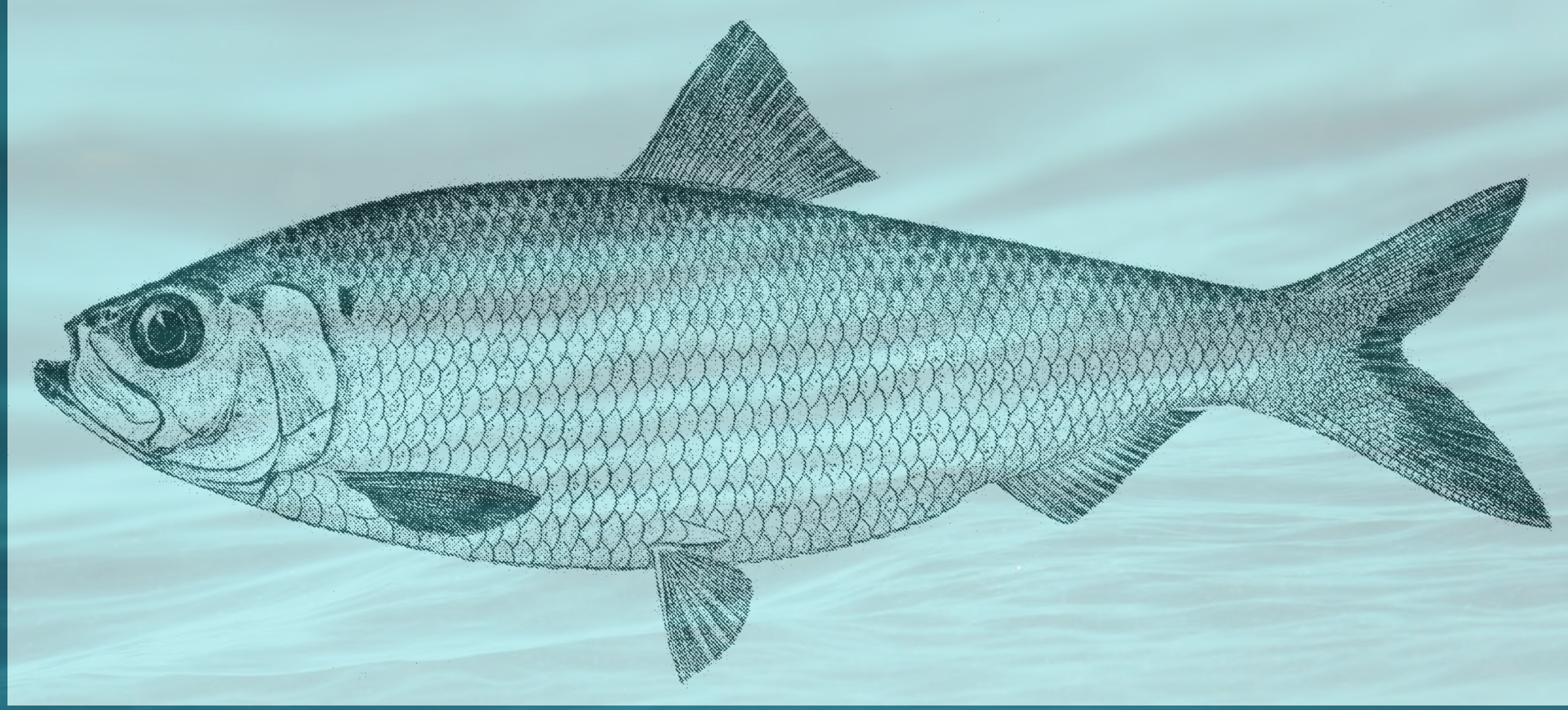
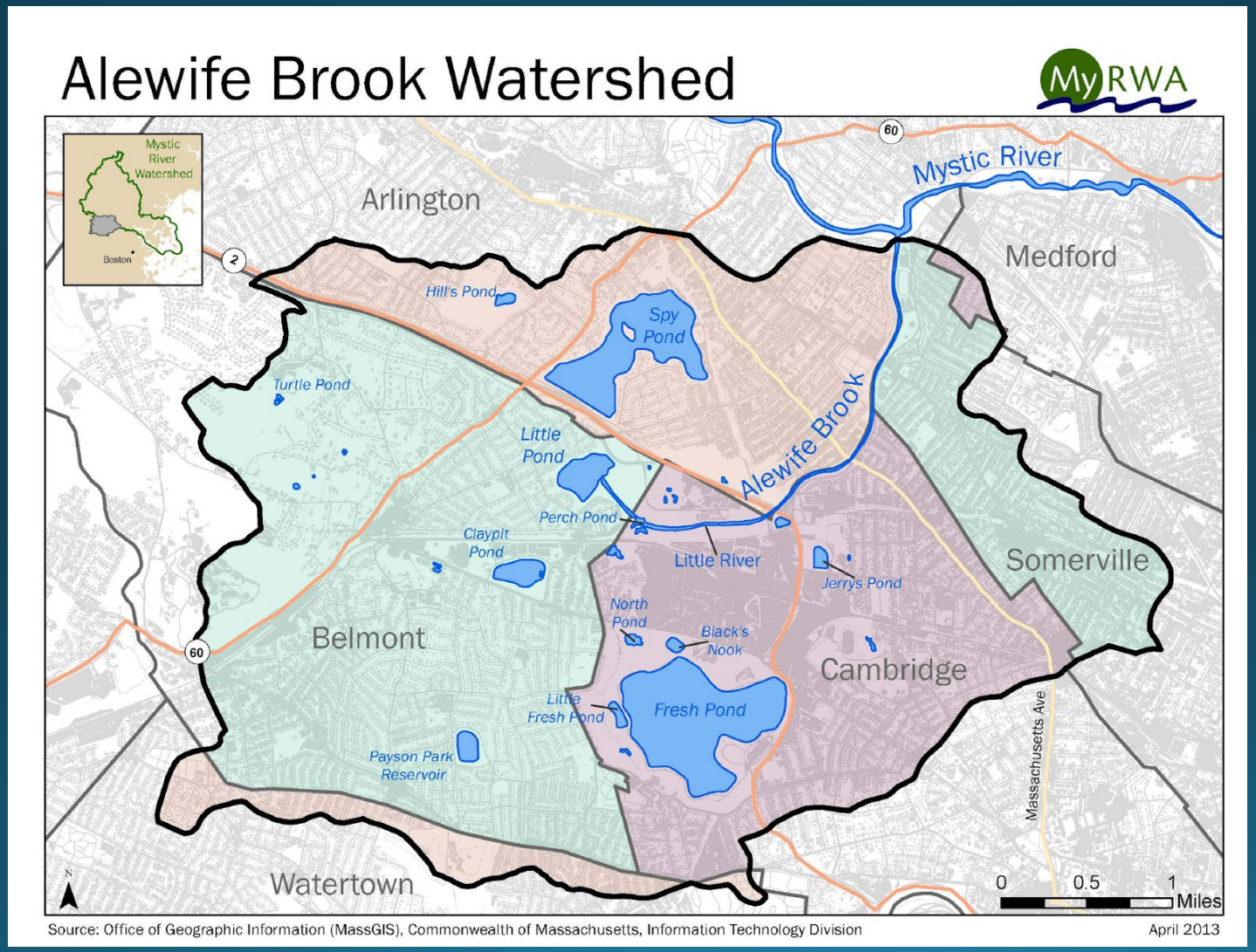


Save the Alewife Brook

Somerville City Council 03/13/2025

December 18, 2023
DEPARTMENT OF CONSERVATION & RECREATION, SAVE THE ALEWIFE BROOK, & GREEN CAMBRIDGE

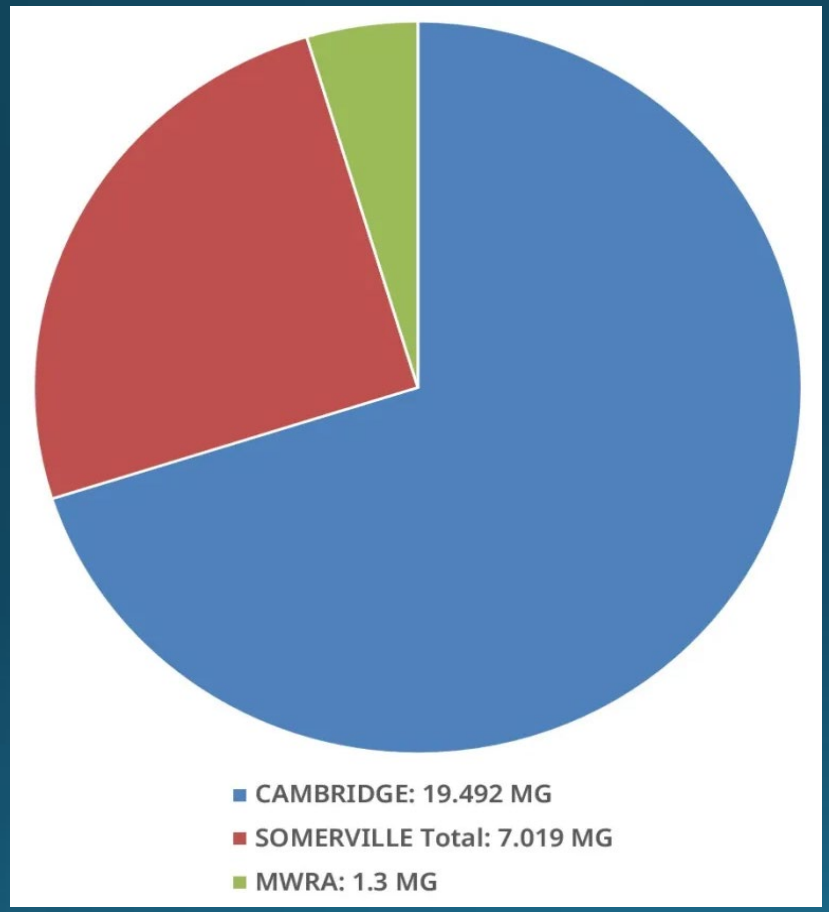
Rain that falls in the Alewife Brook subwatershed drains to Alewife Brook.
The black line shows the border of the Alewife Brook subwatershed.



In 2023, the brook flooded over its bank at least 5 times, sending untreated sewage flood water into the DCR state park and into the Alewife Greenway Path.

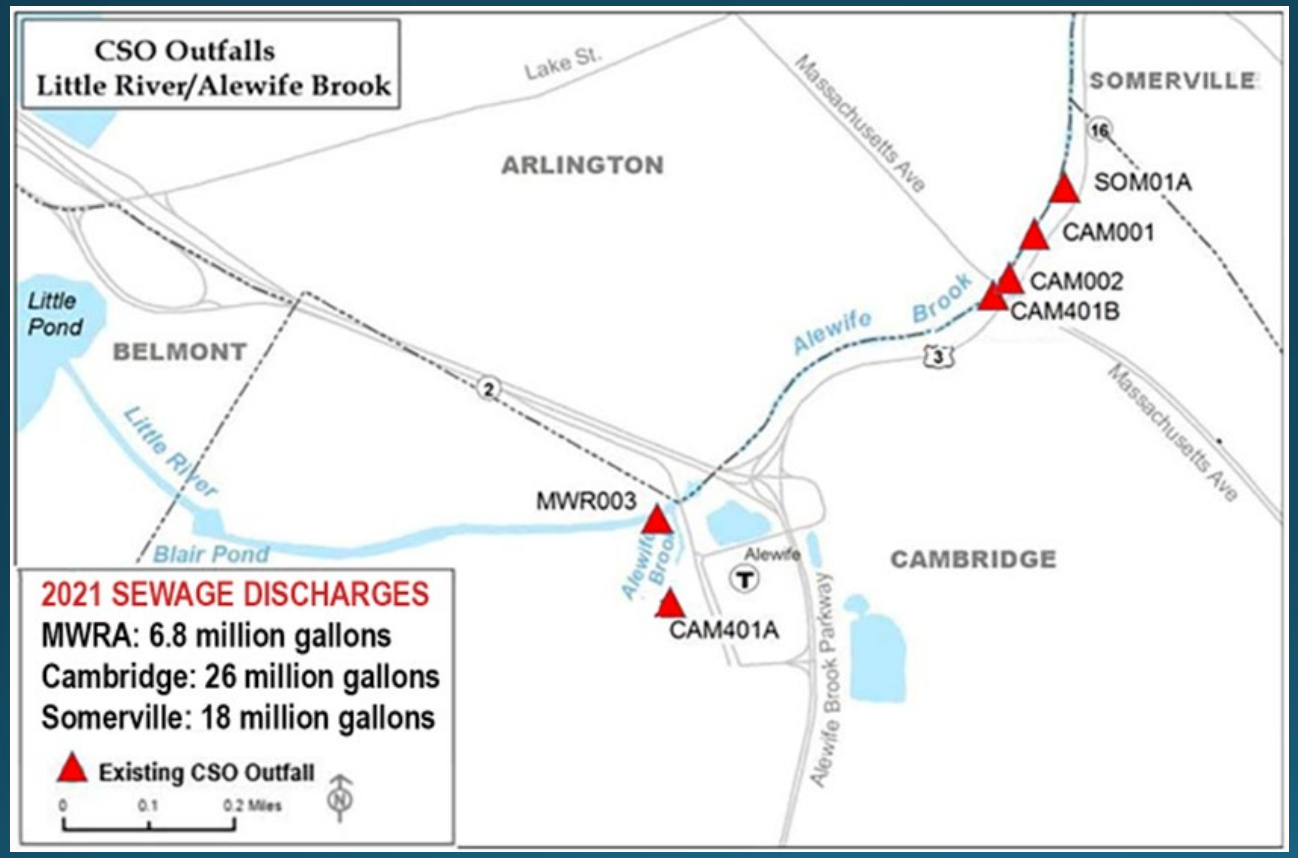
The Alewife Greenway Path is a heavily trafficked multi-use path on DCR land. It links Medford, Somerville, Arlington and Cambridge residents to the Alewife Red Line T stop. Somerville residents use this path. Somerville Road Runners on this path. West Somerville neighbors use this path.

In 2023, 29 million gallons of untreated sewage pollution was dumped into Alewife Brook.



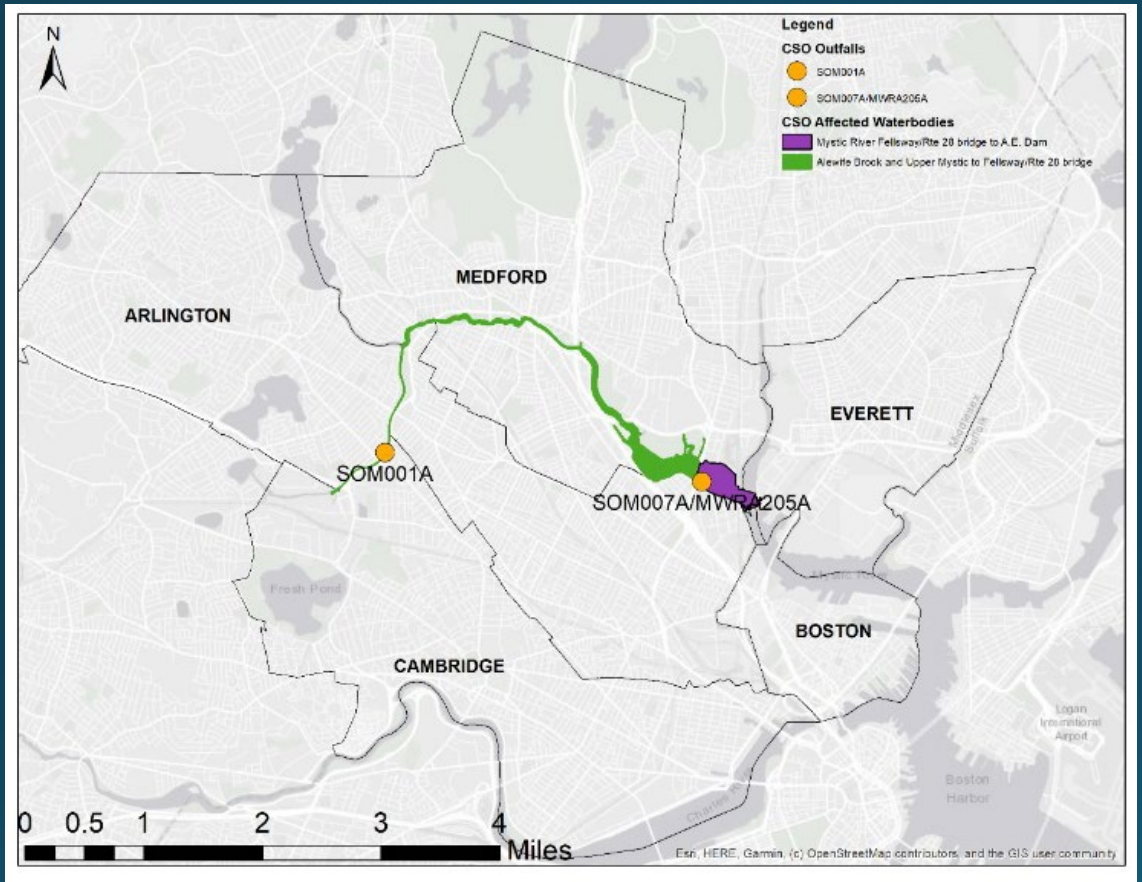
In 2021, 51 million gallons of untreated sewage was discharged into the brook.

Here is a map of Alewife Brook's six active CSO outfalls. All Alewife Brook CSOs are untreated.



This is a densely populated area, with 5000 people living in the Alewife's 100-year floodplain. There are multiple environmental justice neighborhoods along the brook.

Somerville has two Combined Sewer Overflow (CSO) Outfalls.

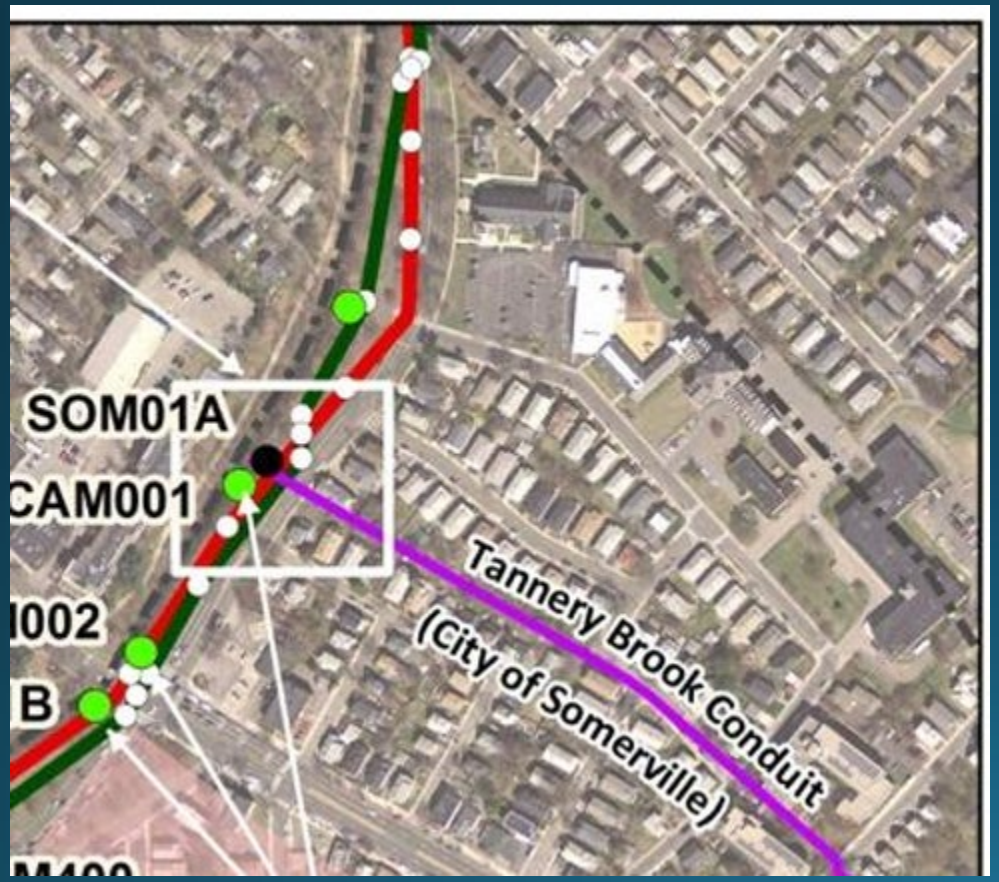


Somerville's Mystic River CSO, SOM007A, discharges treated sewage pollution. Treatment neutralizes harmful bacteria.

SOM001A, the Tannery Brook CSO, discharges **untreated** sewage pollution to Alewife Brook.

Somerville's Tannery Brook CSO: SOM001A

Not in compliance with the Boston Harbor Cleanup court case.
Not in compliance with the Clean Water Act.



Toilet paper hangs from a branch at SOM001A.

Levels of CSO Control

from Second Stipulation of the Boston Harbor Cleanup Court Case:

EXHIBIT D

LTCP Levels of Control from Second Stipulation

CSO OUTFALL	LONG TERM CONTROL PLAN	
	TYPICAL YEAR	
	Activation Frequency	Volume (MG)
ALEWIFE BROOK		
CAM001	5	0.19
CAM002	4	0.69
MWR003	5	0.98
CAM004	To be closed	N/A
CAM400	To be closed	N/A
CAM401A	5	1.61
CAM401B	7	2.15
SOM001A	3	1.67
SOM001	Closed	N/A
SOM002A	Closed	N/A
SOM003	Closed	N/A
SOM004	Closed	N/A
TOTAL		**7.29**
UPPER MYSTIC RIVER		
SOM007A/MWR205A (Somerville Marginal)	3	3.48
SOM007	Closed	N/A
TOTAL		**3.48**

SOM001A: **3 activations per year** and **1.67 MG** of sewage discharge.

2023 Tannery Brook CSO:

12 activations

7.02 MG metered / 14.17 MG modeled

Table 2-3. Summary of 2023 Modeled and Metered CSO Discharges

Outfall	January 1, 2023 – Dec 31, 2023				
	Meter[1] [2]		Model		Meter Data Notes[7]
	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)	
Alewife Brook					
CAM001	0	0.00	4	0.19	Meter data provided by Cambridge.
CAM002	0	0.00	1	0.23	Meter data provided by Cambridge.
MWR003	2	1.3	9	5.32	Meter data provided by MWRA. Refer to Table 2-4 below for discussion regarding meter vs model differences.
CAM401A	20	20.51	10	3.85	Meter data provided by Cambridge. Per the City of Cambridge, due to inconsistencies in flow monitoring data, CSO statistics for CAM401A are based on both metered and model simulated data. Refer to Table 2-4 below for discussion regarding meter vs model differences.
CAM401B	7	1.00	10	2.77	Meter data provided by Cambridge
SOM001A	12	7.02	11	14.17	Meter data provided by Somerville. Refer to Table 2-4 below for discussion regarding meter vs model differences.
TOTAL	**20**	**29.83**	**11**	**26.53**	

https://www.mwra.com/media/file/2023-cso-annual-report

2021 Tannery Brook CSO:

8 activations

17.98 MG metered / 10.98 MG modeled

Table 5. Summary of 2021 Modeled and Metered CSO Discharges

Outfall	January 1 – Dec 31, 2021			
	Meter[1] [2]		Model	
	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)
Alewife Brook				
CAM001	5	0.20	4	0.17
CAM002	0	0	2	0.06
MWR003	5	6.77	5	7.49
CAM401A	18	21.7	10	4.24
CAM401B	7	4.09	5	2.29
SOM001A	8	17.98	8	10.98
TOTAL	**18**	**50.74**	**10**	**25.23**
Upper Mystic River				
SOM007A/MWR205A[3]	17	67.57	12	41.79
Mystic/Chelsea Confluence				
MWR205 (Somerville Marginal Facility) [3]	28	211.27	32	143.75
BOS013	15	0.09	13	0.79
BOS014	15	0.17	17	4.72
BOS017	6	2.76	10	2.58
CHE003	0	0	1	0.00
CHE004	5	0.92	6	1.38
CHE008	16	5.41	16	7.39
TOTAL	**28**	**220.62**	**32**	**160.61**

https://www.mwra.com/media/file/2021-cso-annual-report

What has Somerville done to reduce CSOs in Alewife Brook? Not much in the last 25 years.

Table 1: MWRA Long-Term CSO Control Plan for Alewife Brook/Upper Mystic River Basin

Project	Purpose	Receiving Water	Completed	Cost[1] (million$)
Somerville Baffle Manhole Separation[2]	Remove stormwater from the sewer system; eliminate CSO at outfalls SOM001, SOM006 and SOM007.	Mystic Basin and Alewife Brook	1996	0.4
Somerville-Marginal CSO Facility Upgrade	Improve disinfection; add dechlorination	Mystic Basin	2000	4.0
CAM004 Stormwater Outfall and Wetland Basin[3]	Convey stormwater flows to wetland system for attenuation and treatment.	Alewife Brook	2013	103.7
CAM004 Sewer Separation[3]	Remove large quantities of stormwater from the sewer system; eliminate CSO at Outfall CAM004.		2015	
CAM400 Manhole Separation[3]	Remove stormwater from the sewer system; eliminate CSO at Outfall CAM400.		2011	
Interceptor Connection Relief and Floatables Control at CAM002 and CAM401B and Floatables Control at CAM001[3]	Upgrade connections between Cambridge and MWRA systems to provide relief; add floatables control.		2010	
Interconnection Relief and Floatables Control at Outfall SOM01A	Upgrade connection and provide floatables control.		2013	0.4
Control Gate/Floatables Control at Outfall MWR003 and MWRA Rindge Avenue Siphon Relief	Optimize hydraulic conveyance; minimize overflows while controlling system flooding in large storms; provide floatables control.		2015	4.1
Total				**112.6**

(1) MWRA cost only; from Proposed FY17 Capital Improvement Program. Total MWRA and City of Cambridge cost for design and construction of the Alewife Brook/Upper Mystic River Basin CSO projects totals more than $200 million.
(2) Implemented by City of Somerville with MWRA funding.
(3) Implemented by City of Cambridge with MWRA funding.

Above schedule from Boston Harbor Cleanup Court Case & from the first Long Term CSO Control Plan, **completed in 2015**.

August 31 2024 MassDEP issues Water Quality Variance for Alewife Brook

Thanks to public support and MassDEP's hard work, the Alewife Brook Water Quality Variance now requires:

1. **A Study on Installing Onsite Real-time CSO Notification** to protect people from unknowingly walking through sewage flooding. We asked for a red-amber-green light at each CSO and where the Brook floods onto the Greenway path.

2. **Odor Control.** MWRA, Somerville, and Cambridge shall implement Best Management Practices for odor control for their Alewife sewer systems.

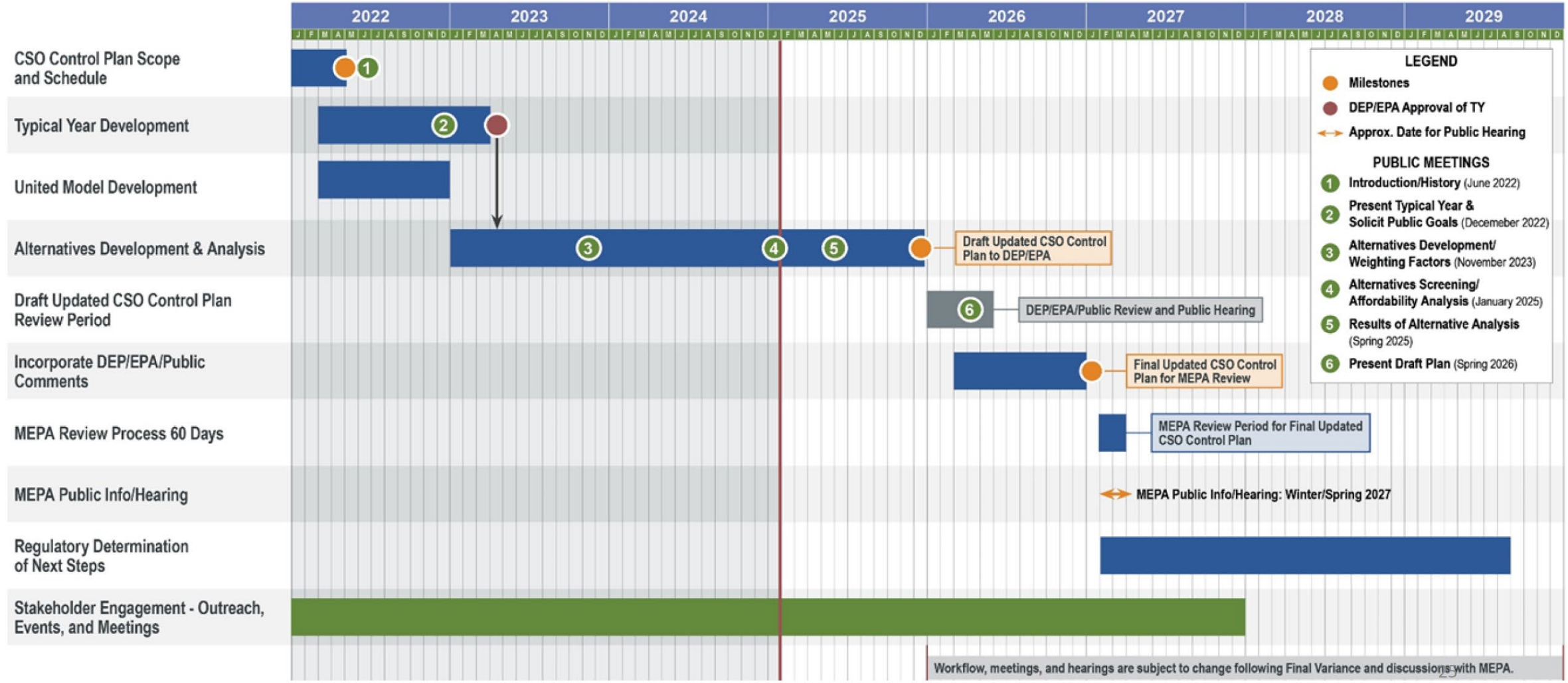
3. **"Floatables" Control study for all Alewife CSOs.** Somerville must determine how to fix their CSO to screen out or clean up toilet paper and other hazardous human waste products.

4. **Fair and Just Financial Capability Analysis** to make improvements at the local level. Massachusetts Water Resources Authority will not get away with submitting their "system-wide elimination" cost of billions of dollars. They don't need to separate every sewer pipe throughout Boston to solve the problem for Alewife Brook. There are viable solutions for the Alewife and MWRA knows it!

5. **Acknowledgement of Climate Change.** Incorporation of Climate Change Impacts in planning, with future storm event reporting to be based on updated rainfall data from the latest NOAA Atlas .

6. **Green Infrastructure** must be considered by Somerville, MWRA, and Cambridge.

Updated CSO Control Plan Schedule



Updated 1/02/2025

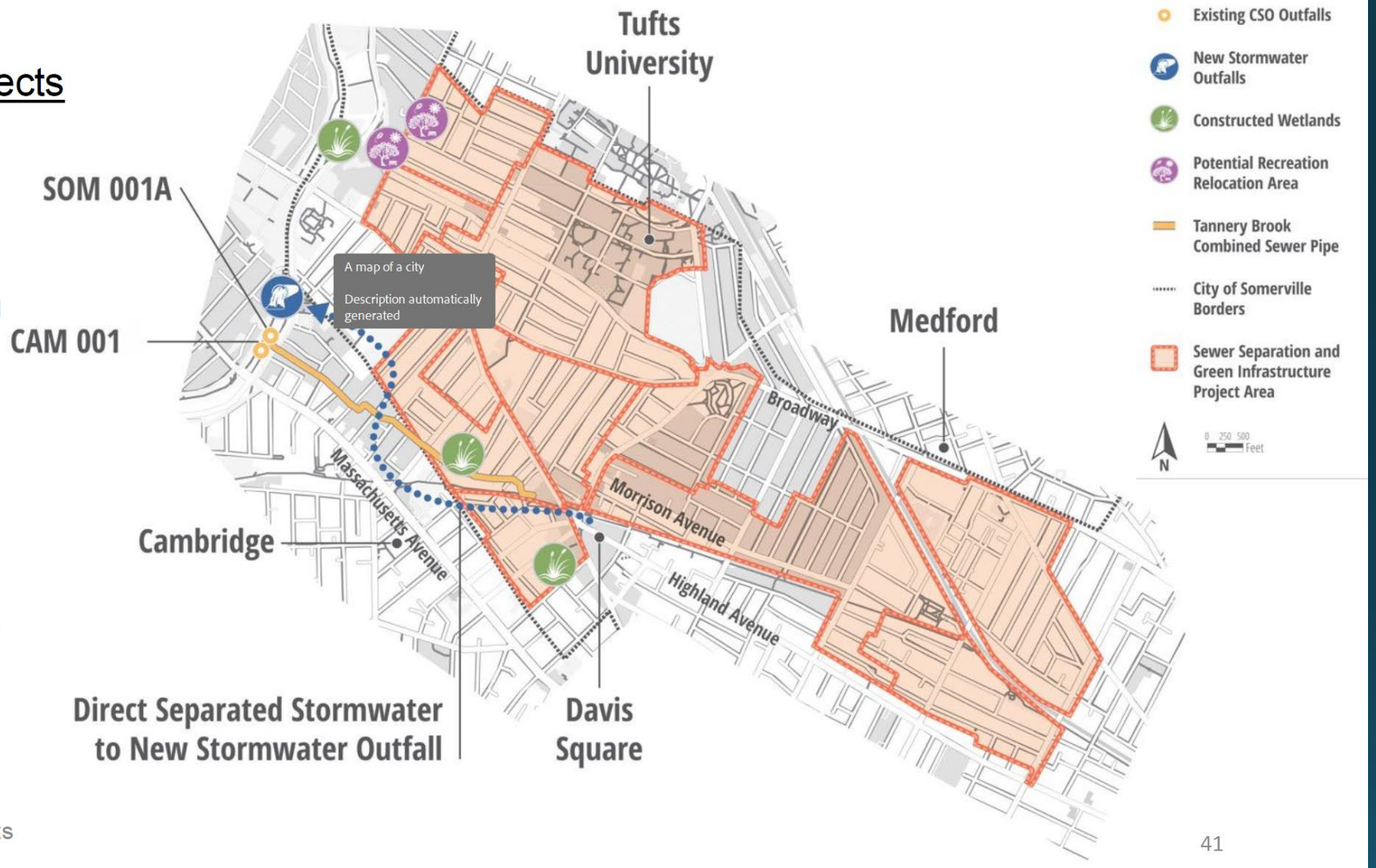
Alewife Brook Sewer Separation

City of Somerville - 2050 Typical Year CSO Control

Potential Alewife Brook Projects

- Large trunk storm drain
- 560 acres of localized sewer separation
- New stormwater outfall on Alewife Brook
- 3 constructed wetlands and land acquisition

Prelim. Cost: ~$850 million *
Prelim. Timeline: ~50 yrs

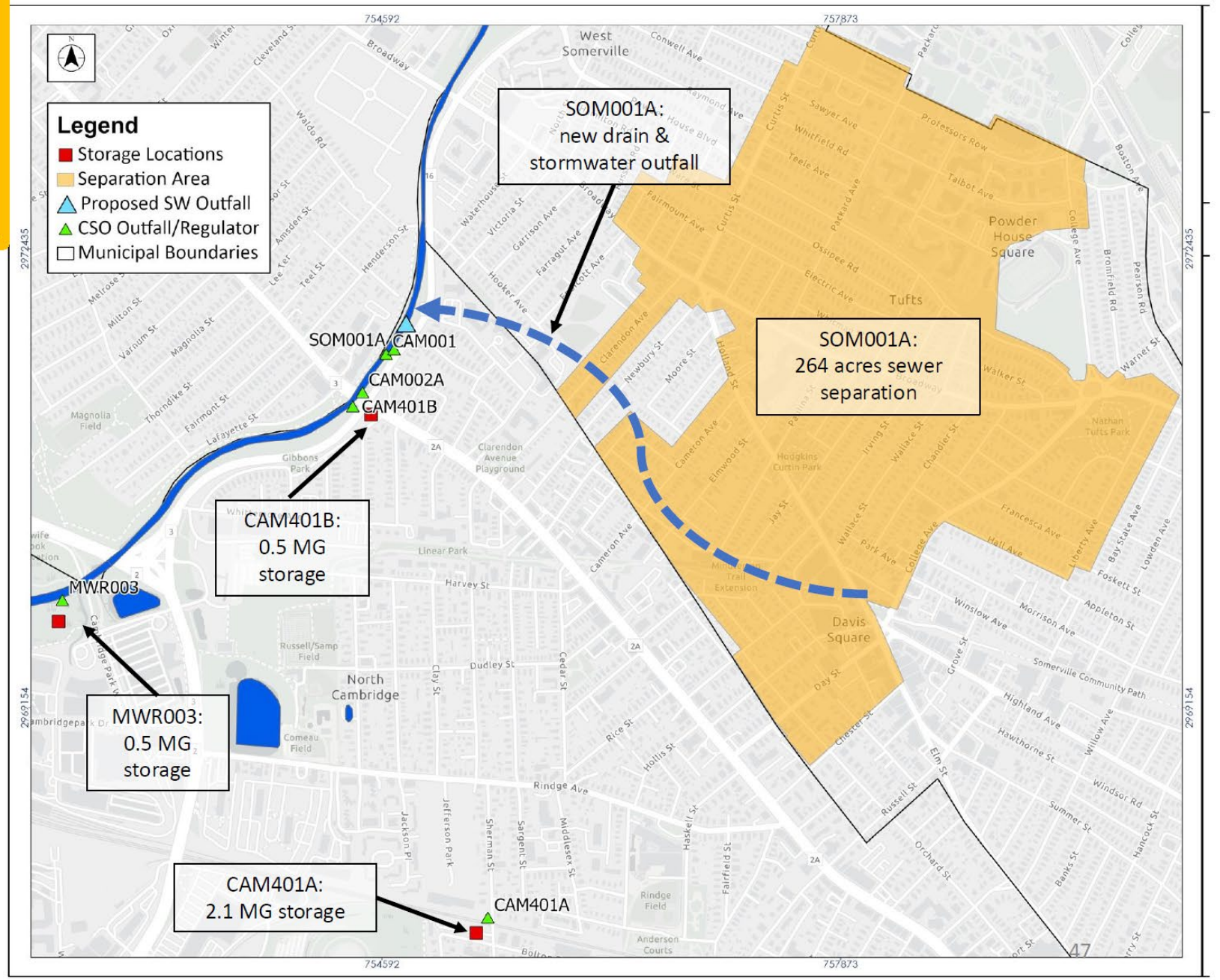


*Costs include sewer separation of some areas tributary to both Alewife Brook and Mystic River. Costs estimated using 2024-dollar amounts and not escalated to construction period. Costs subject to refinement

Alewife Integrated Alternative: 2050 Typical Year CSO Control

- CAM401A: 2.1 MG storage
- CAM401B: 0.4 MG storage
- MWR003: 0.5 MG storage
- SOM001A: 264 acres separated + inline storage with throttles

Prelim. Cost: ~$600 million

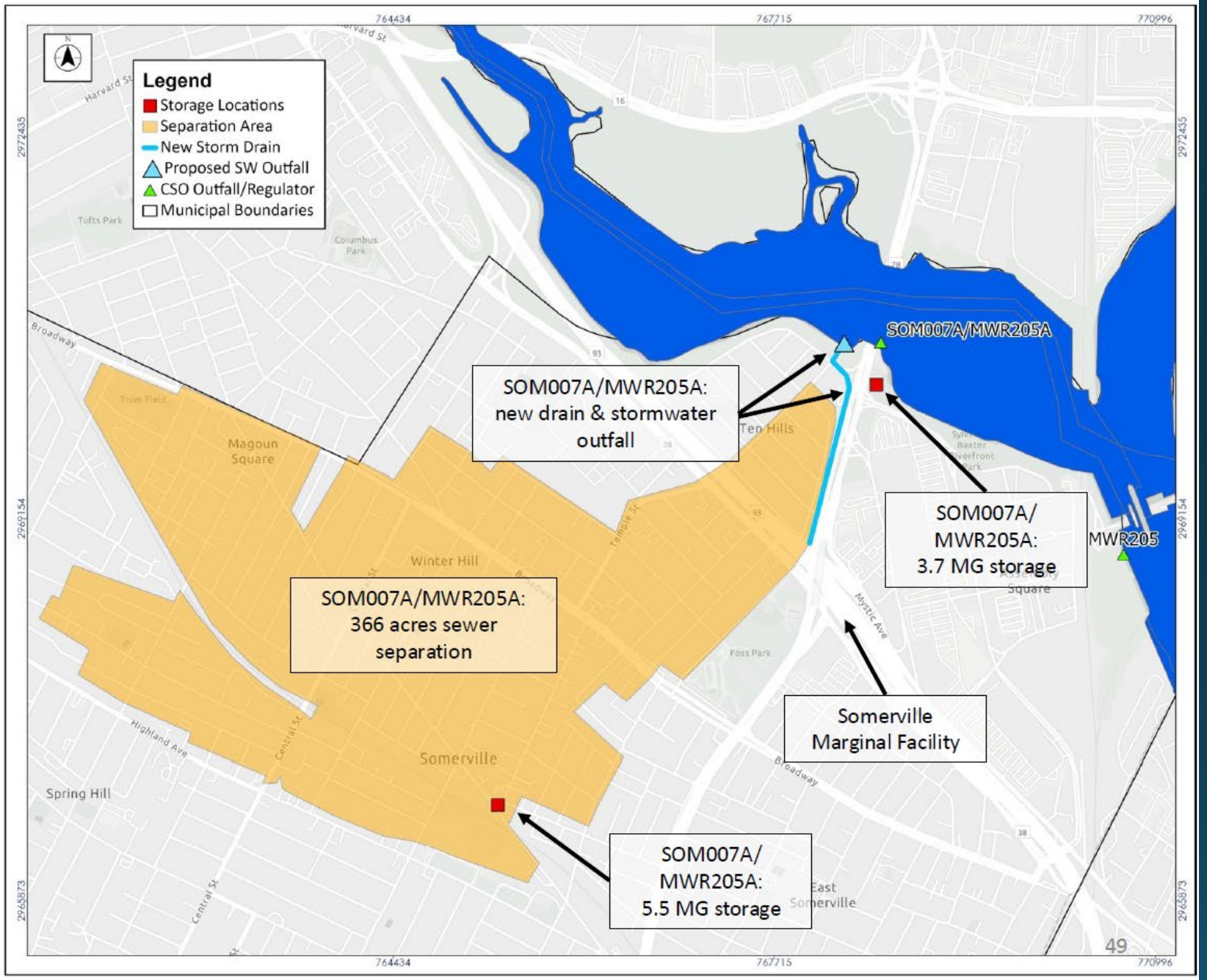


Mystic Integrated Alternative: 2050 Typical Year CSO Control

SOM007A/MWR205A:

- 366 acres sewer separation
- 5.5 MG stormwater storage
- 3.7 MG treated CSO storage

Prelim. Cost: ~$540 million



Financial Capability Assessment (FCA) Process

EPA guidance prescribes methods to measure financial impact (low, medium, and high) associated with current and future sewer services within community using critical metrics such as:

- **Residential Indicator**
- **Financial Capability Indicators**
- Lowest Quintile Poverty Indicator Score
- Financial and Rate Models

Evaluate the financial impact of alternative CSO controls and schedule

Please support our ask for parity

in the city's EPA-required spending on CSOs as part of the Updated Long Term CSO Control Plan.

Thank you!

www.SaveTheAlewifeBrook.org