

Save the Alewife Brook's

Community Combined Sewer Overflow Sewage Elimination Plan



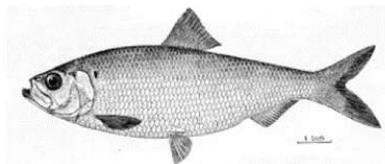
Alewife Brook: where Somerville, Cambridge, and Arlington meet. A view looking south at the Massachusetts Avenue Bridge. Somerville is in the foreground on the left. Arlington is to the right on the other side of Alewife Brook. And Cambridge is up to the left. Photo shot in 1916.

Photo from the Department of Conservation and Recreation collection at the State Archive.

Last updated: 03/19/2026

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Save the Alewife Brook

EXECUTIVE SUMMARY

By April 30, 2026, the Massachusetts Water Resources Authority (MWRA), Cambridge, and Somerville are required to submit a single draft Combined Sewer Overflow (CSO) long term control plan for the Charles & Mystic Rivers and for Alewife Brook to the Massachusetts Department of Environmental Protection (MassDEP). Community health and environmental impacts of CSOs mandate that any plan for Alewife Brook must end CSO sewage pollution while reducing area flooding and improving water quality.

This is Save the Alewife Brook's Community Plan for ending CSO sewage pollution at Alewife Brook. It is drafted using the best data available to Save the Alewife Brook as of early 2026.

This Community Plan leans on the Principles and Goals¹ outlined by the Coalition to End Sewage Pollution², while being mindful of cost, technical feasibility, and project completion time.

- ✓ The plan calls for modernizing the Victorian-era sewer systems of Cambridge and Somerville by creating separate storm and sanitary sewers in the Alewife Brook basin, as has been accomplished in parts of Cambridge and Somerville already.
- ✓ It calls for more Green Stormwater Infrastructure, including constructed stormwater wetlands in the Alewife area, in locations already identified by the Department of Conservation and Recreation's master plan for the Alewife Reservation, and for an underground holding tank at the Alewife Station area for MWRA combined sewage, as MWRA has already proposed in its draft plans.
- ✓ Our plan is achievable at a reasonable cost. It is resilient to Climate Change, as it has the added benefit of reducing stormwater flows to the MWRA sewer system in storms when the system would otherwise be over capacity. And it would provide for green infrastructure to improve neighborhoods.
- ✓ We also call for dredging and restoration of Alewife Brook. The Brook has become degraded by decades of sediment accumulation caused in large measure by the CSOs and stormwater inputs.

¹ The Coalition to End Sewage Pollution: Share Principles & Project Goals: <https://savethealewifebrook.org/wp-content/uploads/2025/10/Coalition-to-End-Sewage-Pollution-Shared-Principles-and-Shared-Goals-2025.pdf>

² Coalition to End Sewage Pollution Announcement: <https://savethealewifebrook.org/2025/11/08/the-coalition-to-end-sewage-pollution/>

From Great Swamp to Open Sewer

Sewage, Flooding, and Environmental Injustice at Alewife Brook

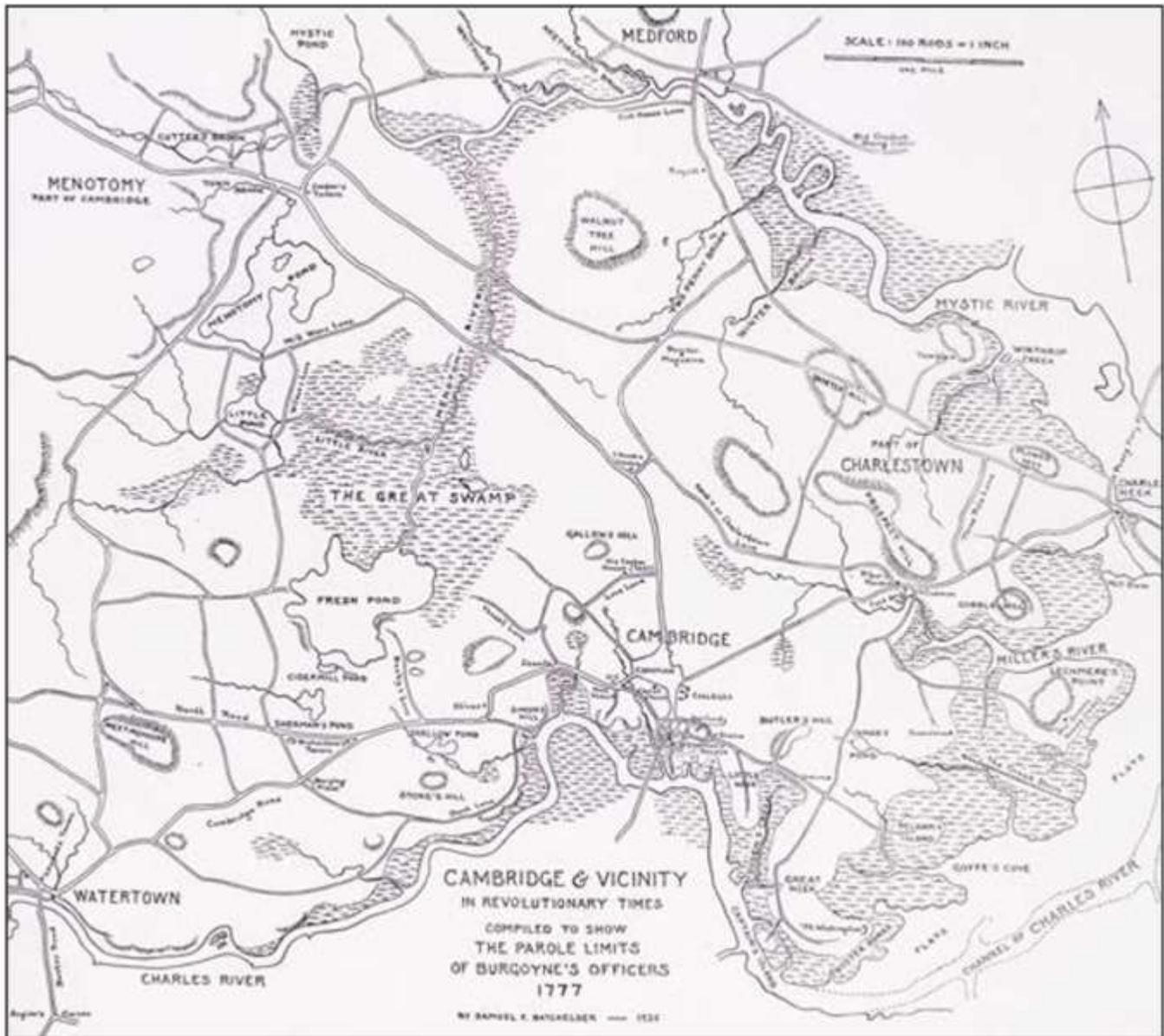


One of the many pools in the marsh. The pool is in Cambridge; the houses in the distance are in Arlington. Photos by William Lyman Underwood.

Circa 1904 Alewife tidal pool photo by landscape photographer William Wyman Underwood.

Once known as “The Great Swamp,” the area that Alewife Brook flows through was seven square miles of marshes and wet meadows. It is described as having been, “a water-logged landscape of swamps, kames, and kettle holes drained by Little River and by the sluggish, meandering Fresh Pond outlet, known to the Indians as Menotomy River, that empties into the Mystic. The plain’s soil was part sandy gravel, part unstable clay, known to geologists as ‘freeman’s muck.’ Over the six and one half miles flow from the Alewife Plain to present day Everett, the water level drops only five inches, and the level of Alewife Brook is actually below that at high tide in Boston Harbor. In East Arlington the ground level is in places but two feet above sea level. This very slight differential ensured periodic flooding by heavy rainfall, with saltwater invasions during onshore windstorms and extreme high tides. The plain may have presented ‘a picturesque landscape, but was one that frustrated human control with its poor soils, spring floods, and infestations of mosquitoes.’ It was rightly called the Great Swamp.”³

³ Cook, Sheila G. *THE GREAT SWAMP of Arlington, Belmont, and Cambridge: An Historic Perspective of its Development 1630-2001*, 2002, self-published & Krim, Arthur *North West Cambridge and Survey Index, A Survey of Architectural History in Cambridge*, Cambridge Historical Commission, 1977 & studies done by members of the Coalition for Alewife



The Great Swamp, 1777, Cambridge, MA (Source: Samuel F. Batchelder Publisher)

Once called “Menotomy River,” Alewife Brook was a winding river that connected Fresh Pond to Little River and Mystic River. The connection between Fresh Pond and Alewife Brook was severed in 1875 to protect Cambridge’s drinking water source. Menotomy River was renamed Alewife Brook in the 19th century, as a tribute to the plentiful Alewife herring that spawned there.

In 1893, the Metropolitan Parks Commission established the Alewife Brook Reservation under the guidance of visionary landscape architect Charles Eliot. Charles Eliot was the founder of both the Metropolitan Park System and The Trustees of Reservations. Eliot’s intention was to preserve parkland connections for the public good.

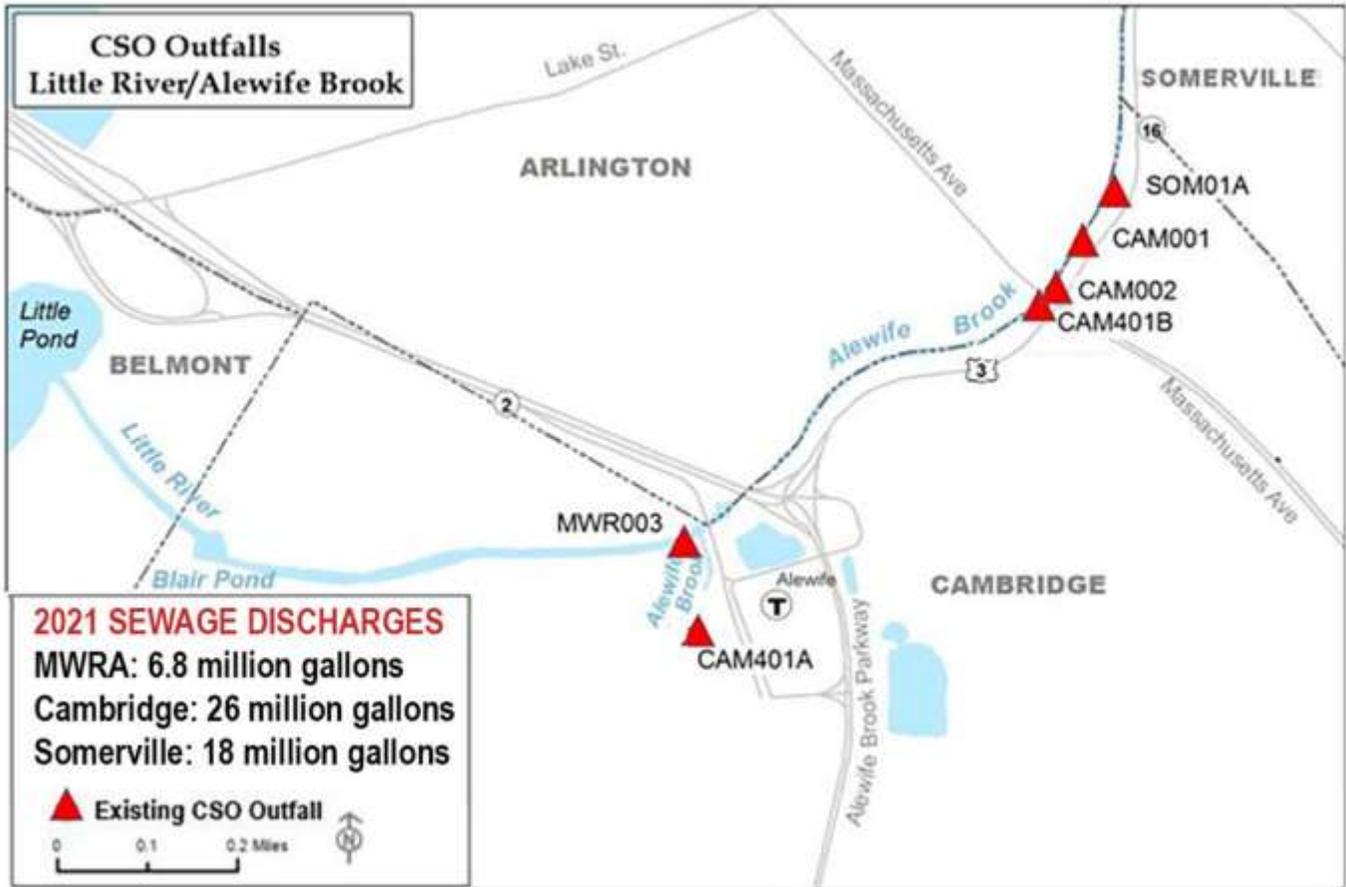
Present Conditions

Today, when heavy rain falls, sewage-contaminated floodwater over-tops the banks of the Alewife Brook and flows into the homes, yards, and parks of densely-populated nearby neighborhoods. The communities are among the most diverse and vulnerable and are recognized as Environmental Justice populations. More than 5,000 people live in the Alewife Brook's 100-year flood plain.



Alewife Brook flooded over its bank and into DCR parkland on 12/11/2023. Photo by Ann McDonald.

There are six active CSO outfalls that all discharge untreated sewage pollution into Alewife Brook: one from MWRA, four from Cambridge, and one from Somerville. Two of those CSO outfalls (CAM401A and SOM001A) are in violation of the Boston Harbor Court Case.⁴



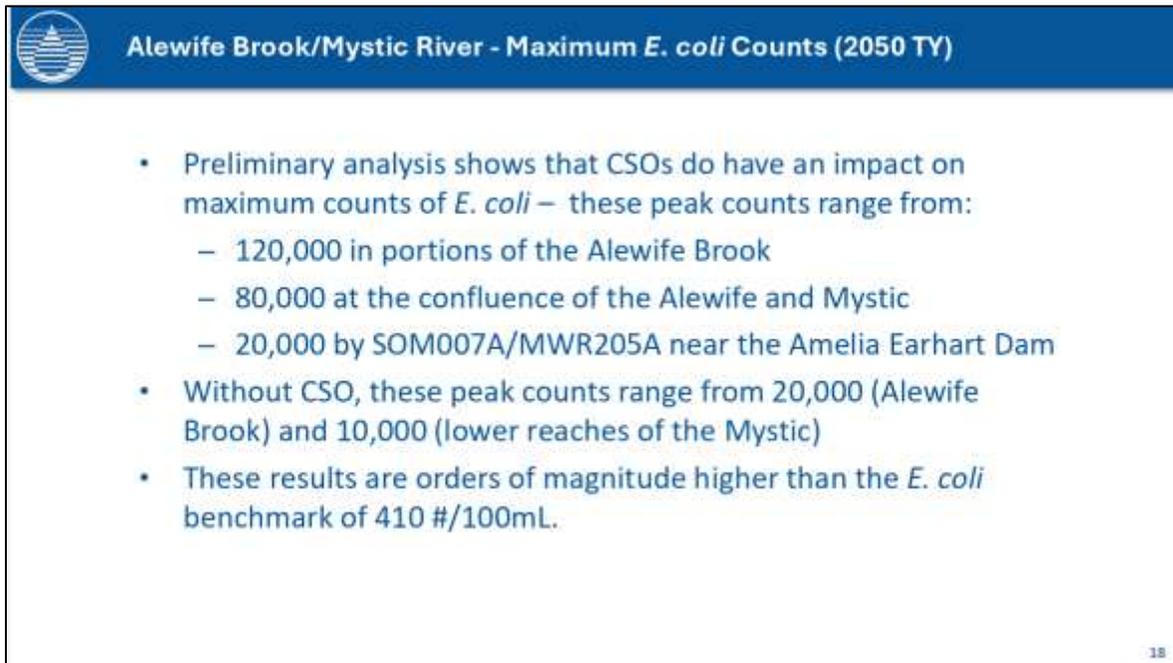
Alewife CSO outfall map from MWRA, modified to correct the locations of the outfalls and include 2021 discharge volumes.

Some times of year there is very little water flow and the grade is very shallow, so the water in the brook stagnates. But other times there are massive stormwater inputs. This area wants to become a swamp, but stormwater wetlands are a modern solution.

⁴ See section 3.3.1 on page 21 <https://www.mwra.com/cso/pcmpa-reports/042823-annualcso.pdf>

Public Health Impacts

Area residents have testified that exposure to sewage floodwater has made them sick. MWRA tests show that during storms, when the CSO outfalls discharge raw sewage, *E. coli* levels in the brook are 10 times higher than what EPA considers safe for swimming and 3 times higher than levels safe for wading or boating.⁵ In addition to *E. coli*, Alewife area residents can be exposed to other live bacteria, viruses, and parasites, including norovirus and intestinal worms - which can cause much greater health problems than *E. coli*. A Boston University School of Public Health study⁶ showed that even living near CSOs can increase the risk of illness serious enough to require an Emergency Room visit, possibly through contact with aerosolized particles.



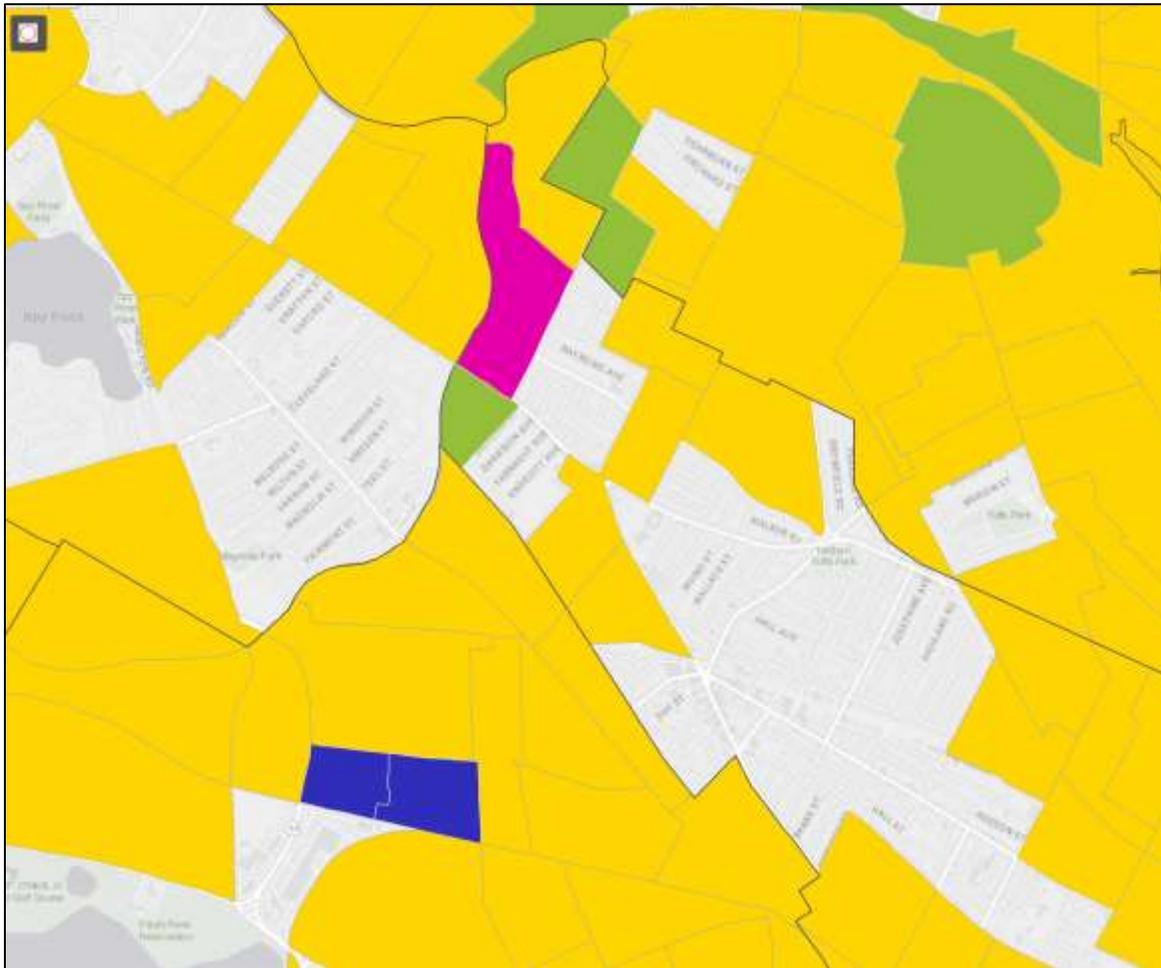
E. coli data from MWRA, presented to the MWRA Board of Directors, October 29, 2025

⁵ E. coli data from the MWRA Board of Directors meeting presentation, page 18: <https://www.mwra.com/media/file/2025-10-29-mwra-board-directors-meeting-presentations>

⁶ Association between Combined Sewer Overflow Events and Gastrointestinal Illness in Massachusetts Municipalities with and without River-Sourced Drinking Water, 2014-2019
<https://pubmed.ncbi.nlm.nih.gov/38775485/>

Environmental Justice Communities

The Alewife is home to multiple Environmental Justice Populations. The Alewife Brook is a problem area because of frequent flooding and six CSOs that dump raw sewage into the Brook, including two that violate the Boston Harbor Cleanup court order. In the Alewife area, CSOs significantly worsen water pollution and increase health risks for Environmental Justice communities. At Alewife Brook, untreated CSOs and flood conditions create a public health hazard.



Alewife Brook 2022 Environmental Justice map, EOEEA

In 2023, 29 million gallons of untreated sewage was discharged into Alewife Brook⁷. That same year, the brook flooded five times⁸. After these storms, children rode bikes through untreated sewage-contaminated floodwater, joggers ran through it, and parents pushed baby strollers through it. The situation is alarming and unacceptable.

⁷ MWRA CSO Annual Report 2023, Table 2-3: <https://www.mwra.com/media/file/2023-cso-annual-report>

⁸ Save the Alewife Brook's 2023 Flood Study: <https://savethealewifebrook.org/2024/11/09/alewife-brook-flooding/>



A child rode her bike through sewage floodwater on the DCR Alewife Path, 09/19/2023. Photo by Ann McDonald.



Area residents jogged and pushed baby strollers through sewage floodwater on the Alewife Greenway, 08/08/2023. Photo by David Stoff.

The Misleading Plan:

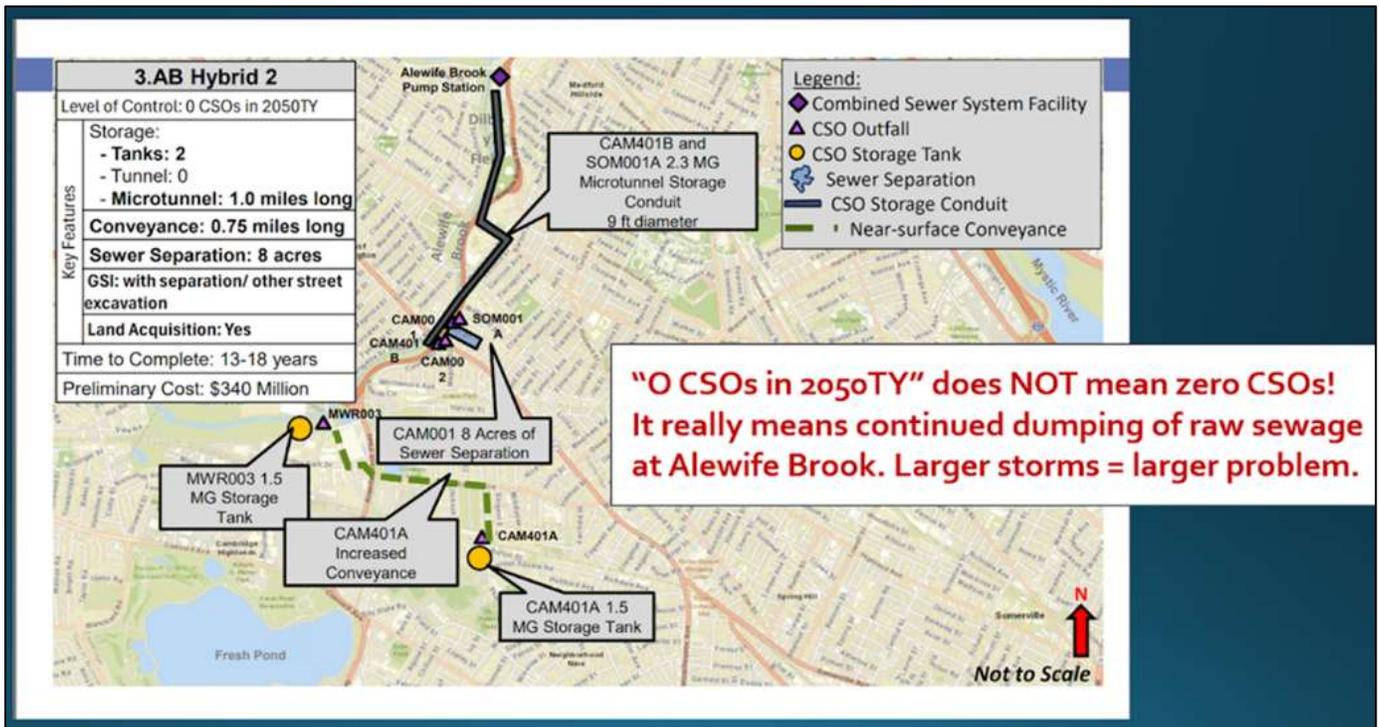
A \$340 Million Plan that Is not Resilient to Climate Change and Ignores Public Health Impacts of Sewage Flooding.

Through MassDEP, there is a regulatory requirement⁹ for a new plan to address sewage pollution at Alewife Brook and in the Charles and Mystic Rivers. For four years and over the course of many public meetings, the voices of advocates and stakeholders have been disregarded. Specifically, MWRA has refused to acknowledge sewage flood conditions and public health impacts at Alewife Brook.

On November 17, 2025, MassDEP sent a letter¹⁰ to MWRA, Somerville, and Cambridge asking for a “Plan that satisfies state and federal standards by achieving the highest feasible level of CSO control.” That is not what the Alewife Brook plan from MWRA, Somerville, and Cambridge is, as shown on the following page. The plan guarantees that there will be raw sewage dumped into Alewife Brook for decades to come. And a lot more sewage will be dumped into the Brook in the future because of Climate Change.

⁹ MassDEP’s Final Determination to Adopt A Water Quality Standards Variance For Combined Sewer Overflow Discharges to Alewife Brook / Upper Mystic River Basin includes the requirement of a Long Term CSO Control Plan. This plan is what MassDEP calls “The Centerpiece” of the Water Quality Variance. <https://savethealewifebrook.org/wp-content/uploads/2024/09/Alewife-Mystic-Variance-Final-Determination-2024.pdf>

¹⁰ MassDEP’s 11-17-2025 letter to MWRA regarding the Updated CSO Control Plan <https://savethealewifebrook.org/wp-content/uploads/2026/01/MWRA-Cambridge-Somerville-Draft-CSO-Control-Plan-11-17-2025.pdf>



MWRA's plan for Alewife Brook, as presented to the MWRA Board of Directors on 02/04/2026.

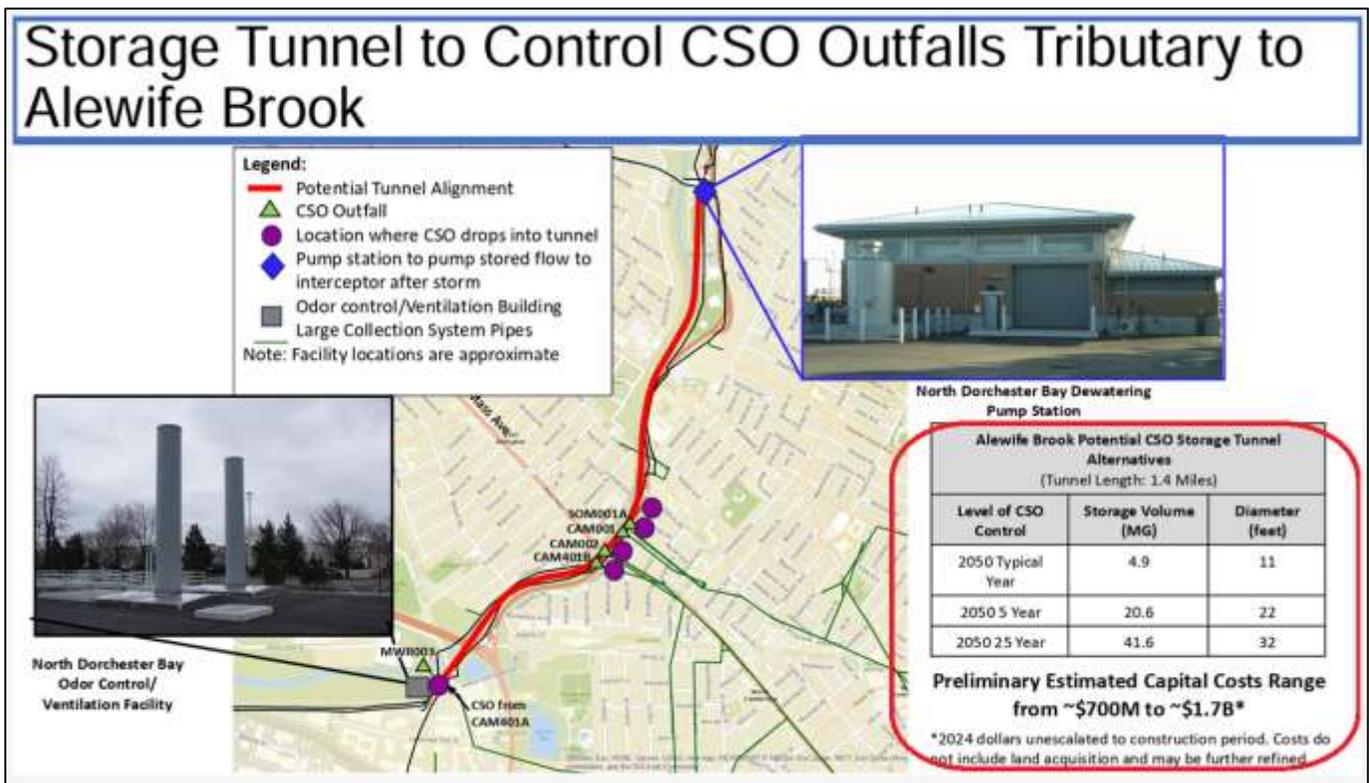
MWRA refers to the level of control in this plan as "0 CSOs in a 2050 Typical Year." However, MWRA's plan does not mean zero sewage pollution. Note that many years have more rain than in a typical (average) year. In the future, the weather will be more erratic, with more wet years. In at least half the years, MWRA's plan ensures that there will be raw sewage dumped into a densely populated and flood-prone area.

MWRA's plan would waste \$340 million - that is rate payer money - on tanks and a tunnel that are not large enough to hold discharge volumes in small 2-year storm events. **A single 5-year storm event (one that would happen once every five years) would result in 15 million gallons of untreated CSO sewage pollution into Alewife Brook.**

Once undersized tanks and the tunnel are built, they are not easily expandable at a reasonable cost. That means that MWRA's plan is not resilient to Climate Change.

At an estimated cost of \$340 million, MWRA’s plan is a waste of rate payer money. The latest financial reports¹¹ submitted to the MWRA Board of Directors show that **the cost difference between the current plans and the virtual¹² elimination of sewage pollution in all three rivers - the Charles, the Mystic, and Alewife Brook - is only \$82 for ratepayers per year in 2050 dollars, which translates to \$44 annually for households in 2025 dollars.**

The long-term solution at Alewife Brook is sewer separation. Combined sewer systems will not have sufficient capacity to perform well in future conditions as precipitation increases due to Climate Change. In addition to sewer separation, Green Stormwater Infrastructure can be used to reduce flooding and clean the water.



MWRA Project Partners Presentation Slide, 2024. Shows that a 5-year storm discharges 20.6 MG.

¹¹ MWRA Board of Directors February 4th, 2026 meeting materials: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

¹² “Virtual CSO Elimination” is control up to a 2050 25-year storm.

Community CSO Elimination Plan

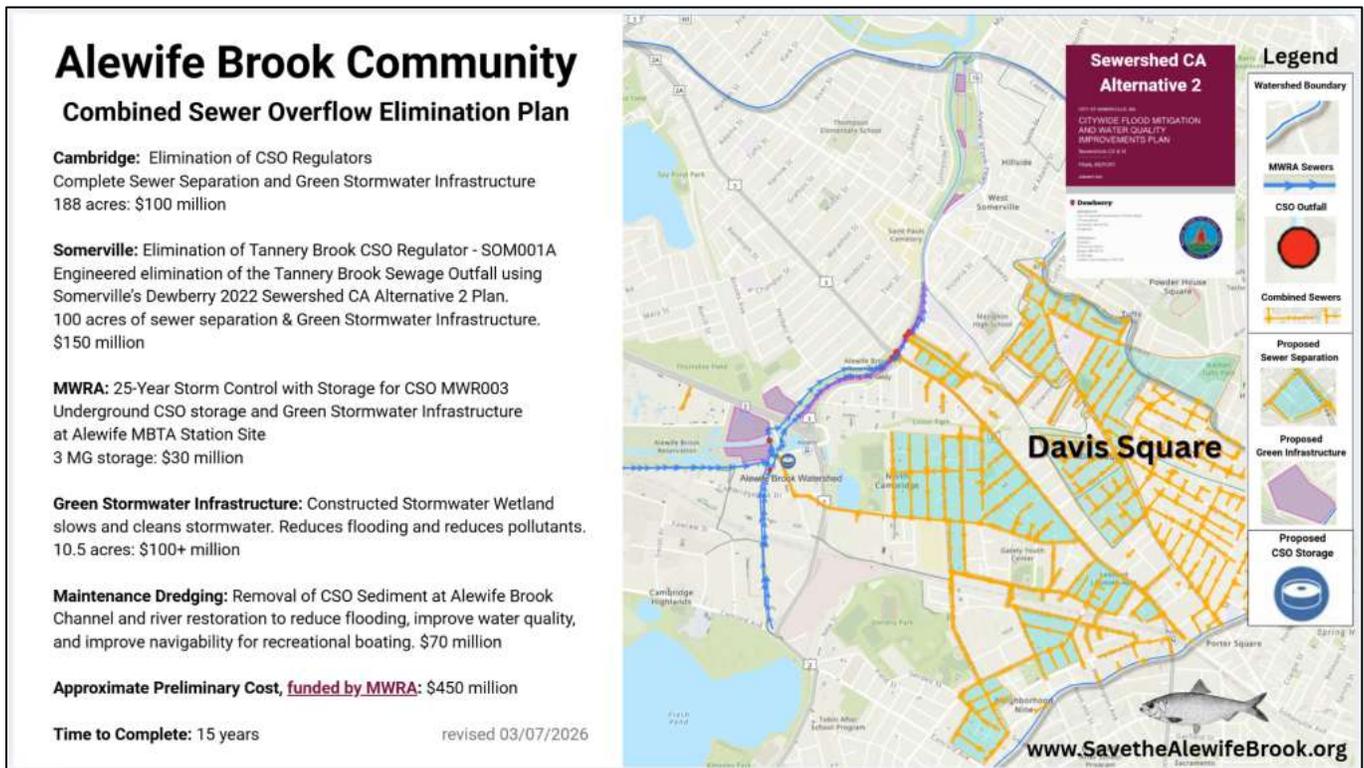
Save the Alewife Brook's Community plan responds to the public health hazard of sewage flooding in the Alewife Brook area by proposing a feasible solution to virtually eliminate CSOs. It integrates Cambridge's long-established CSO strategy at Alewife Brook with sewer separation and Green Stormwater Infrastructure. In Somerville, it incorporates six projects from the Somerville Citywide 2022 Flood Mitigation and Water Quality Improvements plan and 100 acres of sewer separation, as well as Green Stormwater Infrastructure. It proposes a large underground storage tank and Green Stormwater Infrastructure at the MBTA Alewife station for MWRA's Little River / Alewife Brook outfall (MWR003). The Community Plan requires, at a minimum, that Green Stormwater Infrastructure should be installed to manage 1-inch of rainfall from 10% of the impervious surfaces in Cambridge and Somerville neighborhoods that drain to Alewife Brook. New constructed stormwater wetlands would attenuate stormwater flows to reduce flooding, while reducing phosphorus in stormwater.

The Community Plan:

- ✓ Eliminates health risks of exposure to untreated CSOs.
- ✓ Reduces flooding.
- ✓ Improves water quality.
- ✓ Increases capacity in the local and regional sewer system by removing large volumes of stormwater from MWRA's sewers.

Save the Alewife Brook provides the following CSO Elimination Plan for Alewife Brook using the best data available to us. The estimated time to complete the projects in this plan is 15 years. The preliminary cost estimate is \$450 million, including the cost of river restoration.

This plan was presented at the January 11, 2026 Community CSO Meeting in North Cambridge,¹³ attended in-person and online by 171 community members and area legislators where it received positive feedback.



A larger version of the Community CSO Elimination Plan map can be found on the last page of this document.

¹³ Video recording of January 11, 2026 Community CSO Meeting held in North Cambridge to discuss plans in the Charles, Mystic, and Alewife: <https://youtu.be/y7tzcgus8SI>

Elimination of Sewage Pollution at Alewife Brook is Feasible

Elimination of sewage pollution is affordable. The latest financial reports¹⁴ submitted to the MWRA Board of Directors indicate that the wholesale cost difference between the smallest plans and the virtual¹⁵ elimination of sewage pollution in all three rivers - the Charles, the Mystic, and Alewife Brook - is only \$44 annually for households in 2025 dollars.

MWRA can afford to pay for the solution in the cities because long-term bonds from the first Boston Harbor Cleanup projects are expiring. MWRA has the capacity to issue new bonds without significant rate increases because it already has most of the budget for the debt service.

Half the sewer separation in Cambridge has been done at Alewife Brook. This is proof that sewer separation is technically feasible in North Cambridge. Cambridge was able to perform sewer separation in the past by constructing the first Alewife Stormwater Wetland, which reduced flooding and cleaned the stormwater. There is room on state parkland for three more stormwater wetlands, allowing for the completion of sewer separation in North Cambridge.

In 2022, Somerville published its **Citywide Drainage and Water Quality Improvements Master Plan**¹⁶, a collection of infrastructure projects to “reduce flooding, improve water quality, and mitigate combined sewer overflows,” meant to “prepare Somerville for climate change.” This highly credible work of engineering from consultant Dewberry contains construction cost information for each of the projects within the plan, as well as conservative estimates. One of the plans in the Dewberry document details a solution to ending sewage pollution at the Alewife / Tannery Brook CSO outfall, SOM001A.¹⁷ The Dewberry plan is both technically and financially feasible, and construction can be completed in a reasonable timeframe. An additional 100 acres of sewer separation, along with Green Stormwater Infrastructure work, should be included.

At Alewife Brook, water quality can be improved through sediment dredging, river restoration, and construction of Green Stormwater Infrastructure. Green Stormwater Infrastructure, as described by EPA¹⁸, should be installed to manage 1-inch of rainfall from 10% of the impervious surface at a minimum in Cambridge and Somerville tributary to Alewife Brook.

¹⁴ MWRA Board of Directors February 4th, 2026 meeting materials: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

¹⁵ “Virtual CSO Elimination” is control up to a 2050 25-year storm.

¹⁶ Somerville’s Citywide Drainage and Water Quality Master Plan: <https://voice.somervillema.gov/citywide-drainage-and-water-quality-master-plan>

¹⁷ Somerville Project Planners include 95 acres of sewer separation from Dewberry Master Plan projects at Assembly Row in the Mystic River Updated CSO Control Plan. MROSS overview: <https://voice.somervillema.gov/mystic-river-outfall>
From MWRA Board of Directors Meeting, 02/04/2026, Attachment B, page 81, MR Hybrid 2: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

¹⁸ EPA’s Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow Control: https://www.epa.gov/sites/default/files/2015-10/documents/greening_csos_plans_0.pdf

Funding the Plan:

MWRA Was Created to Solve This Regional Problem & Using Their Funding Lowers the Total Cost



Deer Island Wastewater Treatment Plant and digester domes peeking out from behind the clouds.
Shot from a plane out of Logan, Thanksgiving 2025. Photo credit: Kristin Anderson

The Origins of the MWRA

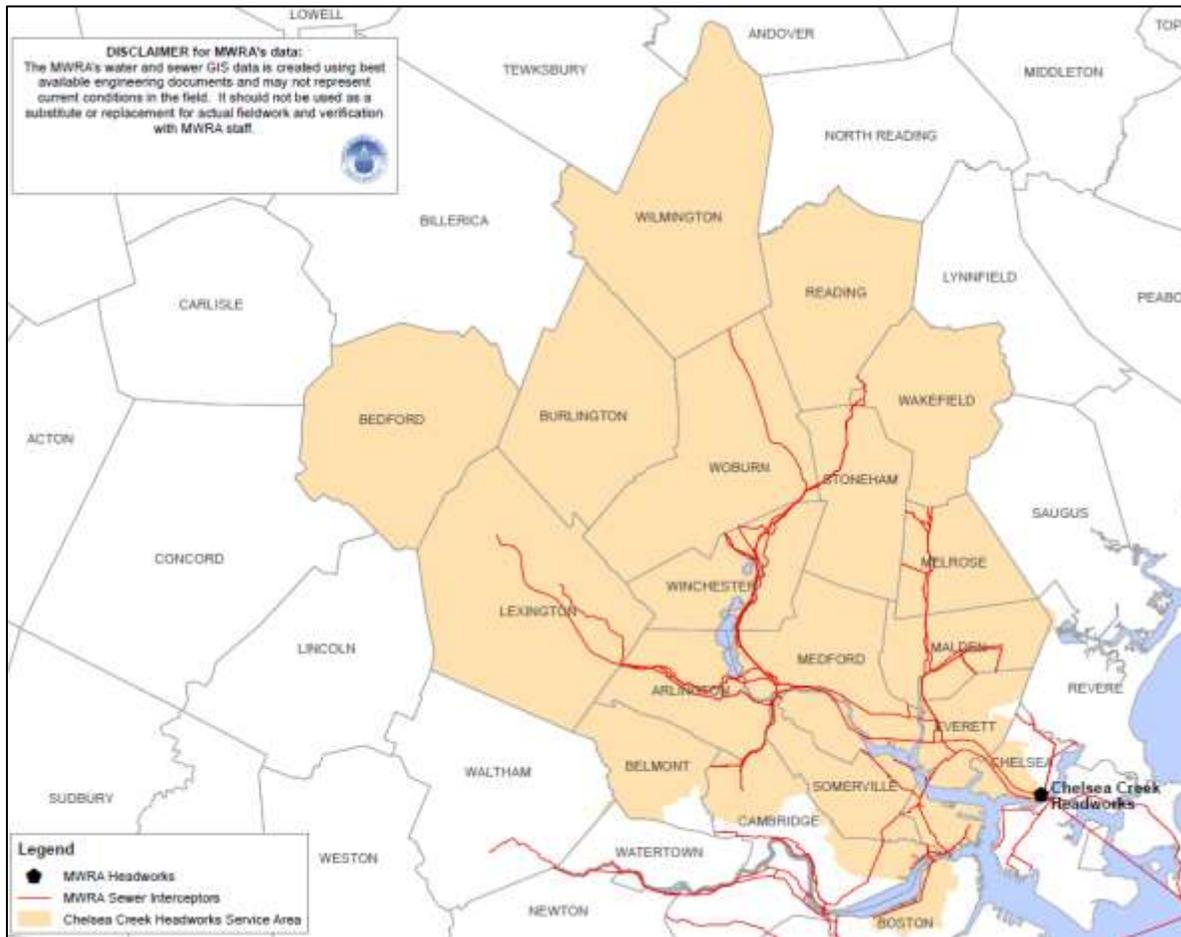
In 1984, as a result of the Boston Harbor Cleanup Court Case, the Legislature created the Massachusetts Water Resources Authority to tackle the region's greatest environmental crisis - sewage pollution, sewer infrastructure failures, and decades of mismanagement. Under the glare of the national spotlight during the Bush vs. Dukakis campaign, and with the legal muscle of the Conservation Law Foundation and USEPA in federal and state courts, the state legislature created the MWRA. The Legislature empowered MWRA with a dedicated funding mechanism for infrastructure upgrades.

The MWRA Enabling Act of 1984¹⁹ mandates the “repair, replacement, rehabilitation, modernization and extension” of the sewer system, “in the best interests of the commonwealth and its inhabitants, to promote the general health and welfare, to improve commerce and living conditions of the citizenry.”

¹⁹ MWRA Enabling Act, Chapter 372 of the Acts of 1984: <https://www.mwra.com/about-mwra/governance-management/enabling-act>

Through borrowing backed by water and sewer system revenues, with rate increases throughout the 1980s and 90s²⁰, the MWRA raised \$5 billion, funding the construction of the Deer Island Treatment Plant and reducing combined sewer overflows. The result has been a \$100 billion return in public health, environmental recovery, and real estate value. This is the story of one of the Clean Water Act's greatest environmental successes in the United States.

CSOs are a Regional Problem of a Connected Sewer System



Map of the Chelsea Creek Headworks Service Area provided by the Massachusetts Water Resource Authority.

MWRA owns aging regional sewer system infrastructure which ties Cambridge and Somerville to MWRA's regional system at Alewife Brook. MWRA's infrastructure at Alewife Brook includes two large "interceptor" pipes built in 1896 and 1948. Those interceptors are connected to all six Alewife Brook CSO outfalls, as well as the Alewife Brook Pump Station. The Alewife Brook Pump Station is the oldest operating pump station in the MWRA's system.

²⁰ Paul Levy's Financing the Boston Harbor Project: <https://www.bscesjournal.org/wp-content/uploads/CEP-Vol-9-No-1-07.pdf>

Stormwater in the combined systems regularly overload the MWRA's sewer system during wet weather storm events, sometimes when the area gets less than an inch of hard rain. At MWRA's February 22, 2022, public briefing to discuss the Final Combined Sewer Overflow Performance Report, MWRA's consultant from AECOM stated, "The MWRA system is limited by downstream capacity. Under very large storm events, the capacity of the Alewife Brook Pump Station, which is downstream of [MWR003] is reaching capacity - very large facility, has 90 million gallons per day capacity. That then discharges into sewers conveying flow further downstream and going to the Chelsea Creek Headworks, that then reaches capacity. And there are events when the capacity of our Deer Island treatment plant, 1.2 / 1.3 billion gallons per day, is reached. So there are limits to what the MWRA can push through the system."

The regional sewer system simply cannot move the stormwater in the system during many storms. Raw sewage mixed with stormwater from Cambridge and Somerville discharges into Alewife Brook because it has nowhere else to go.

Open Sewers are Part of MWRA's Sewer Strategy

MWRA's 2018 Wastewater Masterplan states that CSOs provide "additional system capacity".²¹ For MWRA, CSOs are a feature of its system that is overburdened by an increasing amount of stormwater from increasing amounts of precipitation due to Climate Change. With 6 active raw CSO outfalls at Alewife Brook, MWRA, Cambridge, and Somerville use Alewife Brook as an open sewer.

SUMMARY OF THE 2018 WASTEWATER SYSTEM MASTER PLAN

MWRA's wastewater system is a complex network of conduits and facilities receiving flow from 43-member sewer communities covering an area of about 500 square miles. The regional system serves approximately 2.2 million people, including the City of Boston and surrounding metropolitan area. The Deer Island Treatment Plant (DITP) receives an average daily flow of 353 mgd and has a peak wet weather capacity of 1,270 mgd, with additional system capacity available at combined sewer overflow (CSO) outfalls. Residuals from DITP are processed into pellets for beneficial reuse at MWRA's sludge-to-fertilizer plant in Quincy. The MWRA collection system includes four remote headworks facilities, a network of 274 miles of sewer pipelines and cross-harbor tunnels, 13 pump stations, one screening facility, and six CSO treatment/storage facilities. MWRA also operates the Clinton Advanced Wastewater Treatment Plant (AWWTP) providing sewage treatment services to the Town of Clinton and the Lancaster Sewer District. MWRA's goal is to operate and maintain these facilities to provide uninterrupted wastewater collection and treatment service in a safe, cost-effective, and environmentally sound manner.

From MWRA's 2018 Wastewater Masterplan. MWRA views CSOs as "additional capacity" to their sewer system.
From MWRA 2018 Wastewater Master Plan.

²¹ MWRA's 2018 Wastewater Masterplan, page 9: "The Deer Island Treatment Plant (DITP) receives an average daily flow of 353 mgd and has a peak wet weather capacity of 1,270 mgd, with additional system capacity available at combined sewer overflow (CSO) outfalls." https://savethealewifebrook.org/wp-content/uploads/2022/04/MWRA_wastewatermasterplan_2018.pdf

MWRA's Annual Revenue

MWRA's 2026 budget is \$922 million. 95% of its revenue comes from ratepayer money - that includes over a million households and businesses paying water and sewer bills to their municipalities.



\$2.1 billion funding available, without a shock to households and at low interest rates

MWRA uses its revenue to back long-term bonds to fund sewer system upgrades at more favorable interest rates than cities, Massachusetts, or even the federal government. Decades ago, MWRA issued billions of dollars in bonds to pay for the Harbor Cleanup CSO projects and the Deer Island treatment plant. Those bonds are now expiring, meaning they are paid off. In the next ten years, MWRA has the capacity to issue another \$2.1 billion in bonds.²² MWRA's revenue remains the same, steadily increasing by 3-4% annually, so the budget already exists for the debt service on new bonds. Thus, there will be no huge shock to the ratepayers on their sewer bills.

²² MWRA Annual Report November 2024, Secured Bond Debt Service chart, page 2: <https://emma.msrb.org/P11811316-P11388424-P11828155.pdf>

MWRA’s Legal and Financial Responsibility

According to the Boston Harbor Court Case’s Second Stipulation²³, MWRA is legally and financially responsible for combined sewer overflows that are in violation of the Boston Harbor court case.

As of 2026, the following untreated CSO outfalls remain in violation of the court order,²⁴ as these outfalls do not meet the required levels of control mandated by the court:

Outfall ID	Receiving Water
SOM001A	Alewife Brook
CAM401A	Alewife Brook / Upper Mystic
CAM005	Charles River
MWR018	Charles River
MWR019	Charles River
BOS003	Charles River / Boston area

From MWRA’s 12/27/2024 Supplement to the 2021 Final Combined Sewer Overflow Post Construction Monitoring Program and Performance Assessment Report²⁵

²³ https://savethealewifebrook.org/wp-content/uploads/2026/02/Second_Stipulation_2006_ocr.pdf Exhibit B, paragraph 4 of the Second Stipulation, MWRA “accepts legal liability to undertake such corrective action as may be necessary to implement the CSO control requirements set forth in Schedule Six and related orders of the Court... and to meet the levels of CSO control.”

²⁴ MWRA’s 12/27/2024 Supplement to the 2021 Final Combined Sewer Overflow Post Construction Monitoring Program and Performance Assessment Report, Section 4 Update to the Final Assessment Report - Summary and Conclusions: <https://www.mwra.com/media/file/supplementaltofinal122724>

²⁵ MWRA’s 12/27/2024 Supplement to the 2021 Final Combined Sewer Overflow Post Construction Monitoring Program and Performance Assessment Report, Section 4 Update to the Final Assessment Report - Summary and Conclusions: <https://www.mwra.com/media/file/supplementaltofinal122724>

Six CSO outfalls (SOM001A, CAM401A, CAM005, MWR018, MWR019, BOX003) that are in violation of the court order discharge untreated sewage, making them considerably more hazardous to community health than treated CSOs.

Other outfalls in the MWRA system are not in compliance with the court order, but are expected to meet the court order by the end of this year. That includes Somerville's treated CSOs at Mystic River.

According to the Court's Second Stipulation, the MWRA is responsible for funding infrastructure work on these outfalls to comply with the Court Order. Using the MWRA to fund as much of these plans as possible lowers the cost and accurately reflects the regional nature of these challenges. Some costs may fall on the cities as well. For example, the cities may have additional costs related to complete streets and stormwater infrastructure when doing sewer separation work.

MWRA should cover costs for all legally required work. Additionally, the legislature should seriously consider expanding the scope of the MWRA through updated enabling legislation. Stormwater is an unavoidable part of solving CSOs and managing our regional water infrastructure more generally.

MWRA's Own Affordability Analysis:

At the cost of \$44 more per year to households,

MWRA can afford to eliminate sewage in the Alewife, Charles, Mystic.

MWRA's February 2026 financial analysis²⁶ shows that the difference in household sewer bills between the least and most expensive plans - **which would virtually²⁷ eliminate sewage pollution in the Charles, Mystic, and Alewife** - is minimal, roughly the cost of a cup of coffee per month.

The difference in cost annually to households between the bare minimum CSO plan, called "0 CSOs in the 2050 Typical Year", and the most expensive plan, called "0 CSOs in the 2050 25-year" is \$82 in 2050. That is equal to \$44 in 2025 dollars, using MWRA's assumed rate of inflation at 2.5%

²⁶ February 4, 2026 MWRA Board Meeting Materials, page 27: "The sewer system annual household charges are currently anticipated to increase from \$999 per year to \$2,337 per year without the CSO spending between fiscal years 2029 and 2050. In 2050 based on the additional CSO spending, the household charges are projected to increase to \$2,380, \$2,433 and \$2,462 per year for spending associated with level of control to achieve zero CSOs in the 2050 typical year, 2050 5-year and 2050 25-year storms, respectively." <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

²⁷ The 2050 0 CSOs 25-Year Storm level of control is the equivalent of CSO elimination. It is the Watershed Associations' recommended level of control.

MWRA's Senseless Demand of "Cost Sharing" with Cambridge and Somerville

In the meeting materials shown below from the February 25, 2026, MWRA Board of Directors meeting,²⁸ a staff note from MWRA's Executive Director Fred Laskey proposed that the cities of Cambridge and Somerville pay a total of \$516 million for the CSO control plans.

IWA.1 2/25/26	
STAFF SUMMARY	
	
TO:	Board of Directors
FROM:	Frederick A. Laskey, Executive Director
DATE:	February 25, 2026
SUBJECT:	Submission of Draft Updated CSO Control Plan, Alewife Brook/Upper Mystic River and Lower Charles River/Charles Basins
<hr/>	
COMMITTEE:	<u>Wastewater Policy and Oversight</u>
	<input type="checkbox"/> INFORMATION <input checked="" type="checkbox"/> VOTE
Brian L. Kubaska, P.E., Chief Engineer Colleen Rizzi, P.E., Director of Env. and Regulatory Affairs <u>Rebecca Weidman, Deputy Chief Operating Officer</u> Preparer/Title	 <u>Kathleen M. Murtagh, P.E.</u> Chief Operating Officer
<hr/>	
<div style="border: 1px solid black; padding: 10px;"><p><i>At the February 4, 2026, Board of Directors' meeting, staff presented the recommended alternatives for the Alewife Brook, Upper Mystic River and Lower Charles River/Charles Basins, all of which were at zero CSOs in a 2050 Typical Year level of control. With implementation of the recommended alternatives, CSO discharges to the Variance Waters are projected to be eliminated in the 2050 Typical Year and reduced in storm events greater than those in the 2050 Typical Year. The total planning-level capital cost of the recommended alternatives is estimated to be \$1.28 billion. Preliminary cost sharing allocation discussions with Cambridge and Somerville have established MWRA's proposed contribution of 60% (\$764 million). This Staff Summary further summarizes the recommended alternatives, answers Board questions from the February 4, 2026 meeting and seeks Board authorization to complete and submit a Draft Updated CSO Control Plan consistent with the recommendations included in the February 4, 2026 Staff Summary and Board of Directors' meeting and as further summarized herein.</i></p></div>	

MWRA Executive Director Fred Laskey proposes that Cambridge and Somerville contribute a total of \$516 million to the CSO Control Plan, which includes Alewife Brook and the Charles and Mystic Rivers.

²⁸ MWRA Board of Directors Meeting Materials, 02/25/2026: <https://www.mwra.com/media/file/2026-02-25-mwra-board-directors-meeting-materials>

However, according to the court case's Second Stipulation²⁹, the cities do not have to contribute funding towards projects involving the two Alewife CSO outfalls that are in violation of the Court. The two Alewife Brook CSOs that are in violation of the court are the Alewife MBTA Station CSO (CAM401A) and the Davis Square Tannery Brook CSO (SOM001A).

The cities are not responsible for the cost. MWRA has asked Boston to pay nothing, which is correct because Boston has been aggressively preparing for Climate Change with sewer separation in East Boston. Like Boston, Cambridge and Somerville have been aggressively investing in sewer separation. As a regional entity, MWRA should pay for regional solutions. MWRA is legally responsible for paying for infrastructure upgrades associated with the CSOs that are in violation of the court order. MWRA needs to begin investing now in removing stormwater from its regional sewer system, in preparation for Climate Change.

MWRA Funds Available Now: Cities Must Act Now or Forfeit System Upgrades Funding

Now is the last time that the cities of Cambridge and Somerville are able to use MWRA's funding as required by the Harbor court case to cover the cost of sewer infrastructure upgrades. It is the region's best interest to remove stormwater from the combined systems now through sewer separation. The cities should be pushing for the most ambitious plan to modernize their 19th century sewer systems now. To do otherwise would be fiscally irresponsible. It will never be cheaper to do this work than it is now. Climate Change demands an investment in sewer separation and Green Stormwater Infrastructure now.

²⁹ https://savethealewifebrook.org/wp-content/uploads/2026/02/Second_Stipulation_2006_ocr.pdf Exhibit B, paragraph 4 of the Second Stipulation, MWRA "accepts legal liability to undertake such corrective action as may be necessary to implement the CSO control requirements set forth in Schedule Six and related orders of the Court... and to meet the levels of CSO control."

Labor Solution:

A Union Project Labor Agreement

The Boston Harbor Cleanup was a \$5 billion investment that resulted in improvements valued at \$30 to \$100 billion. It was an investment that led to more housing, cleaner water, improved fisheries, restored habitats, recreational opportunities, and significant private investment along Boston's waterfront.

The Harbor Cleanup was conducted under a Project Labor Agreement between the MWRA and the Building and Construction Trades Council, representing over 15 international and 25 local unions. The agreement required that virtually all onsite construction labor was to be done by union workers. Union labor deserves more credit than it has received for making the Boston Harbor Cleanup projects a success.

A Project Labor Agreement means highly trained, highly skilled labor, increased on-the-job safety, high quality control, project stability, and reduced project costs.³⁰ It sets a standard set of wage rates, benefits, overtime rules, and working conditions for workers. It also commits the unions to no-strike clauses and fast grievance procedures to resolve disputes which could otherwise delay construction. This means a tighter project timeline and reduced costs on complex infrastructure projects, exactly what the Combined Sewer Overflow Plan requires. A Project Labor Agreement benefits working families, the cities and the MWRA. A Project Labor Agreement helps the local economy because it keeps infrastructure dollars in the community.

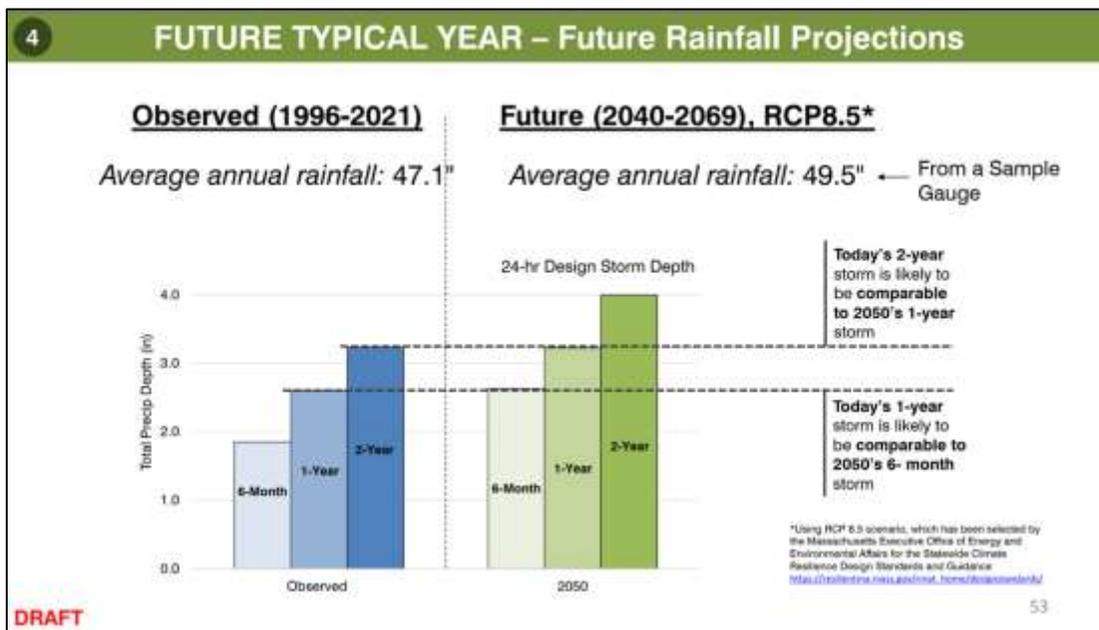
The Updated Long Term CSO Control Plan should have a Project Labor Agreement, to ensure project stability, high quality work, safety, good-paying jobs, and a boon to the local economy.

³⁰ The Impacts of Project Labor Agreements on Costs, Competition, And Contractors in Illinois: Evidence from Capital Development Board Projects, 2025: <https://illinoisepi.wordpress.com/wp-content/uploads/2025/03/ilepi-pmcr-impacts-of-plas-in-illinois-final.pdf>

Climate Change Impact: More Rainfall, More CSO Sewage Pollution

Because CSOs are “wet weather discharges” driven by rainfall amounts, Save the Alewife Brook and the Mystic River and Charles River Watershed Associations urged MWRA to change its sewer system model, known as the “Typical Year” model, to include future storm events predicted by climate change models. MWRA’s previous sewer system design model was based on storm events going back to 1949 but not looking forward.³¹

In 2022, MWRA, Cambridge, and Somerville hired Dr. Arthur DeGaetano from Cornell University and Dr. Indrani Ghosh from Weston & Sampson to look at Climate Change and how it will impact the region. The scientists found that in an average year, rainfall will increase from 47.1” to 49.5” by the year 2050, while rainfall from a single 2-year storm will increase from 3.2 to 4.0 inches - a 25 percent jump. As described below, climate change will increase CSO discharges significantly.



Slide from MWRA, Cambridge, Somerville Planners’ Future Typical Year Rainfall Analysis, presented 12/2022

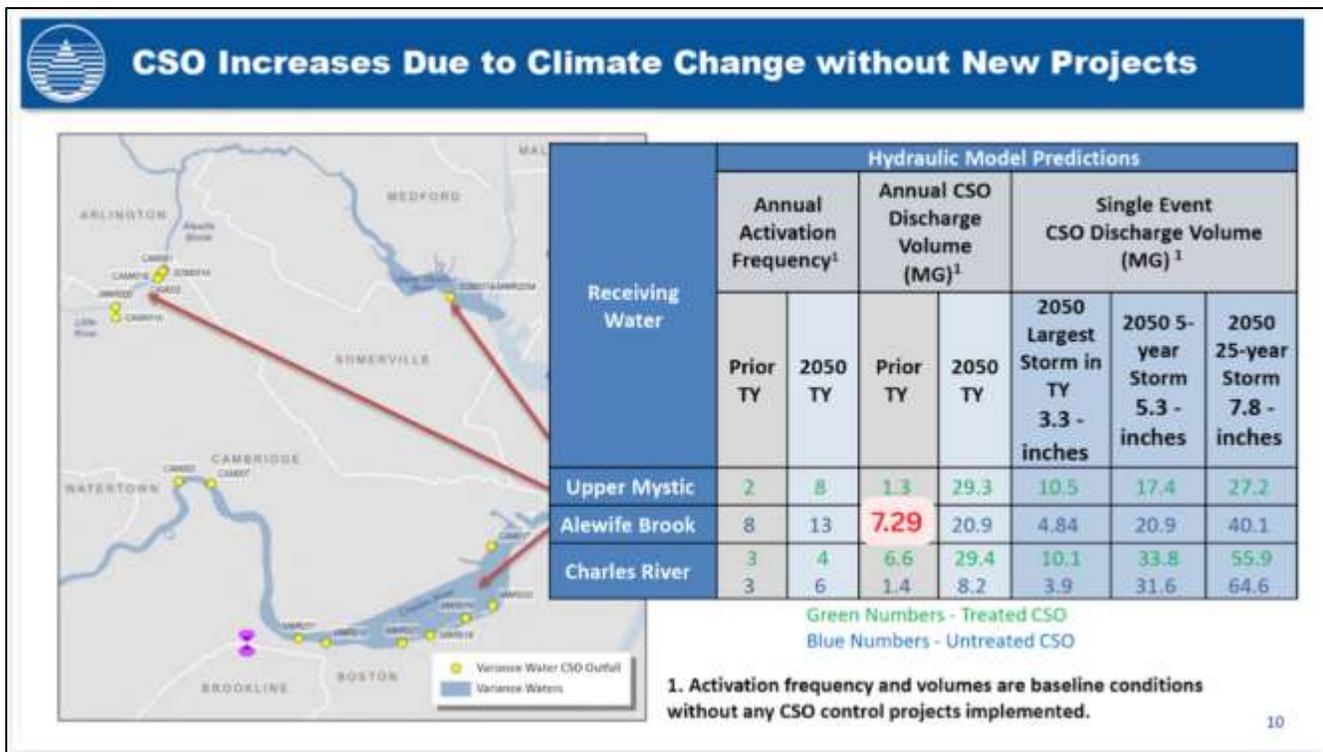
³¹ <https://www.mwra.com/sites/default/files/2024-07/2023.pdf> CSO Annual Report 2023: CSO Discharge Estimates and Rainfall Analyses: Typical Year Rainfall or Typical Year, page 35: The performance objectives of MWRA’s approved Long-Term CSO Control Plan include annual frequency and volume of CSO discharge at each outfall based on “Typical Year” rainfall from 40 years of rainfall records at Logan Airport, 1949-1987 plus 1992. The Typical Year was a specifically constructed rainfall series that was based primarily on a single year (1992) that was close to the 40-year average in total rainfall and distribution of rainfall events of different sizes. The rainfall series was adjusted by adding and subtracting certain storms to make the series closer to the actual averages in annual precipitation, number of storms within different ranges of depth and storm intensities. The development of the Typical Year is described in MWRA’s System Master Plan Baseline Assessment, June 15, 1994. The Typical Year consists of 93 storms with a total precipitation of 46.8 inches.

Climate Change Impact:

Almost tripling the amount of sewage in Alewife Brook by 2050

As shown in MWRA's table below, by 2050, average or "typical" year annual Alewife CSO discharges are expected to increase from 7.29 million gallons to 20.9 million gallons - almost tripling - if nothing is done!

In rainy years, it will be much, much worse. There is only so much space, or capacity, in the sewer system. When there is too much rain, there is too much stormwater entering the combined sewer system. An increase in rainfall produces an apparently exponential increase in CSOs. 19th century combined sewer systems were not designed for today's or tomorrow's storms. The answer to the increase in precipitation is modernization of the sewer system through sewer separation.

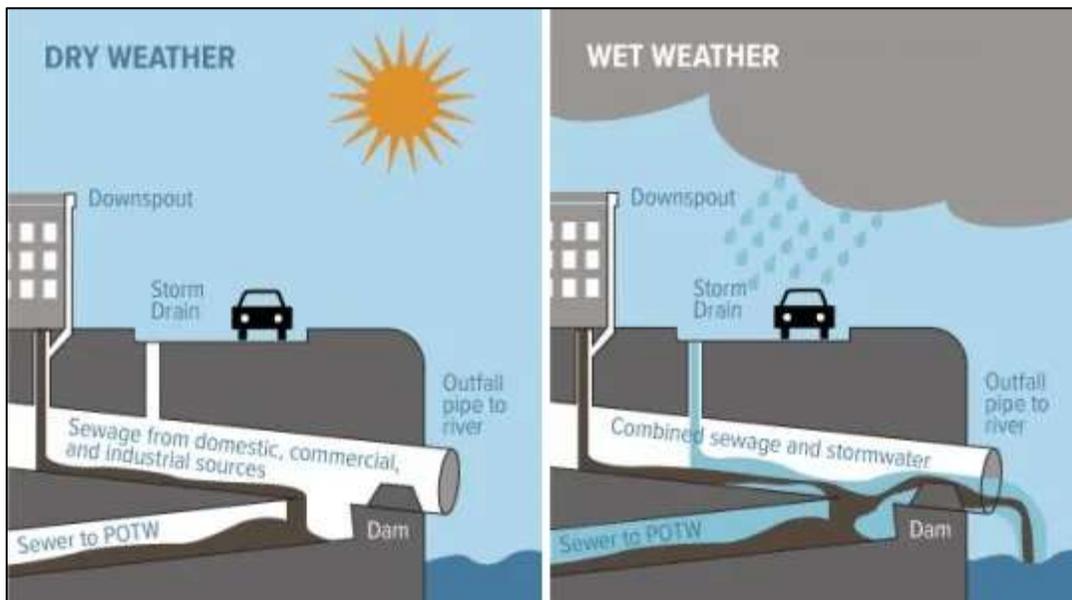


Slide presented to MWRA Board of Directors, 02/04/2026

Sewer Separation:

The Answer to Increased Precipitation Due to Climate Change

During intense rainstorms, raw sewage is discharged into Alewife Brook through combined sewer pipes in Somerville and Cambridge. This is because parts of the cities of Cambridge and Somerville have antiquated, Victorian-era sewer systems that combine rainwater and sewage into a single pipe. The old combined sewer systems are a relic from the 1800s when open and combined sewers were common. More modern sewer infrastructure in towns like Arlington and Medford do not have combined pipes and CSOs.



Combined Sewer System Diagram Source: Jersey Waterworks

Sewer separation at Alewife Brook removes stormwater from the MWRA's regional system. Removing stormwater means increasing capacity in the regional sewer system. Sewer separation also leads to CSO elimination. It is for these reasons that sewer separation is the most climate resilient, most environmentally sound, and is also the most financially prudent approach to CSOs.

Sewer Separation Leads to CSO Elimination

The solution to ending raw sewage discharges in the Brook is to keep rainwater out of the wastewater system. This means modernizing the infrastructure through sewer separation: building a separate pipe so that street drains (catch basins) send stormwater to one pipe and toilets and sinks send sewage to another. Sewage then goes to the Deer Island Sewage Treatment Plant every day of the year. Stormwater flows are sent to wetlands to be naturally cleaned before percolating into the groundwater. In smaller storms, the constructed stormwater wetlands would absorb and clean all of the water. In large storms the water would flow from the wetland to the brook.

Preliminary Results – For Discussion Only

Deep Dive: Regional Sewer Separation in Cambridge, Somerville, and Boston

Outfall	2050 Typical Year* - Baseline Conditions		2050 Typical Year* - Baseline Conditions + Regional Sewer Separation	
	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)
ALEWIFE BROOK				
CAM001	1	0.02	0	0.00
CAM002	0	0.00	0	0.00
CAM401A	12	10.95	0	0.00
CAM401B	3	0.30	0	0.00
MWR003	3	1.08	0	0.00
SOM001A	13	8.51	0	0.00
Alewife Total	13	20.86	0	0.00
MYSTIC RIVER				
SOM007A/MWR205A	8	29.31	0	0.00
Mystic Total	8	29.31	0	0.00

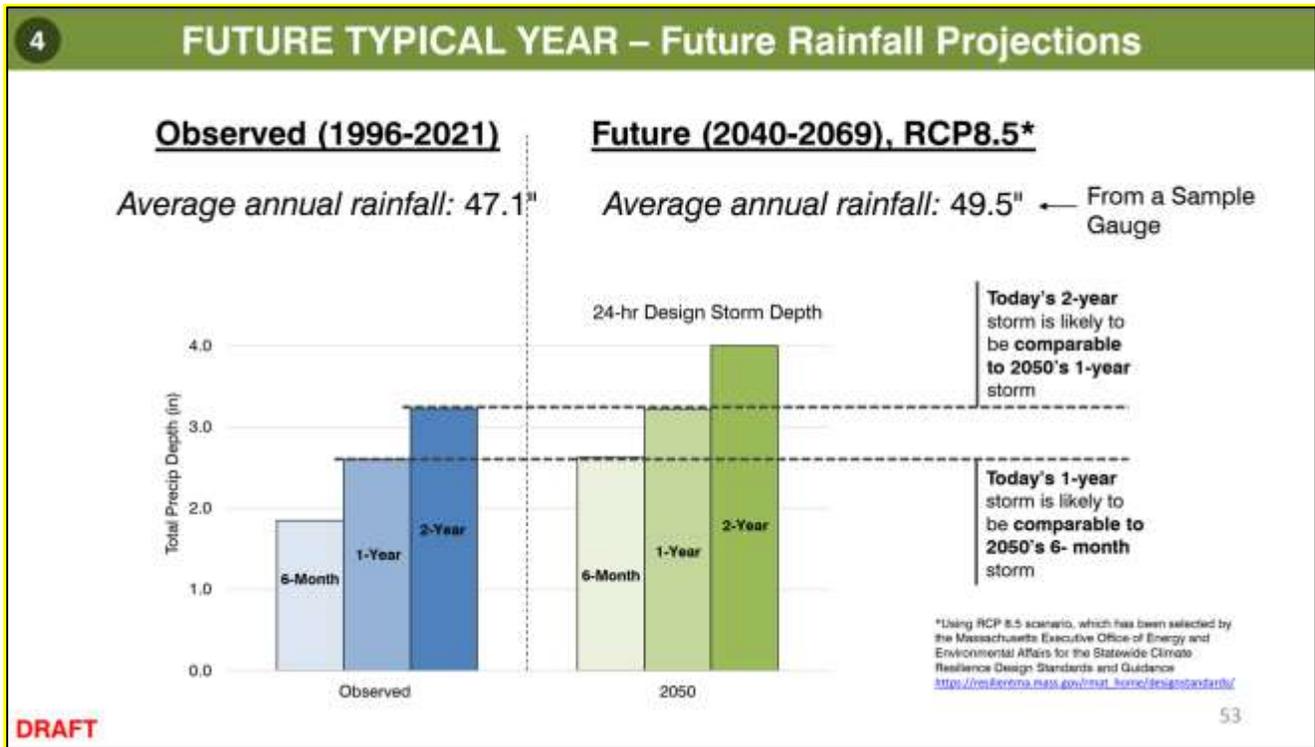
Chart presented by Project Partners to Watershed Advocacy Groups on 06/24/2024.

Sewer Separation Increases Capacity in the Regional System

Sewer separation is the modernization of the sewer system. Sewer separation removes stormwater from the regional sanitary sewer system, which increases the capacity of the sewer system locally and regionally. Complete sewer separation eliminates CSOs, reduces Sanitary Sewer Overflows, and reduces Blended Events at the Deer Island Wastewater Treatment Plant.

Climate Change Impact: More Rainfall, More CSOs

Climate Change scientists, hired to create a forward-looking model, determined that an average year of rainfall will increase from 47.1" to 49.5" by the year 2050. An increase in rainfall means a four-fold increase of CSOs in our rivers.



Slide from Project Partners' Future Typical Year of Rainfall Analysis, 12/2022

\$510,000 Per Acre Cost of Sewer Separation

According to MWRA's Chief Operating Officer in a letter to EPA³² about the Financial Capability Assessment,³³ August 2023, the cost of sewer separation is \$510,000 per acre. Cambridge can complete its sewer separation at Alewife Brook by separating the remaining 188 acres of its combined system using MWRA funding at the cost of \$100,000,000.

In West Somerville, 100 acres of sewer separation is identified by the CSO Project Partners in their plan 2AB Hybrid 1.³⁴ Using MWRA's cost estimate for sewer separation, the cost of that sewer separation work, funded by MWRA, is \$51 million.

The Temporary Disruption is a Once-in-a-Lifetime Opportunity

Sewer separation means opening up the street. It's disruptive, but temporary, and gives the cities the chance to renew almost everything under (and on) the street, including: upgrading water mains, service laterals from mains to property lines to reduce leaks and basement backup risk, gas lines, electric, fiber, telecom conduit, street lighting, road reconstruction and repaving, sidewalks, ADA-compliant ramps, crosswalks, traffic-calming features, bike lanes, as well as street trees, tree trenches, and rain gardens. Coordinated underground trench work stretches limited capital dollars further by installation costs, while reducing future disruption to residents and businesses. And it leads to improved neighborhoods, improved property values, and fewer emergency repairs.

Making additional upgrades to utilities like water mains and electrical at the time of sewer separation work is not always required. But it is smart and will improve neighborhoods in multiple ways.

³² MWRA's August 2023 letter to EPA regarding its Update to the Financial Capability Analysis for variances.

https://savethealewifebrook.org/wp-content/uploads/2026/02/cam_csoplanning_realtimecsopublicnotificationevaluationreport_final20250829.pdf Page 162. "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."

³³ Clean Water Act Financial Capability Assessment Guidance: <https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf>

³⁴ From MWRA Board of Directors Meeting, 02/04/2026, page 37, 2AB Hybrid 1: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

Green Stormwater Infrastructure:

Nature-based Solutions to Flooding and Water Pollution

When it rains or snows, water picks up pollutants as it runs off impervious surfaces in our cities. Examples of impervious surfaces are roofs, sidewalks, driveways, and roads. Green Stormwater Infrastructure is an affordable nature-based solution that helps to reduce local street and neighborhood flooding, improve water quality, improve air quality, reduce urban heat island effects, increase biodiversity and wildlife habitat, and make our cities more livable. It is a great Climate Resiliency strategy with many benefits. It is important to remember that these effective systems require periodic maintenance and occasional renewal.

Upstream remedies like rain gardens, tree trenches, Miyawaki forests, and permeable pavement, and downstream projects like constructed stormwater wetlands clean the water and reduce stormwater flows and flooding. Removal of Alewife Brook's concrete channel and restoration of the brook will improve water quality, eliminate a huge source of neighborhood odors, and reduce flooding.

Constructed Stormwater Wetlands

An example of a constructed stormwater wetlands is the Alewife Stormwater Wetlands, a treasured public park that most people don't realize is actually infrastructure. Completed in 2013, it is a "gem" of the Boston Harbor Cleanup project. This award-winning public park in north Cambridge was the largest and most beautiful example of green stormwater infrastructure in the Northeast at the time of its construction.³⁵ The City of Cambridge regularly monitors and maintains the wetlands and nature trails, keeping it one of the most biodiverse and accessible parks in the city.

The constructed stormwater wetland improves water quality by trapping sediments and cleaning the water biologically using plants. It also reduces downstream flooding by absorbing water into the ground and slowing the flow of stormwater into Little River, which flows into the Alewife Brook, and on through to the Mystic River and then to Boston Harbor.



View of the Alewife stormwater wetland. Photo: Stantec³⁶

³⁵ Engineering News Record's Best Water/Environment Project, 2014: <https://www.enr.com/articles/10135-best-waterenvironment>

³⁶ <https://www.stantec.com/en/projects/united-states-projects/a/alewife-reservation-stormwater-wetland>

Rain Gardens and Bioswales

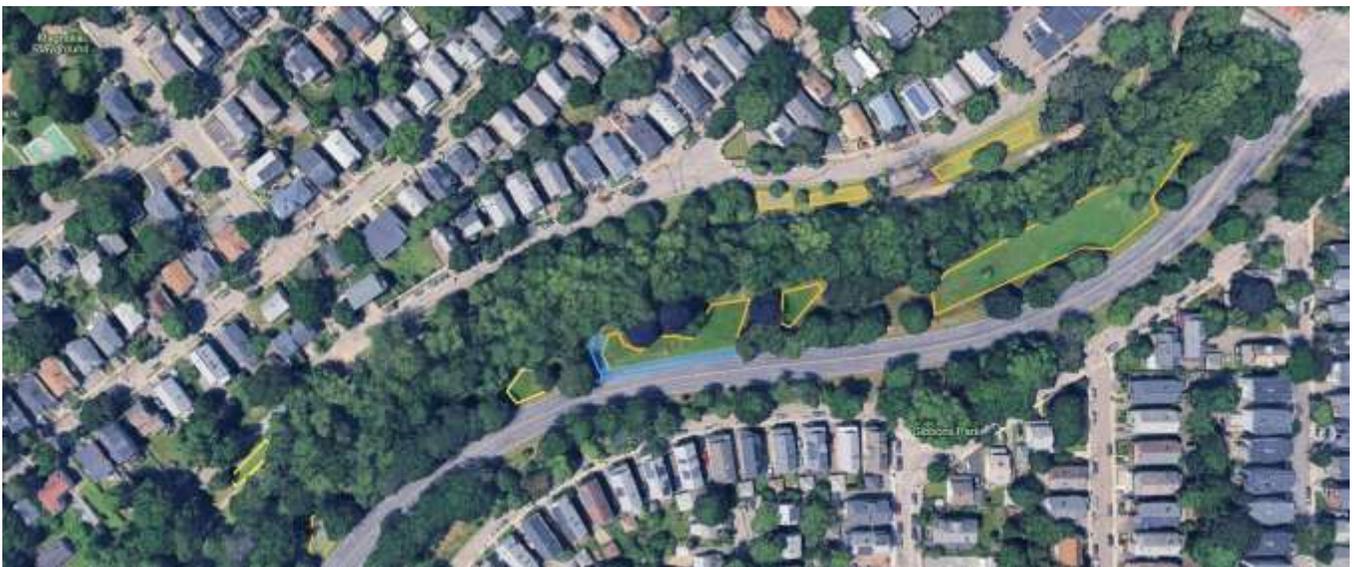
Rain gardens and bioswales are landscaped areas that are designed to allow stormwater from the street to enter a basin, where plants drink the water and nutrients and the soil filters pollutants. Biological processes clean stormwater from the street, so that the remaining stormwater that enters the storm sewers and then rivers and ponds is less polluted. The correct plantings, regular maintenance, and occasional renewal are necessary for rain gardens and bioswales to function effectively.



Arlington's Herbert Road Rain Garden. Credit: Mystic River Watershed Association

Miyawaki Forests

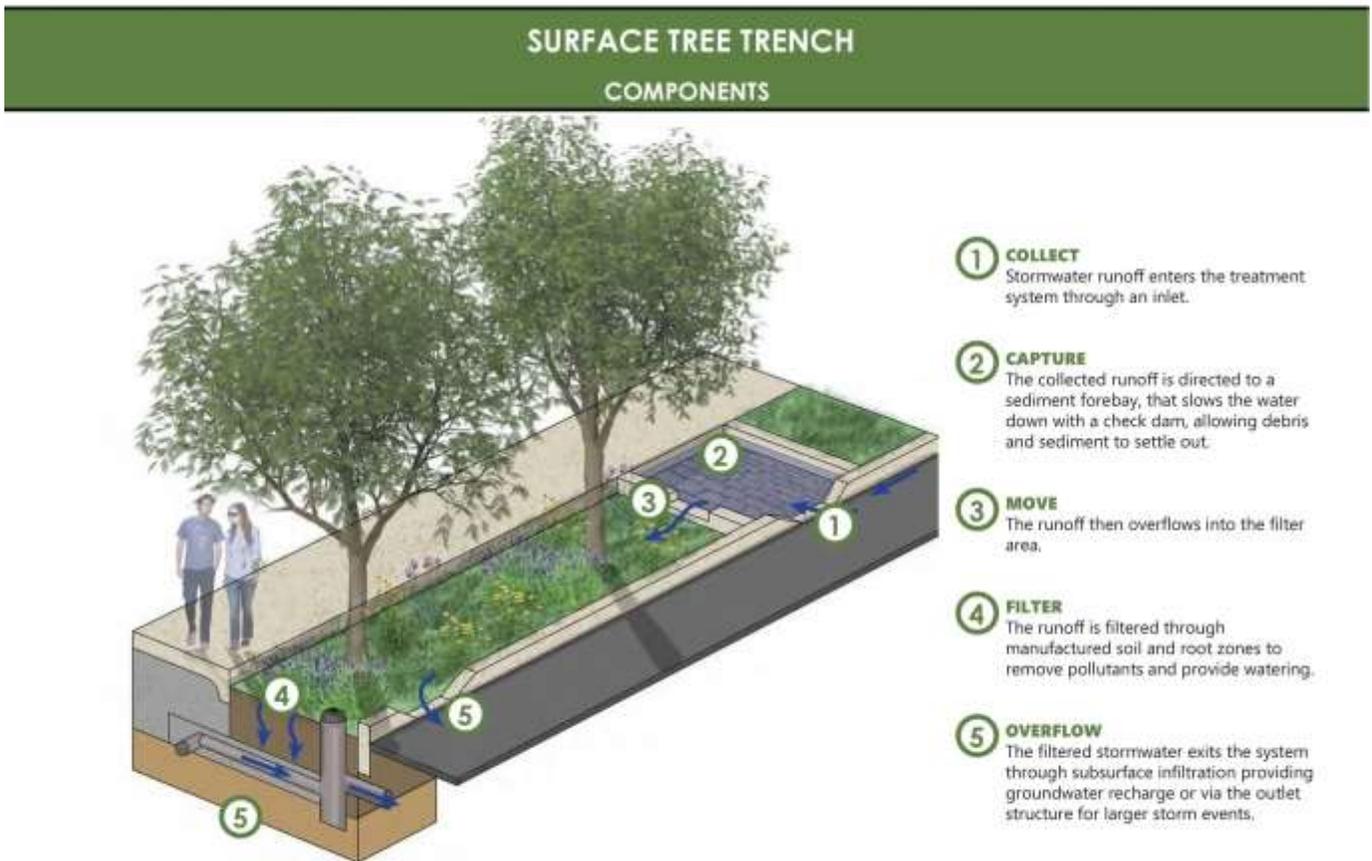
Miyawaki forests create dense, native, and biodiverse forests in a short period of time, through intense soil preparation and dense planting of native species of trees appropriate for the location. Because Miyawaki forests grow and mature more quickly and are denser than other planted forests, they have the potential to absorb more rainwater and surface runoff. The ability of Miyawaki forests to store more water improves over time as the plants grow and the soil becomes richer. Many areas near Alewife Brook may support Miyawaki forests. Below is a preliminary sketch of potential sites for forests, as well as rain gardens, and nearby gravel areas.



Miyawaki forest locations have been identified along Alewife Brook.

Tree Trenches

“Tree trenches work by directing water from impervious surfaces in the surrounding blocks toward a tree. On the surface, the tree trench will look like a street tree pit. But, below the tree, there will be a storage and infiltration space which will store runoff, water the tree, and recharge groundwater. In addition to decreasing tree mortality, these tree trenches are likely to provide co-benefits like increasing tree canopy, cooling neighborhoods, providing habitat, improving water quality, improving air quality, and increasing tree survivability.”³⁷ The underground portion must be periodically cleaned and renewed.



Conceptual design of a tree trench with surface-level runoff watering. Credit: Horsley Witten

³⁷ Mystic River Watershed Association: **TREE TRENCHES** A nature-based cooling solution that uses stormwater to expand and strengthen our urban canopy <https://mysticriver.org/tree-trenches>

Green Roofs

Green Roofs are plantings on roofs that reduce rain runoff from roofs to the street, reduce heat island effect, and help to keep buildings cooler during summer heat. The correct plantings and regular maintenance are necessary for a green roof to function well.

Rainwater Reuse Systems

Large-scale rainwater reclamation reuse systems capture stormwater and repurpose it for toilet flushing, cooling, and irrigation. These systems are safe, effective, and are being installed at scale. They can help conserve water, reduce CSOs and flooding, restore resilience, and improve livability. Large-scale rainwater reclamation is included in a new development in Cambridge at 585 Kendall, a 630,000 square foot building.

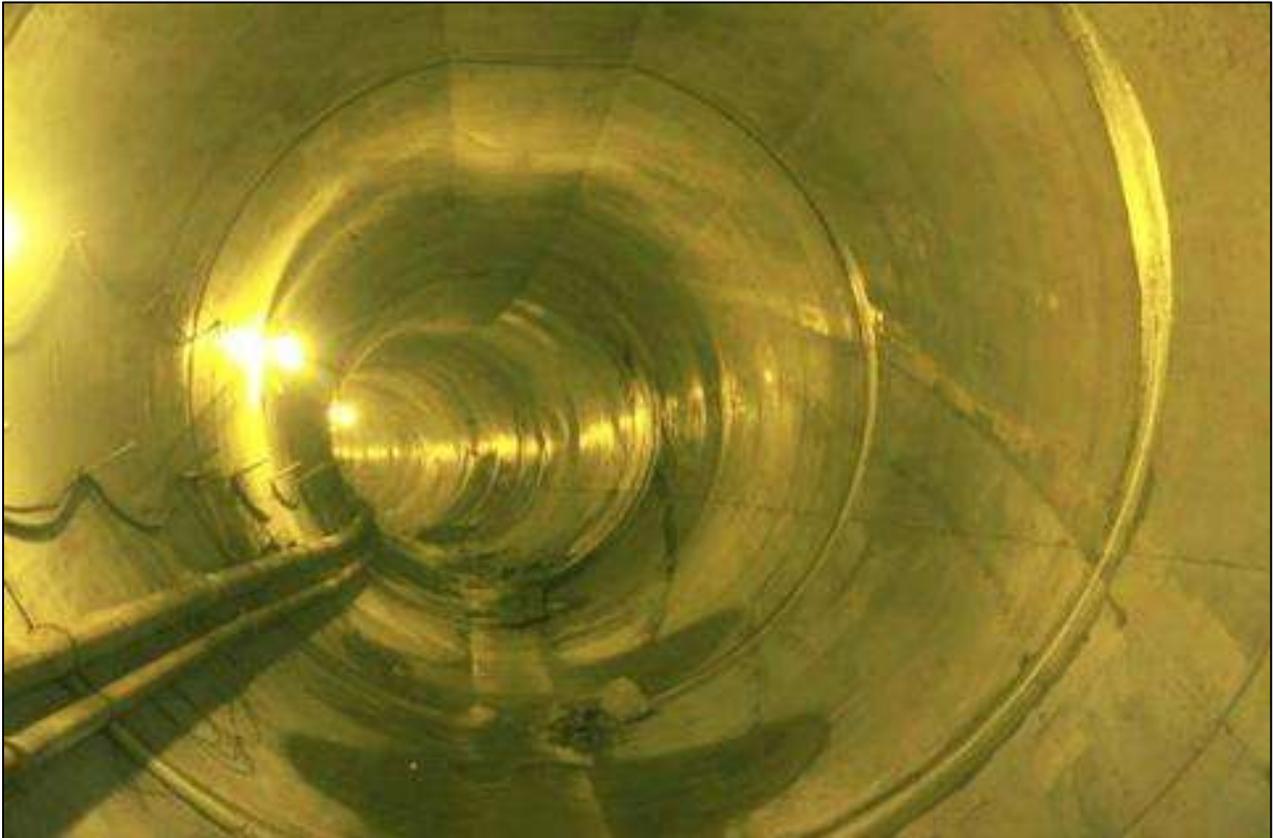
Porous Pavement and Infiltration Trenches

Newer construction materials and techniques allow for hardscapes and surfaces that still allow some amount of water to absorb into the soil beneath. Unlike living soil with plant growth, this will only absorb ~1-2" of rainfall before it is saturated, but there are ways to engineer for greater storage volumes by digging deeper and installing a larger stone reservoir to store and distribute water underground. Performance will degrade over time in New England weather conditions.

CSO Storage

CSO storage can take the form of tunnels and tanks. Combined sewage is sent from the main sewer into a nearby storage tank or tunnel, where it is held until the sewer system pipes have enough capacity again. At that point, the stored combined sewage is released back into the system and sent on to the treatment plant. Some storage facilities are also designed to provide treatment.

Once installed, tanks and tunnels are not easily expandable. Therefore, CSO storage is not resilient to increased precipitation due to Climate Change.



Inside the 2-mile long North Dorchester Bay Tunnel. Photo by MWRA.

Cambridge Solution:

Modernize the Sewer System & Add Green Stormwater Infrastructure

EPA Urges the City: More Sewer Separation & Green Infrastructure

In a letter to the City of Cambridge, EPA wrote, "EPA expects the City to consider continued **separation of city piping**, storage and pump-back facilities at large City parcels along Alewife Brook such as Dillboy Field, and **extensive green infrastructure** in those areas of the City that contribute to combined sanitary sewer and drain lines."³⁸

Sewer Separation in Cambridge is Feasible

According to Boston Harbor court case documents, the preferred method of CSO control in Cambridge at Alewife is sewer separation. Half of the sewer separation in the Alewife Brook watershed was accomplished by 2015.³⁹ That sewer separation work also resulted in the 3.4 acre Alewife Stormwater Wetland to handle the separated stormwater. But the work was not completed, and Alewife sewage discharges continue to be in violation of the court order. Sewer separation in Cambridge is feasible and necessary to achieve an end to sewage pollution at Alewife Brook.

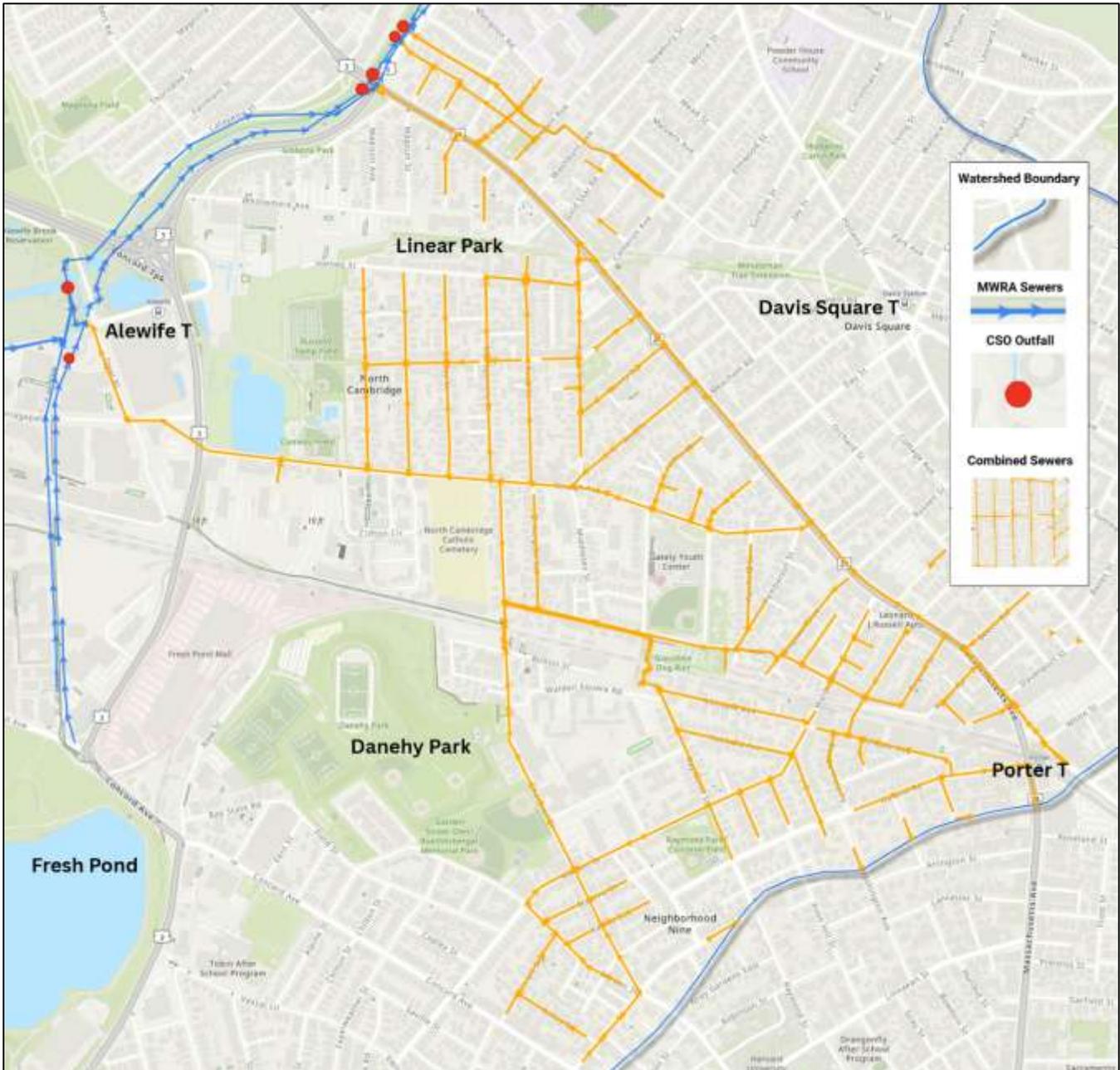
There are 188 acres of combined sewers left that flow from Cambridge into Alewife Brook. Sewer separation also requires reducing stormwater surges (aka: attenuation) to prevent area flooding. The good news is there are 12 acres of public parkland for new wetlands to hold stormwater flows from sewer separation. Because the area was a wetland in the past, before it was drained and filled, it is an appropriate place to restore wetlands. In fact, the state's 2003 Alewife Master Plan recommends using Department of Conservation & Recreation parkland for stormwater wetlands. The estimated cost of 188 acres of sewer separation is \$100,000,000. The time to complete planning and construction is approximately 15 years.

³⁸ EPA's response to Updated CSO Control Plan Draft Scope, dated 05/11/2022: <https://savethealewifebrook.org/wp-content/uploads/2022/05/EPA-rev-Cambridge-CSO-Control-Plan-SOW-1.pdf>

³⁹ Projects from the first Alewife CSO Plan were complete in 2015: <https://savethealewifebrook.org/2025/11/22/massdep-tells-mwra-back-off/#half-done>

188 Acres of Combined Sewer in Cambridge, Tributary to Alewife Brook

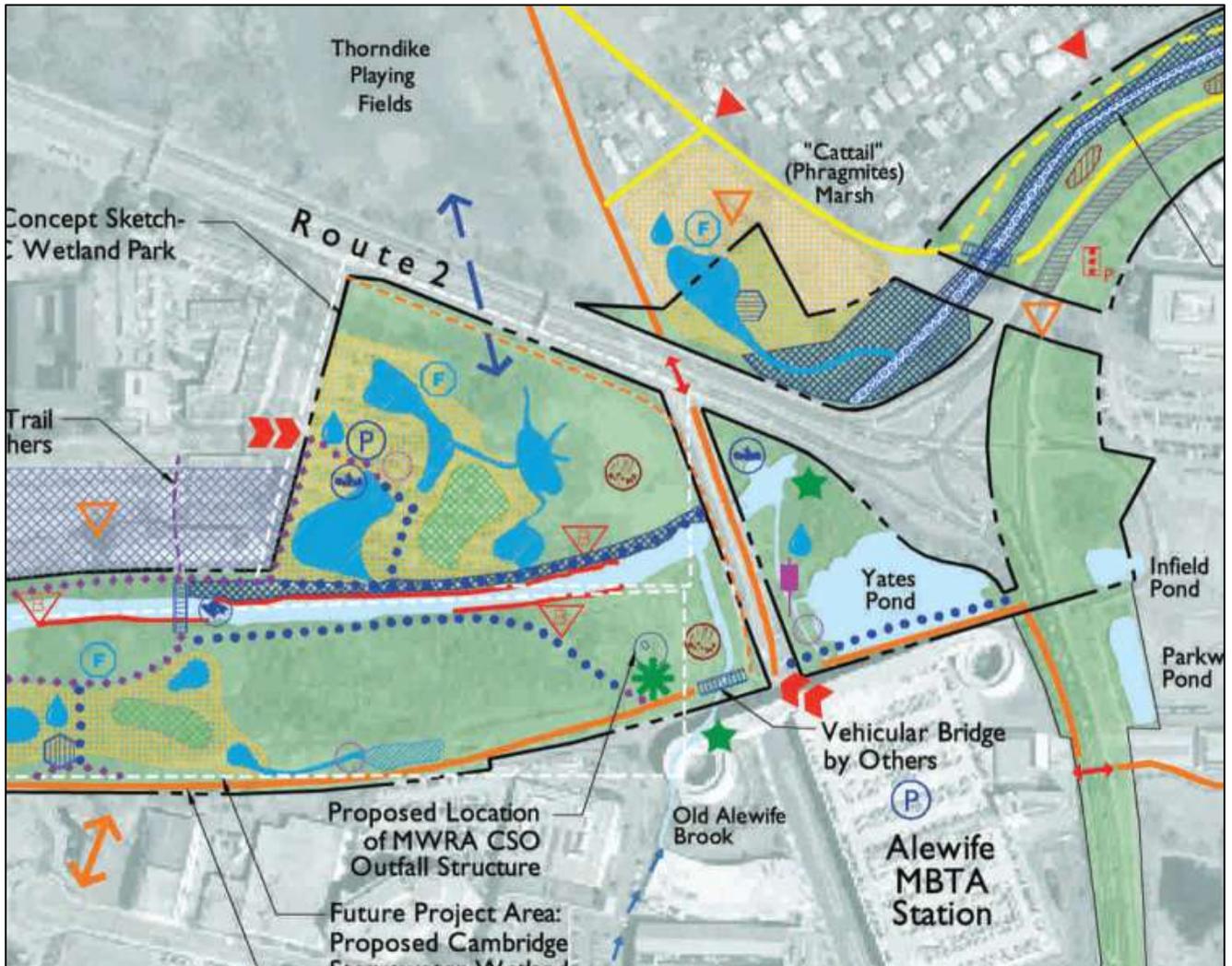
We created a map with combined sewer pipes in orange and arrows showing sewage flows. 188 acres of sewer separation were identified that drain to Alewife Brook from Cambridge. Note: here we did not include the Charles River watershed, nor areas in Somerville.



Map of remaining combined sewer pipes that drain to Alewife Brook in Cambridge shown in orange. Alewife Raw Sewage Outfalls are depicted as red dots.

Available Public Space for Stormwater Wetlands

DCR recommends wetlands projects in their 2003 Alewife Masterplan,⁴⁰ to be sited next to Little River and Alewife Brook. These wetlands recommendations are on state parkland, shown below.

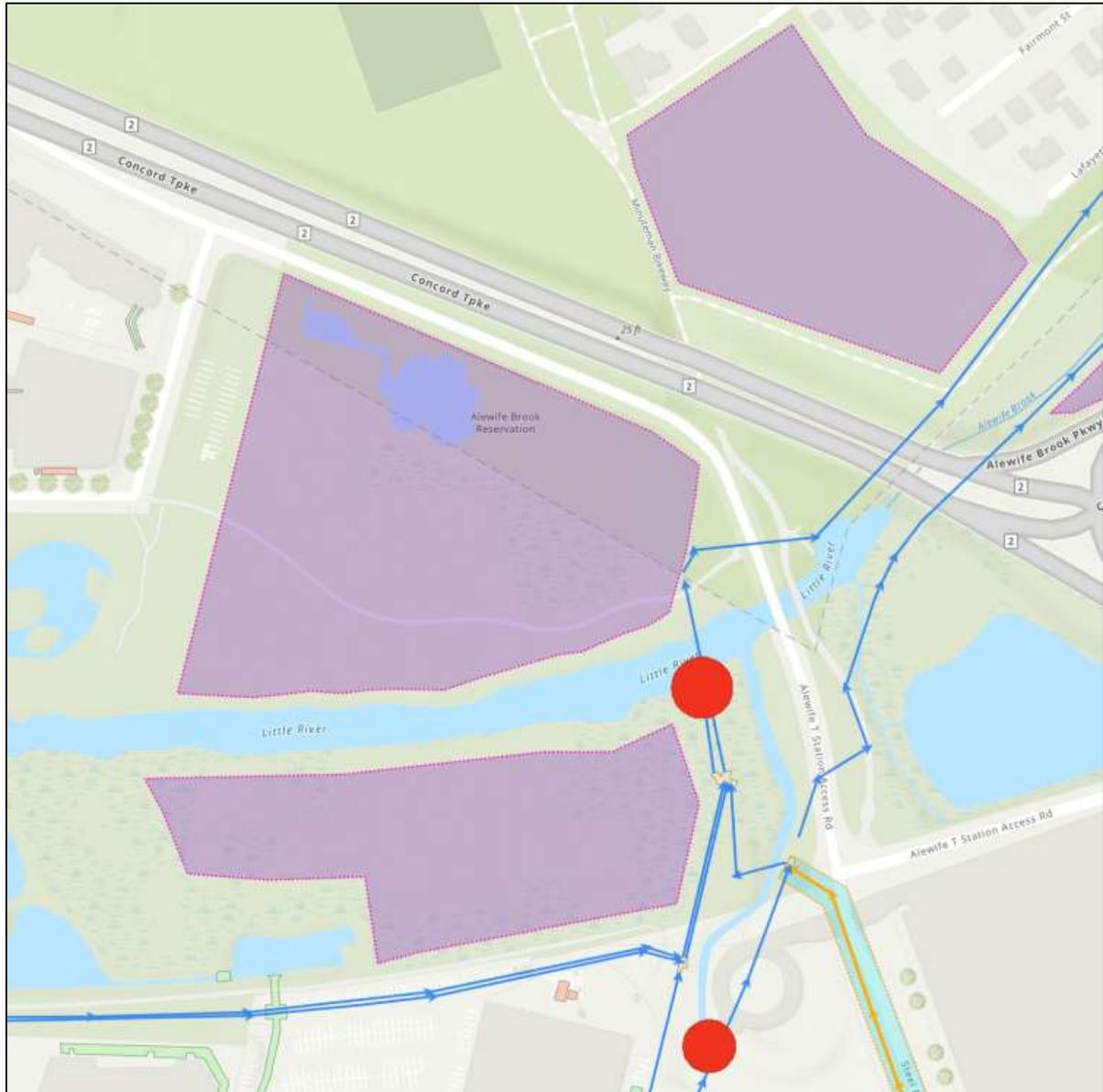


	FLOOD STORAGE / CONTROL		WETLAND RESTORATION / CREATION
	RAINGARDENS FOR STORMWATER TREATMENT		RIPARIAN HABITAT EXPANSION
	PROPOSED LAND ACQUISITION		NATURAL CHANNEL RESTORATION

Section of Planning Map from DCR's Alewife Masterplan shows recommendations for wetlands in yellow, green, and blue.

⁴⁰ DCR's Alewife Brook Master Plan Map, South" <https://savethealewifebrook.org/wp-content/uploads/2021/12/masterplansouth.pdf>
 More guidance from DCR is provided here: [https://www.mass.gov/guides/dcr-master-plans#-alewife-master-plan-\(2003\)-](https://www.mass.gov/guides/dcr-master-plans#-alewife-master-plan-(2003)-)
<https://www.mass.gov/doc/findings-and-recommendations/download>

There are 12 acres of parkland next to Alewife Brook and Little River in DCR plans for wetlands. This is enough space for three more constructed stormwater wetlands. It is enough space to support complete sewer separation for Cambridge's combined sewer pipes now flowing into Alewife Brook. The areas for stormwater wetlands are shown below in purple. According to the Massachusetts Stormwater Handbook (2008, Vol. 1 and Vol. 2) this is adequate sizing for constructed wetlands to treat this volume of stormwater.



Map displaying available public parkland to site constructed stormwater wetlands, shaded in purple.

As a comparison, the Alewife Constructed Stormwater Wetland is 3.4 acres within state DCR land. It receives stormwater from 211 acres. This beloved Stormwater Wetland is a project that is included in the state's 2003 Alewife Masterplan.

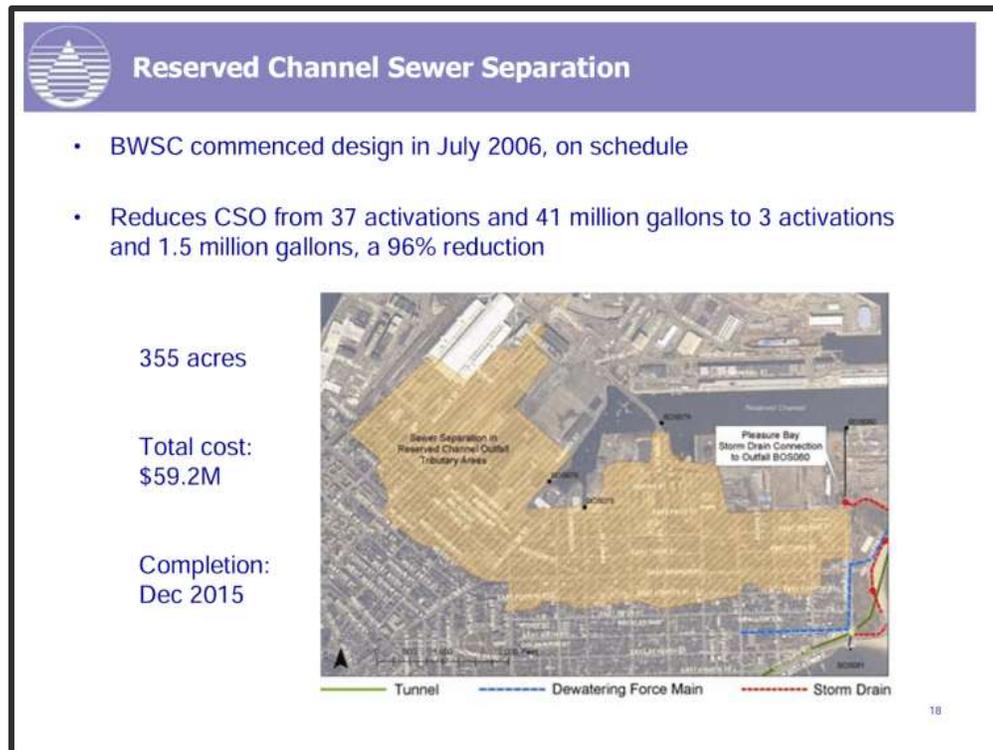
Additional Green Stormwater Infrastructure

Green Stormwater Infrastructure should be installed to manage 1-inch of rainfall from 10% of the impervious surface at a minimum in Cambridge tributary to Alewife Brook.

\$510,000 Per Acre Cost of Sewer Separation

According to MWRA's Chief Operating Officer in August 2023, the cost of sewer separation is \$510,000 per acre.⁴¹ At Alewife Brook, the cost of completing 188 acres of sewer separation in Cambridge is approximately \$100,000,000.

Time to Complete Sewer Separation: 15 Years



From MWRA's CSO Control Plan Progress Update, March 2007.

⁴¹ MWRA's August 2023 letter to EPA regarding its Update to the Financial Capability Analysis for variances. https://savethealewifebrook.org/wp-content/uploads/2026/02/cam_csoplanning_realtimecsopublicnotificationevaluationreport_final20250829.pdf Page 162. "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."

Boston Water & Sewer Commission separated 355 acres of combined pipes in 9 years.⁴² This included time to design and then construct. It's reasonable to plan for the same amount of time in Cambridge for sewer separation. An additional 5 years should be added for planning and construction of stormwater wetlands. Therefore, sewer separation and Green Stormwater Infrastructure can be completed in 15 years.

Regulatory Context

Cambridge's Alewife MBTA Station CSO (CAM-401A) is regulated under the federally enforced Combined Sewer Overflow Long-Term Control Plan (LTCP) from the Boston Harbor Cleanup Court Case, U.S. District Court actions 85-0489-MA and 83-1614-MA. Current discharges exceed LTCP limits, meaning this CSO outfall is in violation of the court order.

Sewer Separation is the Answer in Cambridge

Sewer separation in Cambridge is feasible in terms of technical achievability, cost/affordability, and the ability to meet water-quality and permit requirements within a reasonable timeframe. Cambridge has done it before in the Huron / Concord neighborhood which sends stormwater into the Alewife Stormwater Wetland.

A fifteen-year project with investment on the order of \$100 million for sewer separation work is well within the MWRA's capacity to fund and Cambridge's capacity to implement. Cambridge CSOs can be eliminated through sewer separation. Stormwater can be biologically cleaned by stormwater wetlands. Stormwater wetlands can also reduce flooding. Further, at the February 4, 2026 MWRA Board of Directors meeting, when asked about expandability and further resilience in the face of climate change, the MWRA team answered that the tanks and storage tunnels cannot be expanded, leaving further sewer separation as the only long-term solution that is resilient to Climate Change at Alewife Brook.

⁴² MWRA's CSO Control Plan Annual Progress Report, 2006: <https://www.mwra.com/sites/default/files/2023-11/2006csoarpresentation.pdf> Page 18.

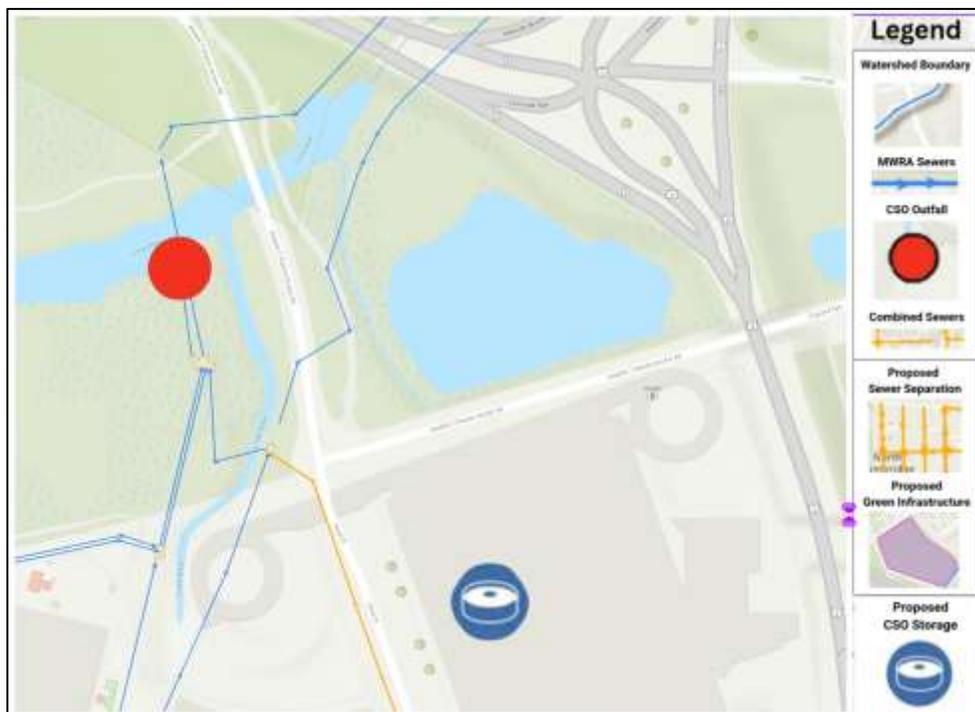
MWRA Solution:

Underground CSO Storage Tank & Green Stormwater Infrastructure at MBTA Station Site

MWRA's Alewife CSO outfall at Little River is known as MWR-003. It is the Rindge Avenue siphon relief and is connected to Belmont's overflow sewer. It reduces sewage backflows in Belmont during storm events. A properly sized storage tank is required for this outfall because tanks are not expandable. Any tank that is constructed must be sized for the largest future storm.

Combined sewage is sent from the main sewer into a nearby storage tank, where it is held until the sewer system pipes have enough capacity again. At that point, the stored combined sewage is released back into the system and sent on to the treatment plant. Some storage facilities are also designed to provide treatment.

MWRA and Cambridge have been in talks with the MBTA to site a storage tank at the Alewife T parking garage site. A 3-million-gallon tank could take 7 years to construct at an estimated cost of \$30 million.



MWRA's MWR003 CSO outfall is represented by the red circle.
The CSO tank is shown in blue, sited on MBTA land at the Alewife T station site.

Ending Alewife Sewage Policy Order

In a June 2025 policy order⁴³ regarding the Alewife Station redevelopment, Cambridge City Councilors voted to “recommend the redevelopment to include as much green stormwater infrastructure as possible, as well as a major underground storage tank to help control CSO discharge”.

As stated in the policy order, there are significant opportunities to add Green Stormwater Infrastructure (GSI) around the station and on the garage’s former footprint once it has been demolished as a part of any redevelopment efforts. The use of land at Alewife Station for mitigation of CSOs and stormwater should be planned with input from community organizations and stakeholders in advance of selecting a developer for the site. GSI should be installed to manage at least 1-inch of rainfall across impervious surfaces and provide important connections to nearby green space.

There exists a tremendous opportunity to link green and blue public spaces along the northern edge of the site, visually reconnecting Jerry’s Pond, Yates Pond, the Alewife Reservation and Alewife Stormwater Wetland. Large Green Stormwater Infrastructure should be sited there.



Cambridge students Sean Mullan, Dylan Fox, and Julian Shabry-Lichter appear before Cambridge City Council to urge a doubling of the size of the Alewife Stormwater Wetlands and an end to Alewife sewage pollution.

⁴³ Cambridge City Council Policy Order:
https://cambridgema.igm2.com/Citizens/Detail_LegiFile.aspx?Frame=&MeetingID=4656&MediaPosition=&ID=29862&CssClass=
<https://www.cambridgeday.com/2025/06/17/alewife-redevelopment-should-also-block-sewage-councillors-say-as-staff-points-to-problem-inland/>
<https://savethealewifebrook.org/2025/06/20/cambridge-passes-alewife-t-sewage-policy-order/>
<https://cambridgema.igm2.com/Citizens/FileOpen.aspx?Type=30&ID=112549&MeetingID=4656>

Somerville Solution:

2022 Flood Mitigation and Water Quality Improvements Plan With Additional Sewer Separation & Green Stormwater Infrastructure

EPA Urges the City: More Sewer Separation & Green Infrastructure

In a letter to the City of Somerville, EPA wrote, “EPA expects the City to consider continued **separation of city piping**, storage and pump-back facilities at large City parcels along Alewife Brook such as Dillboy Field, and **extensive green infrastructure** in those areas of the City that contribute to combined sanitary sewer and drain lines.”⁴⁴

The Community Plan for Somerville is a hybrid approach that includes 100 acres of sewer separation, Green Stormwater Infrastructure, and elimination of the Tannery Brook CSO regulator using an engineering plan comprising six projects from Somerville’s Citywide Drainage and Water Quality Master Plan.

Sewer Separation



Somerville Sewer Separation Proposal from Alternative Presented to MWRA Board of Directors, 02/04/2026.⁴⁵

⁴⁴ EPA’s response to Updated CSO Control Plan Draft Scope, dated 05/11/2022: <https://savethealewifebrook.org/wp-content/uploads/2022/05/EPA-rev-Somerville-CSO-Control-Plan-2022.pdf>

⁴⁵ From MWRA Board of Directors Meeting, 02/04/2026, page 37, 2AB Hybrid 1: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

According to MWRA's Chief Operating Officer in August 2023, the cost of sewer separation is \$510,000 per acre.⁴⁶ At Alewife Brook, the cost of 100 acres of sewer separation in Somerville is \$51 million. This does not include asphalt paving / Complete Streets. In the Project Partners' recommended CSO plan for Mystic River, 95 acres of sewer separation are proposed and estimated to take 5-7 years.⁴⁷ Therefore, 100 acres of sewer separation in Somerville at Alewife Brook can be accomplished in 15 years or less.

New Stormwater Outfall to New Constructed Stormwater Wetland

A new stormwater outfall and pump would be constructed to pump stormwater flows to a new constructed wetlands at Alewife Brook. The cost of the outfall is estimated at \$2.6 million. There are 12 acres of DCR state parkland for new constructed wetlands.

Green Stormwater Infrastructure

In addition, Green Stormwater Infrastructure should be installed to manage at least 1-inch of rainfall from at least 10% of the impervious surface in the combined sewered areas in Somerville, tributary to Alewife Brook.

⁴⁶ MWRA's August 2023 letter to EPA regarding its Update to the Financial Capability Analysis for variances.

https://www.cambridgema.gov/-/media/Files/publicworksdepartment/combinedseweroverflows/Reports/cam_csoplanning_realtimecsopublicnotificationevaluationreport_final20250829.pdf Page 162. "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."

⁴⁷ From MWRA Board of Directors Meeting, 02/04/2026, page 81, 2MR Hybrid 1: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>

Citywide Drainage and Water Quality Master Plan Projects

In 2022, Somerville published its **Citywide Drainage and Water Quality Improvements Master Plan**⁴⁸, a collection of infrastructure projects to “reduce flooding, improve water quality, and mitigate combined sewer overflows,” meant to “prepare Somerville for climate change.” This highly credible work from engineering consultant Dewberry contains construction cost information for each of the projects within the plan, as well as conservative estimates. One of the plans in this document details a solution to ending sewage pollution at the Alewife / Tannery Brook outfall. Note that Somerville Project Planners include Dewberry Master Plan projects at Winter Hill / Ten Hills in the Mystic River Updated CSO Control Plan.⁴⁹ The Dewberry plan is both technically and financially feasible, and construction can be completed in a reasonable timeframe.

Regulatory Context

The Tannery Brook CSO (SOM-001A) is regulated under the federally enforced Combined Sewer Overflow Long-Term Control Plan (LTCP) from the Boston Harbor Cleanup Court Case, U.S. District Court actions 85-0489-MA and 83-1614-MA. Current discharges exceed LTCP limits, meaning this CSO outfall is in violation of the court order.

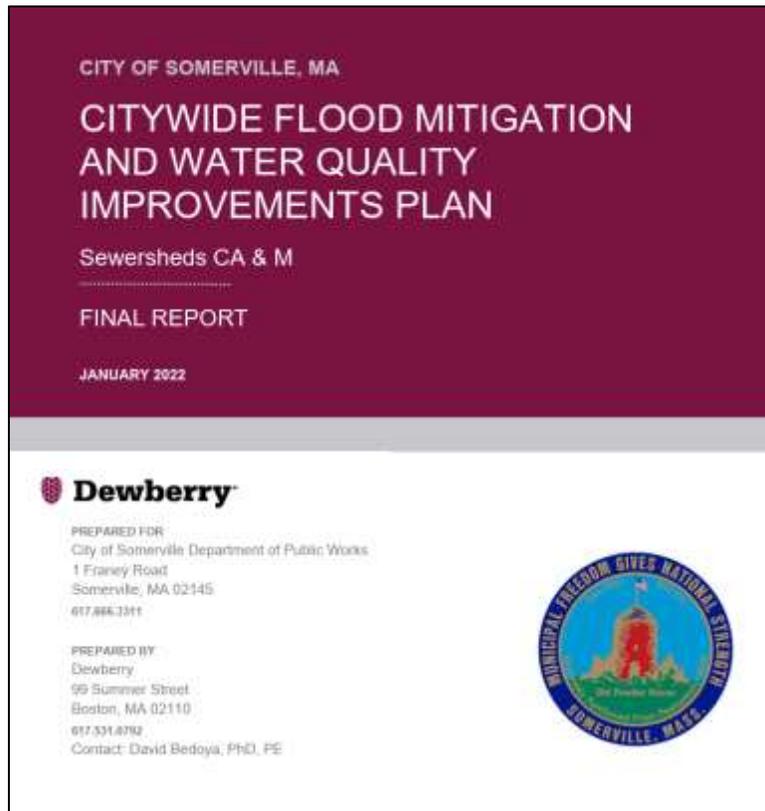
Elimination of Tannery Brook CSOs

“Sewershed CA Alternative 2” is one of the proposed plans in the Dewberry Master Plan. It is a series of projects that leads to the elimination of the Tannery Brook CSO regulator (SOM 001A), so that only stormwater would flow there. That would mean no more CSO sewage from Somerville at Alewife Brook.

⁴⁸ Somerville’s Citywide Drainage and Water Quality Master Plan: <https://voice.somervillema.gov/citywide-drainage-and-water-quality-master-plan>

⁴⁹ MROSS project overview: <https://voice.somervillema.gov/mystic-river-outfall>

From MWRA Board of Directors Meeting, 02/04/2026, Attachment B, page 81, MR Hybrid 2: <https://www.mwra.com/media/file/2026-02-04-mwra-board-directors-meeting-materials>



Sewershed CA Alternative 2 eliminates Somerville CSOs at Alewife Brook and reduces flooding in some Somerville neighborhoods.

The Sewershed CA Alternative 2 projects divert CSO flows to an existing CSO treatment facility, while also using other approaches. Sewer separation, stormwater storage, Green Stormwater infrastructure, and construction of a new stormwater outfall are all features of that plan. This set of projects not only removes a major pollution source but also reduces neighborhood flooding.⁵⁰

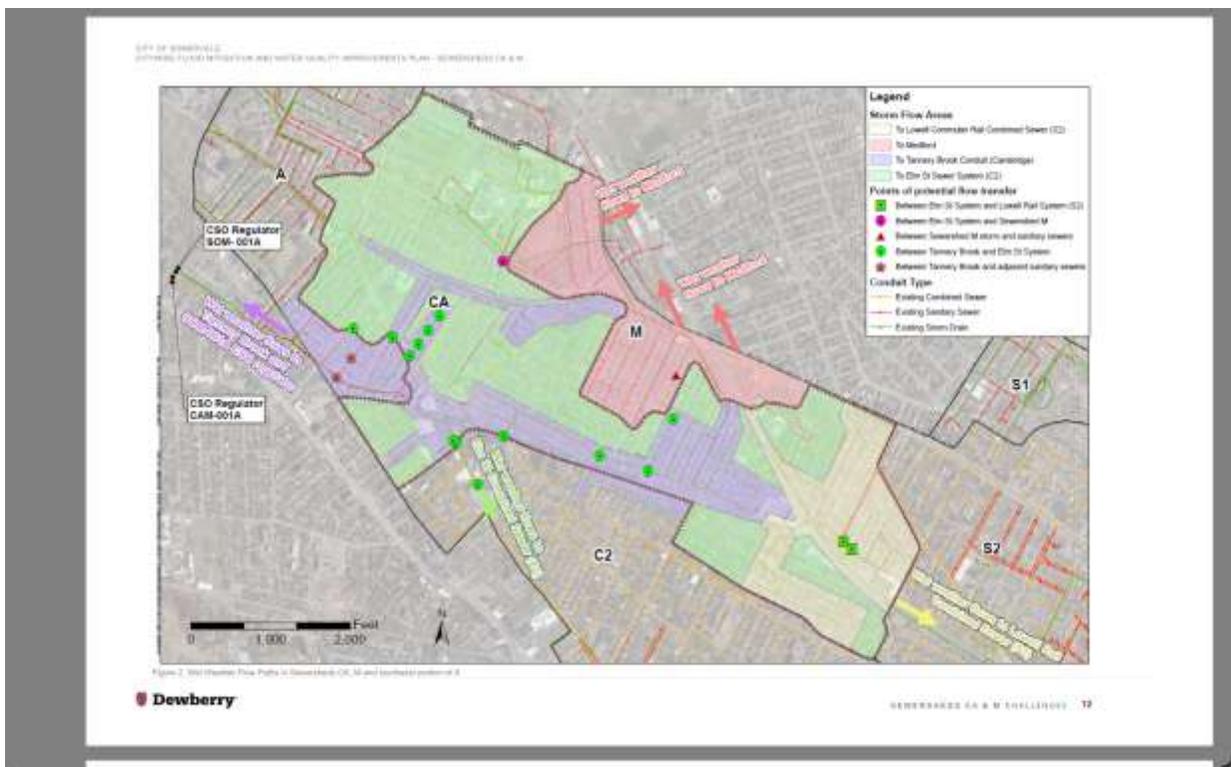
The plan should be modified to incorporate additional sewer separation and Green Stormwater Infrastructure, as needed after applying the Unified Model, which was developed by the project partners by combining the MWRA, Cambridge, and Somerville hydraulic models.

⁵⁰ Neighborhood flooding is reduced in Somerville, shown in chart ES-2 in Citywide Flood Mitigation and Water Quality Improvements Plan, Sewershed CA: <https://voice.somervillema.gov/14086/widgets/47790/documents/30104>

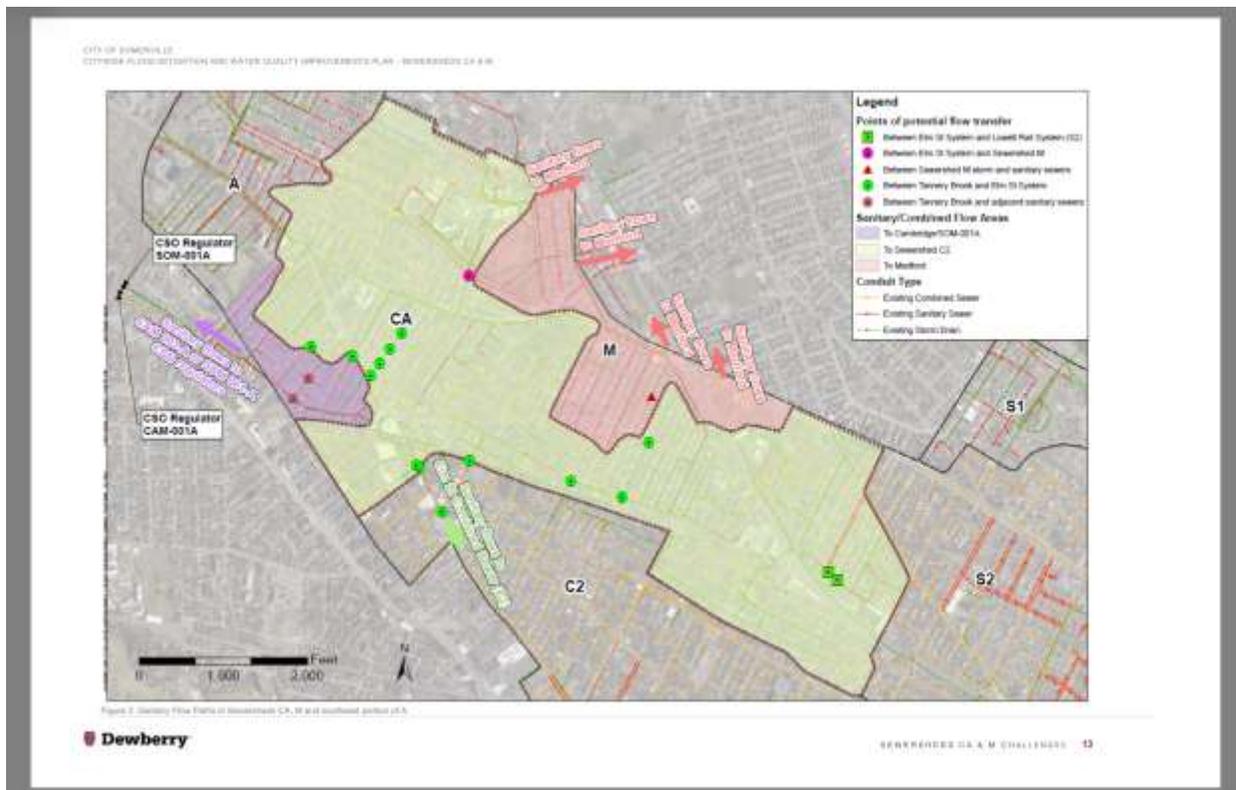
Overview of the Tannery Brook CSO Water Quality Improvement & Flood Mitigation Plan

The Sewershed CA Alternative 2 plan consists of six coordinated projects that allow for the elimination of Somerville's Tannery Brook CSO regulator by diverting the CSO flows to an existing CSO treatment facility. The plan includes projects that also increase stormwater storage, improve conveyance by upsizing the pipes, eliminate cross-connections between sanitary and stormwater pipes, and apply sewer separation strategically. An additional 100 acres of sewer separation, along with Green Stormwater Infrastructure is included in the plan to conform to the Unified Model and the Maximum Design Flow. A summary of the six projects with detailed engineering maps is included in the Appendix of this document.

Existing conditions show the purple section on the map drains to SOM001A.



Projects could send flows to an existing treatment facility, eliminating combined sewage at Alewife Brook and sending stormwater flows in purple that drain to Alewife Brook:



Dredging & River Restoration

In 1910, in response to the mosquito-borne malaria outbreak, wet meadows around Alewife Brook were drained and converted to developable land for housing, transportation, and recreation. The brook itself was straightened and partially channelized in concrete.

“In 1955, a trapezoidal concrete channel was constructed between Route 2 and Henderson Bridge. In conjunction with centuries of drainage and development, hydrologic changes resulted in Alewife Brook having less than 10% of the total surface water of the historical Great Swamp.”⁵¹



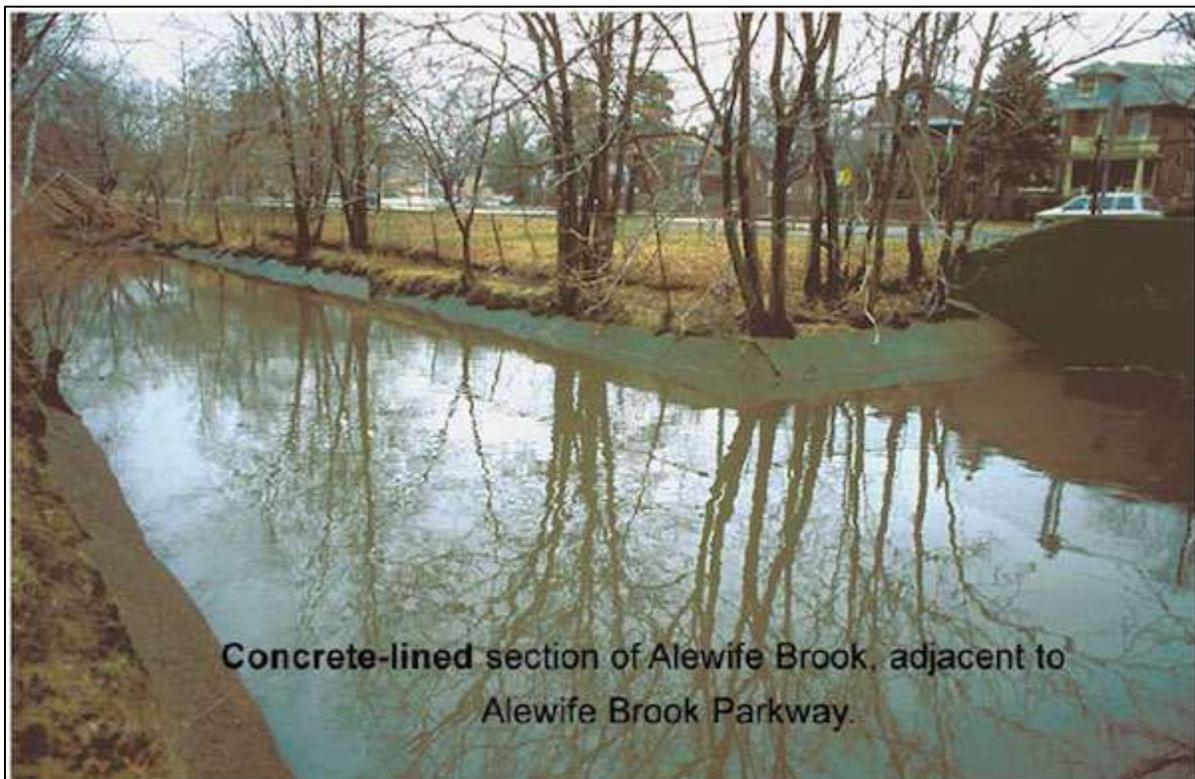
**Construction of the Alewife channel with a crane dredge, circa 1909.
From the Department of Conservation and Recreation, courtesy Massachusetts State Archives.**

⁵¹ Alewife Brook Inter-Fluve Sediment Study Report, 2024

Existing Conditions

Combined Sewer Overflows - raw sewage from human and industrial waste - contribute to sediment accumulations in Alewife Brook. The sediment contains hazardous Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated biphenyls (PCBs), and heavy metals, including Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, and Zinc. The major cause of poor water quality in Alewife Brook is combined sewage discharges. Stormwater and accumulating contaminated sediments also contribute to poor water quality.

The sediment contamination comes from sanitary sewage (what you flush), stormwater, and discharges from local industry into the sewer system. Contaminated sediment accumulates in the Alewife Brook's concrete channel, and compounds the poor water quality problem over time. Sediment accumulation also contributes to odors during drought. Sediment also makes the brook unnavigable for recreational boating.



Channelized portion of Alewife Brook. Image credit: MWRA

In 1988, the idea of dredging the Alewife was floated when the Metropolitan District Commission (MDC – precursor of both MWRA and the Department of Conservation & Recreation) commissioned a sediment study⁵² at Alewife Brook.

More than three decades of sewage discharges later, and after no maintenance whatsoever on the part of MWRA, the amount of sediment has increased. MWRA, Cambridge, and Somerville treat Alewife Brook as an open sewer. Yet the brook is not provided with the same care and maintenance as sewer pipe infrastructure, which periodically gets inspected, cleaned, flushed, and repaired.

Because the Alewife is such a small and slow-moving river, a narrow concrete channel in some places, it has accumulated several feet of CSO-contaminated sediment. During most conditions, the sediment lies beneath less than a foot of water. During drought, when the sediment is below the water line and the sediment is exposed to air, the stench is unbearable. The accumulation of sediment contributes to higher bacterial counts and lower water quality.

Support from EPA

In 2022, EPA wrote a letter⁵³ in response to the MWRA's 2022 Draft Scope for the Alewife Brook CSO Control Plan. In it, the EPA recommended that MWRA dredge the Alewife Brook as part of the Long Term CSO Control Plan. EPA asked MWRA to work with the Department of Conservation and Recreation to remove sediment from the brook. Currently, water quality remains poor even on dry weather days when a lack of CSO and stormwater discharges should mean better water quality. Dredging sediment would improve water quality by removing contaminants and reducing bacterial counts in the water on dry weather days. EPA also suggests that one way to accommodate an increase in stormwater would be to increase the Alewife Brook's storage and flow capacity by dredging the channelized portion of the brook.

\$25 Million Cost of Dredging and Sediment Removal

In 2023, State Representatives Dave Rogers, Sean Garballey, and Christine Barber secured State funding for an Alewife Brook sediment study, which was produced by Inter-Fluve under the direction of the Mystic River Watershed Association and Save the Alewife Brook. According to Inter-Fluve's

⁵² 1988 Little River / Alewife Brook Sediment Study https://savethealewifebrook.org/wp-content/uploads/2022/07/sediment_study_combined_files.pdf

⁵³ EPA's 05/11/2022 Response to MWRA's Draft Scope of Work: <https://savethealewifebrook.org/wp-content/uploads/2022/05/EPA-Comments-on-MWRA-CSO-Control-Plan-SOW.pdf>

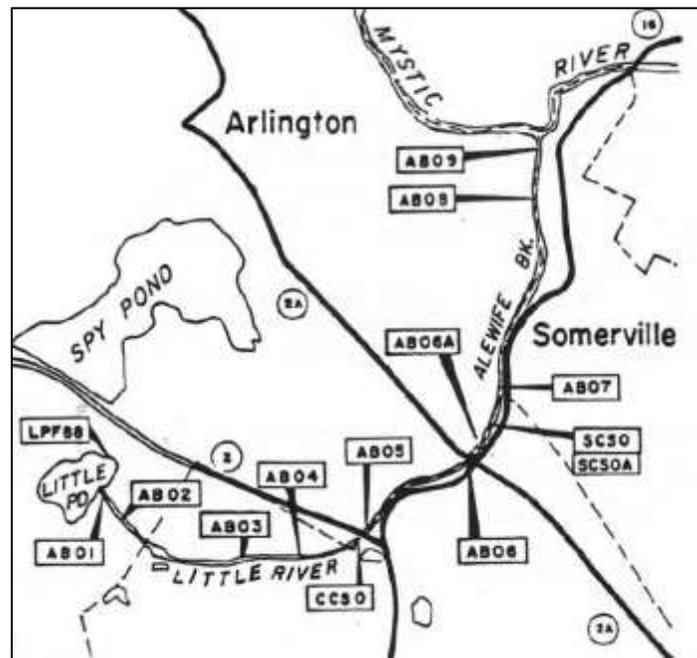
MWRA's 04/01/2022 Updated CSO Control Plan - Draft Scope of Work and Schedule

2024 Sediment Study, the cost of dredging and disposal of the sediment is \$25 million in 2025 dollars.

Sediment Depth Measurements

In its 2022 letter, EPA quotes a 2005 United States Geological Survey study⁵⁴ that estimated sediment volume in the Alewife Brook at approximately half a million cubic feet.

In July 2022, Save the Alewife Brook took sediment measurements. At the center of Little River opposite MWRA's CSO MWR003 ('CCSO' on the map), Save the Alewife Brook measured a sediment depth of approximately 36 inches. That's double the 18 inches recorded in 1988. Further upstream, adjacent to 20 Acorn Drive ('AB03'), Save the Alewife Brook's sediment measurement was 48 inches. That's an increase of 18 inches over the 1988 measurement.



Sample Locations Map from 1988 Little River/Alewife Brook Survey, which includes sediment depth data from some of labeled testing sites.

In 2023, suspended solids from CSO sewage discharges contributed over 16 tons of new sediment to the already clogged Alewife Brook.⁵⁵

⁵⁴ 2005 USGS Sediment Study of Rivers and Lakes

https://savethealewifebrook.org/wp-content/uploads/2022/07/2005_USGS_Sediment_Study.pdf

⁵⁵ Suspended solids calculation according to the MWRA's 2001 Notice of Project Change for CSO Long Term Control Plan for Alewife Brook, EOE #10335. Download available here: https://savethealewifebrook.org/wp-content/uploads/2022/03/cso_al_2001-04-30.pdf

River Restoration

The Department of Conservation and Recreation's Alewife Master Plan⁵⁶ includes stream channel restoration, as shown in the figure below. Dredging the Brook and removing the concrete channel along with river restoration would increase wildlife habitat and provide needed flood storage. MWRA and DCR must work cooperatively to complete the restoration.

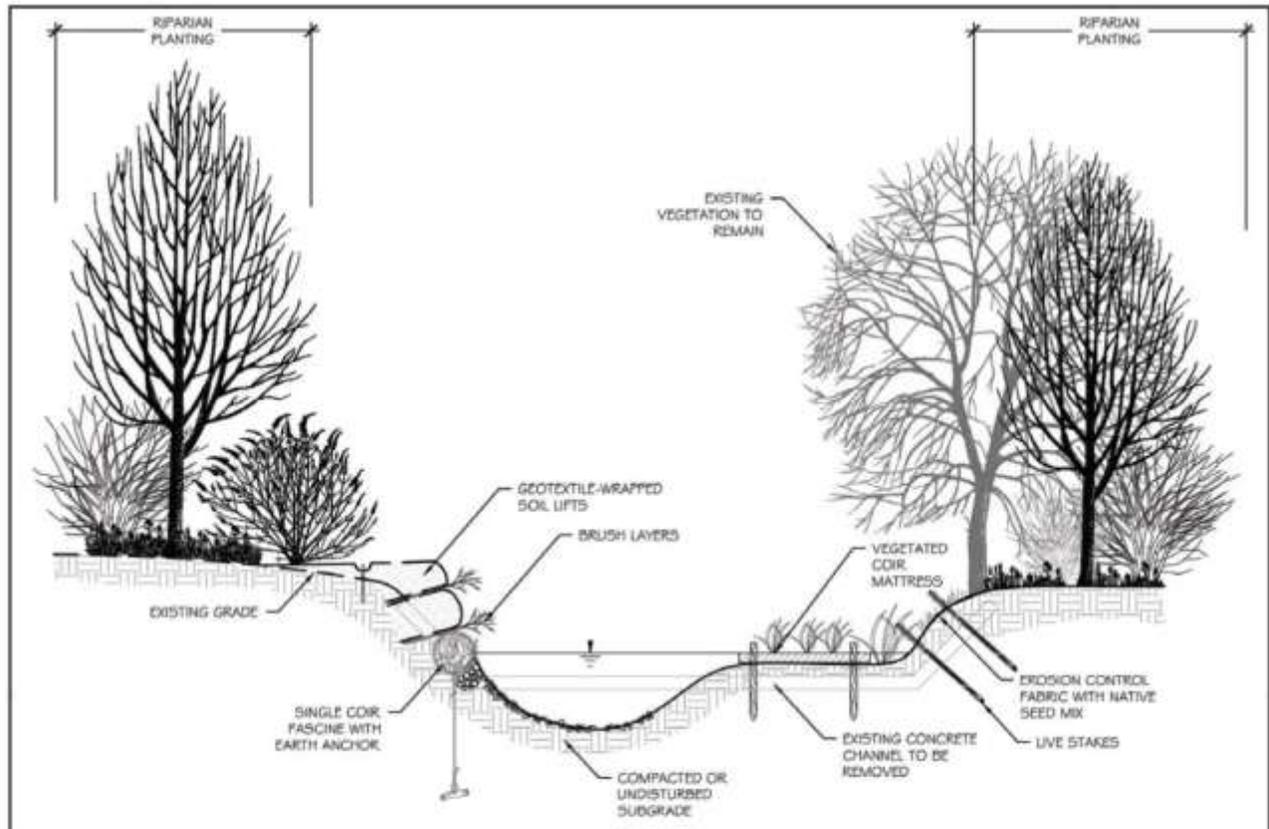


FIGURE 60. Typical stream channel restoration using bioengineering techniques.

Figure from 2003 Alewife Master Plan.

⁵⁶ 2003 Alewife Master Plan documents: [https://www.mass.gov/guides/dcr-master-plans#-alewife-master-plan-\(2003\)-https://www.mass.gov/doc/findings-and-recommendations/download](https://www.mass.gov/guides/dcr-master-plans#-alewife-master-plan-(2003)-https://www.mass.gov/doc/findings-and-recommendations/download)

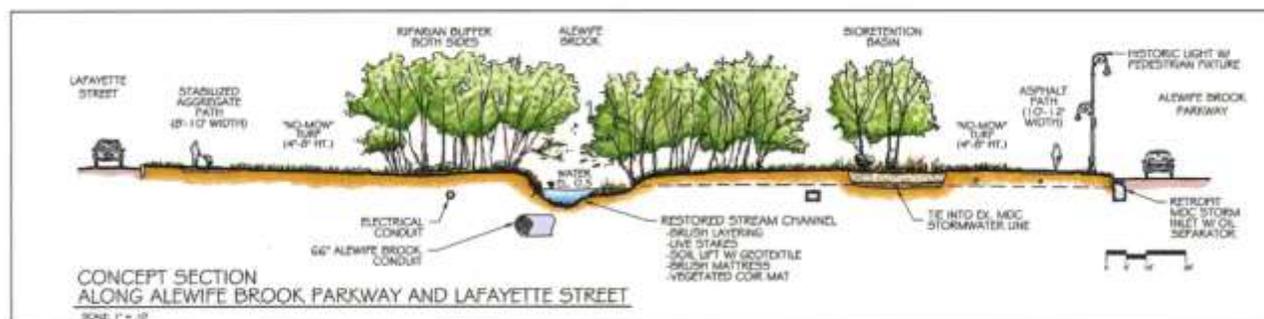
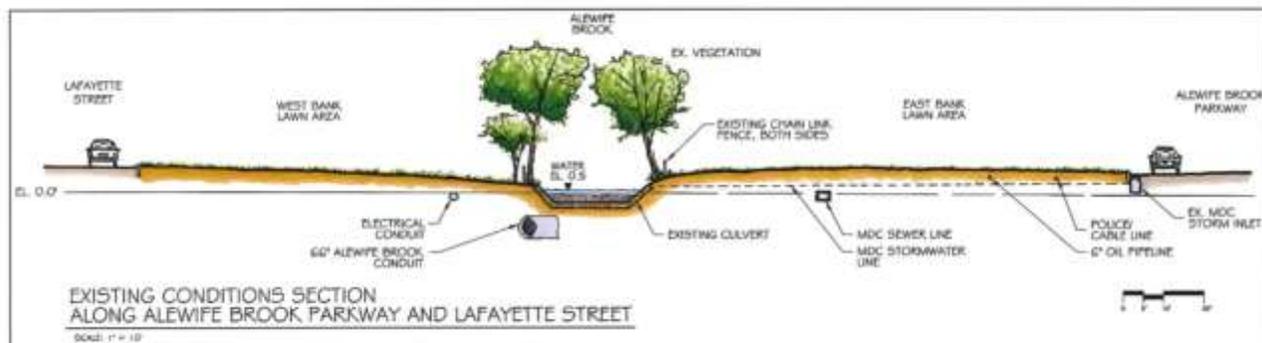


FIGURE 59. Existing (top) and proposed (bottom) conditions along the Alewife Brook Parkway and Lafayette Street

Figure from 2003 Alewife Master Plan.

About Save the Alewife Brook

Save the Alewife Brook is an inclusive and growing grassroots environmental and community health advocacy group with thousands of supporters in Cambridge, Somerville, Arlington, Belmont, Medford, and beyond. The group is focused on addressing untreated sewage pollution and flooding problems associated with Alewife Brook.

Our Shared Mission

Save the Alewife Brook advocates for solutions to sewage pollution and flooding of Alewife Brook and its surrounding area by amplifying the voice of local residents and the Mystic and Charles River Watershed Associations. We meet with the watershed associations monthly and have together formed a Coalition of tens of thousands of supporters who are committed to ending sewage pollution.

We have run an effective, years-long campaign to raise awareness of the issue and create positive change. We seek to eliminate the serious public health risks associated with untreated sewage pollution, particularly in Environmental Justice communities.

To date, we have successfully lobbied for Climate Change to be included in MWRA's planning model. We have successfully worked with the Massachusetts Department of Environmental Protection to improve their Alewife Brook Water Quality Variance, including real-time onsite public CSO notification, odor and floatables control, and fair Financial Capability Analyses which require the CSO permittees to present individual economic feasibility analyses.

We got an Alewife Brook Resolution passed at Arlington Town Meeting. We have met with the Cambridge and Somerville City Council and have successfully gotten three Alewife CSO Policy Orders passed in the cities. We have worked with the Arlington Select Board and the Arlington Board of Health. We are also working with State Representatives Dave Rogers, Sean Garballey, Steve Owens, and Christine Barber, as well as State Senator Pat Jehlen, on getting legislation filed and passed to eliminate untreated sewage pollution at 43 Combined Sewer Outfalls in the MWRA's regional sewer system up to a 25-year storm event.

Special Thanks

Save the Alewife Brook has received unanimous support from Arlington Town Meeting and has received a great deal of assistance from Town Manager Jim Feeney, Town Counsel Michael Cunningham, Director of Public Works Michael Radmacher, Selectboard Members Diane Mahon and Steve DeCoursey. Thank you to the Arlington Board of Health for their assistance and support. We've received unanimous support from Cambridge City Council, with special help from Councilors Patty Nolan & Cathy Zusy. We've also received unanimous support from Somerville City Council, with special assistance from Councilors Ben Ewen-Campen & Will Mbah.

Thank you to Assistant Secretary to the MWRA Board of Directors Kristin MacDougall for extraordinary support in communicating with the MWRA Board of Directors.

We deeply appreciate the support from area leaders and legislators. We are working with State Representatives Dave Rogers, Sean Garballey, & Steve Owens, as well as State Senator Pat Jehlen, on getting legislation filed to eliminate untreated sewage pollution at 43 Combined Sewer Outfalls in the MWRA's regional sewer system up to a 25-year storm event.

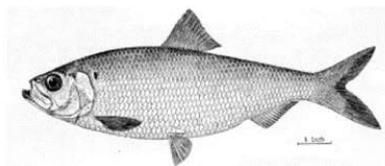
We are grateful for the insight and knowledge shared by Patrick Herron, Andy Hrycyna, Marja Copeland, and Isaiah Johnson at Mystic Watershed Association; Emily Norton and Julie Wood at Charles River Watershed Association; Sarah Adkins and Maya Bickel at Green Cambridge; Lisa Birk and Joel Nogic from Alewife Study Group; Rob Moir of Ocean River Institute; Nick Palermo of Greater Boston Plumbing Contractors Association; Eric Grunebaum of Friends of Jerry's Pond; and Jean Devine & her awesome students at Biodiversity Builders. Thank you to Ellen Mass and to Gwendolyn Speeth of North Cambridge.

Thank you to the thousands of area supporters in Cambridge, Somerville, Arlington, Belmont, and Medford who signed our Email Petition to End Sewage Pollution, attended public meetings online and in person, publicly recounted their personal stories, and wrote letters in support of ending sewage pollution at Alewife Brook.

We are especially grateful for your support.

Thank you!

The Save the Alewife Brook Steering Committee Members are:
Kristin Anderson, David White, David Stoff, Eugene Benson, Ann McDonald,
George Laite, Michael Lonetto, Eppa Rixey



www.savethealewifebrook.org

Appendix

Summary of the six Dewberry Sewershed CA Alternative 2 projects⁵⁷ with engineering maps:

Project CA-2.1: Morrison Avenue and Winslow Avenue Area

This project installs large stormwater box culverts along Morrison Avenue and Grove Street, upsizes key combined sewers and local pipes (including Pearson, Prichard, Powderhouse, and Packard), and adds a new storm drain in Cedar Street to route more runoff into the new culvert system. It also adds catch basins and some green infrastructure to increase inlet capacity and reduce phosphorus, with the goal of significantly reducing chronic flooding on Morrison, Winslow, and nearby streets while keeping flows largely within the rights-of-way during 10-year storms.

SITY OF SOMERVILLE
CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - SEWERSHEDS CA & M

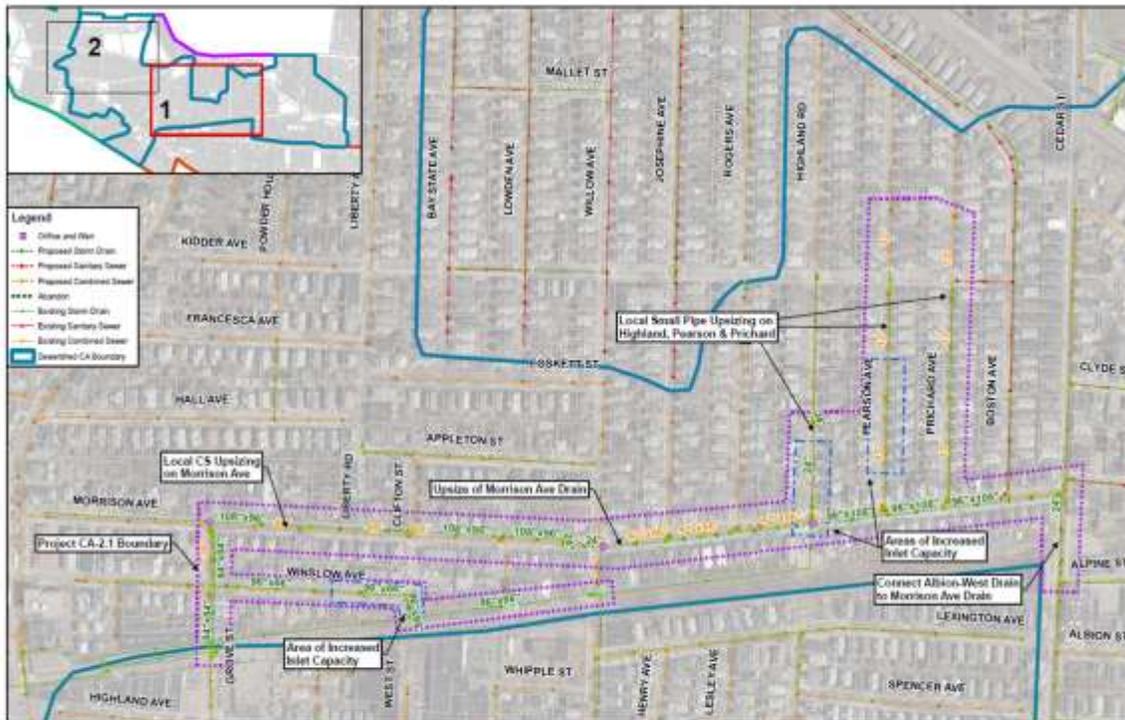


Figure 53. Project CA-2.1 Area - Proposed Improvements (Page 1 of 2)

⁵⁷ Somerville's Citywide Drainage and Water Quality Master Plan: <https://voice.somervillema.gov/citywide-drainage-and-water-quality-master-plan>



Figure 23 | Project CA-2.1 Area - Proposed Improvements (Page 2 of 2)

Project CA-2.2: Vernon Street Area

This project separates sewers in the Vernon Street neighborhood by converting existing combined sewers into dedicated sanitary or storm pipes, installing new storm drains on Trull, Glenwood, and Robinson Streets, and upsizing undersized combined sewers on Murdock Street. It removes common manholes that allow overflow between systems, redirects the Partridge Avenue combined sewer to the new storm drain network, and improves inlets so that recurring flooding on Vernon and Murdock Streets is reduced while also lowering flows sent toward the Lowell Line conduit.

CITY OF MINNEAPOLIS
CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - SEWERWORKS CA 2.2

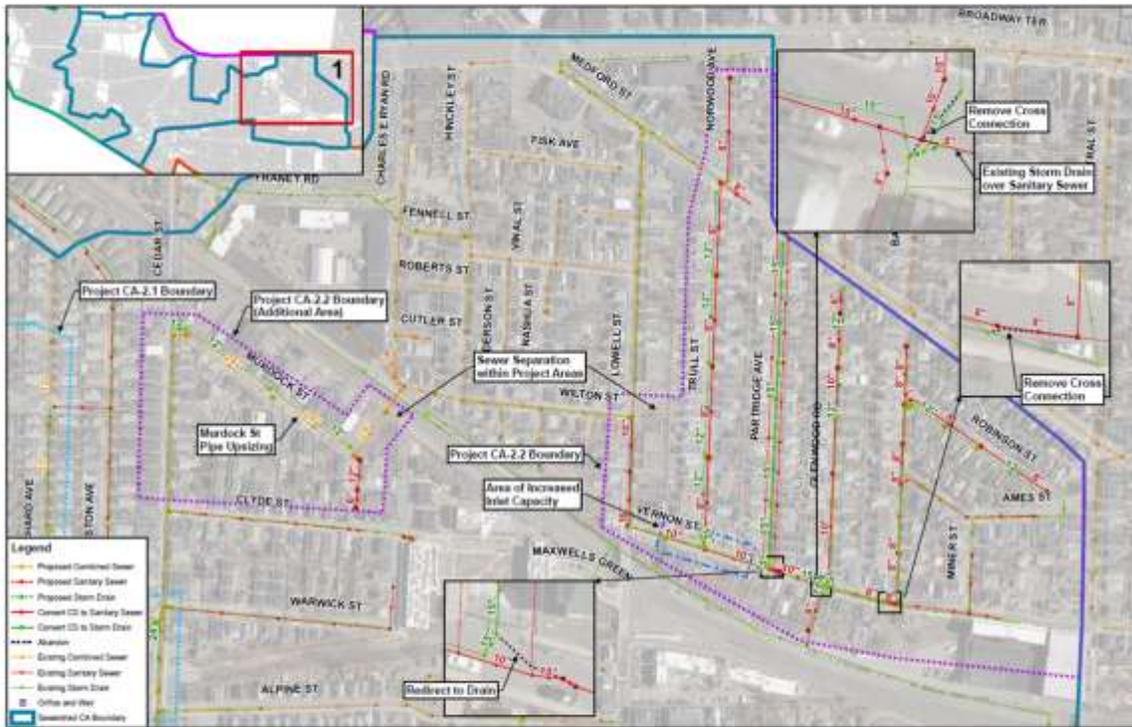


Figure 35. Project CA-2.2 Area - Proposed Improvements

Project CA-2.3: Highland Road and Appleton Street Area

This project separates sewers in the Highland Road/Appleton Street area so that stormwater is collected in a new or repurposed drain system while existing pipes are reassigned as sanitary sewers where feasible. By creating a dedicated storm network and improving local conveyance and inlets, it relieves capacity constraints that currently drive flooding and reduces wet-weather loads entering the combined system that ultimately connect to Elm Street and the Tannery Brook corridor.

CITY OF EDMONDSON
CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - NEWSPRINGS CA 2 & 3



Figure 10 - Project CA-2.3 Area - Proposed Improvements



Project CA-2.4: South of Holland Street Area (this includes the SE portion of Sewershed A)

This project separates storm and sanitary flows in the area south of Holland Street, including the southeastern portion of Sewershed A that actually drains to Tannery Brook, by repurposing combined sewers and adding new storm drains. The work removes cross-connections that send stormwater into combined pipes, improves drainage capacity and inlet performance on local streets, and lowers both surface flooding and combined flows that would otherwise contribute to CSOs downstream.

CITY OF BIRMINGHAM
 CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - SEWERSHEDS CA & M

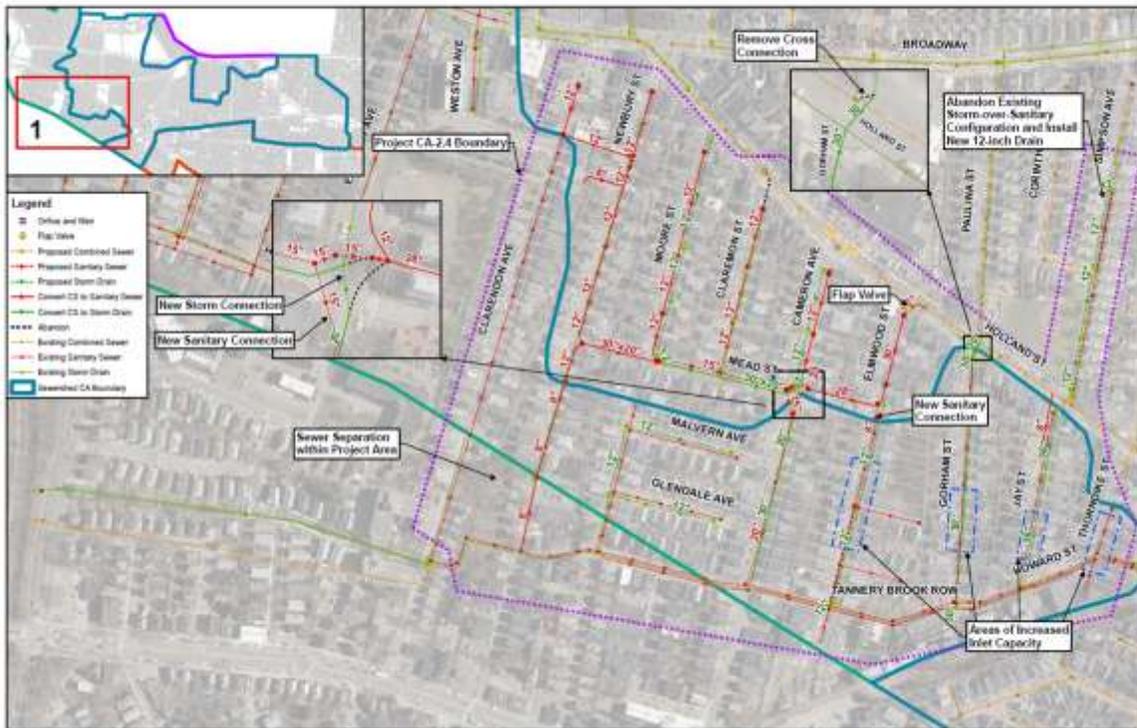
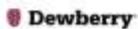


Figure A1: Project CA-2.4 Area - Proposed Improvements



Project CA-2.5: New Storm Outfall to Alewife Brook

This project converts one of the twin 54-inch Tannery Brook pipes in Cambridge into a dedicated storm drain, maintains the other as a combined sewer, and constructs a new 54-inch stormwater outfall from Tannery Brook directly to Alewife Brook. It removes remaining cross-connections between the newly separated storm system and the combined sewers, effectively eliminating the need for the SOM-001A CSO regulator while achieving substantial infiltration/inflow reduction because separated stormwater no longer enters the MWRA interceptor.

CITY OF BOSTON
OFFICE OF FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - SEWERHEAD CA & B

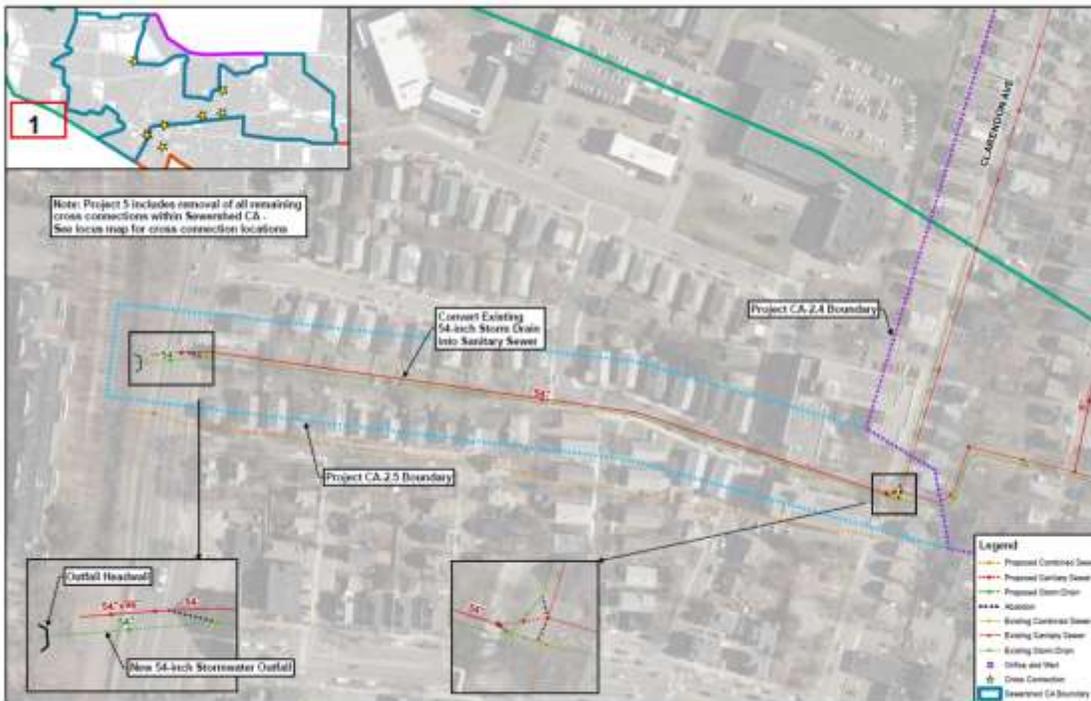


Figure 4.1 Project CA-2.5 Area - Proposed Improvements



Project CA-2.6: Highland Avenue Area

This project upsizes major combined sewers on and around Highland Avenue, Elm Street, and connecting streets to create additional in-line storage and downstream capacity once the Tannery Brook “relief” cross-connections are removed. By enlarging these pipes and adjusting local drainage, it addresses new combined-sewer flooding that would otherwise occur in Davis Square–area streets such as Day, Dover, Meacham, Orchard, and Chester after the outfall project, thereby stabilizing system performance under the Alternative 2 configuration.

CITY OF BIRMINGHAM
 CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENTS PLAN - 2020/2025 CA 4 & 5

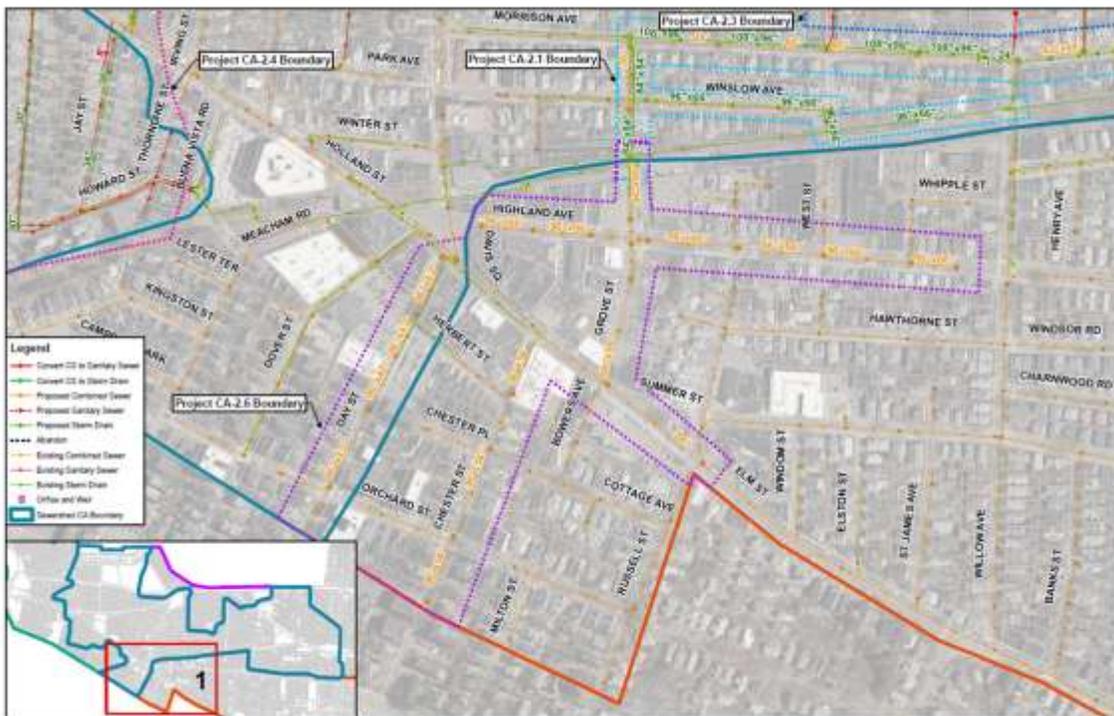


Figure 40: Project CA-2.6 Area - Proposed Improvements



Project Sequencing

CITY OF SOMERVILLE
CITYWIDE FLOOD MITIGATION AND WATER QUALITY IMPROVEMENT PLAN - SEWERSHEDS CA & M



Figure S2. Recommended Project Sequencing with Flood Risk and CSO Considerations for Sewershed CA, Alternative 2 Projects

Alewife Brook Community Combined Sewer Overflow Elimination Plan

Cambridge: Elimination of CSO Regulators
Complete Sewer Separation and Green Stormwater Infrastructure
188 acres: \$100 million

Somerville: Elimination of Tannery Brook CSO Regulator - SOM001A
Engineered elimination of the Tannery Brook Sewage Outfall using
Somerville's Dewberry 2022 Sewershed CA Alternative 2 Plan.
100 acres of sewer separation & Green Stormwater Infrastructure.
\$150 million

MWRA: 25-Year Storm Control with Storage for CSO MWR003
Underground CSO storage and Green Stormwater Infrastructure
at Alewife MBTA Station Site
3 MG storage: \$30 million

Green Stormwater Infrastructure: Constructed Stormwater Wetland
slows and cleans stormwater. Reduces flooding and reduces pollutants.
10.5 acres: \$100+ million

Maintenance Dredging: Removal of CSO Sediment at Alewife Brook
Channel and river restoration to reduce flooding, improve water quality,
and improve navigability for recreational boating. \$70 million

Approximate Preliminary Cost, funded by MWRA: \$450 million

Time to Complete: 15 years

revised 03/07/2026

