is affecting our region, I am afraid that this problem will only increase in severity & scope over time.

MASSDEP RESPONSE 103

See MassDEP Responses 13, 16 and 52.

COMMENT 104

MELANIE ABRAMS, CAMBRIDGE

I just signed the Save the Alewife Brook petition, and fully agree with it. And additionally, I object to the variance being submitted as "temporary" when it has been ongoing for decades and has no imminent plans to actually be in compliance. A temporary variance used for a long-term problem misuses the written law at the expense of public health and safety.

MASSDEP RESPONSE 104

See MassDEP Response 52.

COMMENT 105

STEPHEN BLAGDEN, ARLINGTON

At a Special Town Meeting, in November of 1879, yes 1879, with one item on the Warrant, Arlington voted to take action against the City of Cambridge for sewerage dumping in Alewife Brook, including joining with the Town of Medford, and employing counsel. (Excerpt below)

In 1878 the city of Cambridge sought authority to annex to that city an easterly corner of Arlington. Nov. 18, 1879, the Board of Selectmen was authorized to employ counsel to assist in resisting this action on the part of Cambridge. In this effort they were successful. The incident is mentioned because it has connection with the pollution of Alewife Brook.

At a special town meeting held Nov. 18, 1879, at which the only business proposed in the warrant was "To see what action the town will take relative to the increasing pollution of Alewife Brook by the city of Cambridge," it was

Voted — That the selectmen be and hereby are authorized and requested to take immediate and active measures to prevent the further pollution of Alewife Brook by the sewage of the city of Cambridge; and said Board are authorized to employ counsel and to unite with the town of Medford in any legitimate course looking to the abolition of this threatening nuisance and the preservation of the public health.

This vote was reënforced at a meeting held Dec. 30, 1880, when Messrs. William G. Peck, Richard L. Hodgdon, Henry L. Lawrence, were chosen a committee to secure legislation to protect the public health, by stopping emptying sewage into Alewife Brook and also Mystic River. In a sense the above is a sequel to

(I found the 1879 information in:
Town of Arlington, Past and Present, A Narrative of Larger Event and Important Changes
In the Village, Precinct and Town from
1637 - 1907
See page 150, here:
https://dl.tufts.edu/pdfviewer/1z40m514v/kk91fz634)

So, this has been going on for 150 years. Almost 40 years since the Boston Harbor Case (D. Mass. C.A. No. 85-0489-RGS).

Alewife Brook is small and narrow.
At minimum, the sewerage dumping in the brook, and overflowing into Arlington yards and basements, is being a poor neighbor; flushing your toilet into your neighbors' yards and homes, regularly. Yuk.

How long do you turn the other cheek?
Is almost 150 years enough time to come up with a plan and stop the overflows?
How long can stories and delays be tolerated?

Alewife Brook does not have much change in elevation. It floods easily and drains slowly.
CSO effluent effects are substantial.

Figure 1, on Page 4, of the Technical Fact Sheet shows CSOs CAM001, CAM002, CAM401A, CAM401B, SOM001A, and MWR003, are the sources of Sewer overflow for Alewife Brook.

The Tentative Determination on Page 3 says:
"CSO discharges to the Alewife Brook/Upper Mystic River Basin shall be limited to those set forth in attached Exhibit D (with allowance for any conditions that exceed Typical Year3 conditions)"

The parenthetical is key here. Conditions that exceed Typical Year conditions have occurred more frequently in recent years. Discharges that do not reach the disclosable threshold have been numerous. This restriction is not working.

Section V, page 9 of the Technical Fact Sheet says:
"Variances must be supported by at least one of six factors common to both EPA and MassDEP regulations. Included as one of these factors, in both 40 CFR 131.10(g)(6) and 314 CMR 4.03(4)(a)6., is the following:

"Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact."

MassDEP has determined that proceeding at this time with controls beyond those included in the MWRA LTCP to meet the applicable recreational use and criteria, would result in substantial and widespread social and economic impact. This determination is further supported by MWRA's submittal on August 8, 2023, documenting the cost estimate of $22 billion to fully eliminate CSO discharges, based on their assessment of the facilities needed to achieve elimination."

The Variance sought is for CSO discharges to the Alewife Brook and Upper Mystic River.
However, the financial analysis refers to eliminating CSOs across the entire MWRA area, and is not applicable to the Variance sought.
The Alewife CSOs area has been suffering substantial and widespread economic, social and health impacts for 150 years, and it is time for it to stop.
Looking at the analogy from above of dumping sewerage in your neighbors' yard, for the last 150 years the offending neighbor has rebuilt their house several times, subdivided the property, repaved the driveway multiple times, made numerous utility enhancements and upgrades, but continues to claim they have no money to fix the dumping sewerage. This is not believable or acceptable.
The financial analysis should instead look at the cumulative and future costs, including liability, to property owners with sewerage flooding their basements, loss of property value, health and financial costs of pedestrians, bicyclists, wheelchairists and others unknowingly walking or riding through sewerage.
"Floatables" are not something you want in your basement, your yard, where you walk to work, shop or recreate, or to watch floating by.
The offending jurisdictions need to find the money to finally solve the problem.

The Technical Fact Sheet, Section III, Page 8, says:
"The remaining requirement is submission of Updated CSO Control Plans, which could not have feasibly been submitted by the end of 2023 due date, given the technical challenges which have arisen, along with the need for extensive public participation and agency coordination. As a result, the MassDEP proposes to adopt a new Variance that will be effective from August 30, 2024 to August 29, 2029 in order to allow MWRA, Cambridge, and Somerville to carry out this work. The Variance will also include

conditions that require a pollution minimization program for each permittee to implement actions to more effectively identify and address CSO pollutant loadings, and reporting to advise the public on CSO discharge events and their impacts. "

“Could not have feasibly been done”?????
MWRA, Somerville and Cambridge have become quite proficient over the last 150 years (less for MWRA) at delay, excuses, never quite completing plans to eliminate the CSOs, the solution always being the lowest priority for spending, and “kicking the dog” (their neighbors in Arlington) without consequence. The only acceptable condition for adopting the Variance is that studies, engineering and plans are completed, out to bid, work started to remove the noted CSOs and the project completed or substantially underway by August 29, 2029.

MASSDEP RESPONSE 105

See MassDEP Responses 13, 14, 18, 37, and 52.

COMMENT 106
GINA SONDER, ARLINGTON
It is absolutely unacceptable to continue "kicking the CSO can" downstream.

Mass DEP must address Sewage Discharges into the Alewife Brook and the Upper Mystic River now, without further delay.
I live in Arlington, near Millbrook, the Lower Mystic Lake & the Mystic River - all part of the Mystic River Watershed.

The Mass DEP claims to protect us and our environment, but all I see is the protection of economic interests over people and the planet again and again.

The variance allows CSO to continue degrading the watershed and harming the health of residents affected by these discharges, only to be reviewed and again delayed in 2029.

... to adopt a Variance for CSO discharges by MWRA and the Cities of Cambridge and Somerville to the Alewife Brook/Upper Mystic River for a period not to exceed five years (**August 29, 2029**).
https://www.mass.gov/doc/tentative-determination-to-adopt-variances-for-cso-discharges-to-lower-charles-rivercharles-basin-and-alewife-brookupper-mystic-river-public-notice-extended-comment/download

During the period between January 31, 2027 and August 29, 2029, MassDEP, in coordination with EPA, will review the Final Updated CSO Control Plan(s), review and consider public comments on the Plan(s), confer with the MEPA office on compliance with the Massachusetts Environmental Policy Act, and take action to **approve or disapprove** the Plan(s). MassDEP and EPA actions will include determinations on compliance with the Clean Water Act and Massachusetts SWQS.
https://www.mass.gov/doc/tentative-determination-to-adopt-variances-for-cso-discharges-alewife-brook-upper-mystic-river-variance/download

The time to stop this practice of delay is overdue.

Weather events that cause flooding are only going to increase over the next five years. Eliminate CSO's going into Alewife/Mystic waterways.

Do NOT adopt a variance. FIX the problem.

MASSDEP RESPONSE 106

See MassDEP Responses 13, 16, 18, 52, and 68.

COMMENT 107
BETH MELOFCHIK, ARLINGTON

I write to oppose the granting of a Variance to MWRA, Cambridge and Somerville to allow a temporary change in the State Surface Water Quality Standards (in the form of a Variance) to allow MWRA and the Cities of Cambridge and Somerville to exceed the water quality standards for bacteria in Alewife Brook and Upper Mystic River for a limited period of time while projects are designed and constructed to reduce or eliminate CSO discharges. 24 years to close the Combined Sewer Overflows in Cambridge and Somerville which turn Alewife Brook and East Arlington into an open sewer is long enough to produce results.

Please deny the request for a Variance. And, the current discharge notification system is woefully inadequate. It is too difficult to sign up for notifications meanwhile the uninformed public wanders into and through poisoned bacteria laden overflowing untreated sewage water in Alewife Brook Park. On site postings are needed in the park and along Alewife Brook Parkway as soon as possible.

Somerville fails to meet court ordered goals. Please prioritize public health in East Arlington, end untreated sewer discharges into Alewife Brook. Please cease the devaluation of Arlington's public health and the devaluation of environmental health in Alewife Brook and the corridor. Hold Somerville accountable, deny the variance.

No Variance. No new sewer hookups in either community. Close the CSOs. The Environmental Justice community, the neighborhoods in Arlington have suffered enough, have been exploited by Cambridge and Somerville for long enough. It is time for municipal leaders in Cambridge and Somerville to bring solutions to the table, a table to which Save the Alewife Brook should no longer be excluded.

Please allow 2024 to be the year exploitation of Environmental Justice neighborhoods in Arlington was ended by MassDEP leadership who said, no more, no more Variance. It is time for MWRA, Cambridge and Somerville to bring solutions to the table.

To do otherwise reflects poorly on the Massachusetts Department of Environmental Protection. East Arlington is not being protected from exposure to toxins as the result of previous and current variances.

I ask MassDEP to exercise their authority and protect us, protect our neighborhoods, cease our exposure to untreated sewage, cease our exploitation by wealthier neighboring communities, clean up and protect our green spaces, our DCR corridor.

24 years with no plan on the table illustrates no plan in the works. Please change the dynamic, deny the variance. End the discrimination of Arlington's public health in favor of Cambridge and Somerville. End

the discrimination of Environmental Justice neighborhoods in Arlington in favor of new construction in Cambridge and Somerville.

Send the message that Arlington matters.

We need outside the box thinking by new solution driven dynamic team members.

"In 1999, the Massachusetts Department of Environmental Protection (MassDEP) issued a temporary change in the State Surface Water Quality Standards (in the form of a Variance) to allow MWRA and the Cities of Cambridge and Somerville to exceed the water quality standards for bacteria in Alewife Brook and Upper Mystic River for a limited period of time while projects were designed and constructed to reduce or eliminate CSO discharges. The Variance has been renewed several times. The current Variance expires on August 30, 2024. Since there is still work to be done by MWRA and the Cities of Cambridge and Somerville, MassDEP has started the public process of renewing this Variance for up to five years."

https://www.mass.gov/doc/tentative-determination-to-adopt-variances-for-cso-discharges-alewife-brook-upper-mystic-river-variance-summary-fact-sheet/download

MASSDEP RESPONSE 107

See MassDEP Responses 15, 16, 35, 36, and 52.

COMMENT 108
GILBERT MARTIN, ARLINGTON

First of all, thank you for doing this important work under difficult circumstances replete with competing interests and constrained budgetary means for getting it all done right.

However, as a current resident of Arlington and a past resident of North Cambridge, I strongly urge you to use the Department's regulatory authority to require that out-of-compliance CSOs in the Alewife Brook and Charles River meet existing goals and to ensure sure that MassDEP advocate for Supplemental Environmental Projects for all out-of-compliance CSOs in the Alewife Brook and Charles River in Federal Court proceedings.

I and my family have for years biked and walked the Alewife Brook corridor on both the Cambridge and Arlington sides. At times, that proved an unpleasant experience due to the sewage discharges and overflows. This has been going on too long and the can has been kicked down the brook for some two decades now.

It is time to act: this is Massachusetts, not Mississippi (yes, I have been down there several times for work and it doesn't take long to realize that environmental concerns are not very high on the state's list of priorities - and don't get me started on neighboring Louisiana, where I have spent even more time there for work).
Thank you again for your efforts. I am pleased to live in a state where I can reasonably hope that MassDEP can and will carry out its responsibilities to our waterways and the surrounding communities.

MASSDEP RESPONSE 108

See MassDEP Responses 13, 16, 18, and 52.

COMMENT 109
PAT MULDOON, ARLINGTON
Please order Cambridge and Somerville to replace their CSOs into Alewife Brook. The cost to surrounding communities? Including my town, Arlington, is too great to allow them another 5 years of inaction.

East Arlington gets flooding, so people get sewage in their basements. And with climate disruption getting worse, we can't wait another day, much less years to fix this. You can't let low income, diverse communities continue to be neglected just because those two cities don't want to pay to follow the regulations.

Please do the right thing and require the CSOs to be separated in water and sewage drains. Protect the people!

MASSDEP RESPONSE 109
See MassDEP Responses 13, 15, 16, 18, and 52.

COMMENT 110
JESSE BROWN, ARLINGTON
Sorry — what? Did I mishear? Another "variance"? Our own Department of Environmental Protection is removing our protection from hazardous waste?

Apparently the D.E.P. has been making up to polluters where I live, granting variances, excusing them from legal limits, for decades.

I live, and walk, and breathe, in Arlington. I stroll along the Alewife Brook; I canoe in the Mystic River; I have friends who live on the banks of each.

Who are we supposed to turn to, when raw sewage is lapping up on bikeways, paths, parks, even into people's yards?

What would you want for your children?

Do you think that Cambridge and Somerville are too large to be held accountable for contaminating our waterways, for years?

Whose job is it to clean up the damage? To pay for restoration?

Is it that wealthy towns are exempt from the law? Or that smaller towns don't deserve public health standards?
Who are you really protecting?

You asked for public feedback. This is mine. Don't sell out. Don't grant another "variance" for contaminating — not for five years, not for one year. No wonder the sewage dumpers haven't cleaned up their act, when you let them slide year after year. It's time to show some spirit. To say no. It's your job.

MASSDEP RESPONSE 110

See MassDEP Responses 13, 16, 18, and 52.

COMMENT 111

GWENDOLYN SPEETH, NORTH CAMBRIDGE

Dear regulators empowered to protect our environment in your roles at the Massachusetts Department of Environmental Protection, and those looking on at the federal Environmental Protection Agency,

I am writing to you as a fellow nature lover and concerned citizen who loves my local park and the water body flowing through it. I believe in protective state regulations and the promise of the Clean Water Act, and implore you to do everything in your power to use them, and any other tools you have, to end the scourge of untreated sewage being discharged into rivers and streams in those bits of urban wilderness on which we city dwellers depend for our mental and physical wellbeing.

I am a Steering Committee Member of Save the Alewife Brook and heartily endorse their written comments to you. I include my name and add my voice to support the straightforward, reasonable, and necessary changes to the variance laid out in our organization's letter sent to you earlier on April 22, 2024.

The comments I share here are personal, as my relationship with the Alewife Brook is a deeply personal one. I had heard of the Alewife Brook Parkway for decades, but only six years after moving blocks away from it, did I make the obvious discovery that there was in fact a brook flowing through a park near my house. Imagine my delight when I realized I could find sorely needed respite from the distress of COVID lockdown by walking along a tree-lined brook, spring emerging, and birds singing as they made a stop along their migratory path. I saw such a wide variety of species that my expert birdwatching friends grew envious: Hooded Merganser, Eastern Bluebird, Northern Parula, Painted Bunting, and more.

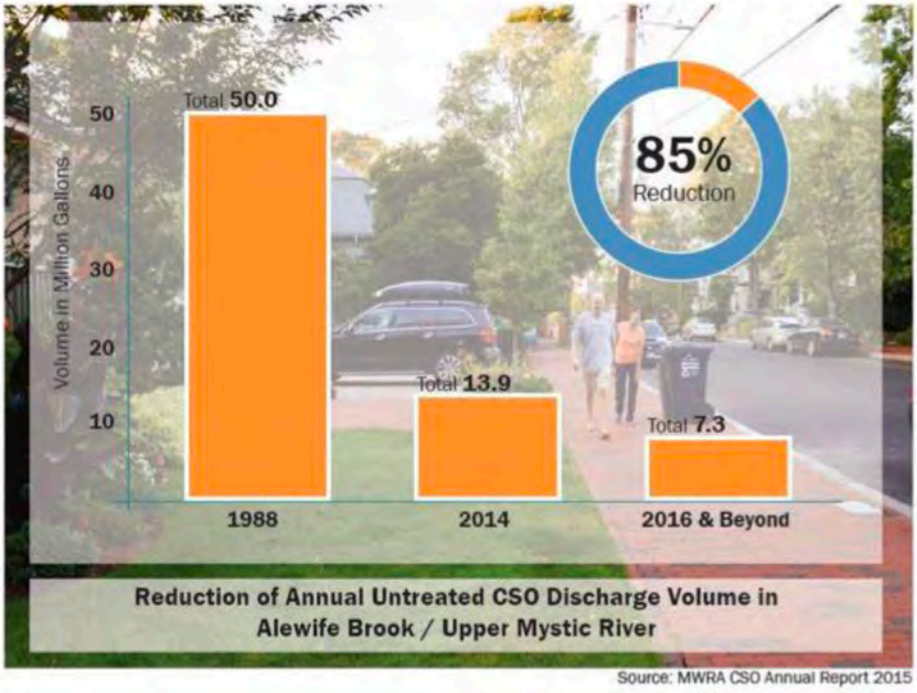
This was all during the drought year of 2020. As that summer followed, the lack of rain exposed what I now know to be CSO sewage solids trapped in the contaminated sediment, debris, and trash obstructions caught in the clogged, mile-long narrow concrete channel where the brook appeared to be gasping for air. The stench of the sewagey sediment and gas emanating from exposed CSO outfall pipes was so nauseating that you could see the faces of pedestrians, cyclists, and drivers grimacing in distress as they passed by. I was horrified when I finally made the connection between the horrible smell and the active, conscious, deliberate dumping of sewage in our otherwise beautiful, desperately needed urban oasis, by my own trusted city of Cambridge.

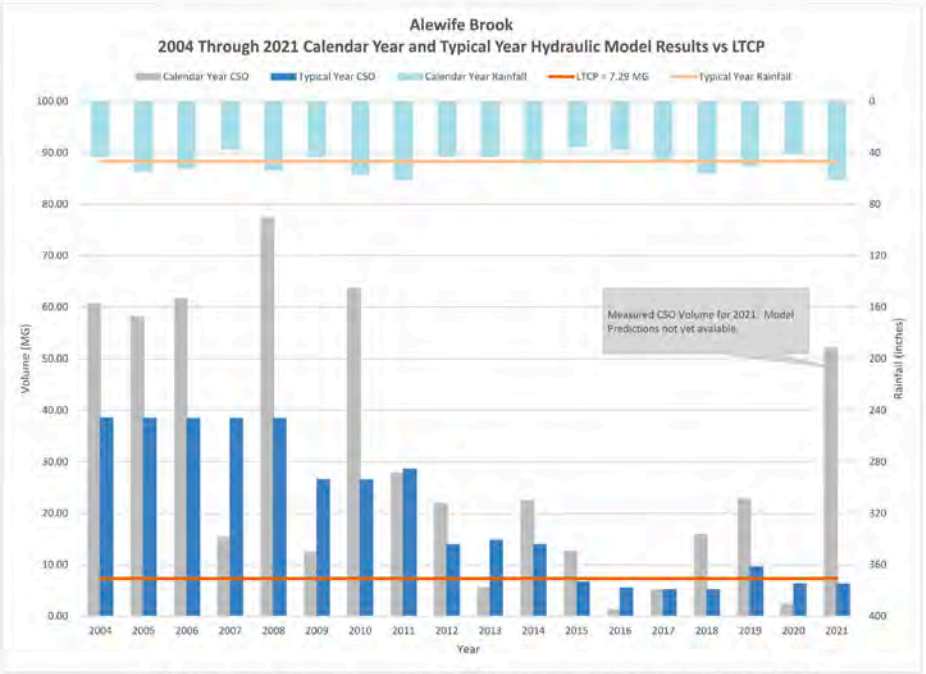
The variety of birds appears dramatically to have decreased over time. With the rainy CSO activation-filled years of 2021 & 2023, only the heartiest of waterfowl seem foolhardy enough to brave such foul water. Please consider what this degradation of tens of millions of gallons of human and industrial waste means for all of the species living in and around the brook. The birds and fish and small mammals and insects are unable to speak for themselves.

Most of our human neighbors lead challenging, stress-filled lives and turn to the Alewife Greenway path as a place to play with their children, to walk their dogs, or to meet their friends and maintain their health, or act as responsible citizens working to fight climate change by to making their commute more green (literally and figuratively) by bypassing roads to get to work or school or the grocery store. The people with whom we volunteer activists speak are raising their voices, but not all of them have time to

fight for justice to prevent this worsening environmental degradation. We depend on you, our valiant public servants to use your knowledge, creativity, and experience to ensure that our cities, and the agency created to protect us from sewage pollution, MWRA, finally prioritize dealing with this unfinished business from the Boston Harbor clean-up court case.

Progress in decreasing CSO discharges across greater Boston is a miraculous accomplishment and should be celebrated, but not at the cost of our community. The two graphs below, both created by MWRA, make clear that the permittees' claims of 85% improvement do NOT apply to CSO discharges in the Alewife Brook, as the volume dumped in the Alewife in 2021 exceeded that for 1988:





Slide 28 of the Massachusetts Water Resources Authority (MWRA) presentation to the Arlington Select Board on 2/14/22

MASSDEP RESPONSE 111

MassDEP acknowledges these comments.

COMMENT 112

Please compel Cambridge, Somerville, and MWRA to:

- Suspend all new sewer hook-ups that would feed directly or indirectly into combined sewer pipes feeding Alewife Brook CSOs. Already permitted development in the Quad/Highlands area of Cambridge will soon add tens of millions of gallons of raw sewage to the regularly overwhelmed combined pipes just upstream of the worst-polluting CSO outfalls. Current I/I requirements do NOT adequately compensate for this imminent burden to the system.
- Work with DCR, other state agencies, and environmental advocacy groups, to ensure that the Alewife Brook is dredged, especially between Route 2 & Henderson Bridge. This section contains four CSO outfalls and was inaccessible to dredging 50 years ago in 1972, the last time any part of the Alewife was dredged. The concrete channel was installed, and chain-link fence erected along its length, in 1954, and contaminated sediment, trash, debris, and CSO sewage solids have been collecting there for 70 years. 2009, when the fencing was removed for the creation of the Greenway Path, was the last time that even large wood debris was removed from the brook. The least the CSO polluters can do is help maintain flood conveyance for this waterbody that they insist they need to exploit and pollute as a means of hydraulic relief for the system they claim to be maintaining according to your guidelines.
- Install simple, cost-effective Green Infrastructure immediately to stem the accelerating increase in the number of CSO activations by capturing the stormwater that triggers them.
- Install grey infrastructure to provide local detention storage and treatment for the sewage Alewife destined for the Alewife, preferably by converting the waste into energy, while they continue to work until they have eliminated all CSO discharges,

MASSDEP RESPONSE 112

Refer to Responses 17 and 36 regarding GSI and sewer hookups, respectively. The CSO Variances relate to CSO discharges only and therefore cannot require dredging of the Alewife Brook. The Water Quality Standards Variances are a temporary modification of the Massachusetts Surface Water Quality Standards pursuant to 314 Code of Massachusetts Regulations (CMR) 4.03(4)(c). These regulations do not cover dredging activities which are instead regulated by 314 CMR 9.00. Additionally, MassDEP notes that Mystic River Watershed Association was recently awarded $100,000 by the Commonwealth of Massachusetts for a "hydraulic study to model the potential effects of dredging and to identify specific actions needed to protect affected communities, including environmental justice communities, around the Alewife Brook in the cities of Arlington, Cambridge and Somerville from flooding and other hazards."

COMMENT 113

We community volunteers fought for and won state funding to study flood mitigation, and the benefits of dredging the Alewife. If a group of concerned citizen volunteers can get money directed toward improving the Alewife, the least those treating the brook as a relief sewer can do is provide the brook with the same level of routine maintenance they provide for their actual sewer lines.

Do we need to wait for our own Hurricane Sandy to have the sewage-contaminated sediments and debris now filling the Alewife channel flood across the highway and into the homes of our neighbors, then spend billions in remediation and clean-up after the fact? Wouldn't it be better to pay for another stormwater wetland and other green infrastructure to absorb and filter the intense rains climate change is already dumping on us now, before a flooding disaster sends us running to MEMA & FEMA for help?

Cambridge, Somerville, and MWRA must take advantage of the once-in-a-generation federal funding available to give our communities beautiful green infrastructure that would raise our spirits while capturing stormwater and decreasing CSO discharges.

MASSDEP RESPONSE 113

MassDEP acknowledges these comments.

COMMENT 114
DAVID STOFF, ARLINGTON

These comments on the Tentative Determination to Adopt a Variance for Combined Sewer Overflow Discharges to Alewife Brook/ Upper Mystic River Basin are submitted by David Stoff, a resident of Arlington Massachusetts. My home is about 1000' feet downstream from 2 CSO outfalls that annually discharge millions of gallons of untreated sewage to Alewife Brook.

I preface my General Comments, Detailed Comments, and observations about the Fact Sheet with this statement:
The administrative action DEP is taking has consequences. These discharges are real. The bacteria concentrations in untreated CSO discharges are dangerously high. The discharges create an odor that lingers for days. They impact my health, that of my family and the community in which we live. They degrade our community. I do not support granting this variance. I believe DEP must enforce the existing class B water quality standard to protect communities along the Alewife. What else would you expect me, or the other people you dump untreated sewage on, to say?

MASSDEP RESPONSE 114

See MassDEP Response 52.

COMMENT 115

I have little to add to the statement I made at the Public Hearing on April 9th. [Exhibit 1] I'm proud of the Alewife community and of the organization of which I'm a member, Save the Alewife Brook. It's impossible for me to imagine how any group could be a more forceful advocate for the Alewife. We are volunteers. Everyone on the other side of the table is a paid professional.

I routinely use the Alewife Brook. Nine days ago I was in a canoe pulling shopping carts out of the Alewife as part of a clean-up effort.[Exhibit 2] I gather material from the Alewife for art installations.[1] [Exhibit 3] In the past I would fish for carp. I dream of the day I will see an alewife swimming in the Alewife Brook.

I've made a reasonable effort to learn as much as I could about the variance by asking questions. These comments would have been better organized and more succinct if there'd been more time for that process. I'd hoped DEP would extend the deadline for written comments. [Exhibit 4]

Many of these comments are applicable to the Charles river watershed as well. I look forward to DEP's response to variance comments. I'm curious how it will be possible for the EPA to approve the variance based on the deficiencies that I see.

Finally, I have to express my astonishment that DEP would fail to take the single action that could profoundly impact the CSO control effort:
Cross bureaucratic boundaries to work cooperatively with other agencies of state government to solve the problem.
It would cost nothing. The public rightfully wonders why the T won't offer land for a treatment plant or storage tanks. Why DCR park improvements are on an independent track. Why MWRA fights our community at every turn. That needs to change.

MASSDEP RESPONSE 115

MassDEP acknowledges these comments and suggestions.

COMMENT 116

GENERAL COMMENTS

1. Public Notification

The public notification measures included in the variance are inadequate to satisfy Federal regulatory requirements. None of the measures moves an inch beyond minimal compliance with state law and NPDES permits. DEP has never adequately addressed community concerns and is entirely content with the status quo. I see no real progress. Attached are past comments on the topic, including some that were written 14 years ago. They are not substantially different from what I would write today. This is the face of public policy failure. [Exhibit 5]

MASSDEP RESPONSE 116

MassDEP disagrees that the public notification measures are inadequate to satisfy federal regularly requirements. In fact, the requirements go beyond what is currently included in the

NPDES permits for MWRA[1], Cambridge[2], and Somerville[3]. Each of the NPDES permits reference the Nine Minimum Controls, one of which is "Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts." This is a general condition that does not impose specific requirements. Additionally, each of the permits requires the permittees to place and maintain signs at each of their CSO outfalls.

The NPDES permits for Cambridge and Somerville each have additional requirements related to public notification, which are: maintaining informational signs at John Wald Park and other public access locations, a joint press release regarding CSOs to be issued by April 15 of each year, email notice to EPA, MassDEP, local health agents, and watershed groups within 24 hours of the onset of CSO discharges, and updates to permittees' websites to include information about CSOs.

MWRA, Cambridge, and Somerville each have approved CSO Public Notification Plans, which are compliant with state regulations at 314 CMR 16.00. With the exception of the requirement for a joint press release, the CSO Public Notification Plans either incorporate the existing NPDES permit requirements or go beyond those requirements in order to comply with Massachusetts law and regulations. The press release requirement is explicitly included in the Variances because it is not a requirement of state CSO public notification requirements. The three permittees have been consistently implementing their plans by issuing required public notifications, posting signs, and completing required reporting.

Additionally, as discussed in MassDEP Response 35, MassDEP has added a new requirement to the final variances for the permittees to scope the feasibility of adding enhanced onsite warning systems near CSOs.

COMMENT 117

2. Public Availability of Sewer System Mapping

NMC #9 recognizes that characterization of the combined sewer system requires the creation of accurate maps. The availability of maps of the permittees' sewer systems online is an invaluable tool for advocacy groups and the public at large. Meaningful public participation in the development of the updated LTCP (Variance, Part F.) would be frustrated if access is curtailed.[2] The variance must clearly state that all system mapping is to remain available online to the public. When it comes to public participation the Clean Water Act is unequivocal. "Public participation… shall be provided for, encouraged, and assisted" (33 U.S.C. §1251(e)).

MASSDEP RESPONSE 117

See MassDEP Response 24.

COMMENT 118

3. DEP needs to require mitigation measures for control odor in the variance

Odor coming from the sewer system is a constant source of complaints.

[1] https://www3.epa.gov/region1/npdes/mwra/pdf/mwrafpm1.pdf
[2] https://www3.epa.gov/region1/npdes/permits/2009/finalma0101974permit.pdf
[3] https://www3.epa.gov/region1/npdes/permits/2012/finalma0101982permit.pdf

[https://savethealewifebrook.org/2022/11/11/hey-mwra-alewife-brook-could-easily-smellbetter/]
In July 2022, I was invited by MWRA to tour the Deer Island Treatment Plant along with other members of Save the Alewife Brook. On that tour I spoke with Stephen Cullen, MWRA's Director of Wastewater Operations & Maintenance. I had a chance to tell him about the odor problem along the Alewife and in particular about the odor coming from a siphon structure on Lafayette Street in Arlington.
After some discussion about whether it was really an MWRA structure, I showed him a picture on my phone. Stephen took a look and said "yes, that's one of ours. I'll see what I can do." A few days later I was walking along the brook and noticed that the manhole and side access on the siphon had been sealed with a thick bead of silicon. And you know what, it worked. A noticeably rank odor was gone and walking in the Greenway was more pleasant. It stayed that way for more than a year.
This spring (2024) the MWRA was doing some work in the area and the seal was removed. Now the odor is back. The variance requires implementation of the Nine Minimum Controls. Proper maintenance of the sewer system is NMC 1. Sealing a manhole with a bead of silicone to control odor is as basic as system maintenance gets. Without an administrative requirement in the variance, a procedure as simple as reducing odor by sealing a manhole will not become a routine practice. The benefits of a low cost odor control solution will be lost. The variance waives the narrative criteria for odor, which is a pollutant. Improving pollutant controls, even controls as simple as this, is a requirement of the variance's pollutant minimization program. The pollutant minimization program(or the measures in Part E) could easily include odor control. If it fails to, it can hardly be said the variance has taken every reasonable step to minimize the pollutant discharges it authorizes.

MASSDEP RESPONSE 118

See MassDEP Response 60.

COMMENT 119

4. The Pollutant Minimization Program(PMP) for Somerville is insufficient to comply with Federal Regulations

As described in the detailed comments, the Spring Hill sewer separation project listed as an improvement to SOM001A does not benefit that outfall. Somerville's additional system optimization measures (variance, Exhibit C) do not include any documentation of projects at Somerville's Alewife Brook CSO outfall SOM001A. The monitoring requirements in Exhibit C are not materially different from NPDES permit requirements. Somerville's PMP must include measures that result in water quality improvement to the Alewife Brook during the term of the variance to meet the regulatory standard. The regulatory definition of a PMP includes best management practices.[3]

At a minimum Somerville should be required to implement Green Infrastructure, such as catch basin retrofitting to reduce stormwater inflow to the combined sewer system tributary to the Alewife. An educational campaign to discourage excess water use during wet weather. (See, Milwaukee MSD Water Drop Alert; https://www.mmsd.com/what-you-can-do/water-drop-alert) is another BMP that is implementable during the term of the variance. Land acquisition (e.g. the former Matignon High School playing field located in the SOM001A/Tannery Brook tributary area), as a site for pollution controls is permissible. A requirement to clear floatables from Tannery Brook/SOM001A is also an improvement that could be implemented during the term of the variance.

MASSDEP RESPONSE 119

See MassDEP Responses 9 and 37 regarding GSI and floatables, respectively. MassDEP cannot mandate permittees to acquire land for the construction of projects that will reduce or

eliminate CSO discharges. MassDEP encourages the permittees to consider educational campaigns similar to the Milwaukee MSD Water Drop Alert.

COMMENT 120

5. Alternative Measures to Support the Existing Uses of Alewife Brook

The variance needs to investigate other "interim criteria"[4] rather than rely on an "interim effluent condition" based on assumptions about the long term control plan's performance as its basis. The "greatest pollutant reduction achievable" is the regulatory requirement. It's not clear that system optimization measures attached to the variance meet that standard; nor that the Pollutant Minimization Plans are sufficient as written. Direct measures like sediment removal, channel maintenance, and habitat restoration can improve the assimilative capacity of Alewife Brook and make measurable improvements to water quality. Ultimately, such measures support boating, fishing, and other recreational uses of the Alewife Brook. For example, the Dredging and Hydraulic Study of Alewife Brook will generate new information about possible improvement to water quality through sediment removal. (https://savethealewifebrook.org/2023/08/26/state-passes-100k-for-alewife-brook)

The goals of the variance are distinct from court ordered CSO planning obligations. DEP needs to evaluate other ways to make progress in the Alewife in order to meet the regulatory standard of the variance.

MASSDEP RESPONSE 120

Refer to Responses 60 and 112 regarding odors and dredging, respectively. MassDEP acknowledges the remaining comments.

COMMENT 121

6. A Low Cost Inflow Reduction Concept

When rereading comments on the 2009 Cambridge NPDES permit, I noticed one from Stephen Kaiser, Ph.D, about reducing inflow to the sewer system during periods of flooding that bears repeating. In discussing the water quality impacts of flood water being introduced into the system he noted:

> [I]t allows even more inflow of brook water through the CSO system and into the MWRA interceptors, triggering even larger SSO discharges near Dilboy Field. MWRA has proposed and supported the concept of installing flap gates on all remaining CSO pipes from Cambridge. Cambridge has indicated its preference for funding the drainage project (contract 12AB I think..DS) rather than inflow controls.

The time has come to revisit this concept in the light of larger climate change driven storms. Flap gates are a simple technology. The installation cost must have been low for MWRA to support it. The Alewife Brook outfalls, particularly MWRA 003, CAM401B, are located in areas that are inundated in larger storms. The potential water quality and public health benefits of keeping flood water out of the system to prevent SSOs in a large storm far outweigh the minimal cost of this measure.

MASSDEP RESPONSE 121

MassDEP agrees that an evaluation of the need for flap gates or similar structures on Alewife Brook CSO outfalls should be reviewed, and that flap gates in some locations provide important

protections against surface water inflow into the sewer system. Such evaluations should be done as an element of the Updated CSO Control Plans.

COMMENT 122

DETAILED COMMENTS

7. Outfalls CAM004, CAM 400,SOM001, SOM002A,SOM003, SOM004, and SOM007 should be removed from Exhibit D.

The variance states "CSO discharges to the Alewife Brook/Upper Mystic River Basin shall be limited to those set forth in attached Exhibit D" Since there are no discharges from these outfalls, including them in the table is unnecessary and it makes the table confusing. Exhibit D must be as clear and easy to understand as possible because understanding the level of CSO control is critical to the variance.

MASSDEP RESPONSE 122

Refer to Response 69.

COMMENT 123

8. Remove SOM001A from the Table supporting Exhibit C part 2

"Implement the following projects during the term of the Variance, in accordance with the project description". (See attached email Raiche/Stoff 4/5/24) [Exhibit 6]

MASSDEP RESPONSE 123

MassDEP acknowledges this was an error that SOM001A was included in the table for the Somerville projects in Exhibit C. The table has been revised in the final variances.

COMMENT 124

9. Linked Sources

When footnotes and other links cite a particular document, it would be desirable if the link would take the reader to the appropriate page; or could the footnote at least list the page. The Department's reasoning is difficult to understand when a footnote or link leads to a 100 page report, not the section of the report being cited. (e.g. FN 1, FN 2)

MASSDEP RESPONSE 124

MassDEP acknowledges this comment.

COMMENT 125

10. The variance fails to meet Clean Water Act requirements because narrative criteria in the effluent limitation (Exhibit D)frustrate implementation of an existing Total Maximum Daily Load (TMDL)

Federal law requires implementation of "effluent limits [required under sections 301(b) and 306 of the Act] and… cost-effective and reasonable best management practices for nonpoint source control" before a state can make a permanent change to it's water quality standards that removes an existing use.(40 CFR § 131.10(h)(1) and(2))

EPA and DEP will make the administrative determinations necessary to permanently change the Alewife's water quality standard at the end of the variance. The variance's requirement for an assessment of the level of CSO control achieved, and the associated water quality impacts of CSO and non-CSO bacteria sources[5] recognises the obligation to review the relevant information, but narrowly frames the review as compliance with one part of EPA's CSO Control Policy,[6] rather than as an element of a comprehensive framework to restore water quality.

The Clean Water Act requires states to identify waters where effluent limitations are insufficient to meet existing water quality standards, and calculate a Total Maximum Daily Load for the pollutant causing impairment. DEP promulgated a Pathogen TMDL for Boston Harbor waters in 2018 to address chronic bacteria impairment.[7] The TMDL is a legally binding plan to address point and non-point source pollution in the variance waters for a pollutant included in the variance.

The 2018 Pathogen TMDL provides a binding framework for improved water quality. The TMDL could establish the allowable pollutant loadings and, should non-point source controls prove ineffective, the TMDL would become the basis for establishment of water-quality based effluent limitations for CSO's in NPDES permits.

It could do this ***if*** DEP would provide information about how "allowances" for "Typical Year conditions" modifies CSO discharge volume and frequency in the variance (See, variance Exhibit D; see also comments on the topic by the Mystic River Watershed Association). With this information it would be possible to calculate a wasteload allocation for variance waters (Alewife Brook for example) using the formula provided in Pathogen TMDL.[8]
Information about how the typical year modifies variance Table D [the variance effluent limitation] is also the information that's required to make the Pathogen TMDL work. The variance needs to address this deficiency if it is to comply with the law.

For nearly 30 years MWRA has claimed "Modeling results have demonstrated that CSO discharges will not cause frequent or significant violations of water quality standards because "[n]on-CSO sources are the predominant cause of water quality violations in most receiving water segments." The Authority's preference is to downgrade water quality standards rather than work with a regulatory framework that might require them to implement additional CSO controls.[9]

My preference is to look at the review of water quality standards at the end of the variance as a step in a rational process to restore our waters, rather than an endpoint.[10]
This view is supported by the Clean Water Act and,oddly, by the EPA CSO Control Policy which states:

> Where [water quality standards] and designated uses are not met in part because of natural background conditions or pollution sources other than CSO's, a total maximum daily load including a wasteload allocation and a load allocation, or other means should be used to apportion pollutant loads

59 Fed. Reg.18688, 18692 (April 19,1994); (CSO Control Policy, Part II, C.4.b.(ii));
33 U.S.C §1342(q)(i)

MASSDEP RESPONSE 125

See MassDEP Response 20. Additionally, it is not necessary to calculate a different wasteload allocation from what is stated in the Boston Harbor Pathogen TMDL, which is "CSO activations

and volumes limited to those included and identified in the permitted Long Term CSO Control Plan." The footnote for the wasteload allocation reads: "See Second Stipulation of the United States and the Massachusetts Water Resources Authority on 'Responsibility and Legal Liability for Combined Sewer Overflow Control' filed in US District Court on March 15, 2006. (MWRA 2006)." The wasteload allocation is consistent with the Variance requirements.

COMMENT 126

Financial Capability Analysis

State regulations 314 CMR 4.03(4)(a)6., require that the financial analysis be for "the affected area," which is Cambridge and Somerville for the proposed Variance for Alewife Brook. MWRA, Cambridge and Somerville must each determine their own portion of the costs and their ability to fund their proposed updated CSO plans.

It is frustrating that DEP failed to respond to commenters who raised this issue when the Department approved the Scope of Work Documents.[11] [Exhibit 7]

MASSDEP REPONSE 126

See MassDEP Response 14.

COMMENT 127

Reduce the Term of the Variance from Five Years to Three.

The reasoning supporting a 5 year variance is that it allows better integration with Long Term CSO Control planning efforts and NPDES permitting. Since the draft variance allows the LTCP requirement to be "satisfied through submittal of one joint Final Updated CSO Control Plan or three separate Final Updated CSO Control Plans" in January 2027, it's unclear whether a single or multiple plans will be reviewed during the final 2 years of the variance.

Because of this, the 5 year term of the variance adds an unnecessary layer of complexity. CWA requires triennial review of water quality variances; a requirement that includes a public hearing. This is an existing process and, in this case, it would be simpler to have 2 variances with 3 year terms. Planning for the updated LTCP could then proceed independently of the variance. If more time is necessary to review the plan(s), DEP can make that finding in 2027. A new variance would constitute a "new regulation" so EPA is authorized to reopen NPDES permits. (40 CFR § 122.62(a)(3)(i)).

This approach has the virtue of allowing meaningful public participation, including a public hearing, at crucial points in the administrative process.

MASSDEP RESPONSE 127

See MassDEP Response 18.

COMMENT 128

Typographical Error

The Pollutant Minimization Program is misidentified as the "Pollutant Minimization Plan (PMP)" on page 2 of the variance.

The term Pollutant Minimization Program is used 40 CFR 131.14(b)(1)(ii)(A)(3).

MASSDEP RESPONSE 128

MassDEP has made this correction in the final Variances.

COMMENT 129

OBSERVATIONS ON THE FACT SHEET

Could the Fact Sheet include an Index of the documents cited as a basis for the variance. Do the MWRA documents cited constitute the complete administrative record MWRA has provided to support the variance?

MASSDEP RESPONSE 129

MassDEP refers to the documents that are most relevant but had not included MWRA's August 8, 2023 Update to the Financial Capability Analysis, which provided the cost estimate that was the basis of the FCA. However it was provided to those who requested it after the Variances went out for public notice. We have also attached it to this Response to Comments document, see pages 161-163.

COMMENT 130

Pg 3.

Does "particularly challenging" mean technology to reduce the discharge is unavailable or does it mean implementation is expensive?

MASSDEP RESPONSE 130

This comment refers to the following sentence: "For the six outfalls that remain particularly challenging (SOM001A, MWR018, MWR019, MWR020, MWR201, and CAM005), MWRA is still investigating cost effective measures to meet the goals of the LTCP." These remaining six outfalls that do not meet LTCP goals are "particularly challenging" because no clear potential projects have been identified to date. For more details, see Section 3.3 (page 18) of MWRA 2023 Annual CSO Report: https://www.mwra.com/media/file/2023-cso-annual-report. MWRA is continuing to investigate potential alternatives.

COMMENT 131

Pg 7.

The fact sheet should list the I&I projects implemented by "member communities" that reduced inflow to the Alewife Brook conduit or Alewife Brook Branch sewer for clarity.

The Fact Sheet is the explanation of the regulatory basis for DEP's variance determination:

The permittees " met nearly all " variance requirements?

Could the Fact Sheet specify which requirements remain unmet. Were these material breaches?

MASSDEP RESPONSE 131

MWRA's "Annual Infiltration and Inflow Reduction Report for Fiscal Year 2024" is available here: https://www.mwra.com/media/file/infiltration-inflow-report.

The Variance requirements that were not met were the completion of the draft and final Updated CSO Control Plans by the dates specified in the 2019 Variances. As explained in the fact

sheet, MWRA, Cambridge, and Somerville requested an extension on those deadlines due to additional time needed for updating the Typical Year to consider the impacts of climate change, holding public meetings that will allow for outreach to Environmental Justice populations and public input at critical points in the planning process, thoroughly analyzing proposed alternatives for CSO reduction, complying with MEPA requirements, and coordination among the three entities developing the Updated CSO Control Plans.

COMMENT 132

Pg 8.

"agency coordination" Could the Fact Sheet specify which agencies are involved? Does the project GANTT chart reflect this?

MASSDEP RESPONSE 132

Agency coordination refers to MWRA, Cambridge, and Somerville coordinating with MassDEP and EPA, as well as MassDEP and EPA coordinating with each other separate from the three permittees. Agency coordination is reflected in the Gantt chart where time for MassDEP and EPA review of documents is allocated.

COMMENT 133

Pg. 10-11

The Discussion of Highest Achievable Condition in the Fact Sheet is Unclear and Fails to Support the Variance

The variance is based on compliance with 40 CFR 131.14(b)(1)(ii)(3). The regulation requires a finding that no additional feasible pollutant control technology can be identified. A casual reader could be misled. DEP should clarify that the finding of infeasibility is supported by affordability data rather than unavailable technology.

The regulation requires an:

"interim effluent condition that reflects the greatest pollutant reduction achievable".

DEP should clarify that interim effluent condition means the CSO volume and frequency in variance Exhibit D, modified by the PMP.

If the footnote to Exhibit D regarding the typical year has regulatory effect, the Fact Sheet should explain how that modifies the effluent condition.

40 CFR 131.14 says the interim condition reflects:

"the pollutant control technologies installed"

DEP should clarify that this means the CSO controls in the revised recommended plan (LTCP). Federal regulations further define "pollutant control technologies'' to include best management practices for restoration and mitigation of the water body (80 Fed. Reg. 51020, 51037 (August 21, 2015)). DEP should discuss the omission of BMPs in the pollutant minimization program in its response to comments

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[1] GhostFish https://savethealewifebrook.org/2022/10/31/ghost-fish-on-halloween

[2] "MWRA strongly opposes making sewer system maps available online due to serious security concerns" MWRAComments on the Draft NPDES Permit for Deer Island Treatment Plant (2023)pg 53/136.

[https://www3.epa.gov/region1/npdes/mwra/pdf/2023/mwra-ditp-mwra-comments-11282023.pdf]

[3] The PMP includes " best management practices for restoration and mitigation of the water body." 80 Fed. Reg. 51020, 51037 (August 21, 2015)

[4] As that term is used in 40 CFR 131.14(b)(1)(ii)(A)

[5] variance, requirement (2) pg1.

[6] CSO Control Policy, Part III B.

[7] The Pathogen TMDL is not without its flaws. The comments in Appendix A of the TMDL explain them in detail. In addition, the ratio of pervious/impervious surface for the Alewife and Mystic could be refined. (https://www.epa.gov/sites/default/files/2020-05/documents/mystic-phosphorus-tmdl-development.pdf)

[8] After public comment the Pathogen TMDL included loads for each segment based on variable flow conditions and the water quality standards (Pathogen TMDL Table 7-3; Appendix A, Pathogen TMDL comment 15, pg 146).

[9] Memorandum, EPA Office of Water, CSO Temporal Recreational Uses or WQS variances based on 40 CFR 131.10(g)(3), January 19, 2024

[10] At one time DEP must have thought so, because a condition of the original 1999 variance was to "Identify "triggers" appropriate for basis to determine when additional CSO controls would yield greater benefits for respective costs" 1999 Variance; 2002 Notice of Project Change Alewife Brook CSO Control Program , pg 45/610

[11] https://savethealewifebrook.org/2022/11/21/letter-to-massdep/

EXHIBITS – see pages 124-158

1. Hearing Statement, David Stoff, April 9, 2024
2. RE: DCR Volunteer release forms
3. Althea pic; Althea Twitter screenshot; Althea sign jpeg
4. Emails and Correspondence
5. Comment Letters
6. Correspondence
7. Correspondence

MASSDEP RESPONSE 133

MassDEP agrees that the Water Quality Standards Variances, pursuant to the cited federal regulations, must include all requirements to achieve the "highest attainable condition" of the water body throughout the term of the Variance. MassDEP affirms that through CSO abatement work included and implemented in the MWRA's approved Long Term CSO Control Plan and augmented by the numerous projects included in the Pollutant Minimization Program (PMP), the Variance requirements reflect the highest attainable condition for the term of the CSO Variance. While such determination considers affordability as a factor, a major supporting factor, consistent with EPA's CSO Guidance, is that additional engineering assessments are critical to establish the viability and water quality benefits of the range of available CSO control technologies, which will be the focus of the Updated CSO Control Plans required under the terms of the Variance. Thus, there is no "feasible" alternative which could be advanced in the absence of that detailed technical information. This finding, and the issuance of the Variance is also subject to review and approval by EPA.

MassDEP also notes that the issuance of a Water Quality Standards Variance does not impact the regulatory requirements for non-CSO pollutant sources, such as stormwater discharges, and requirements for BMPs under the state/federal Municipal Separate Storm Sewer Systems Permit remain in full force.

Regarding Exhibit D, MWRA's annual CSO Report each year compares the annual rainfall, and in some cases data on individual storm events for the prior year, with those events in the typical year which served as the basis for the 1997 LTCP. The annual report notes where the rainfall diverges from that baseline. It also includes use of the MWRA's calibrated sewer system model in assessing the system performance. MassDEP acknowledges the challenges in making data comparisons on levels of CSO control between years which may widely vary in the number of, and intensity of, precipitation events, however, such a data assessment will remain necessary where CSO discharges have not been eliminated. MWRA's assessment is subject to EPA's and MassDEP's review.

COMMENT 134
SAVE THE ALEWIFE BROOK PETITION LETTER

The health of our community and the multiple environmental justice neighborhoods along the Alewife Brook depend on your protection.

Protect our brook, our park, and our homes from pathogens in the sewage flood water by enforcing the existing Class B Water Quality Standard - the standard that ensures that contact with the waters of the Alewife Brook is safe. Please use the Department's regulatory authority to require that out-of-compliance CSOs in the Alewife Brook and Charles River meet existing goals. Make sure that MassDEP is a forceful advocate for Supplemental Environmental Projects for all out-of-compliance CSOs in the Alewife Brook and Charles River in Federal Court proceedings.

There must be real scrutiny of the documentation MWRA has already provided for the cost of CSO elimination. MassDEP must require MWRA, Cambridge, and Somerville each to provide a separate financial analysis explaining why they say they can't afford to eliminate sewage discharges. These independent analyses should include costs for various alternatives, such as local CSO treatment, CSO detention tunnels and tanks, and Green Stormwater Infrastructure.

The public has a role in protecting the waters of Massachusetts. As the hearing on Tuesday, April 9, 2024 demonstrated, there is keen interest if the public is provided meaningful opportunities for participation. A single meeting and hearing is inadequate. Ongoing robust public participation must be part of the variance, particularly regarding the performance assessment of CSO controls based on 'typical year' modeling. The community must have a seat at the table when compliance is reviewed so that actual measured data and human experience inform that assessment. That court-ordered performance goals remain unmet after 20 years is ample evidence of the need for public scrutiny.

Thank you for all you do to protect us and our environment.

Diane Bradley, Arlington
Amy Valera, Somerville
Eppa Rixey, Cambridge
Michael Cerone, Arlington
Margaret Rixey, Cambridge
Christine Odom, Belmont
Sara Alfaro-Franco, Arlington
Natalie Clark, Arlington

Carolyn A White, Arlington
Kathleen Knisely, Somerville
Naticia Hutchins, Somerville
Toni Buzzeo
Emily Dube, Belmont
Justin Crane, Cambridge
Greg Hill, Somerville
Derek Marsh, Arlington
Christine Metzler, Somerville
Douglas Brown, Cambridge
Catherine Pedersen, Arlington
Martha Cleveland, Somerville
Laurence Raffel, Arlington
Diane Mahon, Arlington
Robert Tosi Jr., Arlington
Ann LeRoyer, Arlington
Elaine Campbell, Arlington
Adriene Allen, Belmont
Rachel Roth, Arlington
Elizabeth Merrick, Somerville
Marjorie Smith, Arlington
Marcia Ciro, Watertown
Christopher Legere, Arlington
Victoria Sliwa, Somerville
David Foresman, Somerville
Mark Paglierani, Arlington
Carlee Blamphin, Belmont
Steve Rapp, Arlington
Ann McDonald, Cambridge
Laure Porter, Arlington
Matthew De Remer, Arlington
Don Westwater, Arlington
Linda Moussouris, Cambridge
Carlos Ricardo Rajao, North Cambridge
Susan Chapnick, Arlington
Veronique Bailly, Somerville
Rob Vandenabeele, Cambridge
Leah Broder, Arlington
Hector Cazares, Arlington
Dylan Callahan, Somerville
Paul Lipsky, Somerville
Karen Buck-Gilbert, Malden
Lois Rockcastle, Anchorage, Alaska
John Anderson, New Haven
Melanie Abrams, Cambridge
Jun Seung Lee, Somerville
Alexander Simmons, Arlington
Andrew Chen, Somerville

Jeff Chagnon, Somerville
Grace Durnford, Cambridge
Linda Fernandes, Naples
Brooke Lyons-Justus, Arlington
Sarah Jansen, Somerville
Gary Shostak, Arlington
Candace Shostak, Arlington
Samantha Shostak, Arlington
Bob Sprague, Arlington
Anna Cavallo, Arlington
Melanie Wisner, Arlington
David Whitford, Arlington
Robin Bergman, Arlington
Ruth Hersh, Arlington
Mustafa Varoglu, Arlington
Sanjay Vakil, Arlington
Ellen Cohen, Arlington
Stephen Boudreau, Arlington
Grant Cook, Arlington
Amanda Robinson, Cambridge
Sarah Freeman, Jamaica Plain
Peter Kim, Cambridge
Amy Lees, Arlington
Elizabeth Seelman, Cambridge
Eric Grunebaum, Cambridge
Peter Fuller, Arlington
Elizabeth Benedikt, Arlington

MASSDEP RESPONSE 134

See MassDEP Responses 13, 14, 16, 17, 18, 22, 48, and 52. Also MassDEP notes that April 9, 2024 was not the only public hearing held for the draft Variances. Two additional public hearings were held in the afternoon and evening of March 28, 2024.

VERBAL COMMENTS FROM PUBLIC HEARINGS AND MASSDEP RESPONSES

WATER QUALITY STANDARDS VARIANCES PUBLIC HEARING #1
1:00 PM, March 28, 2024
Zoom Transcription of Verbal Comments
Disclaimer: MassDEP is not responsible for errors in the Zoom transcription.

COMMENT 135
Julie Wood, CRWA: Good afternoon everybody. Nice to be kicking us off on this rainy day. I'm Julie Wood, Climate Resilience Director at the Charles River Watershed Association and I also happen to be a neighbor of the Alewife Brook. While the CRWA supports the Variance we would like to see more requirements within the variance that ensure we are maximizing the time and resources that our public officials, State and Federal regulators, and the public are dedicating to this process. We appreciate the past efforts by MWRA and Cambridge. We applaud their incorporation of climate change into the revised Typical Year and we appreciate their efforts to include us in the updated LTCP process to date.

MASSDEP RESPONSE 135
MassDEP acknowledges these comments.

COMMENT 136
That said, we are currently losing some of the hard fought gains we have obtained with previous CSO control efforts. As our climate changes and heavy and intense rain events become the norm, we are seeing CSOs more frequently. The Charles is a beloved and heavily utilized recreational watershed that is regularly impacted by CSOs. Through this Variance process, we are looking at more than a decade of no to minimal CSO improvements on the ground as LTCP work for the original LTCP, mostly wrapped up in '27, and very minimal on the groundwork is required in the 5 year term of this variance, which will take us into 2029. As my time is short, I'll provide an overview of some of the requirements we would like to see added to this variance and we will also provide detailed written comments by the deadline.

First, Green Stormwater Infrastructure needs to be meaningfully explored as an alternative. In 2023, the parties presented a bookend analysis stating that the maximum use of Green Stormwater Infrastructure or GSI to be reviewed in the plan would only capture the first inch from just 10% of the impervious area, not even including rooftops in this dense urban area. This is not in line with current practices in CSO planning where GSI is being seen in other cities as a low-cost tool that can be optimized to reduce CSOs and provide numerous benefits to the community. We request that this actually be a minimum bookend, a "book cover" if you will, and that that be written into the variance.

We request MassDEP to review the parties' joint CSO website closely and incorporate details that the parties have already committed to in terms of public outreach into the variance. There appears to be more public meetings on their website than in the variance.

We request the creation of an advisory committee that would include us. My colleagues at MyWRA and Save the Alewife Brook, outside experts, ideally peers from CSO cities and engage citizens that could be more closely involved in the remainder of the updated LTCP planning effort. And we request a requirement for third party review of the incorporation of GSI into the alternatives analysis, the

alternative screening, and the affordability analysis. As GSI was not a tool that was used in current LTCP, this new to potentially our area. But has proven to be affective in other cities. We just want to make sure it is fully explored and fully utilized. We request a requirement for third party review of technical models used to create the draft and final updated LTCP and to demonstrate compliance with the existing LTCP. And finally we request additional requirements in exhibit A and exhibit B to install GSI demonstration projects in CSO drain sheds during the variance term so that we're not going a decade without implementing these opportunities. As I said these have multiple community benefits and would provide benefit, even if these areas become separated at some point in the future. Thank you for the chance to comment.

MASSDEP RESPONSE 136

See MassDEP Responses 17, 19, and 22.

COMMENT 137

Elton Elperin, Muddy River Maintenance and Management Oversight Committee: I'm Elton Elperin, Muddy River Maintenance and Water Quality Subcommittee, the water cooler Subcommittee, although I'm not a water scientist, and I just would like to say, I fully support any work on the infrastructure to eliminate combined sewage overflows. I want to take advantage of this opportunity to say that from studying MS4 reports from Brookline on the Muddy River, I know that in addition to the CSOs, and maybe even more of a problem, are the illicit discharges from what I believe are aging sewage and storm drain systems. Probably in Boston, but I know for sure in Brookline. They seem to be random, they happen at every outfall, and they're quite large and I think we should know that there is a program happening to improve the infrastructure, whether it's to replaced and repair to eliminate that. That's really what I wanted to contribute to this. Thank you.

MASSDEP RESPONSE 137

MassDEP acknowledges these comments.

COMMENT 138

Ellen Fine, Healthy Yards, Needham: My name is Ellen Fine and close to a different end of the river known to the Indigenous People as the Quinobequin and to and some of the rest of us as the Charles. In Needham this year, we've had 3 climate catastrophic flooding events, a flooding of over 250 homes and businesses. And I just give that as a sort of a snapshot as the kinds of things that are going to be happening, and have happened all throughout Massachusetts, western Massachusetts, Merrimack Valley, and many other communities. Needham, Newton, and Natick were all hit with at least one of the storms.

And as somebody who actually spends a lot of time on the river, I want to give you a view of what it's like down there. You regularly see these large pipes even out here as you do closer to the city, Cambridge, Somerville, and elsewhere. Leverage, some of them elsewhere. You regularly see these large pipes discharging into the water. And you know that's the pesticides and chemical fertilizers. It's the storm basin runoff, street runoff. and just a variety of toxic mixes that personally ended up in my basement this year, and many others out here as we're experiencing more climate catastrophic storms, and so much more rain and intense storms. I just am asking you to call for the absolute highest level of attention, constant updates and monitoring.

I've been in the Charles in the past, near Natick where there was some horrible sewage overflow into the river, literally seeing dead fish along the way. Thinking, you know you're already out in the kayak, there's not a lot you can do once that water starts coming at you, and you can see that it's contaminated.
So I just wanted to speak from that perspective as someone who uses the river a lot and has much great reference for it, as well as all of our watersheds. That getting away with all of these things, and not allowing for really stringent caretaking of the river is really problematic. And as we're building out in the suburbs, as well as in the city, there are so many of these apartment complexes literally right on top of the river. We have to be better caretakers than what we're being. That's the plea I want to make to you this morning and I thank you very much, and I'll pass it on to whoever's next.

MASSDEP RESPONSE 138

MassDEP acknowledges these comments.

COMMENT 139

Tricia Carney, Cambridge: I'm Tricia Carney. I'm a resident of Cambridge and I'm also a rower on the Charles River. My 16 year old son and I spend hours on the river during the summer and I would just like to comment that children like him actually go into the water, whether it's sailing and flipping, flipping in a sculling boat, or working and lifting kayaks out of the water. They're in constant contact with the water. So I agree with all the points Julie Wood from CRWA made.

MASSDEP RESPONSE 139

MassDEP acknowledges these comments.

COMMENT 140

Eugene Benson, Save the Alewife Brook: I'm from Save the Alewife Brook. We will submit written comments. I did hear Julie Wood's comments and we also agree that the variance should include a number of things that the CSO entities that discharge into the Alewife Brook should do between now and when the new Long Term Control Plan is approved. Or else we're going to have no change as the weather gets worse and we get more and more untreated CSO discharges into the brooks, so we will comment in and writing.

MASSDEP RESPONSE 140

MassDEP acknowledges these comments.

COMMENT 141

The other comment I'd like to make is the difficulty of finding this meeting on the DEP website. If you go to the DEP website, which I've done, and I can't find it unless I know exactly where to look if just spending about 10 minutes of looking. And what I found was there's a link from the proposed variance that's supposed to be to a page where one can sign up for this meeting. But it's not to that page. It's for a page with all of the items that DEP is considering at the moment and if you go down the list…and I wish one of you would click on the link from the proposed variance to the page on the DEP website and think for a second, you're not an expert on DEP and water quality, and you will not be able to find the place to register for this meeting. And would suggest that this needs to be fixed before the next meeting. Maybe by either putting a notice on the front page of the DEP website or, and in addition, for people who have

the draft Variance which has the link, that link should go to the page where you can sign up for the meeting which you cannot do now. So that's my other comment. Thank you.

MASSDEP RESPONSE 141

MassDEP notes that there was some discussion at the public hearing regarding Mr. Benson's comments about the MassDEP website. All MassDEP public comment and hearing notices have to be posted on the same website (https://www.mass.gov/info-details/massdep-public-hearings-comment-opportunities). To assist the public with finding information specific to the MWRA, Cambridge, and Somerville Water Quality Standards Variances, MassDEP will create a repository of documents on the following web page: https://www.mass.gov/guides/sanitary-sewer-systems-combined-sewer-overflows).

WATER QUALITY STANDARDS VARIANCES PUBLIC HEARING #2

6:00 PM, March 28, 2024

No verbal comments were heard during this public hearing.

WATER QUALITY STANDARDS VARIANCES PUBLIC HEARING #3

April 9, 2024, 7:00 PM

Zoom Transcription of Verbal Comments

Disclaimer: MassDEP is not responsible for errors in the Zoom transcription.

COMMENT 142

Representative David Rogers: I want to thank DEP for holding the hearing. I want to thank you for giving me the opportunity to make some brief remarks. I'm the state representative for the 24th Middlesex district that includes Arlington, including East Arlington, North Cambridge, and Belmont. I live in North Cambridge just a block or two from the Alewife Brook and I've been working on issues do with the brook and the CSOs and contamination and pollution for ever since I was elected.

I recently got some money for the Mystic River watershed to study actions that can be taken to improve water quality, including, and also to deal with flooding by studying whether to dredge. I have a bill pending in the legislature right now which would mandate that the CSOs are closed and dealt with by 2035. It was reported out favorably from the natural resources, environment and natural resources committee. It's now in the ways and means committee and I plan to keep promoting that bill. And I would say generally, you know, ever since I've started working on this issue, what you hear is it's two things, it's difficult. Complex that is the hydrology, the engineering. So, it's complex and it's expensive and it's a refrain: repeated over and over that it's complex. And it's expensive, which I appreciate. But we can't wait forever to deal with this problem because…the discharges into the brook…our violate the Clean Water Act is…

I mean we're here to talk I know about a variance. Which I think was first a form of this variance first came into being, I believe, in 1999, so a quarter century ago. And here we are a quarter century later and we're still having this conversation. So, I do appreciate and believe that climate change and the new increasing rainfall related to climate change will now be factored into the modeling. And so that's a good thing but you know, even just this past summer, people with strollers and joggers and people walking

were impacted by contaminated water without even knowing it. There is a new law about notification. But it's not always working perfectly. It's, it's an improvement. So I'm really just here to say to DEP as you consider this variance that you thoroughly consider what conditions might be best imposed before the variance is issued.

Certainly the climate change is a factor. And you know, it's as I said at the outset of my remarks, this is going on for a very long time. I'm glad my bill was reported out. That this must be dealt with by 2035 Because frankly Sometimes when I talk to very well-meaning people in Cambridge, Somerville, the MWRA, all. You know good public servants but what I hear over and over again is that refrain of the complexity and the expense and so we need to find a way to solve the problem and, thanks for listening to my remarks. And I'll listen with interest to the other remarks here today as well. Thank you.

My colleague Representative Garballey and I share representation of Arlington and we have many of the same concerns that I do, but. If he's here, I'll let him speak, but if he's not, just want those on the call who maybe live in Arlington and are represented by Representative Garballey to know he's very involved and equally concerned about these issues.

MASSDEP RESPONSE 142

MassDEP acknowledges these comments.

COMMENT 143

Katherine Tolley: I'm from Representative Owen's Office. He does not have any formal comments but wants to thank you all for hosting this hearing and we are looking forward to hearing the comments today.

MASSDEP RESPONSE 143

MassDEP acknowledges these comments.

COMMENT 144

John Worden: I was a moderator for 19 years, but I am not moderated now and I've been a town meeting member since 1970s so I've been involved in the environmental issues for a long time, perhaps longer than anyone else here. And that back in the early seventy's I was president of the Arlington Conservation Association. We pushed environmental issues and conservation at a time when a lot of people couldn't even spell those words. But with respect to the CSOs in, in the, particularly the Alewife Brook.

Arlington years ago took the steps necessary. Complex and expensive as they may have been. To eliminate any CSOs that we were putting into that brook. And our neighbors on the other side of the brook who are much wealthier than we are in terms of their financial ability to do things have continued adding to the pollution and the pollution I might say that in the town of Arlington there are a lot of residential properties that are very close to the brook. Whereas in Cambridge and Somerville there's very little of any of that because there are wide in the Cambridge side there's a Alewife Brook Parkway. And a great green sward between that and the brook. And in summer building those is the stadium and there's commercial buildings. So on again, there's a highway. Between those buildings and the brook. So, so all the CSOs that Cambridge, Somerville are pouring into the brook causing pollution and health hazards. At the town of Arlington and as Representative Rogers pointed out we've been working at that

for 25 years and now he wants to make a bill. We should bill through legislators say, well, let's clean it up in the next 11 years. That's totally unacceptable…whatever that the cities of Cambridge and Somerville will do what Arlington did years ago clean up this problem, complex and expensive as it may be, and give everybody a break from the sewage that's flowing into the homes of people in Arlington.

MASSDEP RESPONSE 144

MassDEP acknowledges and appreciates Arlington's contributions to environmental protection but notes that Arlington did not have CSOs in the past.

COMMENT 145

Michael Cunningham: Thank you for this opportunity. I know that this is the Michael Cunningham town council of town of Arlington. I just want to say that I support those like Mr. Worden and others in Arlington who have been working on these issues for a long time. I know that the select board has been active and various groups in Arlington and I just want to stress that the town supports the efforts of those who've who worked very hard to make sure that this is a fair process and that the people of Arlington could gain some relief from this. These issues that are ongoing. I appreciate your time. And I'm going to continue to listen.

MASSDEP RESPONSE 145

MassDEP acknowledges these comments.

COMMENT 146

David Stoff: First of all, I'd like to thank the participants who showed up for this. It's an overwhelming expression of support. For the Alewife Brook and the Charles River and you know, for an arcane regulatory process, a lot of people are here and I'm glad you are.

I'm Dave Stoff. I'm an Arlington resident and tonight I'm speaking as an abutter to the Alewife Brook. My home is right on the Alewife which has six combined sewer outfalls dumping untreated sewage and industrial waste into the brook.

I'm here to testify in opposition to the proposed variance. I've participated in regulatory actions about the Alewife for over 20 years. And my expectation has always been that DEP would act. To protect the health of our community and enforce the Alewife's existing class B water quality standard. Rather than waive it. So the law encourages consideration of site specific conditions. And the proximity of untreated sewage discharges to a densely populated and heavily used area.

Here on the Alewife and in the Charles by CAM005, the evidence that you have of routine contact with these discharges ought to be sufficient for DEP to use its best professional judgment and require discharges to meet a water quality standard that protects safe human contact. And that the department chooses to waive that standard and forces a really cynical belief that they care more about the short-term economic benefits to discharges than they do about protecting the health of our community.

You know, the waters of Massachusetts. They're held in trust for the citizens of the Commonwealth and using them as sewers prioritizes a short-term economic benefit for a few over their value to us all in the future. And I think the people who follow us will look very unkindly on these variances. Okay, so that

said, as far as this variance is concerned, it is short on requirements to meet the high interim standard and claims as a goal.

And again and again when I've read this, simple compliance with existing legal requirements is substituted for real progress. As an example, our community has requested real-time notification of sewage discharges for over 20 years. Despite evidence of the failure of the existing notification system, DEP insists that it's adequate and the variance has no requirement in it to improve on it. Now how is that progress?

Another long standing community concern is the unsanitary condition of Tannery Brook. Now I'm going to use my version of screen share. That's toilet paper in Tannery Brook from a storm this summer. And this image has been frequently reproduced by Save the Alewife Brook. Okay, so DEP insists that the floatables control at Tannery Brook are adequate, you know, but how is what we saw in that picture, and it's actually worse there now, adequate?

It's obvious that some kind of post discharge control like netting or a boon is necessary at that site along with periodic cleanup. Somerville failed to meet court order goals for this outfall and incredibly there is not a requirement in the variance for a mitigation project to improve conditions at Somerville 001A. How is that progress? I recognize that it's a 3 minute comment and if there's chance at the end of the hearing, I have more detailed comments, but, to close, for too long, this neighborhood has been used as cheap hydraulic relief for the MWRA sewer system. And the discharges that this variance authorizes are not abstractions to me. I would hope that you would appreciate that things look very different from our end of the pipe and for people who are attending this meeting like me who are frustrated with the lack of progress along the Alewife and elsewhere. Remember DEP doesn't have the final say about this.

You get the last word here If you don't like the variance and I do not. Then join people like me and tell your state legislatures like Rep Rogers, to support the legislation he was speaking about that requires affordable elimination of untreated sewage discharges in the MWRA district. The Waters of Massachusetts belong to us and we get to say how they're used. And if you think it's time to stop using them as sewers, tell the legislature to act. And just avoid the cynicism that perhaps you might feel. At the end of this process. So thanks for letting me speak.

MASSDEP RESPONSE 146

See MassDEP Responses 35, 37, and 52.

COMMENT 147

Michael Rainy: My name is Michael Rainy. I live on Marathon Street right near Broadway, not far from Alewife Brook. The other day I took a stroll on Alewife Brook from Broadway to Thorndyke Park and it was lovely. The next day there had been a lot of precipitation overnight and I walked the same route and there were numerous places that were completely obstructed. Some of which closer to the park. Where the brook had completely flooded over the path and, and I was faced with a choice at that point whether I could go back. The way I came and find a different route or climb up a grassy embankment and climb over a fence to get to the street. And there was a CSO that day so I didn't want to wade through the water. It occurred to me that people with mobility impairments would not be able to make the choice. They would have to go all the way back to some point where they could get back out and find a different route to go the way they were going.

So as part of some kind of variance I would like to see the permittees invest in greater access to the path from alternative routes. So that if there is a flood, people could more easily get out and find an alternative route to avoid the sewage. One of the groups has proposed a light system alerting the public to the presence of a CSO. I would advocate for that light system to include an indication whether the path is obstructed, at any point so that they could choose an alternative route before it's too late for them to not have to make big backtrack.
I looked through the fact sheets, I didn't have time to read through them in depth, but I didn't see anything in there about enforcement actions. What enforcement actions are available, who administers them? Any enforcement actions that have been taken for past violations of the previous variance? Before a variance is granted, I would really like to have that spelled out. Who's going to enforce these rules? How are they going to enforce them? And what kinds of penalties are going to be applied to the violators?

I oppose sewage outflows into my neighborhood in general. It's disgusting. It's not helpful. It's bad for the environment. Thank you for the time.

MASSDEP RESPONSE 147

The two Variances, one for Alewife Brook/Upper Mystic River and the other for the Lower Charles River/Charles River Basin are issued to three Surface Water Discharge permittees, the MWRA and the Cities of Cambridge and Somerville. Parkland bordering Alewife Brook is owned by the Massachusetts Department of Conservation and Recreation (DCR). MassDEP does not have jurisdiction over DCR land and cannot mandate new paths on DCR land in these Variances. Regarding the comment about an alert system, see MassDEP Responses 30 and 35.

The Variances do not prohibit CSO discharges in the Variance waters, but rather they ensure that work is planned or being done to reduce or eliminate CSO discharges over time. MassDEP has the ability to enforce the Variances.

COMMENT 148

Mackey Buck: Hi. I'm Mackey Buck. I live in North Cambridge again, not far from the Alewife Brook. I oppose the variance. I'm not going to speak too long because I feel like everything that I want to say has been said quite articulately by others.

Very glad that Dave Rogers has got this legislation moving about fixing it up by 2035 although I feel like that's a long far away. I sit here wondering if I'm someone who has access to modern sewage treatment and I I'm not a hundred percent sure because I haven't seen maps but it feels like I don't and certainly my neighbors don't and there's just something wrong about that. Without really meaning to, we've wandered into a situation where we have really trashed this planet. Now we know better. We know what we need to do, to fix it up. We know the stakes of having ecosystems that really work versus ecosystems that don't work and this needs to be fixed. And that's all I have to say.

MASSDEP RESPONSE 148

See MassDEP Response 52.

COMMENT 149

Andy Hrycyna: I'm a watershed scientist at the Mystic River Watershed Association whose mission of course, is to protect and restore the Mystic River and all its tributaries, including the Alewife Brook. Thank you for this additional opportunity to comment. As an organization, we are of two minds here with respect to the variance and specifically with respect to the Alewife which is incidentally, the scene of the largest completely untreated CSO releases on any river or stream in Greater Boston.

On the one hand, we officially support the issuance of the variance because we understand that that's the only practical way forward. As the final planning for the long-term solution is underway and we appreciate all the expertise and energy and public outreach that MWRA, Cambridge, and Somerville are bringing to that complex…As others have said process presenting later this year alternatives for final permanent solutions to the CSO problem that by the way is predicted by the parties themselves to get substantially worse in the face of climate change.

So on the one hand we support issuance of the variance, but it's also an admission that water quality objectives are not being met that the promise of the Clean Water Act is not being met. It's an admission that a stream named for migratory fish that, by the way, are making their way back up to the Mystic River in the hundreds of thousands as we speak for the annual spawning migration that that stream will be allowed to legally continue to accept CSO releases on the scale of tens of millions of gallons a year.

We of course don't want our support of the variance has a legal mechanism to imply that we do not think that that legal permission should continue indefinitely and that we believe that CSOs on the Alewife should be eliminated once and for all. We also don't think that as a community of partners, all of us in solving this big public problem that we should take this as permission to do nothing for the next 5 years.

Even as those other plans are being made, the other plans will require doubtless massive public investment and political will to execute in the long term. But there are things that we can do. This is a kind of narrow point. That don't require that huge scale public spending.

The variance should be incentivizing and demanding as a matter of its conditions. In the meantime, things that can be nonetheless important for improving conditions. I'll give two examples. Inflow and infiltration of water into the sanitary sewer system is a well-known contributor to overflows in Alewife Brook and the Upper Mystic.

We think the variance condition should require MWRA to analyze CSO events over the past 5 years in the Alewife Brook to identify instances where concurrent excess flow from separate sewer lines connecting to Alewife Brook. And Alewife Brook conduit happened. And to provide technical assistance and urge communities contributing excess flow to prioritize this I/I work during those flows. And the second we would like to echo the remarks of others that's imperative to add requirements. To enhance notification by installing highly visible, maybe electronic signage on the outfalls at Alewife Brook when they are discharging.

It's well understood that CSO material as people have said overflows the banks and extreme storms and endangers the public health of surrounding neighborhoods, including environmental justice. Neighborhoods that as Dr. Nathan Sanders has shown bare a disproportionate exposure to CSOs releases all around the state. Thank you and I will stop my comments there. Thanks so much.

MASSDEP RESPONSE 149

See MassDEP Responses 15, 35, 38, and 39.

COMMENT 150

Cynthia Hibbard: Hi, good evening everyone. My name is Cynthia Hibbert. I am the President and Board Chair for Green Cambridge. Green Cambridge runs environmental programs in the Alewife Reservation including trail maintenance. Bank restoration. Invasive species removal volunteer cleanup days and the mayor's summer youth program.

CSO number CAM401A is right next to a small piece of property that's owned by Green Cambridge in the Alewife Reservation and it's also immediately adjacent to the MBTA property. We are very concerned that in encampments of unhoused people are being flooded during CSO events. There has been an unhouse person encampment next to the MBTA garage. We think that encampment was empty when it was flooded by the combined sewer overflow last week. However, there are many encampments in the Alewife Reservation. That were occupied and possibly exposed.

We would like to ask that the warning system that's our partners have proposed. Include, an alert that be provided directly to the Cambridge Health Department. Especially to those people who would be responsible for the health of the unhoused. And then have that alert occur with enough time so that the health department could send people to the Alewife Reservation to move encampments before they are flooded by sewage outflows. Thank you very much.

MASSDEP RESPONSE 150

See MassDEP Responses 35 and 76.

COMMENT 151

Sage Carbone: Cambridge resident, co-founder of Cambridge City Growers. And I think that words do not do justice. To the inequities happening in the Alewife Brook overflow space. Simply all. That someone needs to do. Is walk there? Smell what's going on. And immediately you will know that not only is this unethical, a breach of environmental morals. It is. There is no reason to continue at the current levels. These need to be reduced. Point blank period. It is poisoning. Our neighborhood. Thank you.

MASSDEP RESPONSE 151

See MassDEP Response 52.

COMMENT 152

Janice Brodman: I'm speaking for eight neighbors and I, so I'd like to make a kind of process comment and then more substantively about the issue. I found out about this meeting today, about three hours ago. And I let my neighbors know because we've been discussing this for a while. Because many of us have young children and really couldn't join. I'm going to speak for all these eight neighbors. So I've lived in Arlington for- We don't live near Alewife Brook, but we use that area. Our kids ride bikes there, people roll push strollers there, etc. And, I've been in Arlington over 30 years.

And during that time, You know, we've seen, we keep seeing that this is going to get cleaned up and, yet it keeps getting postponed. And I have new neighbors who have children and are concerned and I have

been saying, no, don't worry, this is being addressed. We're going, it's you know two months ago or before I knew there was a variance requested. I think it I think that actually if this were more publicized, you'd get an enormous reaction. This is just a sliver of what actually people feel about this issue. So I, you know, I want to express our concern.

About the variance and objection to the variance. And hope that there's a way. I mean, I appreciate that there has been outreach and enough an effort to include people but I think there needs to be more of an effort because you know everyone's busy people have small children we're working etc. It's hard for people to realize what's going on. But this is an enormously important issue for many, many people in Arlington and probably in our adjoining towns. So, I just want to offer our objection to the variance and hope that this time we'll just address the issue and not postpone addressing it. Thank you.

MASSDEP RESPONSE 152

See MassDEP Response 52.

COMMENT 153

Nicole Gustas: My name is Nicole Gustas and I live close to the Alewife Brook. My partner and I were walking down by Alewife Station the other day and we saw a swan swimming in the brook, which would have been lovely if it weren't just below a sign about the potential sewage overflow and why it was not safe to even touch the water that was there because there could be raw sewage in it. There's something that really reduces the glamour of a swan when you're wondering if a giant turd is going to pop up next to it. And I'm sorry to be crude, but that is the reality that we live with. The Alewife Greenway should be a wonderful resource for everyone. Instead it's an open sewer on any day when there is a substantial amount of rain. I checked my inbox before I got on the call and it is full of CSO sewer alerts because I'm signed up to the program.

Things need to be done. There need to be consequences if, there is going to be a variance and from what I understand. There's not a lot that can be done to avoid it. There need to be consequences for the people who for the organizations who have not yet met the requirements that they are supposed to meet. Otherwise, it's going to keep kicking the can down the road and we're going to have people who are kids now who are going to grow up and still be experiencing the same disgusting things that they are experiencing today.

We also need to, if this variance happens, it needs to happen along with mitigation strategies that can happen right now in order to decrease the amount of stormwater overflow that's going in. I am very frustrated. It's, it is, when I go on my daily walks, I basically have to choose where I'm going to go based on whether it has rained because I don't want to slosh through a sewer.

I'd like it to stop and I don't want to know that 5 years from now we're going to have just another variance and just another variance. Anything that happens needs to happen, any variance that happens needs to happen with the plan, with timelines and due dates. And actual understanding that at the end of the 5 years this is going to be resolved. Thank you.

MASSDEP RESPONSE 153

See MassDEP Responses 13, 16, 18, and 52.

COMMENT 154

Ann Stewart: Hi, I live in Cambridge and I can walk to Alewife Station. One of the issues that disturbs me a lot is the Commonwealth has several hands in operation here. On the one hand it's pushing hard for affordable housing to be built all around the T stations. On the other hand, we have a CSO issue here. We also have CSO outflows in the Charles River. But I don't know what my DPW in Cambridge has in terms of clout to say to the Commonwealth's DEP and DCR.

We have a state budget. That's a real concern now. Are we actually going to move forward with this? What are you going to contribute to helping Cambridge and Somerville so that Arlington doesn't turn around and sue us? I also suggest that of the now 88 participants on this call. One thing you can do is whenever it rains or you know we're going to have a heavy rainstorm, don't use appliances that use water. Thank you.

MASSDEP RESPONSE 154

MassDEP acknowledges these comments.

COMMENT 155

Beth Melofchik: I'm a town meeting member in Arlington and I oppose this variance. I understand from Mr. Worden that Arlington closed their CSOs decades ago and I don't understand. What's preventing Cambridge and Somerville from doing the same except that Mr. Langley's office and MWRA are not forcing them to. I don't understand. how for decades. An Arlington residential neighborhood. Is used as an open sewer for the convenience of wealthier neighboring towns. Cities. Somerville and Cambridge. This is unacceptable. When will Mr. Langley's office prioritize public health? Arlington Public Health, when will that be prioritized? This is ridiculous. It's 2024 and we have untreated human waste in a waterbody. That's getting into neighborhoods, people's yards, people's basements. I mean, seriously. Now, in terms of, on site, real time warning light notification system.

How quickly can you get that up? We need green infrastructure to capture storm water. And reduce the CSO discharges when will Somerville and Cambridge provide plans to show how they will be diverting? The increased storm water we can expend from climate change, expect from climate change, when will we see those plans?

Again, Arlington residential neighborhood is an open sewer of convenience for wealthier neighboring towns. Somerville, as I understand from previous comments, is not meeting court ordered goals they have failed to meet them who's enforcing that and people are suggesting, oh well, we could have the variance if you have conditions.

Well, the current conditions aren't being met. Why would we want to allow a variance? I say no to the variance. Solve this appalling, unacceptable violation of the public trust for decades because you people have done too little or nothing and this violation of public health is hazard we're talking about hazardous waste in a water body in our neighborhoods.

Poisoning wildlife, potentially poisoning our neighbors. Fix it. Now! It's already too late. Fix it. I will also submit written comments. But I think that you violate expectations of civility by the continuation of this abhorrent unacceptable public health hazard that you impose on the community of Arlington. And I thank Ann Stewart for the idea. I think, yes, Arlington should sue Cambridge and Somerville. This is absolutely. Unacceptable. Thank you very much.

MASSDEP RESPONSE 155

See MassDEP Responses 15, 16, 35, 36, 52, and 144.

COMMENT 156

Gary Goldsmith: Thank you very much for holding this hearing. And I appreciate many of the comments that have been made. I won't repeat any of those. I speak as an Arlington resident for almost 40 years and a town meeting member in precinct 11.

I also speak as a physician, now retired, who's basically appalled that at least until 2024 it's been considered acceptable to dispose of our sewage into a public waterway and an adjacent neighborhood. That that's that violates all kind, both logic and, and health regulations. It's a public health hazard. I would mention also that it's the problem is not just with Alewife Brook because Alewife Brook empties into the Mystic River.

The Mystic River is an important recreation area for many towns all the way down to the harbor. I've been a member of the Mystic River Watershed Association for many years and I'm well aware of this. I have taken canoe rides down the river and you can tell where the sewage overflows are coming in by the smell. I also speak as a citizen, and, disheartened that state and local governments have allowed this issue to persist for all of this time. I know that there are many citizens of Cambridge and Somerville who are concerned but I feel as though the governments of those towns have been incredibly inconsiderate and truly bad neighbors in their behavior. Not dealing with this in a reasonable and appropriate fashion. It's just not acceptable.

I remember the MWRA project back in the late '70's. I believe it provided water and sewer functioning for the entire region. That was a nine-billion-dollar project if I remember correctly. I suspect this should be less than that. But that project came in on time and on budget. I believe Paul Levy was the director of that.

And finally, I speak as a taxpayer. Because it's clear to me that at some point, Some people are going to become ill and injured by this behavior and will be suing the DEP and the towns of Cambridge and Somerville.

The Conservation Law Foundation may get involved and bring action to require this being addressed. Finally, I understand that this is a complex, difficult and expensive issue. It's not simply a matter of putting a plug on something and then everything gets better. This will require a significant engineering and construction in order to address this.

And I do appreciate Representative Rogers's bill although I did notice that the date in that is 2035 which I believe is 11 years from now. It would be nice to know that that's when things are going to be resolved rather than when they're going to be addressed.

I have 3 questions. One is, am I correct that a variance basically retains the status quo for the next 5 years or until another variance is requested? Question 2 is what is being done in the meantime in terms of remediation or mitigation or planning? I did look up the public notice for this meeting and it says fact sheets will be available and gives an address. I went to that address and did not find any information there.

I think it would be important to inform the public about what is being done to have a consolidated site where people can find out both what's happening now and what's going to happen in the future. Until I find that information and know more about this, I would oppose the variance and know more about this, I would oppose the variance, not because not necessarily out of practicality, but somebody because I don't, I haven't heard that the time that the 5 years being requested will be used, profitably to address the problem and try to resolve it. That's all I have to say. Thank you very much. Once again, have a good evening.

[Note: MassDEP again provided the link to the CSO Variances documents which includes the fact sheets.]

MASSDEP RESPONSE 156

See MassDEP Responses 13, 16, 18, and 52.

COMMENT 157

Silvia Dominguez: My name is Silvia Dominguez and I live here in East Arlington. It dawned on me that I used the, I mean, I go through this every single day when I go to Alewife and I've seen so many people walk through this water, not knowing that this is sewer water with children, with carriages, with everything.

And this happens so often, it's just really horrible you know I feel like I'm living in a developing country every time this happens this doesn't even happen in developing countries because They don't want to make their people sick. They at least they try not to make their people sick. This is, you know, it makes absolutely no sense to me that.

We have to be concerned. About water in Down the street from where we live. And just waiting for the day that it overflows and it gets to the adjacent streets. This is, it is so disgusting to know that there's an open sewer down the street from where I live.

And we all have this concern and everybody that walks down to Alewife sees it. They all see it because we walk by the Alewife Brook. It's so bad for the neighborhood, it's so bad for, it just ruins such a what could be such a beautiful green area, it just ruins it, it ruins it and not only that, we have to stay away from it because it's so potentially toxic and problematic and disease producing for us.

I really hope that parents tell kids about this so that kids don't end up playing around there. Anyways, I'm really very much in opposition to any continuance variance. I think it's really necessary. That they take responsibility for this and deal with it and get rid of it so that we can start living as if we have any kind of right to a clean environment and not an open sewer. I would appreciate that. Thank you.

MASSDEP RESPONSE 157

See MassDEP Response 52.

COMMENT 158

Eppa Rixey: I live nearby in North Cambridge. I'm a member of the Alewife Study Group as well, but I'm speaking in a personal capacity. I use the Alewife Brook reservation almost every day. It's a wonderful nature reserve. It's a great path that runs through a convenient location. I'm often taking my dog to Thorndyke. Because I live over on the Cambridge side, it's a fun way to get there and get some exposure

in nature. And I've often seen the issues that many other people describe. People pushing strollers through contaminated water.

When it's flooded, I know to kind of avoid that area, but I see a lot of people that don't and walk their dogs through there and the dogs drink the water. I've literally watched it happen. So first I think there's a great need for awareness. So I'm very supportive of conditions like an on-site warning system.

But I think be wary that as people know this issue exists, like you're going to see a lot more opposition, a lot more frustration that there's not longer term planning happening because I think this is not just a big cost, this is also a huge opportunity.

If you just look a little further north along the little river, you can see engineered wetlands and other green infrastructure solutions that have been tried to tackle this exact problem and I just don't understand why we are not doing more to build out green infrastructure along the Alewife Brook both for the enjoyment of people in nature, but also to treat these CSO outfalls and to put more pressure on getting the problem solved in a longer term capacity.

I oppose the variance. I support developing a longer term solution. I support the work of Rep Rogers to eventually close these CSOs and I support the conditions that save the Alewife Brook have been advocating for better on-site notification. Taking action in the near term on Tannery Brook. Better long-term planning. And doing some independent financial analysis of what some of these alternatives look like. I think there's a real pressing need to address some of these issues and I encourage. The MassDEP to not continue to rely on variances to kick that can down the road.

MASSDEP RESPONSE 158

See MassDEP Responses 14, 16, 17, and 52.

COMMENT 159

Kristen Anderson: Thank you. And thanks to the good folks at the Department of Environmental Protection for holding this hearing. And thank you to everyone who is here tonight, especially Dave Rogers, Sean Garballey, and Diane Mahon, as well as Arlington's town council.

My name is Kristen Anderson and I'm a founding member of Save the Alewife Brook. Perhaps more importantly, I'm a former, abutter of the brook. I had sewage floodwater in my home more than once while I was living there. That floodwater came in through the back door. And stayed in my house for days until the floodwaters receded.

My neighbors and I had no idea how polluted the floodwater from the Alewife was. It did not occur to us until after the flooding, was gone that it was sewage that was making us sick with flu like digestive problems, headaches, fatigue, stomach pain. Bloody diarrhea.

We are here this evening to comment on the Alewife Brook's Water Quality Standard Variance. My understanding of the variance is that it allows for sewage pollution discharges as long as projects are being planned and undertaken.

To improve water quality. But we have been promised for decades now that we would see improvements. Decades old court mandated level of CSO control for the Alewife is less than 8 million

gallons annually, yet we had 51 million gallons of sewage pollution dumped into the brook 2021 and nearly 28 million gallons in 2023.

This is untreated sewage pollution in a brook that floods regularly in a heavily-habitated floodplain. In the last 12 months, the brook has overflowed its bank six times sending untreated sewage pollution into the park and into the Alewife Greenway path.

This is a transportation corridor that links Boston Ave, Broadway, and Mass Ave to the Alewife T. It is supposed to be a safe alternative to driving a car on route 16. And yet, we are watching children riding bikes through untreated sewage floodwater. Parents pushing babies strollers through untreated sewage floodwater. They have no idea what is in that water.

I have a number of things that I would like to ask DEP to do, which I believe is within their control. To do as part of this variance. One thing that I think really should be considered is that Somerville's, Tannery Brook CSO. This is the CSO that discharges untreated sewage pollution from Davis Square. It is not in compliance with its NPDES permit as David Stoff had mentioned earlier. There is toilet paper that can be seen hanging from the trees in front of the CSO after CSO discharges. But it's also not in compliance with, the Boston Harbor Cleanup Court case. Somerville has really not done very much to control, CSO discharges at Tannery Brook. They've done great work elsewhere in the city, but nothing. At Tannery Brook. And so, I ask DEP to consider. Doing everything within their power to regulate this CSO.

A supplemental environmental project now of green stormwater infrastructure to reduce CSOs and flooding. Somewhere in Somerville would be great. A requirement to bring Somerville's Tannery Brook CSO in compliance with the last long term control plan would be amazing. Anything but just watching that CSO get worse. If Somerville doesn't have to be in compliance with the last long-term control plan. Why do they have to be in compliance with the next one? I guess that is my thinking there. If the new long term control plan, which is a couple of years now, in the works of planning and will be completed. Plan to make the plan will be completed by the end of 2027.

If that Long Term Control Plan is the centerpiece of this. Water quality standard variance then the next stage of the new Long Term Control Plan is going to be looking at financial analysis, affordability. And so I feel very strongly that DEP needs to require independent financial analysis of the cost of Alewife Brook sewage pollution control. Please require an independent financial analysis of the cost of Alewife Brook CSO control. To include separate findings for each of the CSO permittees. MWRA, Cambridge, and Somerville and that financial analysis should be limited to CSO control in the Alewife Brook subwatershed. It certainly should not cover the entirety of the Massachusetts Water Resources Authority’s system. And additionally, it should be based on current data, not 20 year old inflated cost estimates.

Lastly, that independent cost analysis should include a CSO treatment facility. CSO detention tanks and green stormwater infrastructure for the Alewife. Save the Alewife group will provide more in-depth comments by writing in writing by April 22nd. Thank you.

MASSDEP RESPONSE 159

See MassDEP Responses 14, 17, 37, and 48.

COMMENT 160

Patricia Worden: Thank you very much for taking these comments. I would like to say that I believe in almost all the comments that had been made. And thanks Mr. Stoff for setting us up in an excellent direction. I am a former school committee chair, the former human rights commission member, and former Housing Authority Chair in Arlington.

I cannot believe that we are subjecting our children, elderly, and residents to these hazards every day in that neighborhood. The idea of allowing this to continue through a waiver is totally unacceptable. This is unquestionably an environmental justice issue. And as a medical scientist and public health person, I find the situation totally disgusting and disgraceful.

I thank Representatives Garballey and Rogers, important for their interest in this issue, but they are not. Acting quickly enough. Nor are Town officials they need to move a lot faster. And where is our Senator, Senator Cindy Friedman? I believe she is the co-chair of the Senate Health Committee. This is a huge public health hazard. It should not be allowed to continue any longer. I really feel that Cambridge, I'm a former resident of Cambridge. Although I've used in Arlington for over fifty years, and Cambridge is a very wealthy community. There should be no question that they should be forced to come up with the money whatever it is. To ameliorate this situation and should not be given the opportunity to postpone the issue. Add infinitum by granting this waiver. Again, I would like to thank you environmental officials for listening to these comments and I hope they take them very much to heart. Thank you.

MASSDEP RESPONSE 160

See MassDEP Response 52.

COMMENT 161

Ellen Mass: Well, it is wonderful to be on this. We won't, it's a public hearing. It's not an MWRA hearing, but it's wonderful to be here just so I can see. All the people that have been on this issue for all these, I would say about 2000 I recognize people and it’s so good to know that they’re here and continuing on with a struggle. I ran an environmental organization that has now evolved into Green Cambridge, the Friends of Alewife Reservation, and we brought it out hundreds and hundreds of people over 20 years to do just the things that some of you are speaking about. Whether they were educational tours, whether they were clean ups and even some of the school classes that would come out regularly would even test the waters.

We made consistent calls. Whether it was a one of the new developments. stockpiling sands or various soil materials on their property that would feed into the new stormwater wetland. We I'm seeing all these kind of stewardship type of things in management we did as a grassroots group for Arlington, Belmont and Cambridge.

And how dear the area was to us and we did all this with our Alewife Brook and little river which nobody mentions and they didn't mention it then either it was it's a mistake in understanding of how even how the river works from Belmont, from the Belmont Hills down to Alewife Brook in the Mystic River.

But we do know it is the upper basin. But this variance issue was I was there, I think 13 years ago, this, I'm sorry to laugh, it's not a funny matter, but 13 years ago I stood up with MyWRA, the Mystic River watershed and EPA and many others saying the same exact things 13 years ago. So I'm hearing exactly what was done even in closer to 2000 when my little nonprofit group started.

What we did see was as the developers developed Cambridge Park Drive. A lot of what was happening was a response to that development and we always thought of course They needed to do keep giving variances at that time when we testified it was I think a 5 year it was 5 time variance.

This must be the ninth variance to is our previous speaker mentioned to postpone. Postponed the cleanup that has to go on and I would say one area that was left out is the is the pathogens that come from the COVID and I remember seeing during the COVID period how high the pathogens were in our Alewife Brook and Little River, but they're both together. We can't deal with Alewife because a lot of the outfalls are in Little River in Cambridge, so they're together. I always say at Arlington, Somerville and Cambridge have to work much closer together. To get this done and I'm so glad to hear from. Representative Rogers that he's going to do something about it.

And I don't think we have ever had this level of support that I see tonight. So I'm grateful to be here. I'm very sad that I'm back hearing the same thing. I thought for sure it would be remedied or ameliorated at least and I see that it's not ameliorated so thanks for listening to my presentation and we love the place and we still do and It's still a flood plain and it's still going to have that that sewage and by the way the flood plain has greatly expanded out there which means the water flow from the river is going to expand. We see it as we in our little garden work. We see the expansion, at least the groundwater is much higher. So that's just a layman's presentation. I'm not speaking officially and I'm glad to hear Cynthia Hibbert talk about the kind of work they're doing.

As friends of Alewife Reservation, that's one of their groups now. There are people out there and then of course the people who are most impressive is save the Alewife Brook and I'm so glad to hear from Kristen Anderson and what they're doing to bring everybody together and try to solve this problem. Thank you.

MASSDEP RESPONSE 161

See MassDEP Response 52.

COMMENT 162

Peg McAdam: Hi everybody. I am a neighbor to the brook. I moved here in 2017 and shortly thereafter went to a conference over at Tufts regarding the Alewife watershed and was at a talk where one of the people who did the original designs and the studies one of the comments it stands out for me he said I feel sorry for the people that live on Sunnyside Ave. I live on Sunnyside Ave and that was kind of a shock after I had just moved here. That being said, I do what I can to help the Brook. It's not something that is just about us, you know, it's a living, it should be breathing but the oxygen level is so low that nothing really exists in there. I do see the swans and I feel bad for them. It almost makes me cry every time I see them. You know, it's a living organism that's been abused like we've abused many things.

It saddens me to know and to hear the tenth, you know, the 2035 is the goal. It's like a hundred and twenty years ago they noted the problem in the brook. You know, and people have said kicking the can down the road while we're pissing in the brook, literally pissing in the book.

I'm opposed to the variance. I would, you know. If I had any power, do what I could to sue the hell out of Somerville, Cambridge, Belmont, whoever keeps adding raw sewage to the Brook. I mean, geographically, Sunnyside Ave, the boardwalk, and the Greenway are the lowest points along the Brook. It floods regularly. And there's not much you can do. I mean, the I feel bad for Sunnyside Ave. is because

not only is there where the lowest point but there's a gas pipeline that is 6 feet down, that is 4 feet, it's a main not just a pipeline, it's the gas main. So in terms of you know, fixing the brook. What do they do with the gas pipeline? The condos next door have built up their land 4 feet high. Dilboy across the way is built up 5 feet above the Brook higher than it was. It there's no place for the water to go except for Sunnyside Ave and around the T station.

So I understand the complexity of the issue and it's a huge engineering issue. But morally, emotionally, it should be living, it's an alewife brook. There are no fish in there. I don't even think that bugs really live in there anymore. That's how bad it is. So. It's upsetting to keep coming to these meetings and hearing. Oh, let's kick the can. Let's add another variance. You know, let's keep pissing in the brook, shitting in the Brook. I mean, it's just so sad. You know. The Brook could be a great neighbor. And I do what I can to help what I can with native plants and encouraging people to learn about the issue. But it's just really incredibly frustrating. Thank you for the meeting and thank you for the people that have been working on this for literally 50 years. And Like I said, it was noted a hundred and twenty five years ago. So please let's just put an end, you know, the variance says, temporary variance. Can we put some timeline on it? At the very least put some time on it that by 'X' date. Something is going that the plan is going to be here that a berm is going to be built, just a berm to keep the water in the brook. Might be helpful to protect people along the paths. I'm sure that would take a huge study and what not. Part of me says, let's just hire some trucks and dump some soil along that to block the water from coming up onto the path. It's like, gorilla environmental protection. Let's change the name here. It's not 'what's being protected?' It hasn't been protected forever. So I don't know, I'm just really incredibly frustrated. I think I'm glad that the meeting is here. I don't know that it means much. Yeah, my cynical view. In very short time I appreciate the people that after 50 years are still plugging away. Thank you for all your work and thank you for the comments.

MASSDEP RESPONSE 162

See MassDEP Response 52.

COMMENT 163

Gwen Speeth: My name is Gwen Speeth, I work with Save the Alewife Brook, but I'm speaking personally as a North Cambridge neighbor of the Alewife Brook. I discovered the Brook when I was working from home staring at a computer all day during the pandemic and I needed somewhere to walk. The drought of 2020 caused the exposed sediment and sewer pipe gases to stink then in 2021, 52 million gallons of sewage contaminated water were dumped into the Brook.

Walking along the brook, I didn't know anything about CSOs. I just noticed there were a lot fewer birds and I wondered what the horrible stench was. And I couldn't believe it when I heard that despite me and my neighbors in this largely environmental justice community depending on this lovely urban oasis for our emotional and physical well-being. My city was dumping tens of millions of gallons of raw sewage here. When I talk with people I meet now walking along the brook, they ask 'but doesn't the Clean Water Act mean they can't do that?' And I have to try to explain that the variance means that it doesn't and then they say well at least it's treated right and I have to say no not one of the six outfalls crammed into the one-mile stretch of our tiny narrow concrete lined brook have any treatment at all except a sort of sieve that's supposed to keep unsightly floatables like toilet paper and tampons out of our sight. And even that minimal measure is not working for Somerville's Tannery Brook CSO SOM001A But I thought Cambridge dealt with that problem years ago' they say. 'I thought they separated all the sewers' and I

have to tell them no Cambridge has only separated 55% of our sewers. And the separated pipes in North and West Cambridge come back together just in time to dump combined CSO sewage into the brook.

We talk about the fact that Cambridge, Somerville and MWRA have made changes that have helped clean up the Boston Harbor and the beaches in Boston and we're really grateful that the Charles and the Mystic have made wonderful progress since the '90's with the unwavering advocacy of their watershed associations. But now the polluting permittees claim they've pretty much done everything that makes sense. And they want to walk away and leave the Alewife Brook behind. They say they need the Brook as hydraulic relief for their overtaxed sewer and stormwater systems and that they've done everything that's affordable to reduce CSOs.

Can we afford to allow ongoing sewage contaminated flooding in our state park? Can we afford to endanger residents? By not having a unified onsite warning light system that tells anyone near the Brook when contact with the water is hazardous for their health. The answer is no. I have told members of the DEP before that I actually met somebody walking along the park drinking the water, from the Brook, a human. Just a dog walking. Along the path that's flooded.

Save the Alewife Brook and Mystic River Watershed Association won state funding to study flood mitigation and the benefits of dredging the Alewife. Those are ongoing. If a group of volunteers can get money to improve the Alewife, the least the people, the organizations the municipalities saving millions of dollars by treating the Brook as a relief sewer can do. The least they can do is provide the Brook with the same level of routine maintenance and care that they provide for their actual sewer lines.

Department of Environmental Protection, please protect us. I trust that you at DEP, have the creativity to define and enforce compliance meaningfully for the 3 remaining years of the old CSO control plan into the new one by looking at real meter discharge data. Typical year modeling in a climate emergency when no year is typical for weather is obviously failing for the Alewife Brook.

When Cambridge and MWRA can be considered in compliance and in 2021 their CSOs discharged the same volume of sewage into the Alewife Brook as was discharged in 1992 I did not ask for the job of spending my days and nights working to keep sewage out of the Alewife Brook and I would love to hand that work over to you at DEP. The task of making our park and our waterway safe for humans and the other animals living there. Thank you for your time.

MASSDEP RESPONSE 163

See MassDEP Responses 13, 16, 20, 35, 37, and 52.

COMMENT 164

Kate Schell: Thank you. My name is Kate Schell. I am a resident of East Arlington. My husband and I used to take our daily walks along the Alewife Greenway, we've stopped. I do not support the lengthy timeframe for variances because I don't perceive adequate urgency in the planning, funding, and effectuation of remedies. Raw sewage in public spaces is something you read about in literature from previous centuries. As in before the nineteenth century. My husband and I don't take our walks any longer because it's not safe. I'm really concerned that a family member whose home is on Sunnyside Ave will be welcoming an infant next month into an unsafe home.

I would invite the residents of and the city management of Cambridge and Somerville. And the MWRA staff to imagine the following scenario. Septic system pumping firm discharges a tanker full of raw sewage into your favorite local park. Or the playground your children use or your backyard. Of course, they do it because responsible disposal is too expensive. You would be outraged. And you would be right. I support the proposals from Save the Alewife Brook and I'm really looking forward to solutions that are both timely and effective. Thank you.

MASSDEP RESPONSE 164

See MassDEP Response 52.

COMMENT 165

Ann Thompson: I'm Anne Thompson. I'm, East Arlington resident. Our house is probably within 40 feet of Alewife Brook and we've lived here since 1997. I've been tracking this for many, many decades now. The variances that the city of Cambridge has gotten as its wealth has grown and the fact that I think the first one that I remember, they quoted it being too expensive because it was going to cost a hundred million dollars. I would imagine that's closer to a billion at least by now. But putting things off even further once again is only going to cause more problems. I don't think another variance should be allowed.

As most people have already said. They're just keep kicking the can down the road. I remember when I worked with Ellen Mass on the big development on Cambridge side drive in the silver maple forest. All that development being allowed in a flood way, which runs into the Alewife Brook. Certainly gave the city a lot of money there in any case that Cambridge has a lot of wealth. Cambridge has a triple A rated bond rating. Somerville, similarly, their coffers have grown incredibly more so than any other in the state.

So we're looking at a little bit of different, economic conditions between then and now another, you know, and it's not just the raw sewage that's the issue, but the fact that the sewage overflow is coming from Alewife Brook which has toxic sediments from WR Grace when asbestos and other chemicals were dumped into Alewife Brook. You're not just getting the toxic. The raw sewage you're getting multiple other very, very toxic components.

I think it was about 20 years ago now that I had to file a freedom of information act request to get details on just what's in that Brook. And it's very, very dangerous. They should not be given another variance because, you know, like I said, I've been here since 1997 all I do is see more, I smell it more, I see more high water. I see the path having been improved to make it friendly for people but people don't know anything about what is actually in those overflows and primarily I think very few people had any knowledge that this these dumps, these CSOs are being dumped in there and it should be something that should be the CSOs are being dumped in there and it should be something that should be widely publicized.

That every resident in Cambridge should realize what the city of Cambridge is doing is seeing with Somerville actually everybody in the state because most people I've talked to have absolutely no idea that that is continuing in one of the wealthiest cities in the state of Massachusetts. And one of the most, you know, academically advanced areas in the country. Thank you.

MASSDEP RESPONSE 165

See MassDEP Response 52.

COMMENT 166

Linda Moussouris: I am a resident of North Cambridge and I feel that this issue is going to affect us too because I live close to the Alewife Brook. A couple of things strike me about what you all are talking about which sounds pretty awful and pretty long lasting. One thing that strikes me is they are selling condos and homes. In Cambridge, Somerville and Arlington for unbelievable prices. The housing market has gone nuts. The other thing that strikes me is Harvard University now has an endowment of over 50 billion dollars.

Finally, I believe the three richest people in this country now have as much wealth as the bottom 40%. Our infrastructure in all kinds of ways is inadequate. This is such an example. All of you citizens are talking to each other about this situation. Which needs to be brought to the attention of entities that can really do something about it and put real resources into it. For one thing, Harvard is sitting right here. And it has lots of resources, both. Intellectual engineering and financial. Why isn't this issue an issue that is being brought to the attention of the entire metropolitan area. That's what I have to say.

MASSDEP RESPONSE 166

MassDEP acknowledges these comments.

COMMENT 167

Dr. Jac Goldstein: Thank you for holding this hearing. Thank you to our representatives. And also thank you to Kristen Anderson for your organizing. I want to voice opposition to this variance extension. I currently live in Arlington and previously lived in Somerville right by Dilboy and actually moved there because of the Brook. I would walk and bike to Alewife T on the Alewife Path and then I started to notice that it would smell so disgusting. It would make me gag and it would make my head hurt so I stopped walking and biking to the T and started driving to avoid that. There have been times when I would walk my dog by the Brook and she would roll around and then I would come home and realize that she was covered in liquefied feces. So I actually moved to Arlington to get away from the sewage. I now walk and bike along the Minuteman.

With families that I can't imagine doing that along the Brook because of how disgusting it is. I now tell visitors who are going to come visit me to avoid the Brook area. Don’t go to the restaurants there, don’t stay in the hotels there, and when I tell them why, they can't believe it.

I understand that the solution is complex and expensive. I'm a computational astrophysicist and I understand the complexity of engineering modeling and I also understand the ability to overcome complexity when there is a deadline. Which this variance alleviates. We've already heard of many proposed solutions by people who have done their research.

You know, the one that comes to mind when I hear about how difficult and complex this is, was a hundred and fifty years ago, the entire city of Chicago was lifted up out of its own feces. Like this stopping CSOs into the Brook is not an intractable problem that requires a 5 year extension. It's a value problem. As an individual. One thing I haven't heard yet is that expense is not limited to this narrow definition of dollars spent on solutions.

It also includes the cost of health care, the devaluing of health. Which includes the physical. Mental and emotional health of people and animal residents. The cost of legislation, possible lawsuits, devaluing of real estate. And the devaluing of the quality of life for us all. It is so heart wrenchingly costly to know and to or not know, but to have to tell our children that you can't touch the water that's supposed to sustain us.

That if you, you know, defecated and then go played in your bathtub, that's what we're essentially allowing to happen on a large scale. And you know, one thing that really brings me optimism is that there is a natural resiliency to the Brook that will contribute to its own healing. If only we prioritized the value of not allowing this variance to continue and focusing on proximate and timely solutions to prevent CSOs from desecrating it. So yeah, thank you for accepting my comment.

MASSDEP RESPONSE 167

See MassDEP Response 52.

COMMENT 168

Dr. Melanie Abrams: Hello, my name is Melanie Abrams. And I'm here with opposition to the variance like so many people. I'm also a scientist and understand like we just heard how difficult it is to be told to have a technical solution immediately. If you're a biologist people say we want a microbe at this time you know you can't necessarily make science happen however this is an engineering solution to a problem that we've known about for decades and I was really honestly filled with despair when I attended the long-term planning meeting and saw that the plan was in 2035 to have a new long term plan because we don't have that amount of time to preserve the little health remaining in the Alewife Brook. And it's having really immediate and large effects on public health. There was a metaphor of the septic tank that was used shortly ago and I was I was just thinking of like if my toilet broke. Even if I didn't have a working toilet in my bathroom, it would be totally unacceptable for me to just take the sewage from it and dump it out the window.

And if I told people it was too expensive to get a plumber, even if I didn't have a lot of money, no one would find it acceptable for me to dump sewage out my window onto the sidewalk. And so I don't really see why. For decades, this is an acceptable solution in one of the only public spaces that we have that's a real nature area that you can walk to and impacting people who even aren't making the choice to access this nature area.

I'm here by chance with a friend who had her entire basement flood with sewage water this summer and they kept food there they kept their objects they had a car ruined by it and it's just it's incredibly dangerous like there's the externalities that are not being accounted for here in terms of the impact on people's health, on people's property, on people's safety and the and the and the wild spaces that we have. It's just super dangerous.

I feel disheartened by the fact that probably that the variance is going to be granted despite 80 people coming out and against it right now because people are going to say, well, we need to, we don't have a solution. But we do have solutions. The solution is putting the money we need to put into urgently treating this as a public health hazard. And doing everything on that list of long-term planning in the short term to not grant the variance and to treat it as a violation of the Clean Water Act and of other public health and safety regulations when there is this ongoing waste in the flooding. I don't really know

what to say beyond that, but I do want to give my friend here a minute to talk if she wants to about the sewage in the basement because this is just a crazy problem to be having here.

MASSDEP RESPONSE 168

MassDEP acknowledges these comments.

COMMENT 169

Amelia Smith: Hi everyone. I'm Amelia. I live in Somerville and, yeah, this summer just had…feet of sewage water in my basement and my roommates and I had to you know interact with all of our objects that were ruined or covered in filth and clean everything that we wanted to try to salvage and it was it was horrendous.

Not something I want to go through again and with climate change flooding is only going to get worse and having sewage in that flooding is just awful. And also worth noting that renter's insurance doesn't cover acts of God. And you know, if the city can do something to prevent. Those acts of God will be great.

MASSDEP RESPONSE 169

MassDEP acknowledges these comments.

COMMENT 170

Dr. Melanie Abrams: Yeah, and I've heard people talk about notifications like it's good to know what's happening. It's important to know what's happening, but knowing that there will be sewage in your basement and sewage in your only green spaces in your public space. Don't necessarily fix the problem because you can't usually just up and go and you have to deal with the objects that are covered with it.

So we really need an urgent solution and all of the engineering solutions proposed in addition to every other one. That we would if we're treating this like an emergency. Thank you.

MASSDEP RESPONSE 170

See MassDEP Response 52.

COMMENT 171

Susan Stamps: I live in East Arlington about a 15 minute walk from the Alewife Greenway. I am an elected town meeting member and I'm on the towns tree committee and the town's gas leaks task force. What strikes me about the conversation tonight is all of these passionate people are trying to make a difference. And in Arlington, we're trying to make a difference. And we're making a huge difference in our community. We're planting trees to clean the air and sequester carbon and make our streets lovely. We have a really, we have an adopt a tree program.

We are working with the national grid to reduce gas leaks. We have a robust, diversity, equity and inclusion program in town and it's extremely active community in terms of doing all kinds of things to improve our community and to make people's lives better. I feel like we're doing a good job as a community. We were one of the first communities to pass the MBTA communities. Housing zoning, a multifamily housing zoning. We're doing what we're supposed to do.

I don't think the state is doing what it's supposed to do. I don't think the DEP is doing what it's supposed to do. We don't have the power to regulate the CSOs, obviously, or we would. You guys are the ones that have the power to do that. And I agree with the others on the call that well, yeah, it's really expensive, but that's not an acceptable answer. If we couldn't come up with the money to fund our schools. It was 'sorry people, you know, we just don't have enough money.' That's not an acceptable answer because that's part of our job. Is to do a good job of educating our children. Well, it's DEP's job to do a good job of taking care of our environment. We can't do it. We're counting on you. And that's why I joined pretty much everyone else on this call in saying, do not.

Renew that variance. There's absolutely no reason for it. It's been going on as Peg McAdam said for decades and decades, enough is enough. I'll just add a personal note that I also often exercise using the great boardwalk along the Alewife Greenway. And there's a swan who was there last summer who was sitting on a nest for weeks and weeks. And everyone would stop in the Greenway and look at that swan and just be so taken with the beauty of this swan and the loveliness of the scene. And yet the sadness that that swan was sitting in the middle of a sewer. And so I hope that you take these comments seriously and they do deny the variance and work with Harvard or work with whoever you need to work with to get this job done. Thank you.

MASSDEP RESPONSE 171

See MassDEP Response 52.

COMMENT 172

Ann McDonald: Hi, I'm Anne McDonald. I am a resident of North Cambridge. And according to my FEMA flood insurance increases every year, I am an abutter to Alewife Brook even though the highway is in between me and I'm apologizing as a Cambridge resident to what Arlington is going through with not even having a voice on the body between MWRA, Cambridge, and Somerville, but I just wanted to share, you know, I did go and I supported David Rogers.

Be a little bit at that moment. I just put in the chat the photo that's on the Save the Alewife Brook group's website that I took and it's not that we can look at this photo and we've all heard about children and strollers in this water but it was really compelling and that I felt so helpless and that I was up on Lafayette because a nice other walker I told me it was flooded don't go that way but this girl with her father back away with her baby brother on the back, didn't get that message and just got stuck there and she was just screaming and I just feel like we would like a light so I'm worried then they're going to just close the greenway altogether which would be tragic. Because it really does help so many people with their mental health and connection to nature and their commutes to Alewife Station but I feel like it's the boxes we're putting you other in that are concerning to me so I love that you know we have people here who've worked for years across this whole region as a waterway and as the great swamp that it is still. And are really advocating for making sure that we're bringing climate change to bear because this was not a big flood event. This was September ninth right after September nineteenth and it was just not that big of an event.

This floods all the time and I think most of us who live here and walk here every day know if we go out the day after a rain, it's going to be swampy over there and those of you who have it in your backyard, I wish it wasn't there, but I, I felt really in a box that I couldn't help her because I was up on the road and I would have had to go in through all that that water and her dad was coming anyway, but I just feel like we I felt that way at a number of these meetings.

I go to one of these ones where Somerville almost was laughing saying we're just we don't have any money we're lucky we even have someone in this environmental position now and then another meeting more recently where they were kind of using traffic and construction in addition to money to say if we did this, we didn't bring those the plans but if we did this you'd see construction all up and through Somerville for years and I feel like that that a threat of not thinking big enough we really need the help of MassDEP to help us think holistically and to amazing public servants who are in these organizations, but I think they're boxing in in their thinking because of things they're worrying about.

I don't know. I'm not an expert on any of these ways, but there's not much vision other than I don't think we can do anything. So I do not support them getting this whole region getting a variance for another 5 years because this girl, she was maybe 8, she is going to be 20 by the time that 11 years that David Rogers' well-meaning bill happens. So I think we do need action on all different levels of immediate on green infrastructure as well as longer term measures. Please help us see that glue that that brings us together instead of pitting us against each other because you know there's contrast of wealth and climate justice communities in all of our areas all along the whether it's Cambridge, Somerville or Arlington. Thank you.

MASSDEP RESPONSE 172

See MassDEP Responses 17 and 52.

COMMENT 173

Eugene Benson: Yes, thank you to DEP for holding this hearing. Thank you for everyone who came out tonight to talk about their connection to the Brook and how important the Brook is. I'm an Arlington resident. I'm on the steering committee of Save the Alewife Brook. I'm also an elected town meeting member in Arlington and a member of the Arlington Redevelopment Board with is both in the planning board and the redevelopment agency for the town of Arlington. The comments I'm about to give are my own, but they're informed by all of those places in which I've participated. And I'm going to make technical regulatory comments because I think a lot of other people have spoken passionately and appropriately about what the brook means and the problems with the Brook.

Number one is that this Brook flows by environmental justice neighborhoods both as determined by the state of Massachusetts and also if you look at the EPA EJ screen, they'll be environmental justice neighborhoods too. And yet the tentative Variance decision does not even mention environmental justice at all. Or take environmental justice into account in determining whether to issue a variance or conditions if you do issue the variance. And the length of the variance. Now, many of the EJ communities near the Brook, the only parkland they really have is the DCR Parkland that people talked about. It gets flooded with sewage contaminated waters when the CSOs go off. We also know by research that Dr. Nathan Sanders at MIT has done that throughout the state there's a disparate impact on low-income communities and communities of color with CSOs. CSOs are much more likely to be in low-income communities and communities of color in Massachusetts than in other communities. We also know due to recent research that's been done by researchers at the BU School of Public Health looking at the CSOs. On the Merrimack River that people who live near CSOs, even if they don't drink the water have higher incidences of gastrointestinal intestinal diseases. So something needs to be done. DEP needs to recognize that there's an environmental justice factor here. I think it's required to do so by the state's environmental justice policy now. And I would say either not issuing the variance and putting the three CSO communities into non compliance with the Clean Water Act which is a fine alternative to issuing the variance or if you determine to issue the variance. I think you are obligated to come up with various

additional conditions and mitigation measures for the environmental justice communities. That's one reason why I think you're not ready to issue this variance.

The second reason I think you're not ready to issue the variance is that the financial information about that you are relying upon. To say there's widespread there would be widespread social and economic impact by not issuing the variance is inappropriate to use. What you've used is a letter from MWRA from August 2023 that basically says how much it would cost to separate sewers throughout the entire area. But that really has nothing to do with what it would take in the Alewife watershed to reduce or eliminate the CSOs. In addition, MWRA is on the hook for it's one CSO, Cambridge for its CSOs, and Somerville for its CSO into Alewife Brook. Each one of them should be required to do a separate financial analysis.

We know that Cambridge hasn't even reached it's proposition 2.5 limit and has never done a two and a half override and certainly has significant resources that it could put to this. Secondly, Somerville is much more well off than it even was a decade ago with its Additional growth especially in East Somerville and can afford this. And MWRA only has one CSO that it should be able to do without widespread social and economic impact. It's inappropriate to make the decision based on the MWRA submittal on August 8, 2023.

You know when people were speaking, it occurred to me that there's more widespread social and economic impact by continuing to allow these CSOs. To exist than if Somerville, Cambridge, and MWRA were required to end these CSOs and if this variance did not allow those to continue. Couple of things that I'd suggest DEP can do and should do. As was said before, Somerville, the Tannery Brook CSO001A has not even complied with the Boston [Harbor] Court Order. For CSOs, which takes into account a typical year and not real rainfall. In addition, it has not had adequate floatables control, so you have toilet paper and other things coming out of the CSOs.

One thing that I think DEP must do in this is require Somerville to meet the current standard and to install new usable floatables control that actually makes a difference. The second thing I think DEP should do, based on the state EJ protocols is take enforcement action against Somerville for what it's not done up to this point and require a mitigation from Somerville for those violations. Now, it seems to me the easiest mitigation that DEP can do is not allow any new sewer hookups anywhere in the Tannery Brook sewershed. That would at least mean that there would be no additional flows than there are now. And I would suggest DEP should also prohibit new sewer hookups in the CAM401A sewer shed. I say that because as one of the other people mentioned, there's the same amount of CSO discharge now, as there was in 1991. There is going to be climate change and it's going to be worse if they're allowed to keep on. Hooking more things up to the sewer then we're just going to get more CSOs.

There is a precedent for prohibiting more hookups to the sewer and it's actually in the Boston Harbor case. In about 1990, the legislature didn't want to pass a bill that was part of the Boston Harbor sewer case and the judge basically prohibited new sewer hook ups anywhere in the MWRA system and a few months later the legislature changed its mind and passed the legislation. So there is some precedence for prohibiting new sewer hooks and I would suggest that's the appropriate and next thing to do.

In conclusion, I will just point out as somebody else said. Arlington was one of the first communities that passed the MBTA Communities Act to increase areas where there can be multifamily housing. In addition, the Housing Corporation of Arlington, which is a nonprofit affordable housing developer, is in the process of building very nice, very large, affordable housing, building right next almost to the Greenway. It's not in the flood zone, but people from that building, when it's built, will be using the

greenway. And they won't be able to do that very well if there's going to be sewage flooding on the green space.

So I think DEP doesn't have to issue the variance and is not ready to issue the variance for the reasons I mentioned. But if it does issue the variance, there are many conditions that other people have spoken about. There's ones that we've talked about at previous meetings. And ones that I've mentioned now. So thank you very much for the opportunity to comment.

MASSDEP RESPONSE 173

See MassDEP Responses 14, 15, 27, 36, 37, 48, 52, and 66.

COMMENT 174

Susan McIntyre: Thank you for allowing me to speak. My name is Susan McIntyre. I'm a Belmont resident and I'm new to this area. Previously I lived in Watertown so this issue is new to me. I really just found out about it over the weekend when a family member forwarded me an email. I was surprised to hear about it, to be honest, because I don't think there's a lot of public knowledge about it. You see these signs in the park in the reservation that say the water is contaminated. And the other day I saw a swan and then I saw the sign and I thought, well, how is this how is the water contaminated? Why is it contaminated? And then I received the email to attend the meeting. So, I want to say I'm opposed to the variance because I don't think it's a solution. I think it's a stall tactic to be honest. It's been going on for too long. We deserve much better in Massachusetts and in this area. We live in an area that's abundant with resources and it's just so surprising and it's awful that we can't find a solution to this. So I oppose the variance.

I'm concerned for public health. I'm concerned for the environment. I'm concerned with the wildlife as someone who walks their dog in this area every day. I love being in nature. I love seeing all of that. I love being around other people in nature and I'm just I'm sad. I'm sad this is happening. So thank you.

MASSDEP RESPONSE 174

See MassDEP Response 52.

COMMENT 175

Tori Antonino: Hi, my name is Tori Antonino. I'm a Somerville resident and I just want to commend all the amazing people who have spoken against this variance and I hope you guys are taking detailed notes because there are really great suggestions coming out of this. This hearing, I support. I do not support the variance. I think 150 years ago maybe we didn't or 120 years ago we might not have known any better but 50 years ago we definitely knew better 30 years ago we absolutely did and even 13 years ago. That's when this is should have ended I do think that there does need to be a real deep think about how we do this and getting finances from Cambridge, from Harvard, from Somerville, from developers who are continuing to hook up a new sewage lines and I think one of the last commenters who spoke about well putting a stop on new sewage hookups would quickly get the attention of the city and force a solution. There has to be a solution we're smart people, we have great resources as other callers have mentioned in our academic settings, and we have people power. Somerville in particular, we're getting more money. We have not always been a flush city but we are getting more revenue and we are not in compliance and frankly I would, welcome another lawsuit from Arlington if that gets people's attention.

The city of Somerville needs to really do a hard think about doing intense green infrastructure. We really focused on these stormwater tanks that cost millions and millions of dollars. I don't know how effective they're being, but if we included intense green infrastructure like Philadelphia did. I think we could have a real effect and even doing simple things like people who want to de-pave their driveways. Giving them some sort of tax credit to do it, getting people to not have their downspouts going to go into the streets, we can do simple things and we need to contribute the big bucks and think collaboratively at how to fix this and to fix it now. To not delay. Thank you so much.

MASSDEP RESPONSE 175

See MassDEP Responses 17, 36, and 52.

COMMENT 176

Marina Popova: Hi everyone, thank you for letting me speak. So I have kind of two things that I wanted to mention. The first one is I hear a lot of those excuses that we do not have money to fix this problem any sooner than 5/10/15 years. So to those I would like to ask a question, what is more expensive, the health of people, real life people, residents of Arlington, Cambridge, Somerville or the money that we have not want to spend to fix the problem? So that's the point number 1.

The second point is that if we really, physically, cannot fix this problem this way right now by basically providing a much better, larger, and modernized sewage treatment facilities then there is another way that we keep forgetting about but thankfully many previous commenters already mentioned. You can actually stop adding more sewage into those same lines. Since that seems to be the only real practical and immediate solution to an emergency, which is an immediate emergency right now, I think that that should be considered very seriously. I mean just to give you an analogy you don't invite 25 more people into your house for dinner if you only have food for 2 people. You would first make sure that you buy enough provisions that you prepare in enough food put in 25 guests and then you invite them. It's the same with the sewage, right? I mean those are resources. If you cannot fit in additional 1,000 gallons of raw sewage you just do not add those additional 1,000 new housing units with people with additional sewage. I mean, it's not rocket science, it's pretty simple physical laws, right? I would like that to be taken seriously and be considered and be an enforced law that you know before you try to add any additional volume of the sewer you have to prove that you that additional sewage can be safely accommodated, treated, and cross straight. That's kind of a commonsense solution that actually can be done right now. Thank you so much.

MASSDEP RESPONSE 176

See MassDEP Responses 36 and 52.

ATTACHMENTS TO COMMENT LETTERS

Charles River Watershed Association CSO Webinar: "Learning from Milwaukee", 10 pages

David Stoff, Exhibits 1-7, 35 pages

JOIN US!

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MASSACHUSETTS Rivers Alliance

Save the Alewife Brook

Milwaukee Metropolitan Sewerage District's Climate Change Initiatives

Kevin Shafer, P.E.
Executive Director

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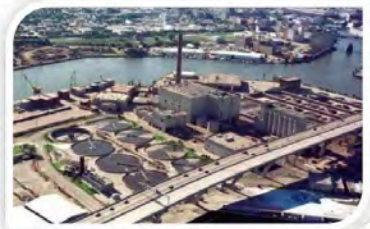
About MMSD

- Regional Government Agency
- Provide water reclamation and flood management
- 1.1 million customers
- 28 municipalities
- 411 square miles service area
- 26.5 square miles combined sewer area

About MMSD



Jones Island

South Shore

MMSD

5

About MMSD

- Deep Tunnel - 521 MG
- 300 miles of District sewers

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7

Northwest Side Deep Tunnel

89 million gallons
7.1 miles long

27th Street Deep Tunnel

27 million gallons
2 miles long

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8

Old Infrastructure

MMSD

98.56%

Capture & Clean

Since 1993

MMSD
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Where We Are Going …

MMSD's 2035 Vision

Integrated Watershed Management Goals:

Zero sanitary sewer overflows

Zero combined sewer overflows

Zero homes in the 100-year floodplain

Acquire an additional 10,000 acres of river buffers through Greenseams®

Use green infrastructure to capture the first 0.5 inch of rainfall

Harvest the first 0.25 gallons per square foot of area of rainfall

Energy Efficiency and Climate Mitigation & Adaptation Goals:

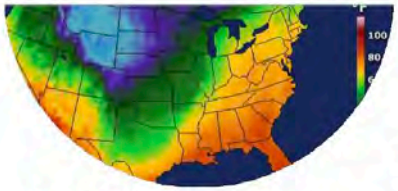
Meet 100% of MMSD's energy needs with renewable energy sources

Meet 80% of MMSD's energy needs with internal, renewable sources

Use Greenseams® Program to provide for 30% sequestration of MMSD's carbon footprint

Reduce MMSD's carbon footprint by 90% from its 2005 baseline

Climate Change



Strategies: Mitigate & Adapt

- Reduce emissions
- Create carbon sinks
- Control stormwater entering sewers

2014 Climate Change Vulnerability Analysis

- Assess climate change impacts to MMSD facilities

Adopted Climate Resiliency Plan 2019

- Regional approach

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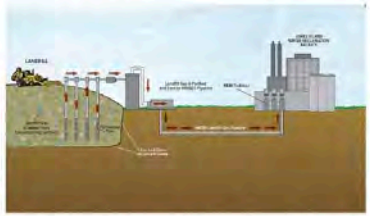
Climate Resiliency Landfill Gas Project



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MMSD is Leading a Watershed Approach to Water Management

Manage that drop of water where it falls – urban, suburban or rural

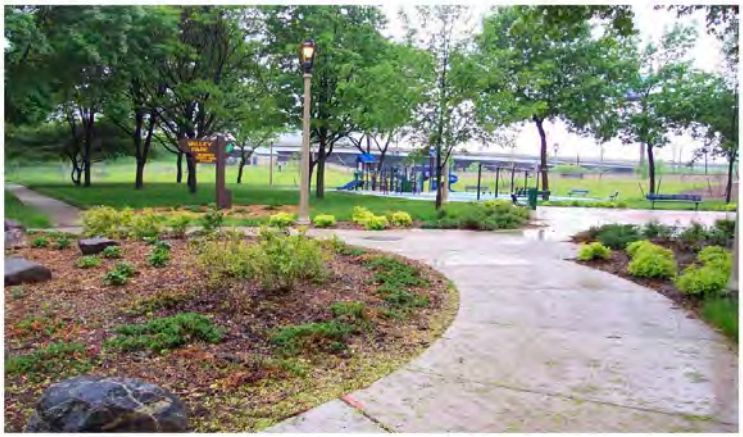
Strive to reduce flooding and improve water quality on the watershed scale

Invest where it has the most impact

MMSD

15

Valley Park Project



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Hart Park

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County Grounds

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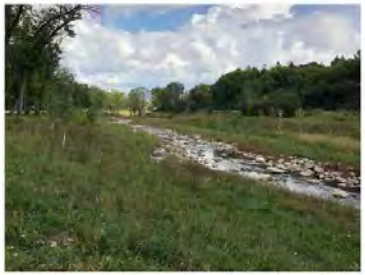
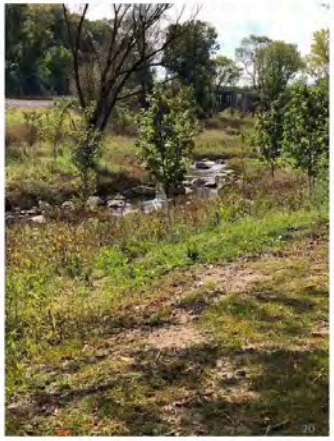
Kinnickinnic River

Underwood Creek





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FRESHCOAST 740
MILWAUKEE, WISCONSIN

Managing Water Where it Falls

Why manage water where it falls?

- Improve water quality
- Diminish the likelihood of:
  - Flooding
  - Basement backups
  - Combined sewer overflows (CSOs)
- Help to mitigate:
  - Pollution
  - Stream bank erosion

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MMSD & Green Infrastructure

- Reduce the amount of:
  - Wastewater to be cleaned
  - Stormwater runoff
  - Clear water in sewer system
- WPDES Permit compliance
- Contribute towards our 2035 vision goal

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23

Types of Green Infrastructure

- Land Preservation
- Green Roofs
- Rain Barrels / Cisterns
- Rain Gardens
- Bioretention
- Porous Pavement
- Native Landscaping
- Trees
- Depaving

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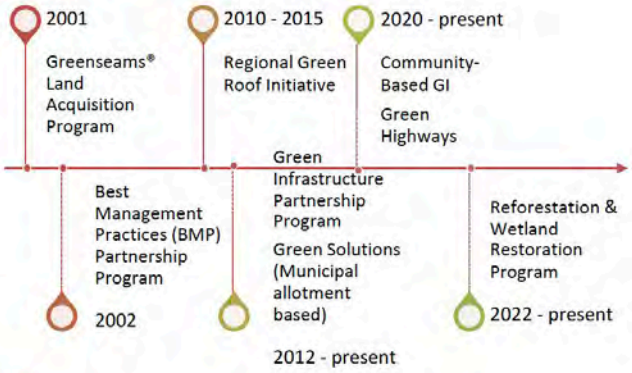
Evolution of Green Infrastructure at MMSD



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Green Infrastructure Partnership Program

- Competitive GI incentive program
- Open to all sectors
- $1.95 per gallon
- 50% minimum match
- Seeks GI champions
- Projects must grant MMSD a conservation easement

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Fresh Coast Green Solutions

- Municipal GI
- Annual allocations based on EAV
- Rollover cap $300k
- Reimbursement
- 10-year easement
- Minimum $25k projects

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Community-Based GI Programs

- Fresh Coast Protection Partnership
- Fresh Coast Green Communities
- Targeted implementation with programmatic goals
- Collaboration between public and private sectors

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Green Highways

- Design and construction projects managed by MMSD
- Partnership with WisDOT, City of Milwaukee, Milwaukee County

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Greenseams®

- Floodwater management by preserving natural systems
- Target sites >5 acres, adjacent to environmental corridors
- Acquisitions are either fee simple or land conservation easements from willing, private landowners

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Green Infrastructure Dashboard

31

Neighborhood Outreach Programs

- Two annual programs
  - Milwaukee - 30th St Corridor
  - Suburban
- Residential - scale GI installation and outreach
- Rain barrels, rain gardens, trees, etc.
- Fresh Coast Interns provide labor

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32

Reforestation and Wetland Restoration

- Plant 6 million trees
- Restore 4,000 acres of wetlands
- Public and private property
- Conservation easement

MMSD PARTNERS FOR A CLEANER ENVIRONMENT

33

Working Soils®

- Floodwater management via natural systems
- Land conservation model
- Permanently protect hydric soils, floodplains, wetlands, and stream corridors (MMSD)
- Permanently protect active farmland & prime soils in developing areas (USDA-NRCS)

MMSD PARTNERS FOR A CLEANER ENVIRONMENT

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Area of Concern
Removal of Estabrook Dam

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35

Area of Concern
Dredged Material Management Facility

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36

Area of Concern
Kletzsch Dam Fish Passage

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37

Community Involvement

- Create awareness of how water intersects with every aspect of life
- Encourage residents to make small changes
- Create pathways for deeper engagement
- Build a more inclusive community of stewards

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Utilities Are Anchor Institutions

Impacting the equity, social, and economic fabric of communities and regions

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39

"I alone cannot change the world, but I can cast a stone across the waters to create many ripples."

- Mother Teresa

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David Stoff – Exhibits 1 to 7

Stoff Exhibit 1 of 7 – Stoff Variance Hearing Testimony 4/9/24

My name is David Stoff. I'm an Arlington resident. My home abuts the Alewife Brook which has **6 Combined Sewer Outfalls** dumping untreated sewage and industrial waste into the brook. I'm here today to testify in opposition to the proposed variance.

I've participated regulatory actions about the Alewife for over 20 years. **My expectation has always been that DEP would act to protect the health of our community and enforce the Alewife's existing Class B water quality standard rather than waive it.**

The law encourages consideration of site specific conditions. The proximity of untreated sewage discharges to a densely populated and heavily used area -here on the Alewife and in the Charles at CAM 005-and the evidence of routine contact with the discharges ought to be sufficient for DEP to use its best professional judgment and require dischargers to meet a water quality standard that protects safe human contact.
That the Department chooses waive that standard enforces the cynical belief that they care more about short term economic benefits to dischargers than protecting the health of our community.

The waters of Massachusetts are held in trust for the citizens of the Commonwealth. Using them as sewers prioritizes short-term economic benefits for a few over their value to us all in the future.
I think the people who follow us will look unkindly on these variances.

That said, as far as the Alewife is concerned, this variance is short on requirements to meet the high interim standard it claims as a goal.
Again and again simple compliance with existing legal requirements is substituted for real progress.
Our community has requested real-time notification of sewage discharges for 20 years. Despite evidence of the failure of the existing notification system, DEP insists that it's adequate and the variance has no requirement to improve it.
How is that progress?

Another long-standing community concern is the unsanitary condition of Somerville's Tannery Brook outfall. DEP insists the existing controls are adequate.
[SHOW PICTURE] How is this adequate? It's obvious that post discharge controls like netting or a boom is needed here and that periodic clean-up should be required.
Somerville failed to meet court ordered goals for this outfall yet incredibly there's no requirement in the variance for a mitigation project to improve conditions here. **How is that progress?**

CLOSING

For too long my neighborhood has been used as cheap hydraulic relief for the MWRA's overburdened sewer system. The discharges authorized by the variance are not abstractions to me. Things look different from our end of the pipe.

For any one attending this meeting who's frustrated by the lack of progress over 25 years remember DEP doesn't have the final say. **YOU GET THE LAST WORD HERE.**

You don't like the variance? Join us and tell your state legislators to support the bill requiring affordable elimination of untreated sewage discharges.

The waters of Massachusetts belong to us. We say how they are used. If you think it's time to stop using them as sewers to the legislature to act.

Stoff Exhibit 2 of 7 – DCR Volunteer Release Forms

Subject: RE: DCR Volunteer Release Forms
From: "Perry, Matthew S (DCR)" <Matthew.S.Perry1@mass.gov>
Date: 04/16/2024, 9:03 AM
To: David Stoff <dstoff@rcn.com>
Cc: Kristin Anderson <arlington@savethealewifebrook.org>

Thanks David,

Please send me the signed forms from the 50 participants when you have a chance.

Thanks,
Matt

From: David Stoff <dstoff@rcn.com>
Sent: Tuesday, April 16, 2024 9:02 AM
To: Perry, Matthew S (DCR) <Matthew.S.Perry1@mass.gov>
Cc: Kristin Anderson <arlington@savethealewifebrook.org>
Subject: Re: DCR Volunteer Release Forms

Matt:

FAR[Ellen Mass] is responsible for the clean-up this weekend.

Save the Alewife Brook held a very successful clean-up on Saturday [4/13/23]. Around 50 people attending, a marching band, and 2or 3 truckloads of trash removed.

A big shout out to Kevin and Chris from DCR/Mystic. They were great and stayed throughout. They made multiple hauling trips to see that all the trash was removed.

I think we have some photos of Chris "fishing" for shopping carts in the brook. We'll share them with you when they're collected.

Thanks

David Stoff

On 4/16/24 8:45 AM, Perry, Matthew S (DCR) wrote:

> Hi Ellen and David,
>
> I did not receive any signed volunteer release forms for the cleanup that was held on Saturday. We need all volunteers that are participating in cleanups on DCR property to fill out the form. If you are planning to hold a cleanup this Saturday at Alewife Reservation, we need you to distribute the forms and make sure everyone participating signs them. The form is available online and I've attached a paper copy that can be printed. Let me know if you have any questions.
>
> Thanks,
> Matt

RE: DCR Volunteer Release Forms

Matthew Perry
Manager of Stewardship Programs & Strategic Initiatives
Department of Conservation and Recreation
10 Park Plaza Suite 6620 | Boston, MA 02116

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Stoff Exhibit 3 of 7 - Althea

Stoff Exhibit 4 of 7: Emails and Correspondence

Subject: RE: Pathogen TMDL for the,Boston Harbor, Weymouth-Weir, and Mystic Watersheds
From: "Reardon, Matthew (DEP)" <matthew.reardon@mass.gov>
Date: 04/05/2024, 2:17 PM
To: David Stoff <dstoff@rcn.com>
Cc: "Langley, Lealdon (DEP)" <lealdon.langley@mass.gov>, "Carey, Richard (DEP)" <richard.carey@mass.gov>

Dear Mr. Stoff:

Thank you for your inquiry. MassDEP's Total Maximum Daily Loads (TMDL) Reports provide a framework for addressing pathogen pollution in Massachusetts' surface waters. Please see Table ES 1-4 (pgs xix to xxi) in the Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds (https://www.mass.gov/doc/final-pathogen-tmdl-report-for-the-boston-harbor-weymouth-weir-and-mystic-watersheds/download).

There are five entities in the Boston Harbor Watershed with permitted combined sewer overflow (CSO) discharges under the National Pollutant Discharge Elimination System (NPDES): Massachusetts Water Resources Authority (MWRA), Boston and Water Sewer Commission (BWSC), and the cities of Chelsea, Cambridge, and Somerville. MWRA accepted responsibility to plan, design, and construct CSO abatement facilities in accordance with their CSO Long-Term Control Plan (LTCP) under a stipulation to the federal court (see TMDL footnote 12, pg. xxi). The Boston Inner Harbor (MA 70-02), Chelsea River (MA 71-06), and Mystic River (MA 71-03) segments were reclassified to Class SB(CSO) in the Massachusetts Surface Water Quality Standards (314 CMR 4.00; MA SWQS). In Class SB(CSO) waters, the uses "are maintained after the implementation of long term control measures described in the approved CSO long term control plan, except as identified in such plan" (314 CMR 4.06(1)(d)11.). The Alewife Brook (MA 71-04) and Upper Mystic River (MA71-02) segments, classified as Class B (with a CSO qualifier), are subject to a variance titled, "Final Determination to Adopt a Variance for Combined Sewer Overflow Discharges to Alewife Brook/Upper Mystic River Basin."

TMDL Reports are written to be consistent with the MA SWQS, including designated uses, surface water classifications, and water quality criteria. For waterbodies subject to a variance, pursuant to 314 CMR 4.03(4), there is a temporary modification of the applicable surface water quality standards. The Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds references the MA SWQS, respective LTCPs, and associated CSO activations and volumes. For example, Table ES 1-4 (pg. xx) includes the following regarding specific waterbodies: "CSO activations and volumes limited to those included and identified in permitted Long-Term CSO Control Plan." Table 7-1, beginning on pg. 77, also includes this information.

Sincerely,
Matthew Reardon

Matthew Reardon
TMDL Section Supervisor
MassDEP – Watershed Planning Program
8 New Bond Street, Worcester MA
Mobile: 857-248-8349
Total Maximum Daily Loads (TMDLs) | Mass.gov

-----Original Message-----
From: David Stoff <dstoff@rcn.com>
Sent: Wednesday, April 3, 2024 4:12 PM
To: Reardon, Matthew (DEP) <matthew.reardon@mass.gov>
Cc: Langley, Lealdon (DEP) <lealdon.langley@mass.gov>
Subject: Pathogen TMDL for the,Boston Harbor, Weymouth-Weir, and Mystic Watersheds

RE: Pathogen TMDL for the,Boston Harbor, Weymouth-Weir, and Mystic Watersheds

Matthew:

Your name comes up as the contact on DEP's TMDL page so I'm sending this to you.

I'm wondering if you can briefly explain how the 2018 Pathogen TMDL is applied to waters subject to a water quality standards variance.

DEP is currently accepting comments for a proposed WQS variance for the Alewife,Mystic and Charles. I'd like to understand operation of the TMDL for variance comments I'm writing.

The link the TMDL is pasted below.

David Stoff

https://www.mass.gov/doc/final-pathogen-tmdl-report-for-the-boston-harbor-weymouth-weir-and-mystic-watersheds/download

Stoff Exhibit 4 of 7: Emails and Correspondence (continued)

Subject: Fwd: A question about text in this variance presentation from EPA
From: dstoff <dstoff@rcn.com>
Date: 04/22/2024, 12:00 PM
To: David Stoff <dstoff@rcn.com>

-------- Forwarded Message --------
Subject:RE: A question about text in this variance presentation from EPA
Date: Thu, 4 Apr 2024 20:08:41 +0000
From: Arsenault, Dan <Arsenault.Dan@epa.gov>
To: David Stoff <dstoff@rcn.com>
CC: Knapp, Michael <Knapp.Michael@epa.gov>

Mr. Stoff:

Thank you for your inquiry. The citation below is from 80 FR 51040 which addresses the final rule for variances in 2015.

"EPA also received comments questioning how a WQS variance works with a TMDL and CWA section 303(d) impaired waters listing(s). These comments suggested the proposed rule creates a conflict in how the NPDES permitting regulation requires permitting authorities to develop WQBELs. Section 122.44(d)(1)(vii)(A) specifies that all WQBELs in an NPDES permit must derive from and comply with all applicable WQS. Section 122.44(d)(1)(vii)(B) specifies that the WQBEL of any NPDES permit must be consistent with the assumptions and requirements of any *available* (emphasis added) waste load allocation (WLA) in an EPA-approved or EPA-established TMDL. Because the WLA of the TMDL is based on the underlying designated use and criterion (and not the highest attainable condition established in the WQS variance), then the WLA in the TMDL is not available to the permittee covered by the WQS variance for NPDES permitting purposes while the WQS variance is in effect. The permitting authority must develop WQBELs for the permittees subject to the WQS variance based on the interim requirements specified in the WQS variance. Upon termination of the WQS variance, the NPDES permit must again derive from and comply with the underlying designated use and criterion and be consistent with the assumptions and requirements of the WLA (as it is again ''available'')."

Please let me know if you have any further questions

Thank you,

Dan Arsenault
Water Quality Standards Coordinator
EPA-Region 1
(617) 918-1562

From: David Stoff <dstoff@rcn.com>
Sent: Monday, April 1, 2024 8:11 PM
To: Arsenault, Dan <Arsenault.Dan@epa.gov>
Subject: Fwd: A question about text in this variance presentation from EPA

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dan:

You're getting this message because the contact page of EPA's online variance presentation links to you.

I asked MADEP first and they didn't know.

Slide 38 from EPA's online presentation *Variances–An Overview* is pasted at the bottom of this message. The slide is about load allocations in TMDL's for variance waters. The word "available" is in quotations. I wanted to know why. Is it a regulatory citation or is it a summary description like an "air" quote?

Writing comments on a DEP variance and understanding this particular point would help.

Thanks

DS
-------- Forwarded Message --------
Subject:RE: A question about text in this variance presentation from EPA
Date: Mon, 1 Apr 2024 20:00:24 +0000
From: Langley, Lealdon (DEP) <lealdon.langley@mass.gov>
To: David Stoff <dstoff@rcn.com>
CC: Borci, Todd <Borci.Todd@epa.gov>, Stephen Perkins <14baker.p@gmail.com>

From: David Stoff <dstoff@rcn.com>
Sent: Monday, April 1, 2024 10:57 AM
To: Langley, Lealdon (DEP) <lealdon.langley@mass.gov>
Cc: Borci, Todd <Borci.Todd@epa.gov>; Stephen Perkins <14baker.p@gmail.com>
Subject: A question about text in this variance presentation from EPA

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Lealdon:

I'm hoping somebody can explain to me why the word "available" is quoted in the slide pasted below. The source of the slide is an online presentation about variances from EPA's Office of Water.

Stoff Exhibit 4 of 7: Emails and Correspondence (continued)

Is the word quoted because its taken from a regulation; or is this a summary description, like an air quote?

The last slide in DEP's variance presentation covers some of this information.

Thanks,

David Stoff

Total Maximum Daily Loads

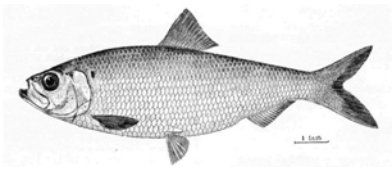
Interim requirements of a WQS variance do not replace the underlying designated use and criteria.

- Load allocations must be based on the underlying designated use because a WQS variance is time-limited and intended to restore the waterbody.

However, a permit may include limits based on the WQS variance even where there is a TMDL for that parameter because the allocations in the TMDL are not "available" during that time period.

Stoff Exhibit 4 of 7: Emails and Correspondence (continued)

Save the Alewife Brook



Environmental Health is Community Health

March 25, 2024

Bonnie Heiple, Commissioner
Massachusetts Department of Environmental Protection (DEP) 100
Cambridge Street, Suite 900

Boston, MA 02114

Re:
Tentative Determination to Adopt a Water Quality Variance for Alewife Brook / Request for an Additional Public Hearing

Dear Commissioner Heiple:

Thank you for the important work that DEP does to protect the public from environmental harm. It is deeply appreciated.

Save the Alewife Brook is a growing grassroots organization dedicated to improving the condition of the Alewife Brook for the benefit of the surrounding communities in Cambridge, Arlington, Somerville, Belmont, Medford, and beyond.

On March 8, 2024 DEP posted its Tentative Determination to extend the Water Quality Variance for Alewife Brook from August 30, 2024, to August 29, 2029. Public comments will be accepted for 45 days. Two virtual hearings will be held on the same day, March 28th.

The issuance of the water quality variance is a significant regulatory event that directly affects communities near the Alewife, Charles, and Mystic. It is reasonable for the Department to provide adequate time for public testimony to hear community concerns. Please note that more than 300 concerned members of the public registered to attend the presentation on alternatives for the new Long-Term CSO Control Plan in November 2023, and more than 200 people attended the meeting. There is great local interest in this issue.

Because of that interest, we ask that you please hold an additional public hearing in the Alewife watershed to receive in-person testimony from the members of the public. And we ask that individual testimony be limited to no less than three minutes, as is allowed at legislative hearings.

Additionally, we ask the Department to index all written comments, including comments in the online chat for the March 28th hearing. Should DEP choose to designate a single response as representative of multiple commenters, we ask that the Department list the names of all commenters to whom that response is applicable with the relevant response. We appreciate the Department's timely response to written comments if it should choose to authorize the water quality variance.

Thank you,

Kristin Anderson, David White, David Stoff, Gwendolyn Speeth, Eugene Benson

for Save the Alewife Brook

cc:
Todd Borci, EPA
Susannah King, DEP
Lealdon Langley (DEP)
David Boyer (DEP)
Kevin Brander (DEP)
Areeg Abd-Alla (DEP)
Eric Worrall (DEP)
Kristin Divris (DEP)
Patrick Herron (MyRWA)
Stephen Perkins (MyRWA)
Max Rome (CRWA)
Jeremy Hall (MWRA)
Catherine Woodbury (Cambridge)
Jim Wilcox (Cambridge)
Sam Lipson (Cambridge Environmental Health Director)
Rich Raiche (Somerville)
Lucia Hiller (Somerville)
Zachary E. Crowley (DCR)
Eric Helmuth (Arlington Select Board Chair)
Diane Mahon (Arlington Select Board)
Stephen DeCourcey (Arlington Select Board)
Len Diggins (Arlington Select Board)
John Hurd (Arlington Select Board)
Jim Feeney (Arlington Town Manager)
Michael Cunningham (Arlington Town Counsel)
Chuck Tirone (Arlington Conservation Commission Chair)
Natasha Waden (Arlington Public Health Director)

Stoff Exhibit 5 of 7: Comment Letters

Mark Casella, P.E.
MassDEP CSO Coordinator
5th Floor, One Winter Street
Boston, MA 02108

July 29, 2010

RE: TENTATIVE DETERMINATION TO EXTEND THE VARIANCES FOR CSO DISCHARGES ALEWIFE BROOK/UPPER MYSTIC RIVER

These comments on the proposed variance extension for Alewife Brook/upper Mystic River are submitted by David Stoff, 88 Fairmont Street, Arlington, Massachusetts, a homeowner whose property abuts the Alewife Brook. The comments consist of three text pages("comments document"), a two page affidavit ("Affidavit of David Stoff"), and two pages of captioned photographs ("Attachment 1").

It is appalling that DEP considers annual sewage discharges that are equivalent to the CSO load of the entire Charles River basin as adequate to meet requirements for CSO control in the Alewife Brook.

The current control plan was originally presented to the public as a cost-effective and quick approach that would implement CSO controls before the year 2000. MWRA claims that water quality benefits have been achieved, but these "benefits" were primarily accomplished by fixing problems the Authority had failed to identify in the original control plan. To this observer the "phased implementation" of CSO controls has been a disaster for the Alewife Brook, a body of water which for all practical purposes is being written off to finance CSO controls in more politically well connected areas of the MWRA system.

The current variance contains no condition requiring MWRA to identify/discuss resource degradation caused by the extended period of time it has taken to implement CSO controls on the Alewife Brook. DEP maintains that the variance is merely "deferring" a determination of the highest feasible level of CSO control. The Department has deferred this decision since 1997, but is blind to the consequences of this action. The Fact Sheet posits that DEP has an "expectation of significant CSO control and water quality improvement" through the implementation of the remaining CSO control projects in the Alewife Brook; the inverse is also true: delay of these projects has resulted in significant resource degradation. It is time to discuss this degradation, quantify it, and propose mitigation measures. I would expect to find such a discussion in the data summary required of MWRA in Part (D)(i) of the variance.

Floatables Control

The variance should require CSO permittees to work with the Department of Conservation and Recreation to maintain sanitary conditions along the Alewife Brook.

Floatables control along the Alewife Brook continues to be a problem and basic sanitary conditions remain unmet. See, Attachment 1. Required floatables controls are implemented pursuant to the court approved schedule ("Schedule Seven") and supposedly were to be in place by December 2008. See, DEP Response to Comments 2007 AB/UM Variance. Cambridge and the MWRA are proposing to substitute new construction milestones and completion dates for floatables controls projects on the Alewife.

The Fact Sheet is misleading in attributing delay in the implementation of floatables

1

controls to the 2005 wetlands appeal. It fails to note that Cambridge was the party that sought continuances during the wetland appeal process and ignores the role of the Division of Administrative Law Appeals in the delay.

When the suite of floatables controls in the recommended plan were proposed they were presented to the public as stand alone features of the CSO control plan, something required at outfalls that would not be permanently closed. Delay in implementation of floatables controls cannot be attributed to the wetlands appeal anymore than it could be attributed to the lack of a final water quality standard determination, something that might also change the configuration of outfalls slated for closing. Cambridge and MWRA chose to ignore construction milestones and users of the Alewife Brook ought not be burdened by this choice. Implementation of floatable controls should be accelerated in order to achieve immediate, promised, benefits.

The proposed revisions to the construction schedule place completion of floatables controls beyond the term of this variance. Without some type of mitigation during this variance term, unsanitary conditions will persist at CSO outfalls along the Alewife Brook, making the Alewife unfit for recreational uses which the variance ostensively protects. Sewage related floatables are a component of the authorized discharge; logically the burden of cleaning up floatables belongs to the CSO permittees who are responsible for the discharge.

In the past when this issue has been raised the CSO permittees have asserted that the Department of Conservation and Recreation ("DCR"), the agency authorized to maintain the channel of the Alewife Brook, is responsible for post discharge sanitary conditions. When EPA reissued the NPDES permit for Cambridge CSO discharges (MA 0101974), the agency adopted this reasoning and included a reporting requirement as an element of the routine monthly inspection of CSO outfalls:

> ...the permittee shall forward to the Massachusetts Department of Conservation and Recreation ("DCR") its description of any conditions within DCR's control that impair the operation of any CSO structure.

NPDES Permit No. MA0101974, Part 1(C)(1).

At a minimum the 2010-2013 variance should extend this reporting requirement to the City of Somerville and the MWRA, entities that also maintain CSO outfalls in the receiving water.

DCR has stated in public meetings that its maintenance commitments extend to maintaining the new Alewife Brook-Mystic River Bicycle Connector/ Alewife Greenway (the "bicycle path") that borders the Alewife Brook. Sanitary conditions in the channel directly impact the new bicycle path because portions of the path will periodically be flooded by the Alewife Brook and contaminated by sewage related floatable materials (See, Affidavit, Attachment 1); however past experience demonstrates that DCR lacks the resources to maintain the Alewife area. The clean-up costs for discharges authorized pursuant to this variance should be borne equitably. DEP can, and should, adopt a variance requirement that:

- ensures that channel obstructions are reported to DCR;
- provides interagency coordination of periodic clean-up;
- makes failure to perform clean-up of identified sanitary waste a violation of the water quality variance.

It is entirely reasonable for Alewife Brook abutters to demand a minimum level of cooperation between state agencies, the MWRA, and CSO permittees. The continued finger-pointing between responsible parties translates into a lack of action on the long standing nuisance-like conditions plaguing property owners adjacent to the Alewife Brook.

Signage

Part (C) (i) of the variance requires outfall signs which are visible from land and water. My recollection is that this requirement has existed for about ten years. I call DEP's attention to the affidavit and photos included with these comments. The variance states: "Failure to comply with the conditions of this variance...will constitute a violation of the[NPDES] permit." Is a Clean Water Act citizen suit really necessary to get Somerville to post a sign?

In response to a comment regarding the need for additional signage along the Alewife Brook submitted for the Cambridge NPDES permit it was noted by EPA in its Response to Comments document that "MassDEP encourages the commenter to submit a detailed request with documentation..."

The commenter responds to MassDEP:

Signage should be located at Bicentennial Park in Arlington, near the intersection of Massachusetts Avenue and Route 16; at the Lafayette Street boat launch/ overlook area on the DCR bicycle path; at the confluence of the Alewife Brook and Mystic River on the DCR bicycle path near Sunnyside Avenue. The commenter is available should DEP wish to assemble a working group to address the issue of additional signage.

Tannery Brook/SOM001A

Tannery Brook is a natural waterbody, a water of the Commonwealth, as that term is used in G.L. c.21 sec. 42. Although Tannery Brook is now culverted, flow from Tannery Brook is a necessary part of the stream flow of a healthy Alewife Brook. The fact that Somerville has identified inter-connections between the culvert and the city sewer system cannot convert an outfall that discharges storm water from the watershed of a stream into a CSO outfall, and this "CSO specific" variance cannot be used to authorize such discharges. Flow from Tannery Brook is necessary to maintaining a healthy Alewife Brook. Somerville should be required to eliminate interconnections between the Tannery Brook Drain and its sewer system based on the requirements of the MS4 permit. MWRA should be required to reassess the CSO controls planned for SOM 001A to return necessary water flow to Alewife Brook.

The Fact Sheet fails to cite data from Somerville's updated sewer assessment report, required as a condition of the previous variance, to support implementation of the recommended plan in this area. DEP stated, in its response to comments on the previous variance, that it would be working with Somerville to address multiple issues. The Fact Sheet is silent as to the outcome of these efforts.

Closing

I wish to take this opportunity to thank DEP for the chance to comment on this variance, the five which preceded it, and the others that will surely follow.

3) SSOs occurring in the MWRA system downstream of Tannery Brook could be noticeably relieved by removing a 30" connection flowing full of rainwater from the sewer in every storm over the 3-month recurrence.

While the building of a Millers River Drain to the Charles could similarly benefit Somerville residents and MWRA capacity issues, as well as alleviating CSO flows from CSO facilities and backups exiting thru CAM017, I see nothing in this permit to request for now. However, I reiterate that stormwater cannot be separated from CSO issues, and urge a holistic view of permitting MS4 issues in CSO communities.

Response to Comment C3:

EPA and MassDEP agree that the only way to completely eliminate CSOs to the Brook under all weather conditions is by separating sufficient storm water and extraneous flows from the combined sewers to ensure that flows in the sewers do not exceed capacity under any weather condition, and that such separation would virtually eliminate basement flooding. We also agree that reductions in flow to the MWRA Alewife Brook Sewer achieved by removing the connection from the Tannery Brook Drain would reduce the possibility of overflows from the MWRA sewer. We would note however, that separation underway in Cambridge will serve to reduce flows from Cambridge into the MWRA sewer, thereby freeing capacity for increased discharges from the Tannery Brook Drain. We would further note that sewer separation in the combined sewer areas tributary to Tannery Brook would significantly increase stormwater discharges during wet weather and may exacerbate flooding in the Brook.

We also agree that water quality standards can only be met in the Mystic River/Alewife Brook watershed by addressing both CSO and stormwater pollutant issues. The federal court order in place currently requires addressing CSOs from Tannery Brook by increasing the connection to the MWRA interceptor, which was shown to be both cost-effective and feasible. EPA and MassDEP will continue to evaluate the potential for higher levels of CSO control during the period of the CSO Variance. Costs and feasibility of eliminating the Tannery Brook CSO will also be considered under the regulatory framework of the Clean Water Act and state water quality standards.

Comments submitted by David Stoff:

Comment D1:

The public notification conditions in the Draft Permit are inadequate. Enhanced public notification measures are needed for CSO outfalls scheduled to remain open after the MWRA CSO control plan is implemented.

NMC # 8 requires "adequate notification of CSO impacts and occurrences." Warning signs have been required at CSO outfalls for almost twenty years. Arguably the signage requirement is the simplest permit requirement to meet. The inability of the permittee to comply with this simple but necessary requirement is appalling.

SOM001A discharges into a waterbody that is surrounded by public parkland. It is twenty-five feet from the Massachusetts Department of Conservation and Recreation's new Alewife Brook Greenway. It is about eighty feet from a hotel and in close proximity to a pediatrician's office, an Orthodox church, and a private elementary school. Students from nearby Matignon High School routinely transit the outfall area. CSO discharges at SOM001A will continue well beyond the term of this permit. Given the conditions shown here, a casual user of the Alewife Brook area, such as individuals using the Alewife Brook Greenway, would be unaware of the CSO outfall; hence the public notification requirements of NMC No. 8 are not met.

Response to Comment D1:

This photo of signage clearly does not meet the complete signage requirement in the permit and the variance. See the response to Comment B4, which refers to a revision in the final permit requiring the City of Somerville to document that it is meeting the signage requirement of the final permit.

Comment D2:

Press releases and delayed e-mail notice of discharges (conditions of the Draft Permit and water quality variance) are directed primarily to homeowners. The purpose of press releases is to inform people living in the floodplain about the impacts of CSO discharges. The purpose of e-mail notice is to provide local public health officials with warning of CSO occurrences so that they can provide residents with information about sanitary conditions and appropriate mitigation measures. While laudable, these permit conditions fail to provide warning within a timeframe that is useful to casual users of the Alewife Brook and Greenway.

Developing a real-time public notice system that meets NMC #8's requirement for notice of CSO "occurrences" would be a more effective strategy to reach casual users. Enhanced signage in conjunction with a system of warning lights is certainly feasible. The draft permit requires direct metering of discharges from SOM001A; perhaps the meter could be configured to trip a warning light. Enhanced public notification is particularly desirable at CSO outfalls, like SOM001A, that

will remain open after implementation of CSO controls in the MWRA plan because these outfalls are long-term hazards.

Response to Comment D2:

See the response to Comment B4.

Comment D3:

Some remedial public notice measures are required along the Alewife Brook. Current conditions at SOM001A violate ***existing*** permit and variance conditions. The Draft Permit is an opportunity to address public notification measures over the long-term. Given the permittees lack of compliance, the lack [of] permit conditions addressing enhanced public notification measures creates the impression that EPA is comfortable with the current conditions.

Response to Comment D3:

EPA believes that the current signage and notification conditions, which are mainly derived from the variance, are adequate and effective. Although there is a question about the current signage at Outfall SOM001A, the permittee is required to document that this signage is consistent with the permit condition within 30 days after the effective date of the permit. Although extensive CSO remediation work over the past 10 years has separated a majority of the combined sewerage in the City, there are still ongoing and planned CSO remediation projects that will continue to result in improvements to the sewer system. Two of these projects are noted in the Fact Sheet [(1) Control Gate and Floatables Control at Outfall MWR003 and (2) MWRA Rindge Avenue Siphon Relief Project]. Keep in mind that these projects are expensive and will take many years to complete. As mentioned earlier, we would encourage the City to enhance its notification procedures in any way that it finds feasible and effective.

As described previously, the submittal of Annual Reports will continue to be required. The City has not been submitting these reports and the Agencies have required that that all relevant Annual Report data for the period of 2006 through 2011 be compiled and submitted within 90 days of the effective date of this permit.

Comment D4:

The Draft Permit should be modified to require basic channel maintenance at CSO outfalls.

Channel obstructions and inadequate floatables controls at CSO outfalls discharging to the Alewife Brook, where SOM001A is located, continue to be a problem. Basic sanitary conditions

remain unmet. As an example, this picture shows current conditions at Alewife Brook CSO outfall CAM001, just upstream from SOM001A.

The Draft Permit should be modified to conform with requirements found in other Alewife Brook CSO permits, such as the NPDES permit issued for the City of Cambridge. That permit requires that the "permittee shall forward to the Massachusetts Department of Conservation and Recreation ("DCR") its description of any conditions within DCR's control that impair the operation of a CSO control structure." (Part I. C. 1. of NPDES Permit MA 0101974). It is true that none of the Alewife Brook CSO permittees can force DCR to take action, but the effort involved in reporting obstructions is minimal.

It can be argued that an obstruction like the one depicted above violates the basic maintenance requirements of NMC #1 (proper operation and regular maintenance programs...[of] combined sewer overflows) regardless of which entity has jurisdiction over debris in the channel of the Alewife Brook; hence it is a violation of Part I. A.1.a.(1) of the Cambridge permit. It certainly traps floatable materials and creates the appearance of a public nuisance at the outfall.

Response to Comment D4:

To the extent that situations such as the one depicted in the enclosed photograph adversely impact the ability of the Town of Somerville to implement any of the NMCs required by this permit, EPA agrees that such conditions should be remedied by the City of Somerville as soon as possible. Part I.C.1 of the permit has been revised to include language similar to that of the Cambridge CSO permit that requires the permittee to notify the MADCR of any conditions in the vicinity of the CSO structure that could impair its operation or maintenance.

Comment D5:

The description of Tannery Brook in the Fact Sheet is inaccurate

The description of Tannery Brook as a city storm drain is misleading. Tannery Brook is a natural waterbody, a water of the Commonwealth as that term is used in G.L. c.21 sec. 42. Although Tannery Brook is now culverted, flow from Tannery Brook is historically part of the stream flow of the Alewife Brook and is necessary to maintain the health of that waterbody. The fact that Somerville has identified connections between its combined sewer system and a culverted stream cannot convert a natural waterbody into a combined sewer. The description of Tannery Brook as a *convey*[ance] that drains to the MWRA system (Fact Sheet, Part II.) justifies a permanent degradation of the Alewife Brook by depriving it of waterflow from a tributary, while simultaneously exacerbating Sanitary Sewer Overflows (SSOs) at the Alewife Brook Pump Station during wet weather.

The *Final Variance Report for Alewife Brook and the Upper Mystic River,* July, 2003, states that Somerville "is currently looking into the feasibility of controlling miscellaneous dry weather sanitary discharges to the Tannery Brook Drain, and tentatively plans to access the feasibility of separating upstream regulators, closing off the drop connections to the [Alewife Brook Conduit] and turning the Tannery Brook Drain into a separate storm drain." Neither the Fact Sheet nor previous DEP responses to Variance comments discusses the feasibility of such an effort, though this issue has been raised. EPA should acknowledge in its response to comments that the MWRA 's CSO control plan for SOM001A is an interim solution and that this complex drainage system warrants further investigation [prior to a change in the water quality standard].

Response to Comment D5:

The Tannery Brook drain is not a water of the United States as that term is defined in 40 CFR 122.2, but is rather a point source discharge as defined in the same regulation. Therefore, the discharge is appropriately regulated by the permit. Notwithstanding our disagreement regarding the drain's characterization we agree that the discharge of clean water from the Tannery Brook Drain would provide benefits to the Alewife Brook. Obviously, flow quantities that would cause flooding or other problems in the Brook are not desirable.

Michele Barden
US Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-4)
Boston, MA 02109-3912
Submitted via email: barden.michele@epa.gov

Claire Golden
MassDEP, Surface Water Discharge Program
150 Presidential Way, Woburn, MA 01801
Submitted via email: MassDEP.npdes@mass.gov

Dear Ms. Barden and Ms. Golden:

I thank you for the chance to give US EPA Region 1 and MassDEP my comments on the draft National Pollutant Discharge Elimination System (NPDES) permit issued to the Massachusetts Water Resources Authority (MWRA) Deer Island Treatment Plant and Combined Sewer Overflow (CSO) co-permittees.

I live in Arlington Massachusetts. My property abuts the Alewife Brook and is downstream from an MWRA CSO that discharges untreated sewage. The CSO discharges authorized by the permit are not abstractions to me. The Alewife often inundates the adjacent Department of Conservation and Recreation (DCR) Alewife Greenway and in the past has flooded my home. I can smell the sewage in the brook from my porch when the outfalls discharge during the summer.

The focus of my comments is permit requirements impacting Alewife Brook. If memory serves me, I have commented on every NPDES permit authorizing CSO discharges to the Alewife Brook, and every water quality variance for the last twenty years.

I recently testified in support of House Bill 886, which I helped draft, requiring treatment of all CSO discharges in the MWRA district. My comments are drawn from my first hand experience as a neighbor to the Alewife Brook. I cite legal authorities and arguments in the footnotes.

As a threshold matter I'm troubled by the regulatory complacency evidenced in the draft permit. When the Deer Island plant was built it was a source of civic pride and a symbol of what Massachusetts could accomplish. That narrative has been supplanted. The environmental progress the plant's opening heralded has been overtaken by an austerity driven vision of the future where waters like Alewife Brook are sacrificed for the short term benefit of the permittees. I am disappointed in EPA Region 1. I'd hoped they'd fight harder for waters like the Alewife. That disappointment is realized in the continuance of water quality variances for CSO impacted waters which underlies the effluent limitation of this permit.

NO MORE VARIANCES

For almost a quarter of a century the safeguard of a water quality standard[1] that protects the health of the community surrounding the Alewife has been waived. It's reasonable for *any* community to insist that discharges be treated so that incidental contact does not pose a health risk. The open ended excursions from water quality standards authorized by this permit deny communities the meaningful protection of an enforceable standard. While aspirations for variance waters remain high, the reality is that these receiving waters could not meet the existing standard for safe human contact (class c) during wet weather. So they are reclassified. The justification for the reclassification is cost savings, and neither the burden, nor the benefit of these cost savings is shared equally among communities in the MWRA district.

A. An Abused Regulation

Both federal and state regulations define a variance as a short term, temporary modification of a water quality standard.[2] The draft permit contemplates implementing another long term CSO control plan through additional variances.[3] The proposal renders the word "temporary" meaningless. The variance enables CSO discharges, including those with identified public health impacts, to continue in near perpetuity, without a clear path to elimination in derogation of the requirements of the Clean Water Act.[4]

B. The Future of CSO Impacted Waters

In practice the reliance on water quality variances has created a two tiered system for CSO receiving waters in the MWRA district. CSO variances are for waters where public expectations remain high. Chasing an interim goal, the "highest attainable water quality," justifies waiving standards and the harsh reckoning that some communities will have to accept the localized impacts of continued CSO discharges. The second tier,partial use designations are sufficient for urban waters. Here the assumption is that current conditions will remain unchanged.[5] The public accepts that the current hierarchy of resource users will continue much as it has in the past. *It's always been a sewer, so it's OK to use it as a sewer.*

It's impossible to ignore the echoes of historic patterns of racial and economic discrimination in this approach. For any CSO impacted community, the expectation that discharges will be treated so that incidental contact does not pose a health risk is reasonable. That's the thrust of H886.[6] A uniform and achievable level of CSO treatment that protects the health of all communities. It's the MWRA that defined control for the 25 year storm as economically achievable CSO elimination.[7] That has to be the goal for all CSO impacted waters. The draft permit, and the agency that wrote it, needs to acknowledge that the variances fail to address the disparity in the level of CSO treatment in the MWRA district.

1Class B primary contact; draft permit Attachment J; Attachment K
240 CFR 131.14; 314 CMR 4.03(4).
3Fact Sheet pg41.
433 USC sec 1251
5Because of stormwater, or the highway, or port operations. Whatever other pollutant load justifies continuing sewage discharges.
6https://malegislature.gov/Bills/193/H886
7Final CSO Post Construction Monitoring Program and Performance Assessment Report

Ending CSO variances is unpopular. Partial use designations for the Alewife, Mystic, or Charles would be a set-back in the restoration of these resources. However, the regulatory process provides a forum (a Use Attainability Analysis). It is transparent. Impacted communities can document health impacts of continued discharges. They can present evidence of existing uses. There is the possibility that the inclusion of community based data can create a fairer approach to the reclassification of CSO impacted waters. To borrow a quote from Elizabeth Warren, I'd rather there were "blood and teeth left on the floor" and fight for environmental equity for communities living with CSOs than acquiesce to a status quo whose only promise is that in some hazy future the condition of *some* of these waters will improve.

The Public Notification Plan does not provide reasonable protection from the impacts of CSO discharges.

"[M]inimizing... human health impacts from wet weather overflows," is a core tenet of EPA's CSO Control Policy and the standard by which implementation of minimum control measures,[8] including public notification provisions in the draft permit, must be judged. Over three million people live in the MWRA district. Less than 500 subscribe to the web based discharge notification system. The hybrid system of outfall signage,mailings and electronic notifications in the draft permit has been tried for over a decade. Region 1's judgment that the system provides "adequate notification" [9] ignores evidence that occurrences of CSO discharges do go unnoticed by the public and that this causes unreasonable health impacts for some communities.

A. Realistic expectations for the users of the Public Notification system are needed.

When untreated sewage is being discharged, the *least* sophisticated user of the notification system should reasonably expect to receive a warning. Contrast that expectation with the demands of the existing electronic notification system. To use the system on the Alewife

8 CSO Policy, FR, vol 59, pg 18691; implementing the Nine Minimum Controls(NMC).
9Response to Comments,NPDES Permit #0101982, City of Somerville,2012 pg 91.
https://www3.epa.gov/region1/npdes/permits/2012/finalma0101982permit.pdf

you're expected to have a working phone, with subscriptions to Cambridge, MWRA and Somerville CSO alerts, to know the number and location of various CSO outfalls, what watershed the outfall is in(because notices cover multiple watersheds) and whether you're upstream, or downstream, of the discharge. Of course it will be raining while you do this. Such demands require a level of skill and user sophistication that's unreasonable to expect for access to a public warning system.

B. For users of the Public Notification system timely notification means actual notice.

I took this picture with my phone.It shows people in the area behind my house crossing water that was heavily contaminated with raw sewage. When asked, none of these people knew a CSO discharge occurred.
Before anyone will ignore a child,or drop their groceries, to pull out a phone, they must have a reasonable belief that there's an immediate health risk. Along the Alewife, and in other communities, the lack of a contemporaneous posting of untreated sewage discharges leaves people unaware of the health risks they're exposed to. Timely notification of sewage discharges means actual notice in those places where people are in close proximity to the discharge.[10]

C. Use appropriate notification technology to meet Clean Water Act requirements.
For over 20 years our community, watershed groups, and town leaders have requested that NPDES permits for CSO discharges to Alewife Brook include additional public notification measures.[11] Our repeated requests for automated discharge warning lights for users of the MBTA Community Path and DCR Alewife Greenway is based on community knowledge of what's necessary for an "adequate" alert system. The single minded emphasis on web and phone based advisories obscures the fact that other, sometimes simpler, technologies can meet CWA requirements. A system of automated warning lights, that provides real time notice of discharges, is a reliable substitute for web/phone based notification without the corresponding staffing levels required by the current system. Massachusetts law specifies the use of email and text messages for notifications. The scope of public notification measures in the permit can be broader than those required by the state. The Fact Sheet's assertion that

10Other locations include the Charles River Esplanade,Magazine Beach, the bikeway adjacent to CAM005.
11Ibid, FN4

Public Notification provisions in the draft Permit reflect "advances in technologies" [12] lacks a corresponding requirement for a review of the effectiveness of that technology.
People living along the Alewife must protect themselves from untreated sewage discharges that will continue, with no end in sight. The stubborn adherence to status quo measures for public notification smacks of a culture of indifference among regulators. It signals a preference for reducing costs for permittees over the mitigation of community health impacts caused by the CSO discharges authorized in the permit.

SMELL SOMETHING, SAY SOMETHING

The reek of sewage stigmatizes a community. The odor says public resources can be denied in *this* place. Odors from combined sewers are a problem in communities throughout the MWRA district. It's a particular problem along the Alewife where 6 CSO outfalls and their related structures are a source of strong and persistent odors.
A culture of institutional indifference permeates the operation of combined sewer systems in the MWRA district. It normalizes sewer odors as the inevitable byproduct of living with an "old" sewer system. In practice this culture masks the diversion of public resources away from vulnerable communities to places where those resources buttress higher value private investment.

EPA's Environmental Justice Screening Tool puts the Alewife in the 90th percentile for wastewater impacts nationwide. The NPDES permit should incentivize changes in the institutional culture of public works departments to improve conditions for communities most

12Fact Sheet, pg 105

impacted by the operation of combined sewer systems authorized by the permit. EPA's Equity action plan for Executive Order 13985 directs the agency to integrate community science into program implementation. An assessment of links between system maintenance[13] and reports of ancillary nuisance conditions in the MWRA's combined sewer communities is long overdue. Community based odor reporting and the revision of inspection and annual NMC Plan updates would be a practical addition to the permit.[14] The addition of a telephone contact number to outfall signage for reporting maintenance issues, the practice of most other major metropolitan areas, is long overdue in the MWRA district.

Floatables Control at Alewife Brook CSO Outfall SOM001A/Tannery Brook

Minimizing solid and floatable materials in CSO discharges is a long standing permit requirement.[15] What's lacking is a critical analysis,including public input, of the performance of this minimum control technology at outfalls where untreated CSO discharges are authorized. In these locations floatables control is the only treatment the discharges receive. When the technology fails, permitted sewer operations impose a disproportionate burden on the local community.The best available control technology should be in place and inspections must ensure the controls operate properly.

13NMC 1
14NPDES permit,Part I.B.3.b.
15NPDES permit,Part I. b. 2. b.(6); [NMC6]

The photo of Somerville's CSO outfall SOM 001A illustrates the localized impacts of an untreated CSO outfall. The performance of the existing floatables controls at this location is woefully inadequate. Following the recent August 8, 2023 storm both the Somerville Mayor's office and the Arlington Board of Health received complaints about toilet paper in trees around the outfall and persistent odor that indicated maintenance problems. There were press reports about it.[16]The inability of the permittee to provide current inspection reports compounded the problem.

A revised floatables control plan for SOM001A(to be incorporated in the permit)is currently under review by EPA and DEP. This review is part of a public process The open public review process must analyze:

- improved controls capable of completely eliminating sewage related material from the discharge;
- netting or similar screen installed on the outfall spillway to control discharge of sewage materials that escape initial treatment;
- the post discharge clean-up of sewage related materials from the area adjacent to the outfall.

The draft permit has a requirement for observation of floatables in discharges from DITP.[17] Monthly inspections at CSO outfalls should have a similar requirement. I expect that discharges from SOM001A/Tannery Brook will be eliminated or controlled to a 25 year event level in the new Long Term Control Plan.

16https://www.wbur.org/news/2023/10/23/massachusetts-combined-sewer-overflow-cso-climate-change
17NPDES permit, Part I. i. [floatables observation]

Massachusetts DCR should be listed as a co-permittee and included in minimum CSO control measures

Part I B. 3. of the permit describes implementation levels for the Nine Minimum Controls. NMC 1 requires MWRA Cambridge and Somerville to maintain the CSO outfalls along the Alewife Brook. All of these outfall structures are located on land owned by DCR. At various times permittees have said that because the physical outfall structures are integral parts of the Alewife Brook's concrete channel, DCR is responsible for their maintenance, and the maintenance of adjacent areas. DCR's predecessor agency the Metropolitan District Commission did, in fact, maintain the outfalls, the channel of the Alewife Brook, and the surrounding land.

A combined sewer outfall is undoubtedly an element of a "treatment works."[18] NPDES permits for Cambridge and Somerville acknowledge that DCR maintenance impacts outfall operations.[19] As relics of the MDC sewer system, the Alewife CSO outfalls don't really fit the

18 33 USC sec 1219(B); Fact Sheet Appendix D

19 NPDES permit # 0101982 Part IC.1."The permittee shall forward to the Massachusetts Department of Conservation and Recreation ("DCR") its description of any conditions within DCR's control that impair the operation or maintenance of any of its CSO structures" Cambridge's NPDES permit has a similar requirement.

current system boundaries in the permit. For example, look at the picture above [SOM001]. Is the concrete spillway at the bottom of the image part of the outfall (Somerville) or part of the channel(DCR)?
EPA's argument for the inclusion of sanitary sewer communities as co-permittees (Fact Sheet, Appendix D) is applicable to DCR in the Alewife; more so, in that existing NPDES permits for CSO discharges already recognize DCR's obligations.[20]

Excess sediment and debris in the concrete channel, a direct result of DCR's deferred maintenance, degrades the ability of the Alewife Brook to transport or assimilate its CSO pollutant load. Maintaining the hydraulic performance of the Alewife Brook is a necessary condition for accurate comparison of thirty years of water quality data, the basis of permit compliance.The change in channel conditions since the 1990's is striking. Including DCR as a co-permittee, with a defined responsibility for maintenance around CSO outfalls and channel maintenance in the Alewife Brook would improve compliance with minimum controls in a neglected portion of the sewer system because all maintenance issues in the Alewife Brook could be addressed through the permit.

Thank you for the opportunity to make these comments. As always I look forward to your response.

David Stoff
88 Fairmont St.
Arlington, MA 02474

20Ibid, FN 14

Stoff Exhibit 6 of 7: Correspondence

Subject: RE: Somerville projects in variance exhibit C
From: Rich Raiche <rraiche@somervillema.gov>
Date: 04/05/2024, 11:34 AM
To: David Stoff <dstoff@rcn.com>
Cc: "'Langley, Lealdon (DEP)'" <lealdon.langley@mass.gov>

Hello David,

If it says that those will have a direct benefit at SOM001A, that is an error. Those projects will direct benefits at SOM007A. (So "seven" not "one".) The primary benefit of those projects is to the Cambridge Branch Sewer. Both the Cambridge Branch and the Somerville/Medford Marginal discharge to the DeLauri Pump station, which is capacity limited. The reduction in flows from the Cambridge Branch to DeLauri provides additional capacity for the Somerville/Medford Marginal, which in turn reduces overflow to the Somerville Marginal CSO treatment facility that discharges to SOM007A during high tide. Our modeling indicates a lot of interactions between Marginal, Cambridge Branch and Prison Point.

In the long-term, it should also be noted that those projects may enable additional alternatives in the purple area, which do have a direct benefit on SOM001A. But those are alternatives we currently modeling and it's too soon to say what is really feasible.

Hope that helps,
Richard E. Raiche, PE, PMP, MCPPO
Director of Infrastructure and Asset Management
City of Somerville
1 Franey Road, Somerville, MA 02145
o: 617.625.6600 x5410

From: David Stoff <dstoff@rcn.com>
Sent: Friday, April 5, 2024 10:38 AM
To: Rich Raiche <rraiche@somervillema.gov>
Cc: 'Langley, Lealdon (DEP)' <lealdon.langley@mass.gov>
Subject: Somerville projects in variance exhibit C

Rich:

The Spring Hill sewer separation and Poplar St. pump station projects are listed in the variance as having benefits at SOM 001A.

Could you explain [BRIEFLY] the interaction between the projects and the discharges at SOM001A. Any way to quantify the benefits in terms of discharge and volume frequency?

Saw this online, your map from a 2018 presentation on the topic. Spring Hill is in the purple?

Stoff Exhibit 6 of 7: Correspondence (continued)

Area	MWRA Connection	Overflow
	Somerville Marginal Interceptor (SMI)	Mystic River
	Alewife Brook Conduit (ABC)	Alewife Brook
	Cambridge Branch Sewer (CBS)	Interactions with SMI and McGrath system
	Primary to CBS with overflows to ABC	Alewife Brook, plus interactions with CBS

DS

Stoff Exhibit 7 of 7: Correspondence

Mr. Eric Worrall
Regional Director
MassDEP Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

RE: MWRA Schedule Extension Request for Deliverables Associated with the Updated CSO Control Plans (Extension Request, Extension)

Dear Mr. Worral:

Though I've written to you before I've never introduced myself. I'm David Stoff, an Arlington resident and abutter to the Alewife Brook. I was an active participant in the previous Alewife Brook CSO control plan and the Town of Arlington's response. I'm a member of Save the Alewife Brook. I'm an almost retired attorney as well. My focus is the Alewife Brook. The concerns expressed here are mine. I've limited the comments to items identified in the MWRA Extension Request and Scope of Work(SOW). Given the similarity between the Cambridge and Somerville Extension Requests these comments are likely applicable to them as well.

Con flicting Goals of the Extension Request

Having read and pondered the Extension Request, the attached GANTT chart, and related documents more than I'd wish to admit, I'm still confused. The root of this confusion is MWRA's decision to develop their CSO control plan independently. The justi fication for the Extension is the need for "substantial collaboration" in developing the revised CSO control plan.[1]MWRA goes into great detail about elements of that collaboration. Indeed, they say it's *required* to develop an effective CSO control plan.[2] The logical result of all this collaboration would be a single comprehensive CSO control plan. When MWRA declares the permittees will draft individual CSO control plans, and pursue individual Affordability Analyses the justi fication for the Extension collapses. For example, how much of the 3 years they're requesting is for collaboration on feasible engineering solutions, as opposed to time now required for the creation of 3 separate CSO control plans,and 3 independent Affordability Analyses?[3]

The simultaneous demand to work collaboratively while pursuing independent goals introduces a host of conflicts that DEP needs to resolve prior to approving the Extension Request. When"MWRA acknowledges that there are CSO control alternatives that must be evaluated and considered together" they highlight an area needing additional scrutiny because this is where they come closest to addressing the internal conflicts in the document.[4] The CSO controls for Alewife Brook meet MWRA's criteria as an area for additional collaboration. These outfalls are so sensitive to conditions in the MWRA interceptor and at the MWRA's Alewife Pump station[5] that an uncoordinated response is an exercise in futility. Additionally, Alewife Brook is home to CSO outfall SOM001A, one the non-conforming outfalls MWRA is required to investigate and bring into compliance in the Federal Court order.[6] MWRA will have to do more than "collaborate to develop tools to be used in alternatives evaluation (unified model), an Updated Typical Year, and public input." It needs to provide resources to bring SOM001A into compliance with the level of CSO control required by an updated CSO control plan.

1 Extension Request, pg.2
2 EG: 1997 CSO Facilities Plan and Environmental Impact Report and 2003 Alewife Brook NPC
3 Even a casual cynic would think that the MWRA frames the Extension Request this way because they view it as a mere formality. DEP's concurrence with the 3 year schedule in Judge Stearn's Order is a given for them.
4 Low hanging fruit. A delicious treat that can't be beat.
5 See discussion in Final CSO Report section 4.2.2.1 SOM001A (Alewife Brook)
6 Outfalls that failed to meet the goals of the original CSO control plan for which MWRA has not yet identified suitable controls. See Fed Court order May 2020. I think this discussion may apply to CAM005 in the Charles as well.

SOM001A

Why is it necessary for Somerville to do an independent CSO control plan and Affordability Analysis for SOM001A? How does a Court order to MWRA "counsel in favor of the submittal of separate, but coordinated Updated CSO Control Plans by each entity?" The exact opposite is true. In as much as the burden to bring SOM001A into compliance[7] is placed squarely on the MWRA by the Court, why would time for Somerville to complete an independent Affordability Analysis be needed?

The only reason I can find to justify additional time is that the the level of CSO control in the updated CSO control plan will significantly exceed the level in the existing plan[8]. The only real justification for providing more time to the MWRA and requiring an affordability analysis from Somerville, in as far as outfall SOM001A is concerned, is that additional time means MWRA wants commitment of financial resources from Somerville, beyond the resources required of MWRA by the Court, to increase the level of CSO control in the updated plan.

Both the public and the City relied on MWRA to achieve the court ordered level of CSO control at the outfall. MWRA had 20 years to do this. I'd take a dim view of wasting more time developing a CSO control alternative for SOM001A that fails to enhance the level of CSO control.[9] MWRA's desire to seek independent Affordability Analyses from the other permitees feels like a shake-down.[10] Both Affordability Analysis and CSO Elimination tasks are identified in the SOW. A detailed look at that document and its sources is instructive.

Affordability Analysis

Affordability Analysis is found in SOW, Section 6. It's not clear from SOW or the GANTT chart in the Extension Request what the timing for completing the affordability analysis is. The EPA guidance that serves as a template applies to an individual entity. When MWRA uses Affordability Analysis as a factor supporting the creation of multiple CSO control plans, it's because the results of the analysis might be "influencing each entities ability to apply capital resources to further CSO control." It's not clear what "influencing" means here. I looked to other supporting documents to make sense of it. The *Memorandum* supporting Schedule 7 is probably the best context. Here the court parties agree to a requirement for an "alternatives analysis describing what further actions could be taken and costs associated with those actions." "Influencing" must mean the ability of other permittees to make a financial contribution to CSO control alternatives that are identified,and then included, in MWRA's December 2024 *Supplemental Report* to the Court.[11] Because the "cost associated" with any alternative that only meets the requirements of the existing LTCP would be borne by MWRA alone, it would seem MWRA expects to completely escape the cost of increasing the level of CSO control in the updated plan by shifting that burden to the other permittees. Chutzpah.

The best I can say is that I'm unclear how the collaboration on affordability MWRA envisions works, or how it will be used during the alternatives analysis. The same holds true for developing three updated CSO control plans.The scope of this financial collaboration seems to go beyond using a unified model. It seems directed at an agreement about cost sharing as a basis for choosing the alternatives that are identified and brought forward to the public.The *Supplemental Report* is not a milestone in the GANTT chart. The public meeting section of the SOW mentions a presentation of a *Draft Updated CSO Control Plan* during public meeting number 3. I'd like to know if the *Draft Updated CSO Control Plan* and the

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7 Compliance with: the 2019 variance; The second stipulation; 3 discharges annually, 1.67 Million Gallons volume. SOM001A is not even close to this level of compliance.

8 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.That requirement is updated in the Amended Schedule Seven, in the May 2020 Court Order

9 CWA sec 101: *restore* and maintain..the nation's waters

10 The MWRA's discomfort at moving money from one pile to another is insufficient reason for the community to forgo a real solution to SOM001A after waiting twenty plus years for MWRA to make good on its promises.

11 After that the court parties will make a determination about whether the control alternatives identified satisfy the performance requirements of the LTCP and, ultimately of the Federal Court case.

Supplemental Report are the same thing. Time is passing. The alternatives analysis is supposed to begin in five weeks. Drafting of CSO control plan(s) is supposed to begin in the summer of 2023.
I would hope that DEP will provide some clarification about how the considerations discussed above will be addressed in its response to the Extension Request. For transparency's sake I'd also like to see the public involved.[12] Having a draft version of the *Draft Updated CSO Control Plan/Supplemental Report*-whatever it's called- before it is presented at a public meeting would be necessary for informed participation. I'd ask DEP to require a milestone in the public participation timeline about 2 weeks before the date of this public meeting as a place holder for distribution of the draft document to the public. Oh, and also, MWRA needs to pay a fair share of the costs of increasing the level of CSO in the Updated CSO Control Plan.

CSO Elimination
MWRA's Scope of Work also identifies a task involving CSO elimination. That task is defining what CSO elimination means in the Alternative Analysis. The discussion at section 2.1.2. in the MWRA's *Final CSO Assessment Report* is probably where the MWRA is going with this task. MWRA claims that it has "effectively eliminated" CSO discharges to the South Boston beaches. The discussion and accompanying tables note a "25 year level of service" for these outfalls. Limiting CSO discharges to major storms is a reasonable goal. I'd quibble about who sets this goal(not MWRA!) but I'd be satisfied to use a 25 year level of service as a proxy for economically achievable CSO elimination during the alternatives analysis. I do fear that MWRA is going in a different direction in the Alewife. At least I've never heard anyone from MWRA say they were updating the Alewife Brook CSO control plan to achieve a 25 year level of service.

Identification of Sensitive Use Areas

MWRA's Scope of Work includes a look at sensitive use areas in the Alewife.[13]This is a requirement of the CSO Control Policy.[14] In the LTCP the requirement resulted in prioritizing of CSO controls to the South Boston beaches and to shell fishing beds.It's a planning step meant to prioritize CSO controls in the areas that most need them. For the updated CSO control plan, identification of sensitive uses could begin in January 2023 or be included as a requirement in the 2024 variance. Who knows when this assessment will happen? Not me. But I'd like to.

I disagreed with the sensitive use area assessment in the 2001 Notice of Project Change for the Alewife Brook CSO Control Project(NPC). MWRA misreads the CSO Control Policy in a way that denies both DEP and EPA a useful tool to address long-standing community concerns here.The CSO Control Policy[15] says"(t)he CSO control plan is to give priority to controlling overflows in sensitive areas" and that "sensitive areas, as determined by the NPDES authority...include" seven areas that specifically meet the requirement. In the NPC it was sufficient for MWRA to demonstrate that none of the listed elements existed in the waterbody. This is a misreading of the statutory language. The correct construction is that the permitting authority can determine what a sensitive use is, based on their discretion, and those areas include the ones on the list. The listed areas are a starting point. The MWRA chooses to remove the word "include" in their reading of the section, replacing it with "are." When Congress adopted the CSO Control Policy into the Clean Water Act, they did not change the wording of the section; nor did they delete the permitting authority's discretion.The rules of statutory construction apply to this, even if the regulatory practice and culture differs from this interpretation.

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12 The public whose ruthlessness in finding value likely exceeds the MWRA's own

13 SOW, section 4.2.1. Identify Sensitive Use Areas

14 33USC sec 402(q)

15 CSO Policy part II, C.(3).

In the context of planning for CSO controls a sensitive use area is what the permitting authority says it is.[16] Since three of the listed areas have to do with human contact, it is entirely reasonable for people living around the Alewife to ask DEP to condition approval of the Extension Request on the permittees conducting a survey of places where human contact with the planned CSO discharges might occur. The notion that planning for CSO controls should include a look at places where people might come into contact with untreated sewage discharges is a hardly remarkable.That a CSO control plan subject to this requirement should give priority to eliminating discharges where human contact exists, as this construction of the CSO Policy's sensitive use area language suggests, is a demonstration of its reasonableness. DEP should require MWRA to do this.

The Typical Year

Revising the typical year. It's everyone's priority. For my part I have faith that all the effort will result in a more accurate, forward looking, typical year for the MWRA to use.
I'm much more concerned about the way DEP will use this information to determine the appropriate level of CSO control and compliance Massachusetts water quality standards.The model is a proxy for actual conditions. It's imperfect.[17] I applaud the data gathering effort the updated typical year represents. That said, when DEP offers the "typical year" as a box in table of activation frequencies and discharge volumes as the enforceable level of CSO control for Alewife Brook, as it did in the 2019 variance, it's an incomprehensible standard. DEP relies on voluntary public notice provisions in the variance to communicate the risks posed by CSO the permittees discharges. Shifting this risk to the public is rightly rejected by most people. The standard itself needs to do more to communicate when CSO discharges can be expected and how severe the discharges will be.

DEP really needs to **unpack the "black box"** -that is a performance standard based on a statistical typical year and compliance with a computer model- and supplement it with something that people who have to live with the results can use. A narrative standard, and the variance is a narrative water quality standard, ought to relate to observable phenomena or to a meaningful service level. It should offer people sufficient predictive information so they can alter habitual patterns of behavior; or choose not to, but understand what that choice entails. Flood insurance rate maps show the water you're wading through in a 100 year storm. Stormwater design standards relate to service levels and flooded parking lots. The claim MWRA makes about a 25 year level of service for outfalls in South Boston is a start. I'm skeptical that the updated CSO control plan will achieve a level of service on par with that of South Boston in the Alewife, I'd like a revised narrative standard to provide sufficient detail that real world encounters with CSO discharges come as no surprise. As an example:

> CSO outfall SOM001A will discharge during intense rainstorms that food the adjacent Alewife Brook Parkway .
> This happens about 3 times a year. The discharge lasts about 1 hour.
> Each discharge will produce approximately 500 thousand gallons of untreated sewage.

---

16 Within the arbitrary and capricious standard of the APA.

17 Another StAB rock band moment.The room darkens.A single spotlight illuminates the stage. Everything is still. Hullo! We're the Typical Year. This song's about foul water and how they twist the truth on paper-like in Semiannual CSO Discharge Report No. 4, pg. A-26. It's called Model Lies:

Cottage Farm. Rainy sky
I don't cry. As you walk by
Rain so hard. I'm soaking wet.
You say we're dry.
Rank odor pierces. Our hearts know why.
Your Model Lies

Chorus: Oh AECOM, AECOM
Dark summer sky
My tears. Your sighs
Tell me why
The Model Lies

Within 72 hours Alewife Brook will be safe for incidental contact.

Cambridge, Somerville and the MWRA have enough information to provide this level of detail to the public. Including a narrative standard for the level of CSO control that can be easily understood in the Updated CSO control plan needs to be a priority for DEP, especially considering how long it will take to implement the updated plan.

Nine Minimum Controls Review/Odor Control

Proper operation and maintenance of CSO facilities, NMC(1), is reviewed in section 3.1.1 of the SOW. Although NMC review is given it's own section number, it's likely this review is meant to be part of the characterization of existing system conditions. Odor control belongs in the updated CSO control plan.

It is axiomatic that a well maintained sewer system does not smell. It's practically the first thing MWRA mentions when you tour one of their facilities. They say "see, this facility doesn't smell." Well, a poorly maintained sewer system smells. Odor is a persistent problem along the Alewife Brook. It's a problem in wet weather. It's a problem in dry weather. It's present in any season. Not insignificant occasional sewage smells that waft by. Strong persistent odor that does not dissipate, particularly by the outfall structures themselves. In the Alewife the MWRA sewer system is a bad neighbor.

Recently members of Save the Alewife Brook have begun to look at ways to document and map odor complaints. The Smell Your City phone application is being tested. We are also considering training volunteers to periodically walk along the Alewife Brook and check on, and report, odors.

The permittees will have their updated plan. The single most beneficial element that plan could contain would be comprehensive odor control. The Alewife area smells bad. The sewer system is to blame. Fix that, and the updated plan will enjoy a measure of public support. It'll be the thing that made the Alewife smell better. Barring that, compliance with the Nine Minimum Controls is an NPDES permit requirement, so odor control can be addressed that way.

Inter-Agency Coordination

The best for last. The most problematic portion of the MWRA's Extension Request is where the MWRA asks that "variances in support of this request should merely provide a time extension, and not result in additional variance conditions that would take away consultant and staff resources dedicated to the Updated CSO Control Plan efforts"(pg3).[18]

I understand that anyone likely to be reading the Extension Request knows the federal regulations relating to water quality variances. They know how unlikely it is that the request could be granted. What gets me is the breach of trust that MWRA's "recommendation" represents. Public participation is used to justify the Extension Request, but in the very same document you get a fine example of the MWRA's willingness to bypass the public when it suits them.

Say something nice? Well at least this shows MWRA does believe in inter-agency cooperation- when it can save them money. In its response to the SOW, EPA noted that MWRA ought to take a leadership role with regard to bringing various state agencies to the table. MWRA has the resources, and was created to do just that. Specifically, EPA wanted MWRA to work with DCR to dredge the Alewife Brook. I want that too. In the Alewife, DCR holds all the land. The green infrastructure projects being put forward for consideration in the Updated CSO Control Plan will require coordination with DCR. Any work in the Alewife Reservation to mitigate the impacts of CSO discharges will require coordination with DCR as well. Having DCR participation in the CSO public meetings really is a necessity. While you could blame for the lack of a DCR presence on a weak EOEEA secretary, I do feel it's by

18 My initial impulse was to cudgel someone with a volume of the Code of Federal Regulations. But that has passed.

design, given that the EOEEA Secretary is the Chair of the MWRA Board.

There's an opportunity cost to forgoing inter-agency cooperation. This year the MBTA began modernization of the North Cambridge Bus Garage. The site is about 300 yards away from 3 CSO regulators. It's is a place where a storage/treatment tank could easily be sited on mostly open public land. That is, could *have* been sited, if any MWRA had given it any attention.

The cost of this lack of cooperation is an open sewer called the Alewife Brook in my neighborhood. I'm fully aware that MWRA believes its water quality model demonstrates that money spent on the Alewife Brook is wasted. It's also probably true that the Authority can meet LTCP obligations with regard to Boston Harbor without doing *any* additional work on the Alewife. If you wonder why I seem almost militant at times, it's because I'm the guy who gets to live with the open sewer the MWRA's approach leaves behind. All the money MWRA saves by ignoring Alewife Brook is meaningless to me. I can still sit on the porch after a summer thunderstorm, just like I did 20 years ago, and smell the sewage in the Alewife Brook.
That said, I continue to look to Mass DEP and EPA to work with the people living near the Alewife to change this.
I do have an additional request. I would really like to understand 2021 Alewife Brook Pump Station Optimization Evaluation Report. Particularly the graphics used in the interceptor profiles. Is there anybody who can take the time to explain this report to me?

Sincerely,

David Stoff
88 Fairmont St.
Arlington,MA 02474

MWRA UPDATE TO FINANCIAL CAPABILITY ANALYSIS, AUGUST 8, 2023

MASSACHUSETTS WATER RESOURCES AUTHORITY
Deer Island
33 Tafts Avenue
Boston, MA 02128

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
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August 8, 2023

Todd J. Borci
Manager, Water Compliance Section 1
Enforcement and Compliance Assurance Division
U.S. EPA New England
5 Post Office Square
Suite 100 (04-4)
Boston, MA 02109-3912

Re: Update to the Financial Capability Analysis for variances.

As requested, the Massachusetts Water Resources Authority has updated its evaluation of the cost of system-wide elimination of CSO discharges through sewer separation. In this update, MWRA has reevaluated the current amount of sewer separation required to achieve system-wide CSO elimination, given the original 2005 estimates were based on planned sewer separation projects which have since been completed, along with further sewer separation completed or soon to be completed by MWRA and its member CSO communities.

MWRA originally responded to the U.S. Environmental Protection Agency Region 1's (EPA) request to evaluate the cost of a system-wide elimination of CSO discharges in its letter dated October 7, 2005. In this letter the MWRA outlines that system-wide elimination of CSOs would require a set of major sewer system improvements and expansions involving 1) complete, system-wide separation of remaining combined sewers, 2) extensive relief of the transport systems both upstream and downstream of the MWRA headworks facilities, including relief of MWRA-owned interceptors and certain community-owned interceptors, 3) relief of MWRA- owned cross harbor tunnels between the headworks and Deer Island, 4) major expansion of the headworks, 5) major expansion at the Deer Island treatment plant, including the North Main Pump Station and 6) an additional outfall relief tunnel for the effluent discharge to Massachusetts Bay. MWRA determined that system-wide sewer separation by itself, while feasible for CSO elimination in certain areas (e.g. South Dorchester Bay), would not provide the necessary hydraulic relief because 100% inflow removal would not be feasible and the transport and treatment systems would have to convey, treat and discharge all remaining inflow, along with peak sanitary flows and infiltration.

The MWRA's current hydraulic model (Q1-2023 system conditions) was used to tabulate the combined sewer areas currently tributary to the MWRA collection system. The areas were identified in the model by selecting the upstream areas tributary to the dry weather flow connections at each of the Combined Sewer Overflow (CSO) regulators and at each of the CSO facilities. These selected areas were then reviewed to identify and remove any duplicates. For instance, if there were overlapping areas tributary to more than one regulator, only one of the areas was counted. Additionally, duplicate areas resulting from separated stormwater still being connected to the combined system were removed. According to this methodology, the combined area based on the MWRA's current hydraulic model was calculated to be 6,877 acres. However, the combined areas tributary to North Dorchester Bay CSO Tunnel, which came on line in 2013 and provides effective CSO elimination, and other completed or planned sewer separation projects outside of the completed Long Term Control Plan (LTCP) were excluded, leading to a total combined area of 5,920 acres. Prior cost estimates were based on the 6,000 acres requiring sewer separation.

Over the past 18 years the cost for the system-wide separation has been inflated using Engineering News-Record (ENR) Construction Cost Index. This resulted in the cost per acre of sewer separation being higher than expected at $672,000 per acre for the May 2019 estimate. Rather than continue to update the number based on the ENR index MWRA used recent project data to better estimate sewer separation costs. The unit cost per acre has been updated using sewer separation construction costs provided by the Boston Water and Sewer Commission (BWSC) for recent construction contracts in South Boston and East Boston. Based on the average cost per acre from BWSC contracts, adding a 50% contingency given the significant uncertainty by which stormwater can be conveyed to the receiving waters, the average cost is estimated to be $510,000 per acre[1]. The preliminary estimated construction cost for sewer separation of the 5,920 acres is $3 billion.

Attachment 1 presents a total estimated cost of $22 billion to achieve CSO elimination for all remaining CSOs discharging to variance and non-variance waters within the metropolitan Boston area, as well as the individual cost components of system-wide separation and the escalated major system improvements and expansions required to manage the remaining inflow within the MWRA regional collection system.

If you have questions regarding these updated costs and financial information, or questions related to other aspects of our request for variance extensions, please do not hesitate to contact me at 617-788-4359.

David W. Coppes, P.E.

Chief Operating Officer

cc: Dan Arsenault, EPA

Susannah King, MassDEP

1 Not including engineering costs

Attachment 1

Cost of System-wide CSO Elimination

	Total cost with contingency and inflation	**Total cost with contingency and inflation**	**Total cost with contingency and inflation**	**Total cost with contingency and inflation**	**Total cost with contingency and inflation**
	October 7, 2005	September 2, 2011	August 27, 2013	May 24, 2019	March 15, 2023*
	inflated from 1994	*inflated from 2005*	*inflated from 2005*	*further inflated from 9/1/2013 to 5/1/2019*	*further inflated from 5/1/2019 to 3/1/2023*
Ward St., Columbus Park and Chelsea Creek Headworks	675,000,000	843,749,599	916,246,642	1,088,727,374	1,447,057,039
Boston Main Drainage Tunnel (from Ward St. to Deer Island)	616,000,000	769,999,634	836,159,899	993,564,537	1,320,573,535
Metropolitan Relief Tunnel (from Chelsea to Deer Island)	345,000,000	431,249,795	468,303,839	556,460,658	739,606,931
Deer Island Treatment Plant, including North Main Pump Station	5,300,000,000	6,624,996,851	7,194,232,894	8,548,526,045	11,362,077,492
Effluent Outfall Tunnel	1,600,000,000	1,999,999,049	2,171,843,892	2,580,687,108	3,430,061,130
Residuals Facilities	500,000,000	624,999,703	678,701,216	806,464,721	1,071,894,103
Subtotal	**9,036,000,000**	**11,294,994,631**	**12,265,488,382**	**14,574,430,443**	**19,371,270,229**
System-wide Sewer Separation	2,500,000,000	3,124,998,515	3,393,506,082	4,032,323,606	3,019,200,000
Total	**11,536,000,000**	**14,419,993,146**	**15,658,994,464**	**18,606,754,049**	**22,390,470,229**

* For inflating costs between May 2019 and March 2023 the following indexes were used (May 2018 – 8282.39) and (March 2023 – 17755.69)

APPENDIX B

Watershed Advocacy and Stakeholder Group Meeting Presentations

City of Cambridge | City of Somerville | MWRA

Updated CSO Control Plans Enhanced Notification

Watershed Associations Meeting

November 20, 2024

Meeting Agenda

1:30 Welcome

1:40 Discuss + identify interim measures

- What should we modify now to improve public notification in areas that flood during CSO activation?

2:10 Feasibility study scope of work

- Discuss and give input on scope of work for the feasibility study of real-time onsite notification options

3:00 Adjourn

Variance Requirements

By **August 31, 2025,** MWRA and the Cities of Cambridge and Somerville shall complete an **evaluation** of the feasibility of installing and implementing a real time, on site public notification system for CSO discharges, such as a warning light system.

The evaluation shall include, but not be limited to, an assessment of costs, coordination with property owners and abutting municipalities, power needs, permitting requirements, logistics of installation and implementation, and success of similar systems in other cities.

Variance Requirements

Simultaneously, MWRA and the Cities of Cambridge and Somerville shall identify and implement **interim measures** for enhanced notification to the public of CSO discharges.

MWRA and the Cities of Cambridge and Somerville shall consult with watershed advocacy groups to inform development of the scope of the evaluation and identification of interim measures.

Interim Measures

What should we modify now to improve public notification in areas that flood during CSO activations?

Current CSO Notification Practices

- 314 CMR 16.00 - Notification Requirements to Promote Public Awareness of Sewage Pollution
  - Email notifications to subscribers
  - Signage at public access locations

- NPDES CSO Permits: Signage at all CSO outfalls

Cambridge's Current Notification System

Email Alert System

- Sign up process for emails: cambridgema.gov/Subscribe
  - Members of the public sign up online (Constant Contact)
  - Cambridge staff adds in additional "must notify" recipients per the regulation (e.g. Boards of Health, newspapers, etc)

Staff activities during CSO activations related to emails

- Staff receives alarm notification through SmartSights WIN911 mobile app when CSO occurs
- Staff confirms CSO event through review of Supervisory Control and Data Acquisition (SCADA) System
- Staff manually sends initial and 8-hr update emails to all subscribers and updates website

Onsite signage

- All CSO outfalls: CAM001, CAM002, CAM401A, CAM401B, CAM005, CAM007, CAM009, CAM011, CAM017
- At 7 public access locations in Cambridge

Somerville's Current Notification System

Email Alert System

- Lucica manually adds "must notify" recipients per the regulation (e.g. Boards of Health, newspapers, etc)
- Members of the public sign up online (platform: Jotform)
- Lucica manually adds new sign-ups to Somerville CSO Notifications Google group

Staff activities during CSO activations related to emails

- ADS/PRISM monitoring system
- Somerville staff notified by ADS/Prism when SOM001A activates
- Lucica sends initial and 8-hr update emails to all subscribers using the Google group – in the process of having these emails be automated through ADS/PRISM and Aquasite

CSO Events > 2hrs

- Lucica monitors Cambridge and MWRA 8-hr notifications emails to identify outfalls with CSO discharges longer than 2 hours
- Lucica emails Communications Dept and DPW staff to send Somerville wide alerts and add inserts to the existing signs

Onsite signage

- At SOM001A
- At 3 public access points in Somerville

MWRA's Current Notification System

Email Alert System

- Sign up process for emails
  - Members of the public sign up online (software: Everbridge)
  - MWRA add in additional "must notify" recipients per the regulation (e.g. Boards of Health, newspapers)

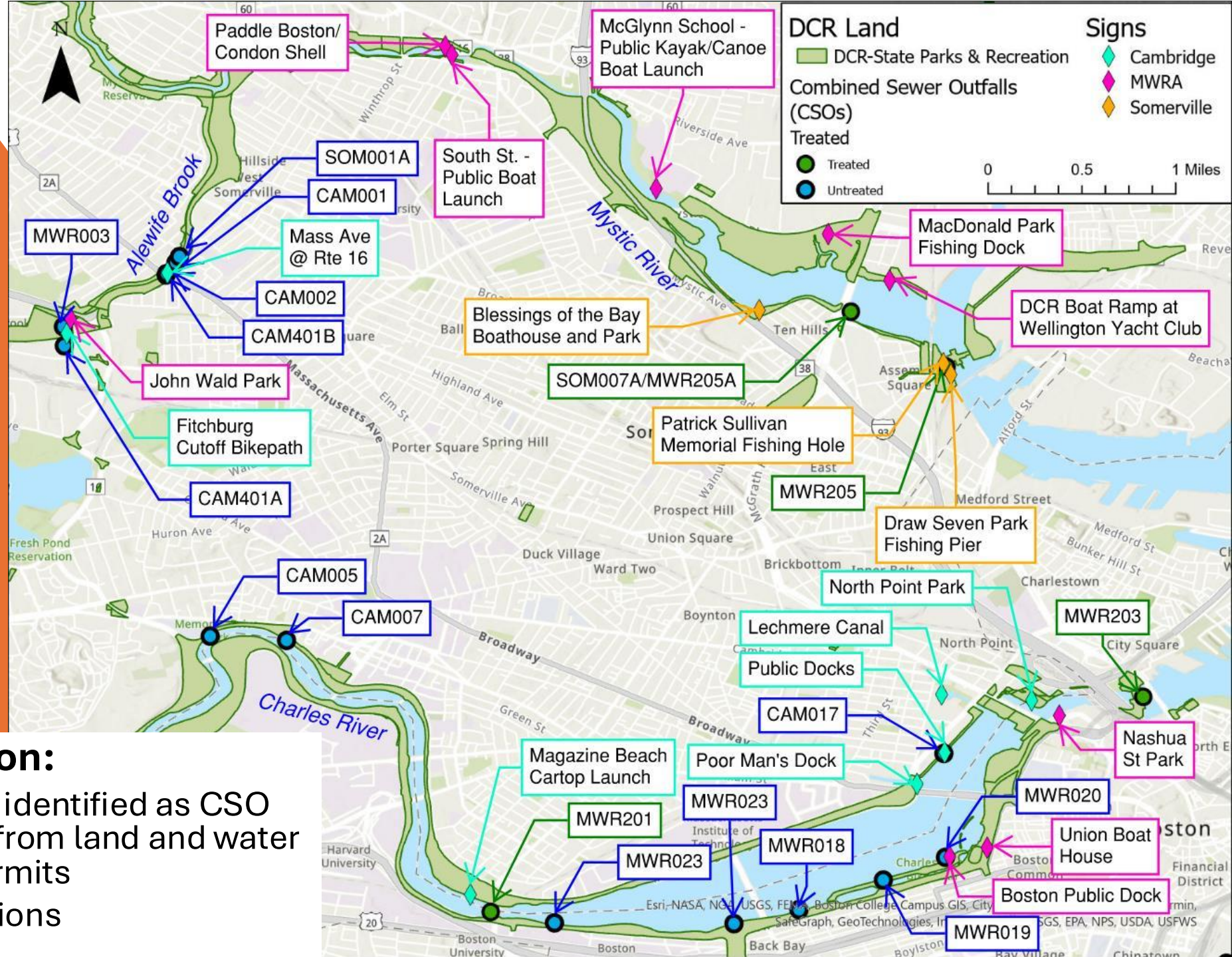
Staff activities during CSO activations related to emails

- MWRA Emergency Operations Center (EOC) staff monitor wastewater elevations and watch for levels exceeding overflow values (24/7)
  - EOC staff inform Environmental Quality (ENQUAL) staff by phone (24/7)
  - ENQUAL staff update website and manually send initial and 8-hr update emails to all subscribers and the "must notify" email list

Onsite signage

- At MWR003, SOM007A/MWR205A, MWR205, MWR201, MWR010, MWR023, MWR018, MWR019, MWR020, MWR203
- At 9 public access points in Arlington, Boston, and Medford

What signage exists now?



- **Existing sign location:**
  - All CSO outfalls are identified as CSO outfalls and visible from land and water per NPDES CSO permits
  - Public access locations

Proposed interim measures for enhanced notification

What: Signs at flooded pathways

- Temporary signs immediately
- Permanent signs upon approval of permits

When:

- During normal business hours before forecasted large storm events likely to cause overbank flooding

Message on sign: See upcoming slide

Where: See upcoming slide

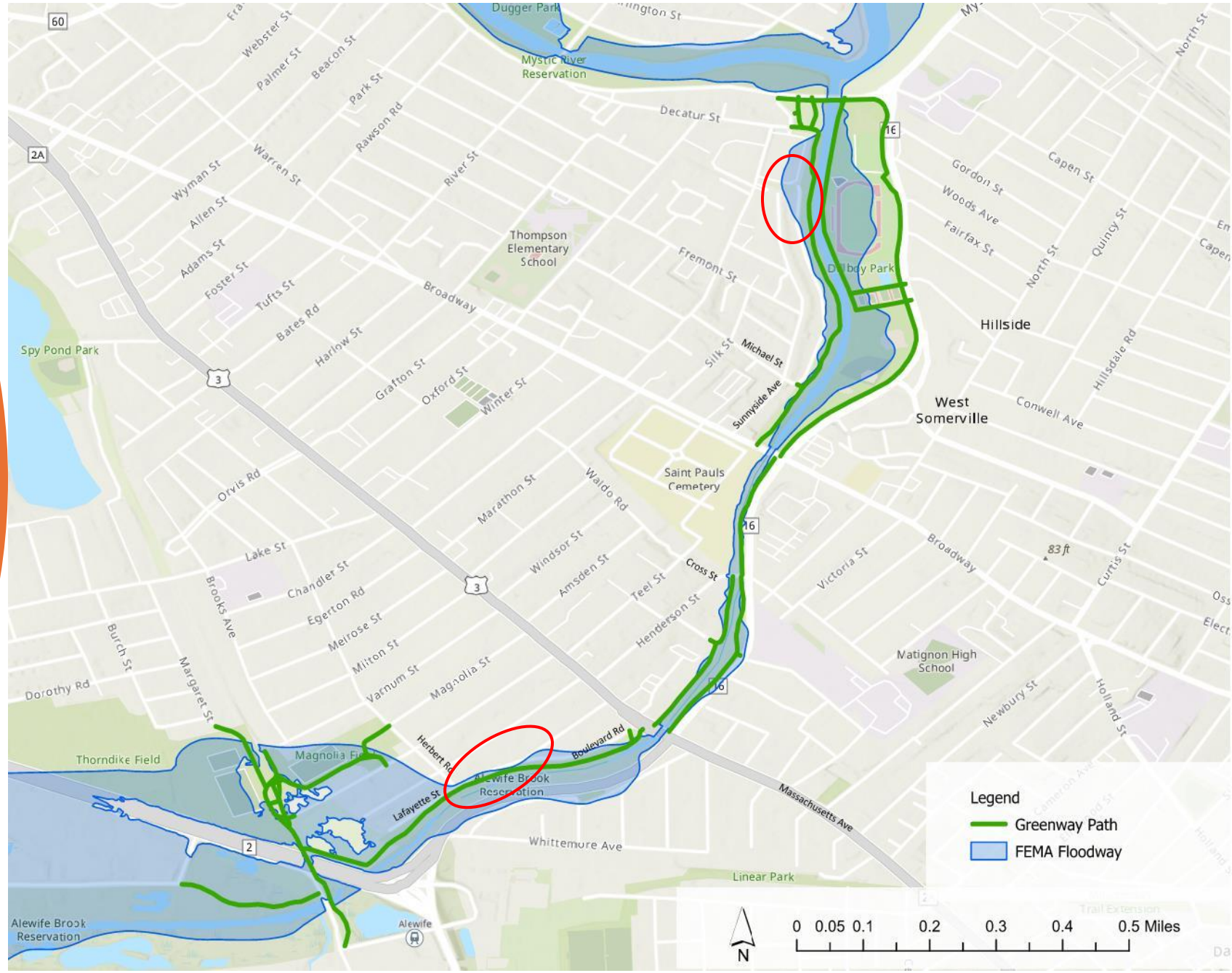
Proposed text for signs

TURN AROUND if you see water flooding the Greenway!

- Floodwater may be contaminated by oil, sewage and chemicals
- It is **never** safe to walk, stroll, drive, or bike into floodwaters.
- Keep children and pets away from all floodwaters.
- Sign up for email notifications
  - www.cambridgema.gov/Subscribe
  - www.somervillema.gov/cso
  - www.mwra.com/follow-us

(Also translated into other languages)

Where does flooding occur?



Interim Measures Questions/Discussion

- Temporary/Fixed signs?
- Where are the flooding problem areas?
- Language/text for sign (slide 12)?
  - Thoughts on text
  - What's missing?
- Other measures?

Feasibility study of real-time onsite public notification

How can we implement an onsite notification system for CSO discharges?

Draft Scope: onsite public notification system for CSO discharges to Variance Waters

- Best practices and success of similar systems in other cities
  - What type of systems are used (flags, beacons, etc.)
  - When and how long are they displayed
- Installation & implementation logistics
- Coordination with property owners and abutting municipalities
- Power needs
- Permitting requirements
- An assessment of costs

Real-time Notification Questions/Discussion

- What do you envision for this system?
- Are you familiar with other real-time notification system? Explain how they operate?
- When to use enhanced real-time notification:
  - During all CSOs?
  - When public health advisory is issued (all SSOs, CSOs > 2h)?
- Where to target enhanced notification systems:
  - At CSO outfalls?
  - At public access locations?
  - Other suggested locations?

City of Cambridge | City of Somerville | MWRA

Updated CSO Control Plans Enhanced Public Notifications

Meeting with small group from local watershed associations

May 5, 2025

Meeting Agenda

10:30 Welcome

10:40 Background and Ongoing Work

- Review variance requirements
- Interim measures

10:50 Notification System Research

- What we've learned: existing systems, other systems, MWRA pilot
- Coordination on a path forward

11:10 Feedback and Discussion

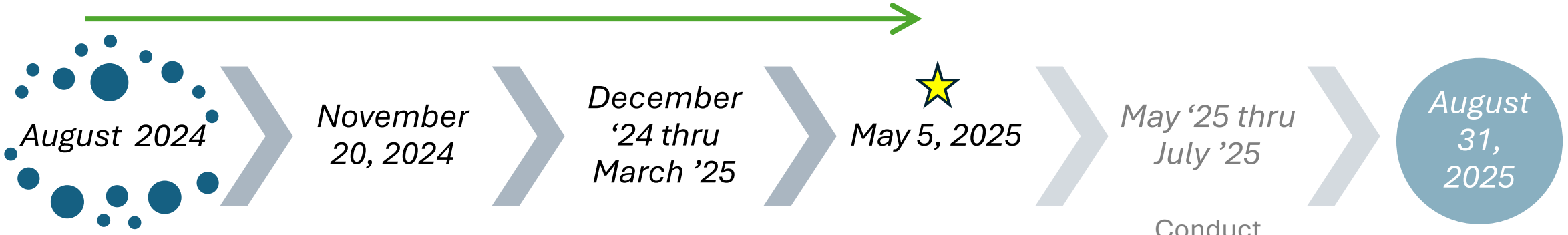
- Next steps between now and August 31st

12:00 Adjourn

Background and Ongoing Work

What is being done to evaluate enhanced public notification systems?

Update on the Timeline



Updated CSO Variance

Initial Meeting on Evaluation Scope for Enhanced Public Notifications

Research into real-time, onsite CSO notification systems

Update Meeting on Enhanced Public Notifications

Conduct evaluation into feasibility of a real time, onsite CSO notification system

Submit report on the evaluation to EPA and DEP

Variance Requirements

By **August 31, 2025,** MWRA and the Cities of Cambridge and Somerville shall complete an **evaluation** of the feasibility of installing and implementing a real time, on site public notification system for CSO discharges, such as a warning light system.

The evaluation shall include, but not be limited to:

1. an assessment of costs,
2. coordination with property owners and abutting municipalities,
3. power needs,
4. permitting requirements,
5. logistics of installation and implementation, and
6. success of similar systems in other cities.

Variance Requirements

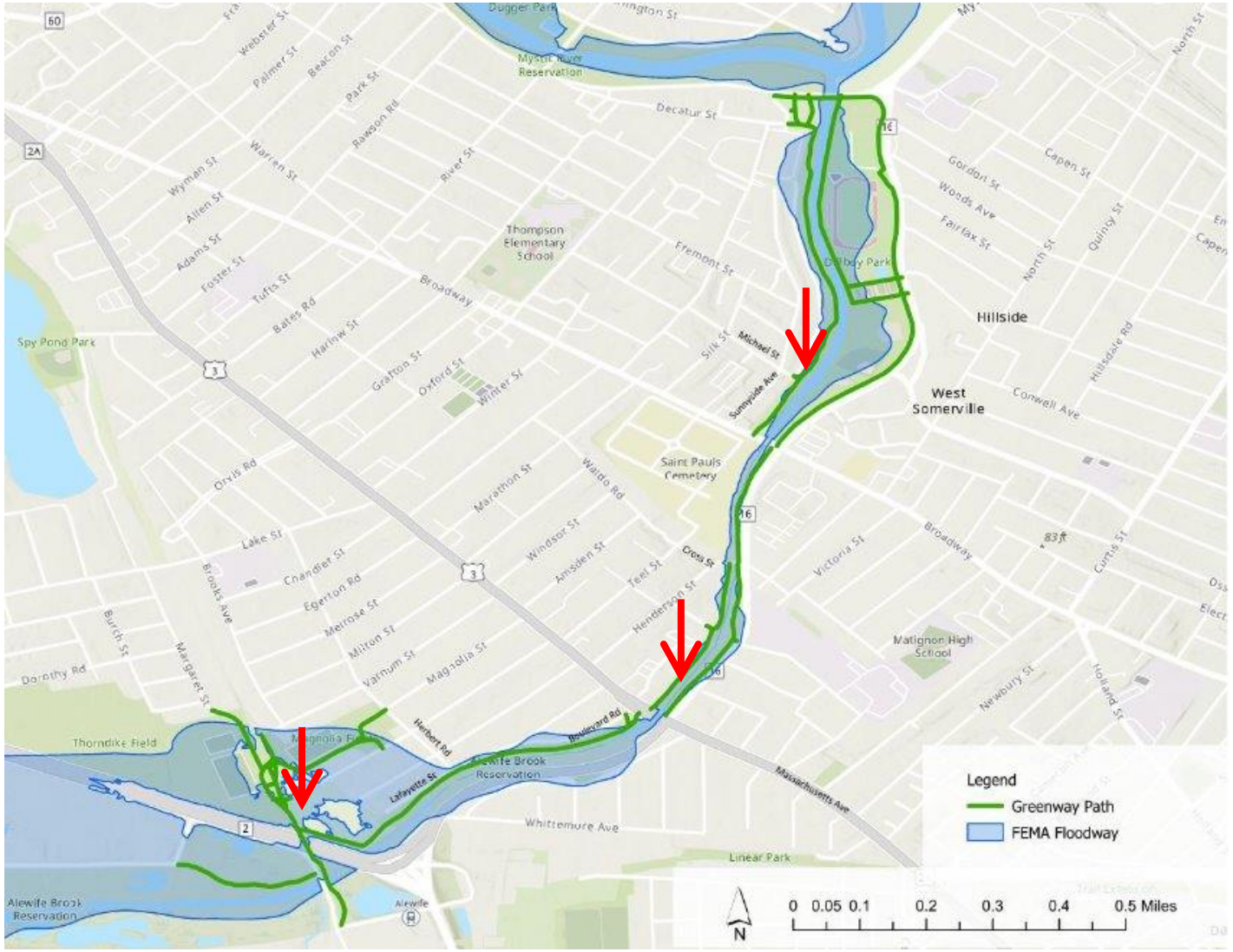
Simultaneously, MWRA and the Cities of Cambridge and Somerville shall identify and implement **interim measures** for enhanced notification to the public of CSO discharges.

MWRA and the Cities of Cambridge and Somerville shall consult with watershed advocacy groups to inform development of the scope of the evaluation and identification of interim measures.

Implementing Interim Measures

UPDATE

- On December 11, 2024, three sandwich boards were placed along the Alewife Brook Greenway path (2.7” event)
- Boards placed for rain events >2" in 24 hours and with high peak intensity



Implementing Interim Measures

FEEDBACK

Boardwalk near Rt. 2

Mass Ave

Sunnyside Ave

Notification System Research

Are there existing examples of onsite public notifications systems for CSOs?

Existing: Lancaster, PA Indicator Beacons

Motivation

- 2017 Consent Decree
- “visual notification system designed to notify the public of the occurrence of CSOs based on flow monitoring”

Design

- Indicator light glows red during event, yellow 24 hours after
- Flow meters are grid powered, lights are solar powered
- Radio signal triggers from associate CSO light
- 4 lights, at outfall locations

Cost

- $72,950 for purchase and install

Additional CSO Notification Measures

- Permanent Signage, email notifications, website updates

Lancaster Notification Lights

Existing: DC Water Indicator Beacons

Motivation

- 2005 Consent Decree
- "A visual notification system shall be installed…based on flow monitoring at representative CSO outfalls on each receiving water."

Design

- Indicator light glows red during event, yellow 24 hours after
- Grid Powered
- Utilizes cell signal to trigger light
- Single CSO location triggers all lights along water body
- 12 lights at public access locations, along 3 water bodies

Cost

- Unknown, as lights were installed as part of larger projects

Additional CSO Notification Measures

- Permanent Signage

DC Water CSO Signage

Existing: Chelsea, MA Indicator Beacons

Motivation

- Public awareness, no legal requirement

Design

- Indicator light glows amber during event and for 24 hours after
- Solar powered
- 911 notification system
- All lights triggered for any CSO activity
- 4 lights, at public access locations

Cost

- $32,600 for purchase and install

Additional CSO Notification Measures

- Permanent Signage, email notifications, website updates

City of Chelsea Notification Light

Existing: ALCOSAN Flagging System

Motivation

- 2007 Consent Decree
- Required a “flag system for notification used by marinas to alert the public of such Discharge

Design

- Staff raise flags when treatment plant wet well reaches a certain level
- Flags raised between 8am – 7pm
- Flags in place for 48 hours
- Seasonal: April 1 – Oct 31

Cost

- Staff Time

Additional CSO Notification Measures

- Permanent Signage, email and text notifications

ALCOSAN Notification Flag

Existing: Charles River Watershed Association Flagging System

Motivation

- Public Awareness

Design

- Red flags to indicate poor water quality, Blue flags indicate good water quality
- Red flags raised in response to modelled prediction of water quality and CSO events
- Notification of CSO events through MWRA notification system
- Following CSO event, red flags are raised at downstream locations
- Seasonal May 1 – October 31

Cost

- Flags raised by volunteers
- Water quality sampling completed by CRWA

Additional CSO Notification Measures

- Email notifications for water quality including CSO events

Charles River Water Shed Association Flags

Research into Other Potential Systems for Real-time Onsite CSO Notifications

Are there other methods for enhanced CSO notification systems?

Potential Systems

Indicator Lanterns *(Gowanus Canal)*

- Pros: Onsite notification
- Cons: Deployment and public education challenges

Indicator Lantern

LED Message Boards

- Pros: Ability to provide additional information and update information in real-time
- Cons: Additional power requirements (tied to the grid) and increased cost

Remotely Operated Deployable “Drones”

- Pros: No onsite power requirement
- Cons: Untested, requires trained staff

Auditory Alert Systems

Other Systems

Sampling Buoy *(Gowanus Canal)*

- Pros
  - Easily visible in the water
  - Real-time monitoring of *some* water quality metrics, though not those relevant to CSO discharges
    - Turbidity
    - pH
- Cons
  - No way to monitor coliform, a major contaminant of concern for CSOs
  - High cost
  - High complexity
  - Impossible to deploy in Alewife due to depth requirements

Sampling Buoy

Indicator Buoy Lights

- Simple buoy without sampling, may be compatible with indicator lantern technology
- Further research needed to develop buoy

Example Buoy Light

MWRA Piloting At MWR205A/SOM007A

Outfall Notification Lights – Pilot Project

Pilot Site: Outfall MWR205A (Assembly Sq)

- Outfall structure to Mystic River by the Fellsway
- Proposed location: On far corner, riverside of the outfall platform, anchored directly to the top slab of the structure. (Location in Yellow)
- Clear line-of-sight from local Yacht Clubs and Public Dock
- Radio Connection to MWRA's Somerville Sampling Building 500'

Coordination with MassDEP and Between Entities

Moving forward

Coordination to Move Forward

MassDEP

- Following the definition of real time notification as included in the 314 CMR 16 regulations (we have 4 hours to notify)
- No plan to develop state guidelines

Cambridge, MWRA, and Somerville coordination:

- Notify for all CSO events
- Keep systems up/active for **48 hours** after the event
- Install systems at public access locations if technically feasible
- Use an **amber** color if chosen systems will be a type of beacon
- Include an education sign at the sign/system location
- Need for robust public education

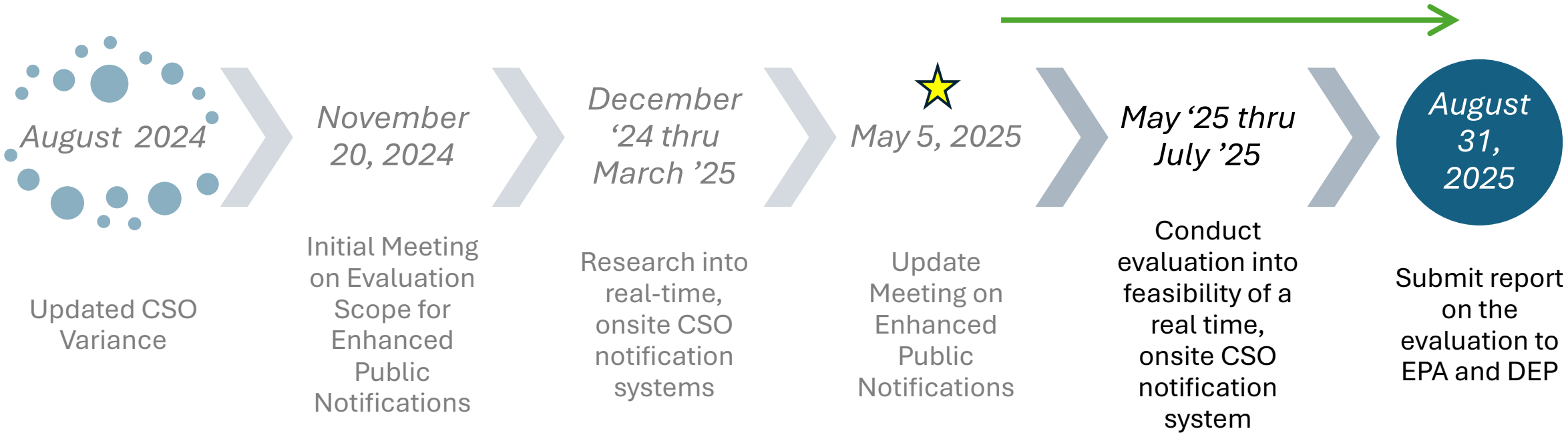
Getting Feedback

Which of the approaches discussed would work best for our watersheds?

Discussion

- Which of these options does your group prefer and why? How would you rank them? (We're happy to hear thoughts now and also to have you chat with colleagues and get back to us)
- What would be most helpful in a public education campaign? Would you be willing to help get the word out when the time comes?
- Anything else you'd like to share?

Next Steps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November 20, 2024
Initial Meeting on Evaluation Scope for Enhanced Public Notifications
December '24 thru March '25
Research into real-time, onsite CSO notification systems
May 5, 2025
Update Meeting on Enhanced Public Notifications
May '25 thru July '25
Conduct evaluation into feasibility of a real time, onsite CSO notification system
August 31, 2025
Submit report on the evaluation to EPA and DEP

APPENDIX C

Real-Time CSO Notifications Summary Memorandum

Draft for Review

M E M O R A N D U M

TO:	Lucica Hiller, Catherine Woodbury | Cambridge DPW
FROM:	Jonnas Jacques, Mckenna Roberts | Kleinfelder
DATE:	March 27, 2025
SUBJECT:	Summary of Research into Real-time CSO Notification Systems
CC:	Jim Wilcox, Diane Stokes | Cambridge DPW

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1. Purpose

This memorandum summarizes research conducted by the Kleinfelder team into existing real-time CSO notification systems currently used to improve public awareness of CSO events. It also briefly proposes alternative systems that could be developed, though are not currently in use. Research into these options consisted of online research and discussions with the notification system owner's operations staff. Phone conversations with staff at each entity occurred between December 2024 and February 2025. This document is intended as a summary of options for real-time, onsite CSO notification. It does not summarize regulations that govern public notification.

2. Existing CSO Notification Technologies

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System	DC Water	Lancaster, PA	Chelsea, MA	ALCOSAN	Charles River Watershed Association
Motivation	Consent Decree (2005) requiring real-time, onsite notification system	Consent decree (2017) requiring real-time, onsite notification system	Public awareness, no legal requirement	Consent Decree (2007) requiring onsite notification system	Public awareness
Indicator	Indicator lights - Red during event - Yellow for 24 hr after - Change in color is programmed in	Indicator lights - Red during event - Yellow for 24 hr after - Change in color is programmed in	Indicator amber lights - Remain illuminated for 24 hours after signal - Automatically turn off	Flag - Raised at all locations when any CSO event occurs (following day for overnight events) - Removed 48 hours after event	Flag - Raised at all locations downstream of CSO event - raised when multiple regression model predicts poor water quality
Power Source	Grid powered. Human input only to override in case the system malfunctions.	Grid powered PLCs at meters Solar panels charge batteries for lights	Solar panels charge batteries for lights. Staff notify 911 when to turn on the lights.	Staff raise flags after CSO event	Volunteers raise flags at public access points.
Cost	Unknown. Lights are being installed as part of larger construction projects, so construction costs for lights specifically are not known	$72,950 (purchase and install)	$32,600 (purchase and install)	Cost of flags is minimal	Operations consist of limited staff time - Primarily utilizes volunteers - MWRA pays for samples
Install Date	2018 - 2030	2021	2023		
Location	As of 02/2025: 5 Public access locations (4 along Anacostia River, 1 along Potomac River) By 03/2030: 12 public access locations (4 along Anacostia River, 4 along Potomac, 4 along Rock Creek) - Locations coordinated between DC Water and National Park (land owner) staff	4 CSO outfalls - Locations chosen to be next to outfalls	7 public access locations - Locations chosen by Chelsea DPW, MassDEP, and Green Roots (local EJ organization)	9 public access locations - Locations	Public access locations - Locations determined by volunteer participation
Signal	Cell signal from a representative CSO on each water body will be used to turn on all 4 indicator lights on that water body	Radio signal from CSO flow meter with PLC Signal from meter only illuminates light at meter. Outfall where light is located. CSOs discharge to a river with no tidal activity that affects the meter.	Staff verified CSO alarm, Staff use 911 system to turn on all lights, regardless of which CSO overflows	Wet well level in treatment plant alerts staff, who notifies additional staff over text	MWRA notification
Time of Year	Year round	Year round	Year round	Seasonal: April 1 until October 31, 8am-7pm, 7 days a week.	Seasonal: May 1st and October 31st
Additional CSO measures	Permanent signage	Permanent signage, email notifications, City website updates	Permanent signage, email notifications, City website updates	Permanent signage, email and text notifications	Email notifications (for water quality, not just CSO)
Permitting/Land Ownership	Most on National Park land and permitting with the National Parks was required.	On City owned land or within sewer easement	2 required DCR permits 1 required permission from private owner 4 on City land	None	None

System Details

DC Water

DC Water and Sewer is a regional entity that provides wastewater treatment for a population of 1.6M people. The wastewater system consists of both separated and combined sewers. Typically, all wastewater is treated at the Blue Plains Wastewater Treatment Plant, which has an average treatment volume of 384 million gallons per day (MGD) and a maximum four-hour treatment volume of 555 MGD. (DC Water, 2024) During storm events when the capacity of the combined sewer system is exceeded, water discharges into Anacostia River, Rock Creek, Potomac River or tributary waters at 48 CSO locations within the DC Water wastewater system. (DC Water, 2024)

Lancaster, PA

The City of Lancaster owns and operates a partially combined sewer system. They operate 60 miles of separated sewer piping and 88 miles of combined sewer piping. It includes five CSOs and the Advanced Wastewater Plant, which treats water from 13 tributary municipalities and has a capacity of 32.08 MGD. The wastewater system services a population of approximately 130,000. (EPA, 2025) (City of Lancaster, 2025)

Chelsea, MA

The City of Chelsea, MA is serviced by the Massachusetts Water Resource Authority (MWRA) for both their water and sewer systems. The Chelsea sewer system consists of 70% combined sewers and 30% separated sewers. (City of Chelsea Massachusetts, 2024). The combined sewer system includes 4 CSOs, which discharge into Chelsea Creek. (City of Chelsea, 2024)

Figure 1. City of Chelsea Notification Light

Allegheny County, PA

Allegheny County Sanitary Authority (ALCOSAN) is a regional entity. It operates 90 miles of sewer interceptors that service 83 municipalities. The system includes 259 combined sewer overflow structures and 53 sanitary sewer overflow structures. (ALCOSAN, 2024)

CSO events are triggered by a level sensor in the wet well at the ALCOSAN water treatment facility. Modelling was used to determine the water elevation at which CSOs occurred.

Charles River Watershed Association

The Charles River Watershed Association (CRWA) is a watershed association with a mission to use science, advocacy, and the law to protect, restore, and enhance the Charles River. It utilizes a multiple regression model to predict water quality. Upon notification of a CSO from the MWRA, flags downstream of the CSO event are changed to red. They remain red for 48 hours after the event ends. (Charles River Watershed Association, 2024)

3. Translatable Technologies

Water system monitoring technologies used for other purposes may be applied to CSO monitoring and notification. Two such systems are in place in the Gowanus Canal. The Gowanus Canal is a 100-ft wide, 1.8-mile long canal in New York City's borough of Brooklyn. It was built in the 1800s. In 2010, the canal was designated as a superfund site due to pollutants generated from manufactured gas plants (MGPs), paper mills, tanneries, and chemical plants, which discharged waste into the canal. Additionally, CSOs discharge into the canal during wet weather events. Both the City of New York and local activist groups have implemented a number of systems to monitor the canal and alert local residents of public health issues.

- *Household Indicator Lanterns*

The Gowanus Canal is not classified for recreational purposes and therefore CSO notifications are not needed to inform recreational users. However, a household indicator system has been implemented to help residents minimize water use when CSOs are expected, therefore reducing CSO volume and frequency. The notification system was designed by two fellows at the Van Alen Institute, Francesca Bastianini and Steven Koller. It consists of small lanterns that residents are encouraged to place in their house or business. The lanterns glow white during dry conditions. During a CSO event or when wet weather is expected, lanterns flash rainbow colors. During rainbow periods, residents are encouraged to cut back on water consumption.

The signaling system relies on a wireless network (cellular or Wi-Fi) for communications. It works by sending a ping to the NYC Department of Environmental Protection waterbody advisory website to search for any indication of a water quality advisory for the Gowanus Canal.

Instructions for 3D printing the lantern and the lantern programming code is open source and available online. As such, the cost of the lanterns only includes manufacturing costs and staff costs for maintaining the notification system.

A similar lantern notification system could be implemented at businesses and homes adjacent to the Alewife Brook, Mystic River, and Charles River to alert those in the vicinity of water quality advisories. A system of this nature would require extensive public education and demonstrations for its use to be effective and publicly accepted as a notification system.

- *Water Quality Buoys*

The cleanup plan for the Gowanus Canal includes dredging the contaminated sediment on the bottom and capping the canal. During the dredging of the canal, officials must monitor the turbidity to ensure that polluted sediment does not travel downstream. To monitor turbidity in real time, the project has installed water quality monitoring buoys along the canal. The buoys can be customized to monitor a range of water quality parameters including turbidity, dissolved oxygen, pH, and salinity. Buoys measure the parameters in real time and relay the information to a website or SCADA system using a range of signaling methods including cell signals, blue tooth, and satellites. Information can be sent to a website or a City's SCADA system.

Unfortunately, buoys are not well suited as CSO indicators because the primary CSO pollutant of concern, bacteria, cannot be measured in real time or without a lab. This is because bacterial testing requires an incubation period. This process takes hours to days and requires lab-based testing. Remote buoys may be able to monitor some additional water quality parameters that are correlated with CSO events such as a

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rise in nitrogen. However, it would be impossible to prove that these measurements were caused by a CSO and not the general runoff into the river during rainfall.

The buoys communicate over a cellular network through the Iridium (satellite) system. Water quality buoy range in price from a few thousand dollars to hundreds of thousands of dollars, depending on the monitoring technology included and the size of the buoy. An inquiry to YSI (manufacturer) for their EMM68 platform yielded a rough estimated cost of about $47,000 to furnish and install the buoy.

4. Alternative Systems

Indicator lights and flagging systems are the most widely used onsite notification systems. However, municipalities could develop alternative systems better suited to their specific needs. One option is outfitting beacon lights with LED boards. LED boards may be helpful in providing detailed CSO information such as the time and volume of the CSO event. They can also be repurposed as permanent signage during dry periods. A second option is to provide an audible component to the warning system to attract attention, increase accessibility, and provide additional details about the overflow event.

Municipalities may also consider deploying drones or remotely operated boats to CSO locations during CSO events. This option reduces the need for an onsite power source and makes it possible to move the notification craft to the area where a CSO is occurring.

While many options for notification can be imagined, they would result in extensive design work and an increased risk of failure. Pre-engineered and pre-tested solutions are likely to have lower costs and more predictable outcomes. Given that numerous locations have successfully installed methods of CSO notification, it is likely preferable to follow a similar approach to one of these systems.

5. Conclusion

Multiple options for onsite notification of CSO events are available. In determining the ideal solution, the following questions should be considered:

a) What information is important to the public?

The expectations and needs of the public should inform the system chosen in multiple areas:

- Time delay – Systems detailed in this report have response times ranging from minutes to hours. To determine the correct notification choice, the City and the public must determine what length of delay is acceptable.
- Location – The City should consider if it is more helpful to have notification systems at public access locations or at the location of the outfall. If systems are installed at public access locations, consideration should be put into which locations will be most visible and raise the most awareness.
- Event Severity – The City should consider whether notifications should be deployed only for events that trigger public health advisories, or for any CSO event that occurs.

b) Is there staff available for this system?

The systems in this report have various burdens on staff time, with some systems requiring staff to manually raise flags across the system, some being fully automated, and some relying on volunteers. The City should consider the staff time burden of any of these systems and evaluate if there is any opportunity to partner with community organizations to offload some of that burden.

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c) Is there existing infrastructure that would enable real-time, automated, reliable signaling?

The systems that were able to implement automated signaling had infrastructure in place (flow meters and level sensors) that could be used to either predict or confirm a CSO event. To implement a similar solution, the City would need to identify existing infrastructure or install new infrastructure that can provide this information. The infrastructure necessary will depend on whether the City plans to install lighting systems for overflow events at individual CSOs, a lighting system triggered by an overflow event at a specific CSO, or a lighting system triggered by an overflow event at any CSO.

d) Where are the optimal locations for a notification system and what permits are required at those locations?

Depending on the locations chosen by the City, there may be a need to obtain permits for the installation of the real time notification systems.

e) What funding is available for the installation of the system?

The cost associated with these systems varies. If implementing a solution that comes with construction costs, the City could consider researching MassDEP grants to identify possible sources of outside funding.

f) In an interconnected conveyance system, how is one entity accounting for CSO activations from other entities for locations within its jurisdiction?

The answer to this question will depend on who manages the CSOs and the indicator lights, the location of indicator lights in relation to the signaling CSO, the number of indicator lights to be installed, and an analysis of the impacts of a single CSO on the entire water body.

g) Will tidal activity impact the reliability of flow data?

Tidal activity may cause water level fluctuations in coastal wastewater systems that trigger CSO alarms. If this is the case, operators may struggle to obtain reliable metering data for indicator light control from flow metering data.

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APPENDIX D

Proposed Beacon Light Site Maps


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Tax Parcels with Ownership
Proposed Beacon
M.D.C.
Fitchburg cutoff bikepath
MASSACHUSETTS COMMONWEALTH OF
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Little River
WELLINGTON, HELEN H. &
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community


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Tax Parcels with Ownership
Proposed Beacon
BP-ONE CANAL PARK, LLC.
Lechmere Canal
CAMBRIDGE CITY OF
SEARS, ROEBUCK AND CO.
KARP, STEPHEN R., STEPHEN C. PLUMERI AND
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community


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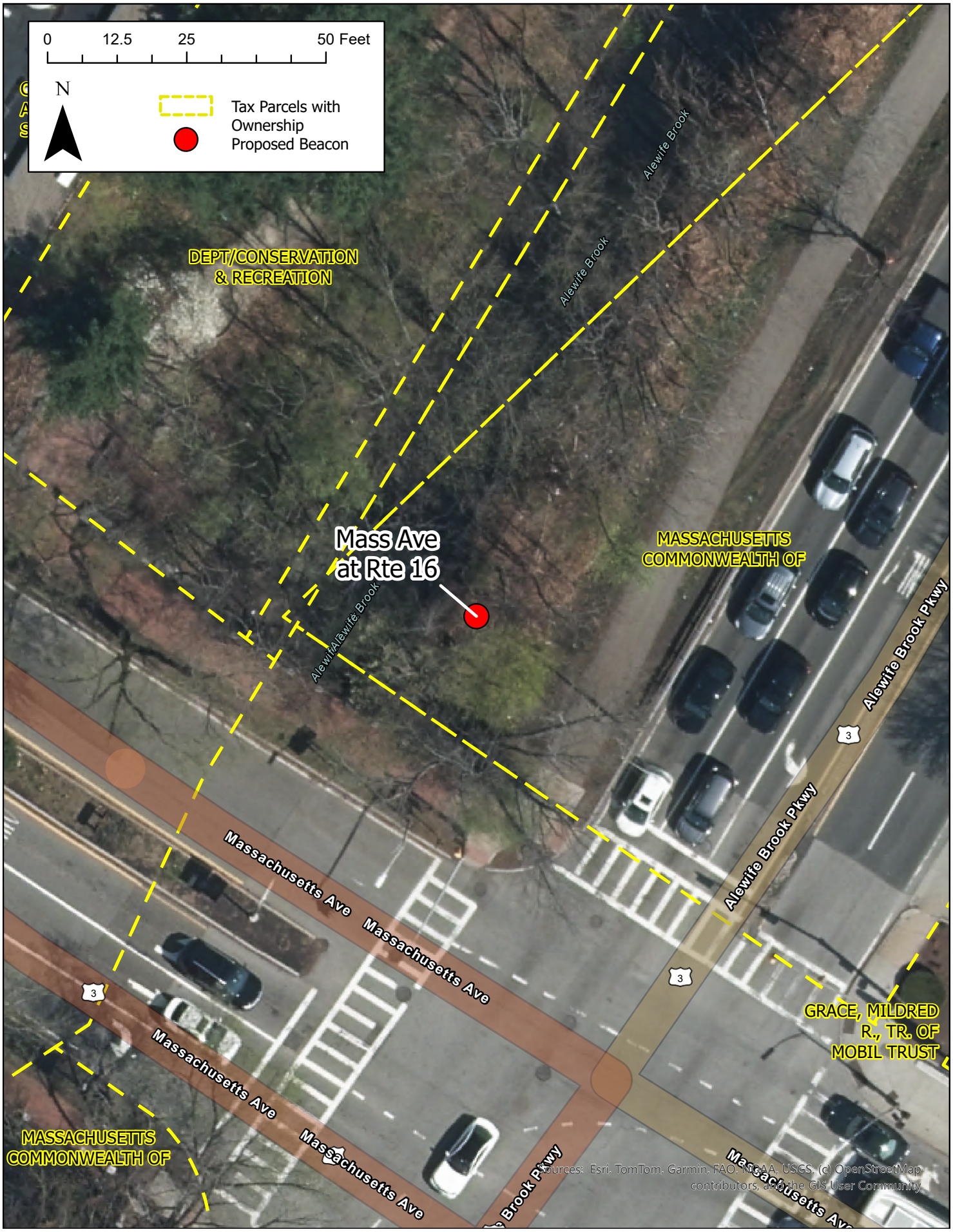
Tax Parcels with Ownership
Proposed Beacon
Magazine Beach cartop launch
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community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MASSACHUSETTS COMMONWEALTH OF
Alewife Brook Pkwy
Alewife Brook Pkwy
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GRACE, MILDRED R., TR. OF MOBIL TRUST
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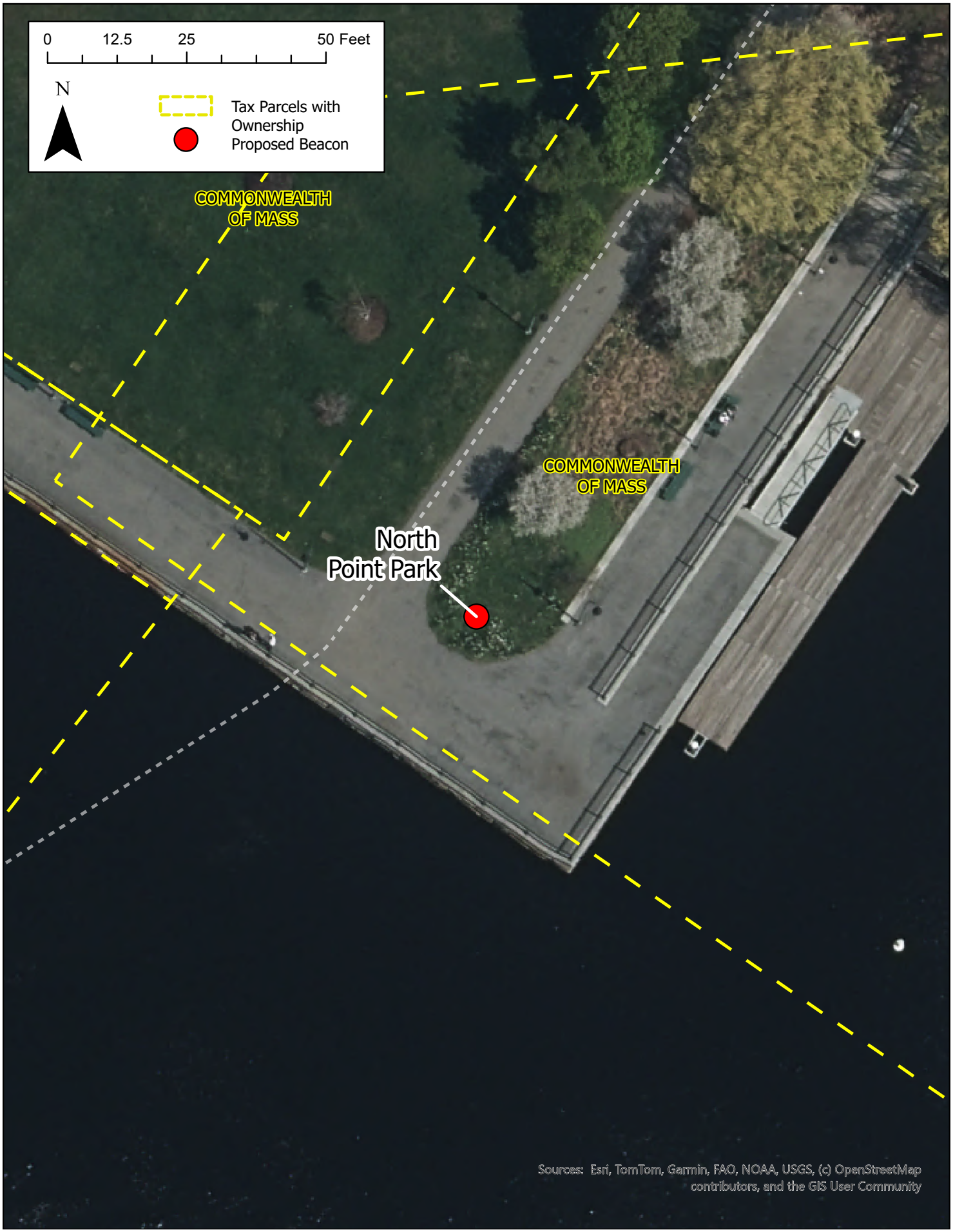
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community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Proposed Beacon
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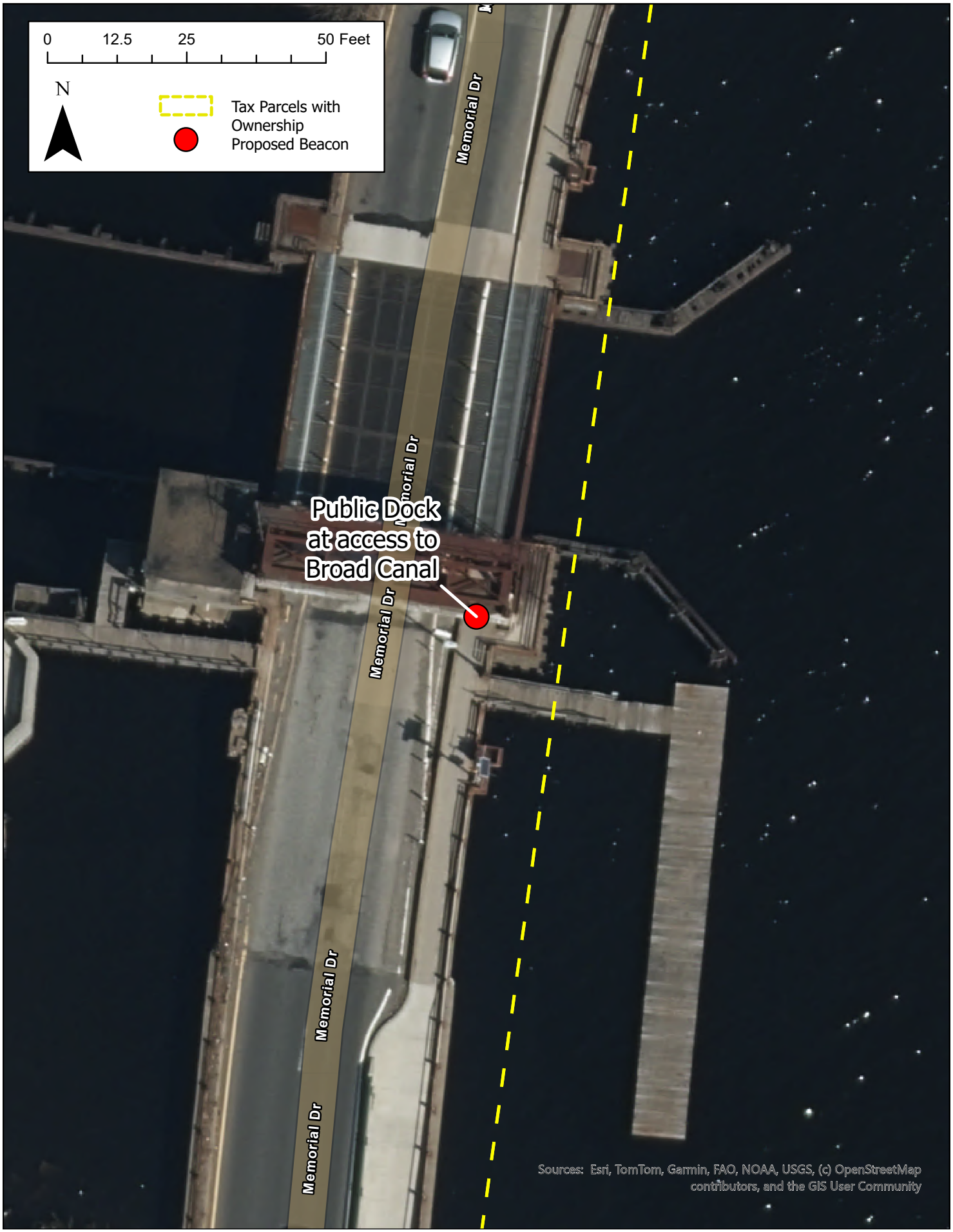
North Point Park
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community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Tax Parcels with Ownership
Proposed Beacon
Memorial Dr
Memorial Dr
Memorial Dr
Memorial Dr
Public Dock at access to Broad Canal
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community


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Tax Parcels with Ownership
Proposed Beacon
Cambridge Pkwy
CAMBRIDGE CITY OF
Cambridge Pkwy
Public docks across from Front Park
ZIMBLER, ENID B.
Cambridge Pkwy
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

APPENDIX E

Prior Beacon Light Feasibility Study by CDM

Memorandum

To: *Ms. Diane Stokes, PE*
DPW Director of Engineering Services
City of Cambridge, MA

From: *Eric Silverman, PE, PMP, CDT*
Project Manager

Date: *January 15, 2024*

Subject: *Solar Powered Beacons for CSO Notifications – Preliminary Engineering*
DPW On-Call and SCADA Maintenance Services
CDM Smith Task 11 (Executed under Amendment No. 1)
House Doctor Engineering Services File No. 10141T, Continuing Services from File No. 8412D

1.0 Background

The City of Cambridge (the City) is continuing their efforts to ensure compliance with *314 CMR 16.00 Notification Requirements to Promote Public Awareness of Sewage Pollution*. As part of this effort, the Cambridge DPW (the DPW) has already installed signage to alert the public of a potential Combined Sewer Overflow (CSO) at six locations (four at the Charles River and two at Alewife Brook). The DPW has requested that CDM Smith perform preliminary engineering to determine the feasibility of remotely activating a beacon at each of these locations upon activation. The beacon would need to continue to illuminate for 48 continuous hours after the CSO event has ended at that location.

The locations are as follows:

- Alewife Brook – Fitchburg cutoff bike path near Steel Place (Lat. 42.39659 & Long. -71.1438)
- Alewife Brook – Massachusetts Avenue at Rte. 16 (Lat. 42.4012 & Long. -71.136045)
- Charles River – Magazine Beach Cartop Launch at 668 Memorial Drive (Lat. 42.35391 & Long. -71.112722)
- Charles River – Poor Man's Dock at Broad Canal on Memorial Drive (Lat. 42.36232 & Long. -71.078325)
- Charles River – Public docks across from Front Park on Cambridge Parkway (Lat. 42.36472 & Long. -71.076195)
- Charles River – North Point Dock at 1 North Point Boulevard (Lat. 42.36869 & Long. -71.069497)

Since no utility power or communications is currently available at these locations, CDM Smith performed site investigations and preliminary engineering to determine options for a solar or turbine powered solution to meet the needs of the City. After some initial research, turbine power was eliminated due to its large footprint (100'+) that would make it unsuitable for these urban locations.

2.0 Recommended Options

Once turbine power was eliminated, CDM Smith evaluated solar solutions in the marketplace that would meet the needs of the City. Two options were ultimately evaluated and compared.

2.1 Option 1 – Turnkey Vendor Solution (RACO)

The RACO Alarm Agent Remote Terminal Unit (RTU) is vendor solution securely housed in a NEMA 4X enclosure, measuring 12"x10"x8". This system allows for remote activation and deactivation of an alarm beacon positioned at the top of the RTU through a user-friendly dashboard accessible from any internet capable device. This system is currently priced at approximately $3,000 and requires a $450 yearly agreement fee covering cell service, dashboard access, and technical support via phone. The system can be integrated into the existing DPW SCADA system via custom written code by CDM Smith.

Powering the RTU is a 5W, 12VDC solar power package configuration, providing up to 7-days of runtime without sunlight, which exceeds the *"IEEE Recommended Practice for Sizing Stand-Alone Photovoltaic (PV) Systems – IEEE 1562-2021*" for minimum autonomous runtime in New England. The solar panel proposed by RACO is sized at 47"x21" and connected to a NEMA 3R battery enclosure (23"x19"x20").

For installation, a mast (or masts) will be required. The recommended wiring size will vary based on the distance between the battery enclosure and the RACO Alarm Agent Panel. The solar power package is currently priced at approximately $2,100.

2.2 Option 2 – Contractor Solution – Separate Components

For this option an Allen-Bradley PLC control panel is equipped with a top-mounted beacon for signaling purposes. Control of a multi-colored status beacon, capable of displaying red, amber, and green signals, would be integrated with the DPW's existing Supervisory Control and Data Acquisition (SCADA) system. The equipment is housed in a durable NEMA 4X enclosure measuring 12"x12"x6". Inside the enclosure is an Allen-Bradley Micro800 PLC and Cradlepoint modem (matching the platform installed at all DPW pump stations and remote sites). The PLC control panel with beacon is currently estimated at $3,000. Programming services for the panel would be provided by CDM Smith under the SCADA on-call contract.

Powering the PLC panel is a 17W, 24VDC solar power package configuration, providing up to 5-days of runtime without sunlight which meets the *"IEEE Recommended Practice for Sizing Stand-Alone Photovoltaic (PV) Systems IEEE -1562-2021*" for minimum autonomous runtime in New England. The solar panel measures 79"x39" and connected to the NEMA 3R battery enclosure (21"x16"x15").

For installation, a mast (or masts) will be required (similar to the RACO Turnkey solution described above). The recommended wiring size will vary based on the distance between the battery enclosure and PLC control panel. The solar power package is currently priced at approximately $4,000.

3.0 Comparison of Options

The table below shows a comparison of the key criteria between the two options CDM Smith evaluated.

Key Criteria	Option 1 – Turnkey (RACO)	Option 2 – Contractor (separate components)
Approx. Hardware Costs – Comm. Panel and Solar	$5,100 plus $450/year maint. contract (Labor/Installation not included)	$7,000 plus monthly cellular service by DPW (Labor/Installation not included)
Approx. Solar Panel Size	47” x 21”	79” x 39”
# of Beacons	1 Beacon (One color - additional colors require additional beacons)	1 multi-colored beacon (3 Colors)
SCADA Integration	Separate web interface/software app with custom written connection to DPW SCADA	Will be built into DPW SCADA like all other pump stations and remote sites
Days Operational w/o Sunlight	7 days	5 days
Maintenance & Support	Unknown entity	CDM Smith support for programming and known GC/vendor for City

Option 1 has a smaller footprint and a longer operational time without sunlight. However, Option 2 will maintain the DPW SCADA platform implemented at remote sites, reduce spare parts and maintenance requirements, and will integrate seamlessly into the existing DPW SCADA system.

3.1 Installation Considerations

There are two possible installations for either option 1 or option 2 depending on any site-specific restrictions. These options are shown in the attached installation detail which conceptually shows what a single mast assembly would like versus a dual mast assembly. The single mast assembly is preferred as all components are mounted in one location with the DPW signage. Underground electrical is minimized with only a grounding rod with a single mast. The dual mast assembly is a more complex installation and could be used at any location where a single mast cannot be installed due to site-specific restrictions. With a dual mast system, the solar package is installed on a separate mast from the RACO or PLC control panel with beacon and DPW signage. This would require underground cabling to connect the solar package to the RACO or PLC control panel with beacon and DPW signage. It is also possible that the RACO/PLC control panel with beacon and signage could be mounted to a handrail or other structure if available in the preferred vicinity for public notification and not on a mast as shown in the detail.

4.0 Summary

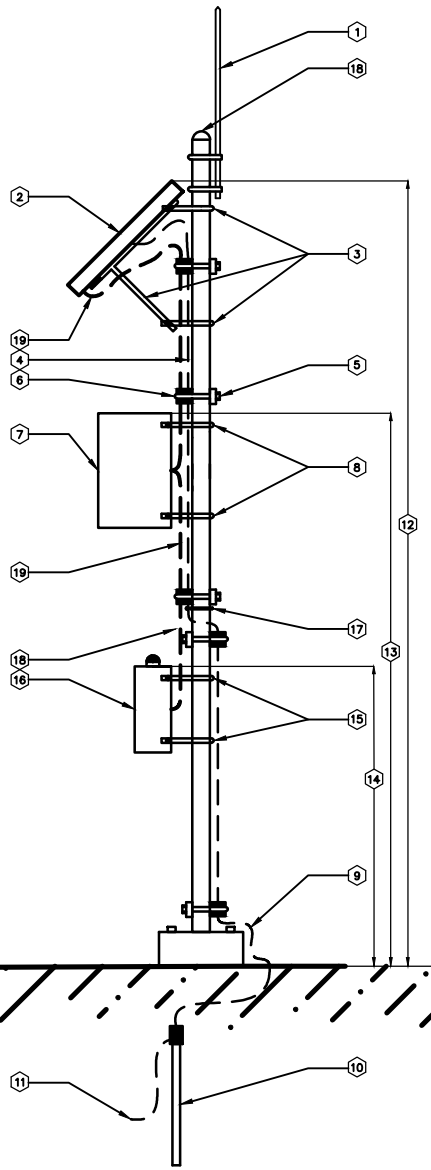
Both option 1 and option 2 are viable for the DPW. The costs are about the same for the solar and communications hardware and the deciding factor should be based on whether the DPW prefers a smaller solar panel with a vendor provided solution (option 1) or maintain the DPW SCADA system platform (option 2) with a larger solar panel allowing for an easier integration into the existing DPW

SCADA system. A hybrid solution can also be implemented where some sites utilize option 1 and others option 2.

5.0 Next Steps

Once DPW decides on the preferred solar and communication technology, the project implementation approach should be determined. Both options can be implemented under a traditional design-bid-build with the project awarded to a general contractor or a design-build approach with DPW Contractor and Electrician purchasing and installing the system. For either option, CDM Smith would assist contractor and perform the required programming to integrate the beacon control into the DPW SCADA system. Once these decisions are made by DPW, CDM Smith can develop the necessary costs for the City for their portion of the work to assist in moving this project forward.

Enc: installation detail – solar powered cso beacons single and dual mast concept



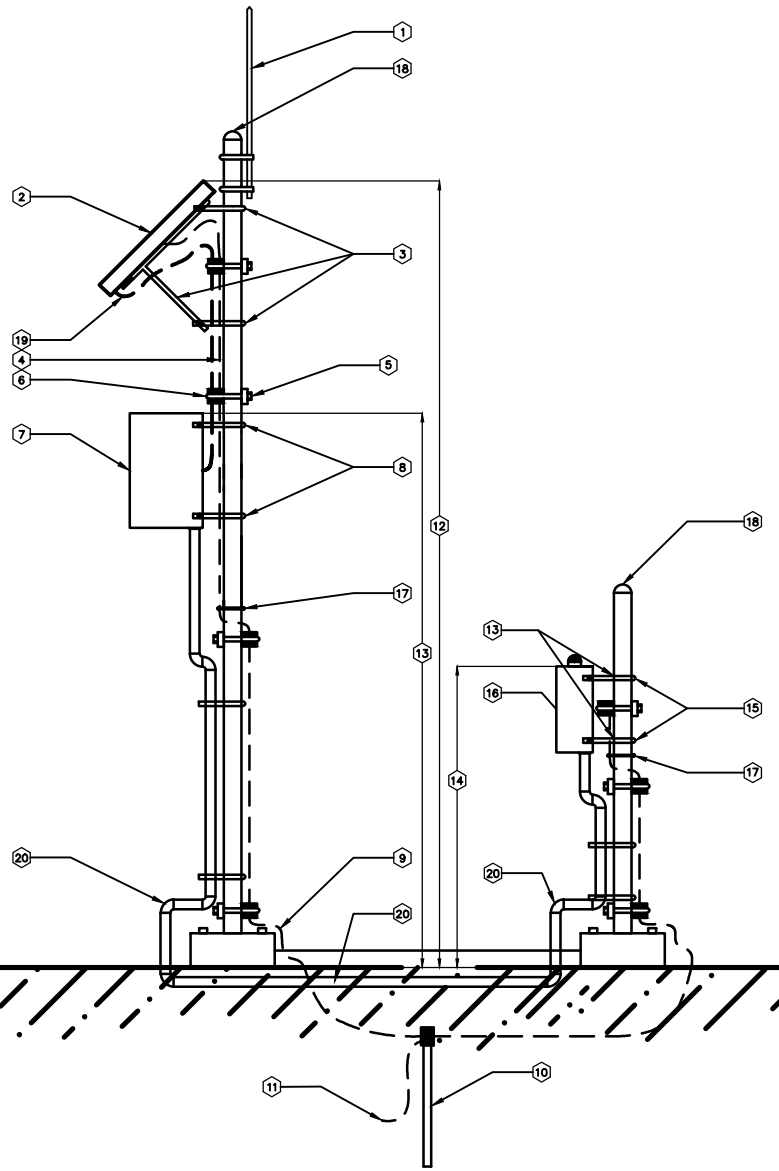
SINGLE MAST ASSEMBLY

DETAIL A

NTS

CODED NOTES:

1. LIGHTNING ROD PER NFPA 780
2. SOLAR PANEL
3. SOLAR PANEL PIPE MOUNTS
4. ELECTRICAL WIRE CABLE
5. CABLE GROUNDING KIT
6. SECURE CABLE TO MAST PIPE WITH CLAMPS
7. BATTERY ENCLOSURE
8. BATTERY ENCLOSURE PIPE MOUNT
9. GROUND WIRE: PER CODE
10. IF LIGHTNING ROD IS USED, SUPPLY TOWER GROUND ROD PER NFPA 780 AND NEC. 8 FOOT MINIMUM COPPER CLAD.
11. BOND TO ELECTRICAL GROUNDING ELECTRODE SYSYEM WITH #6 AWG MINIMUM PER NEC ARTICLE 820.
12. SOLAR PANEL HEIGHT (15' – MEASURED FROM GROUND LEVEL)
13. BATTERY ENCLOSURE HEIGHT (12' – MEASURED FROM GROUND LEVEL)
14. CONTROL PANEL HEIGHT (6' – MEASURED FROM GROUND LEVEL)
15. CONTROL PANEL PIPE MOUNT
16. CONTROL PANEL WITH BEACON LIGHT AND DPW SIGNAGE
17. LISTED GROUND CLAMP FOR PIPE
18. PIPE CAP
19. ELECTRICAL POWER CABLES
20. ELECTRIC POWER CABLE UNDERGROUND CONDUIT



DUAL MAST ASSEMBLY

DETAIL B

NTS

NOT FOR CONSTRUCTION

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: S.HUSSAIN
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CROSS CHK'D BY: G.ACKER
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CITY OF CAMBRIDGE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORK (DPW)

SOLAR POWERED CSO BEACONS
SINGLE AND DUAL MAST CONCEPT

PROJECT NO. 0139-238322
FILE NAME: I-1.DWG
SHEET NO. I-1