



Presentation to

MWRA Advisory Board

***Draft Updated CSO Control Plan
Alternatives Recommendation***

March 19, 2026



Scope of Study: Variance Water CSOs





Alternatives Developed for Four Levels of Control in 2050

“Limited CSO in 2050 Typical Year” - Significantly reducing CSO discharges from those predicted to occur in a 2050 Typical Year

“2050 Typical Year” - No CSO in a 2050 Typical Year

“2050 5-year” - No CSO in a 2050 5-year, 24-hour design storm

“2050 25-year” - No CSO in a 2050 25-year, 24-hour design storm



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Alternatives



General Components of an Alternative



Sewer Separation



Green Stormwater Infrastructure



Storage



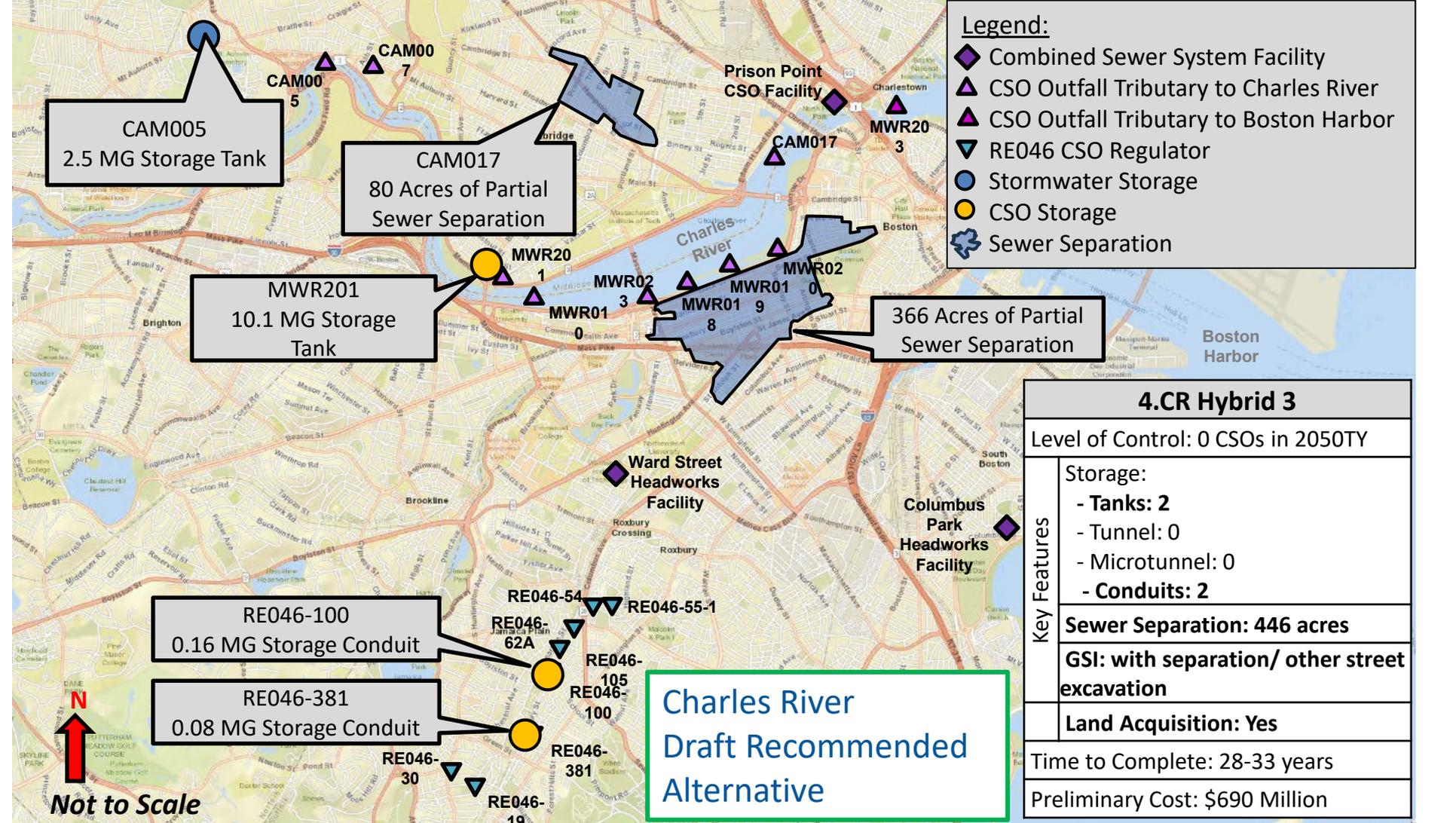
Conveyance



Regional Tunnel



Charles River



Legend:

- ◆ Combined Sewer System Facility
- ▲ CSO Outfall Tributary to Charles River
- ▲ CSO Outfall Tributary to Boston Harbor
- ▼ RE046 CSO Regulator
- Stormwater Storage
- CSO Storage
- ☁ Sewer Separation

4.CR Hybrid 3

Level of Control: 0 CSOs in 2050TY	
Key Features	Storage: - Tanks: 2 - Tunnel: 0 - Microtunnel: 0 - Conduits: 2
	Sewer Separation: 446 acres
	GSi: with separation/ other street excavation
Land Acquisition: Yes	
Time to Complete: 28-33 years	
Preliminary Cost: \$690 Million	

**Charles River
Draft Recommended
Alternative**

Not to Scale



Mystic River

2.MR Hybrid 1

Level of Control: 0 CSOs in 2050TY

Key Features

Storage:

- Tanks: **1**
- Tunnel: 0
- Microtunnel: 0

Conveyance: 0

Sewer Separation: 95 acres

GSI: with separation/other street excavation

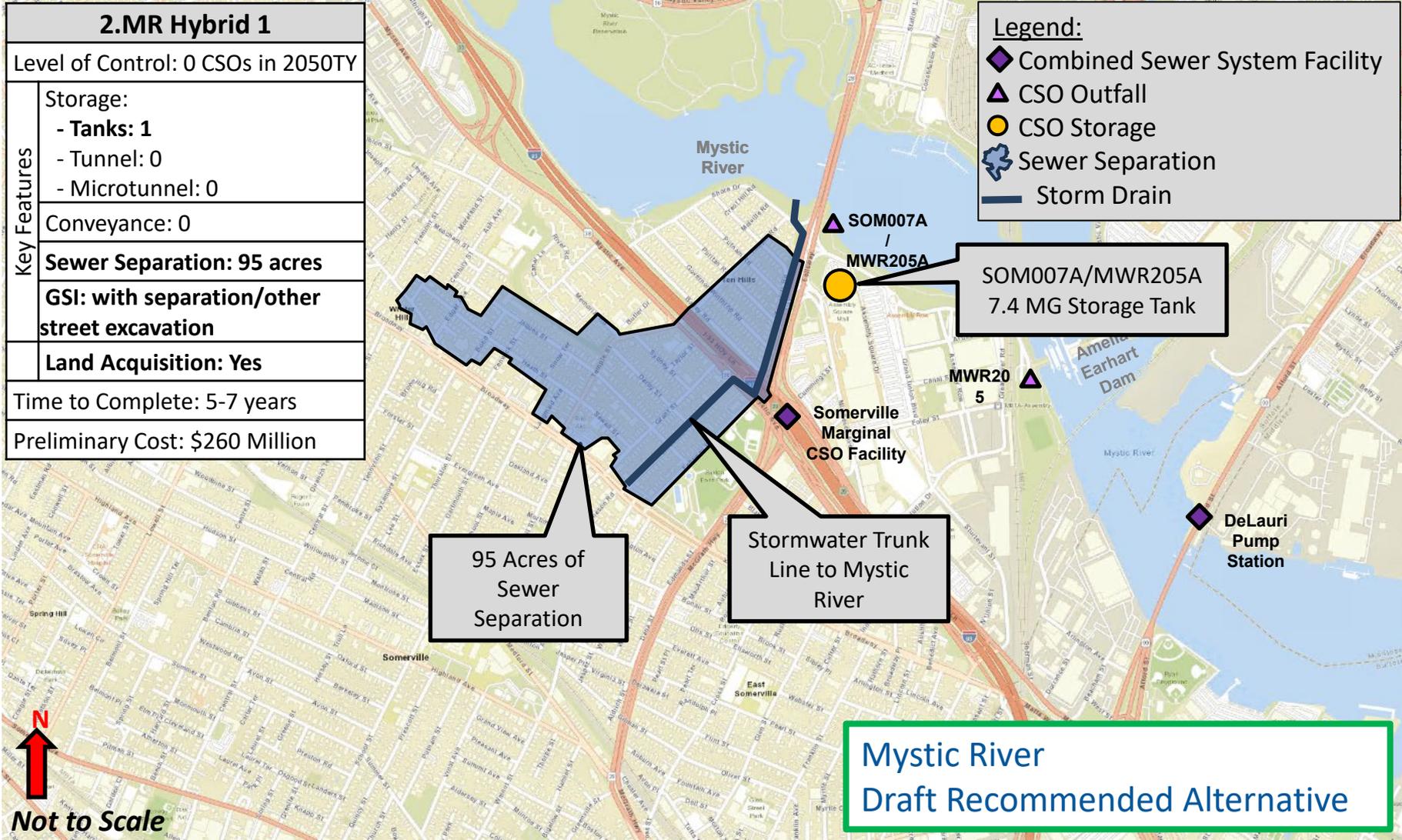
Land Acquisition: Yes

Time to Complete: 5-7 years

Preliminary Cost: \$260 Million

Legend:

- ◆ Combined Sewer System Facility
- ▲ CSO Outfall
- CSO Storage
- 🌿 Sewer Separation
- Storm Drain





Alewife Brook

3.AB Hybrid 2

Level of Control: 0 CSOs in 2050TY

Key Features

Storage:

- Tanks: 2
- Tunnel: 0
- Microtunnel: 1.0 miles long

Conveyance: 0.75 miles long

Sewer Separation: 8 acres

GSI: with separation/ other street excavation

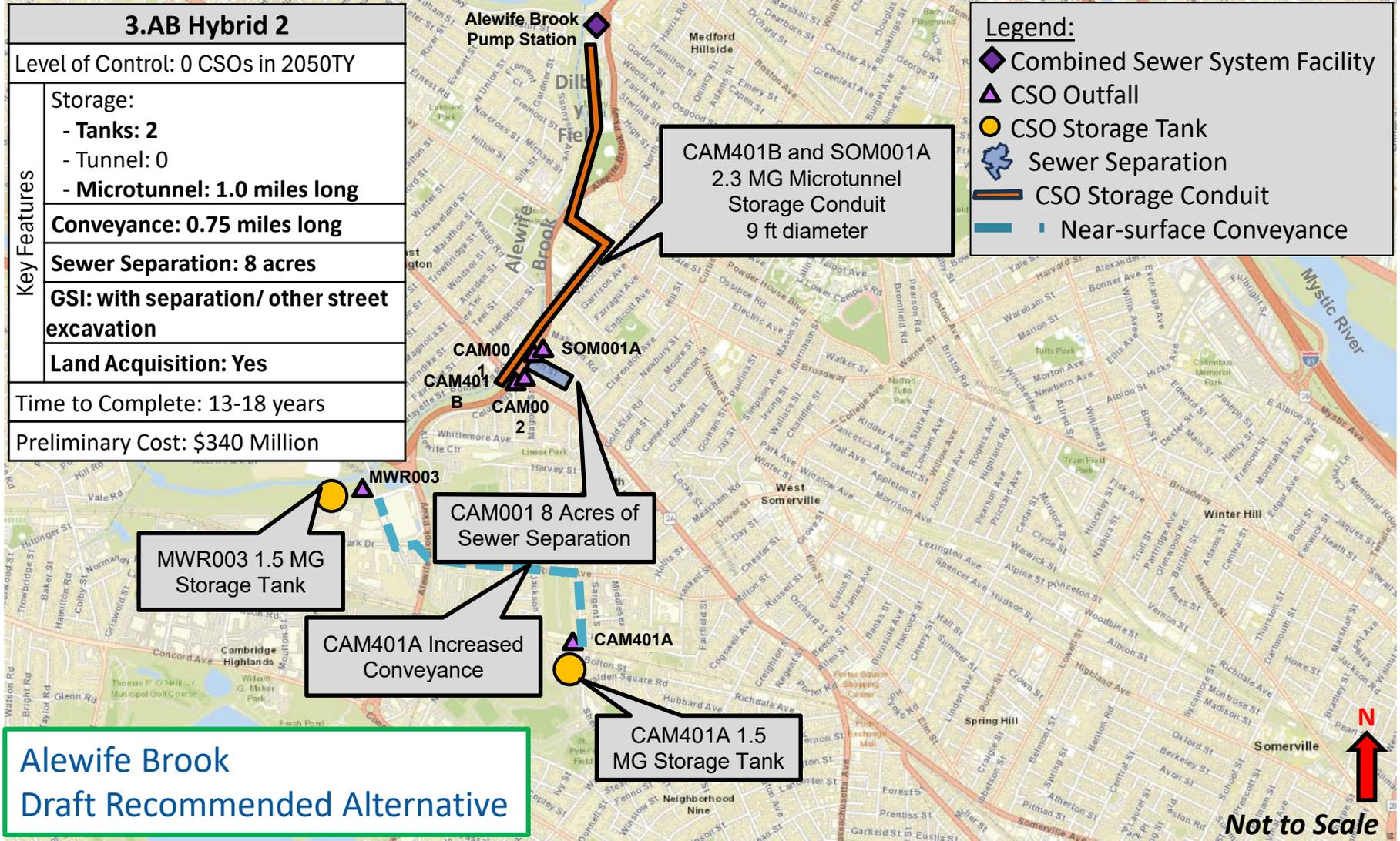
Land Acquisition: Yes

Time to Complete: 13-18 years

Preliminary Cost: \$340 Million

Legend:

- ◆ Combined Sewer System Facility
- ▲ CSO Outfall
- CSO Storage Tank
- 🌿 Sewer Separation
- CSO Storage Conduit
- ▬ Near-surface Conveyance



Alewife Brook
Draft Recommended Alternative

Not to Scale



Water Quality



There are Multiple Sources of Pollution

Pollutants affect water quality, environmental health, and public health.
CSOs are one source of those pollutants.

Dry weather (perpetual)

- Illicit sewer connections
- Leaky sewer pipes
- Wildlife and dog excrement
- Decomposing leaves

Stormwater (every time it rains)

- Pathogens (bacteria, viruses)
- Oil and grease
- Nutrients (Phosphorus, Nitrogen)
- Trash
- Others

CSOs (large, intense storms)

- Pathogens (bacteria, viruses)
- Oil and grease
- Trash
- Nutrients (Phosphorus, Nitrogen)
- Pharmaceuticals
- Industrial waste
- Others

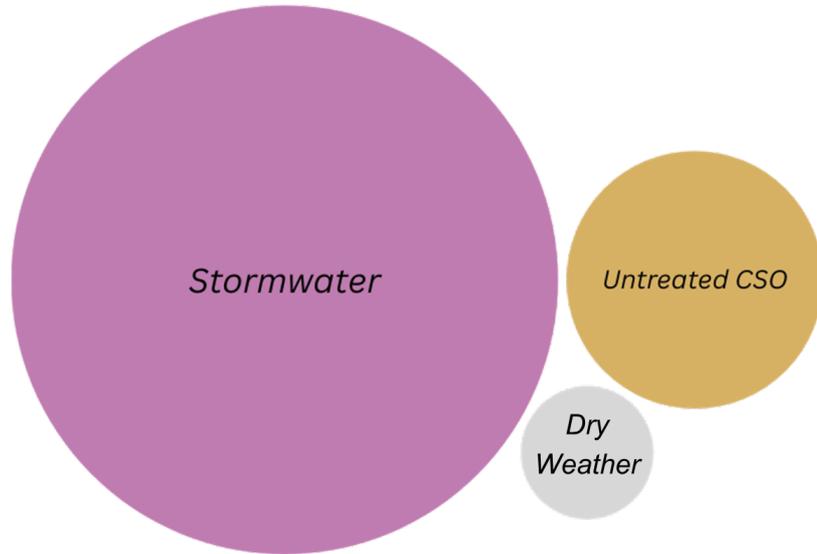
Data shows **eliminating CSO would not** make waterbodies fully swimmable or fishable.



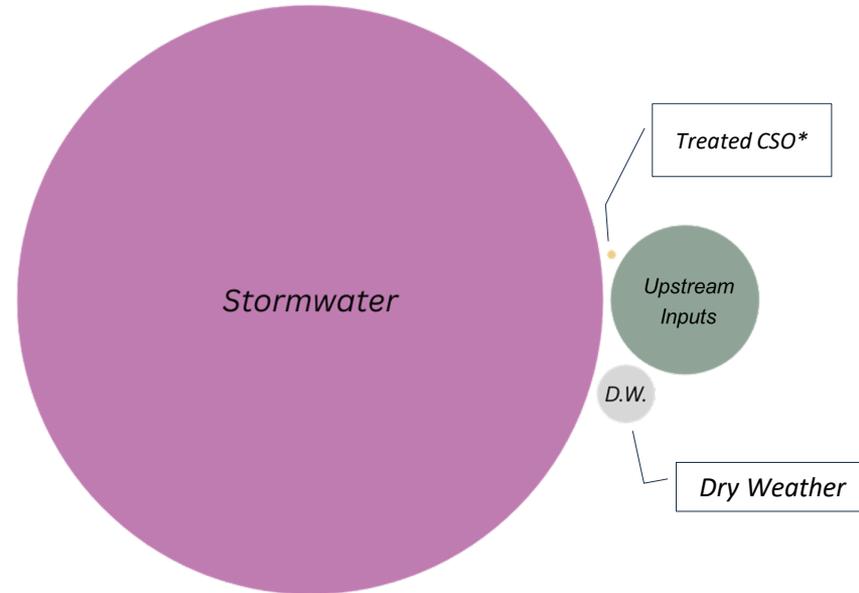
Water Quality – Current Sources of Pollution

Relative annual proportions of *E. coli* by source

Alewife Brook



Upper Mystic River

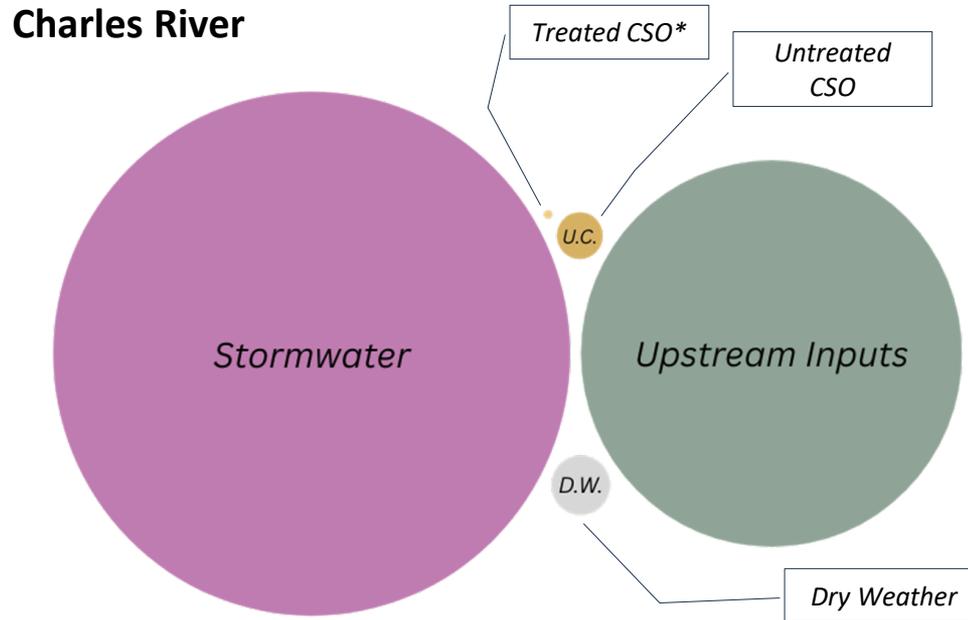


* Treated CSO is disinfected before discharge



Water Quality – Current Sources of Pollution

Relative annual proportions of *E. coli* by source



* Treated CSO is disinfected before discharge



MWRA Has Conducted Water Quality Sampling Since 1989



MWRA has monitored the Alewife, Mystic and Charles since 1989.

Data are shared with watershed groups and other interested parties to support their visions for the watershed.

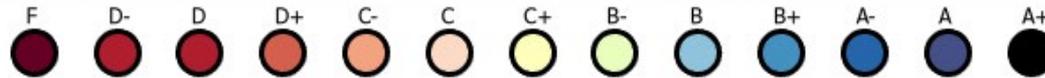
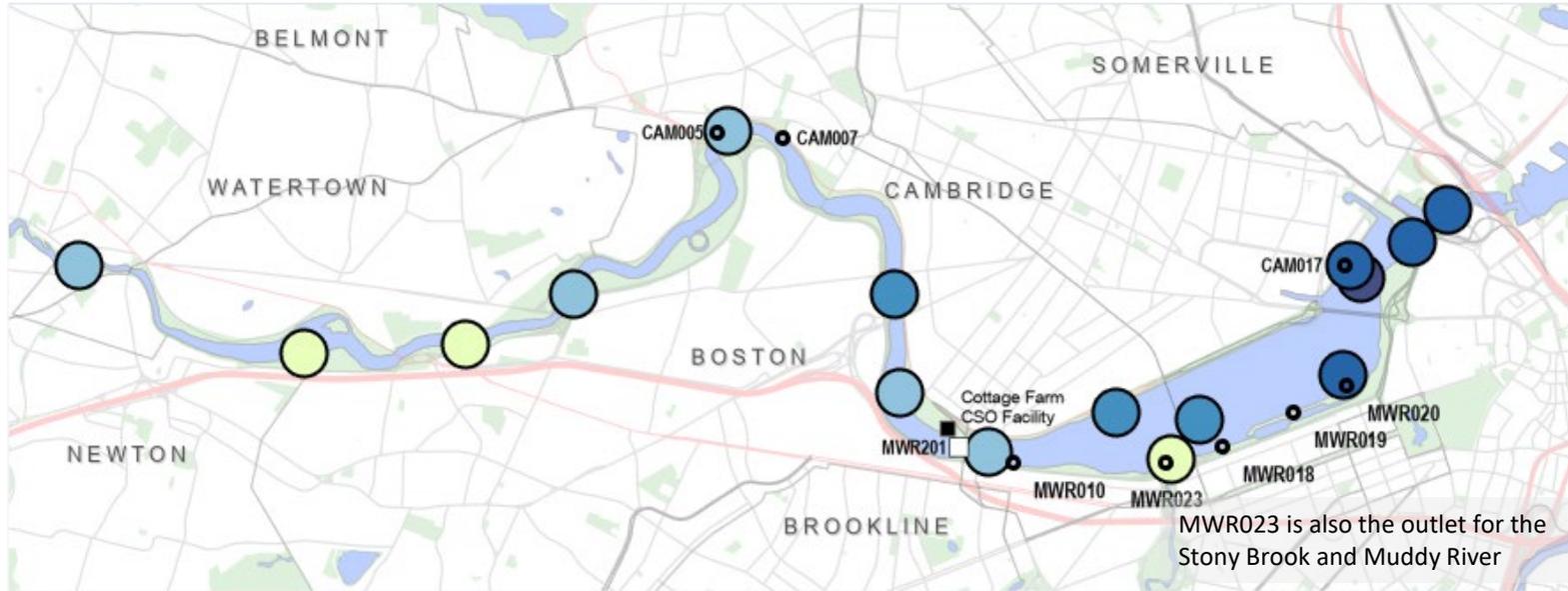
Data are available at: <https://www.mwra.com/harbor/download-environmental-data>

Test	Number Analyzed	Purpose
<i>E. coli</i> <i>Enterococcus</i>	49,000+	Is the water safe for swimming or boating?
Phosphorus	3,900+	Do high nutrients lead to algae blooms?
Dissolved Oxygen Temperature	33,000+	Does the river support aquatic life?



Charles River Water Quality Is Generally Good

These grades show **high compliance** with swimming and boating *E. coli* standards.



□ Treated CSO Outfall ● Untreated CSO Outfall ■ CSO Treatment Facility

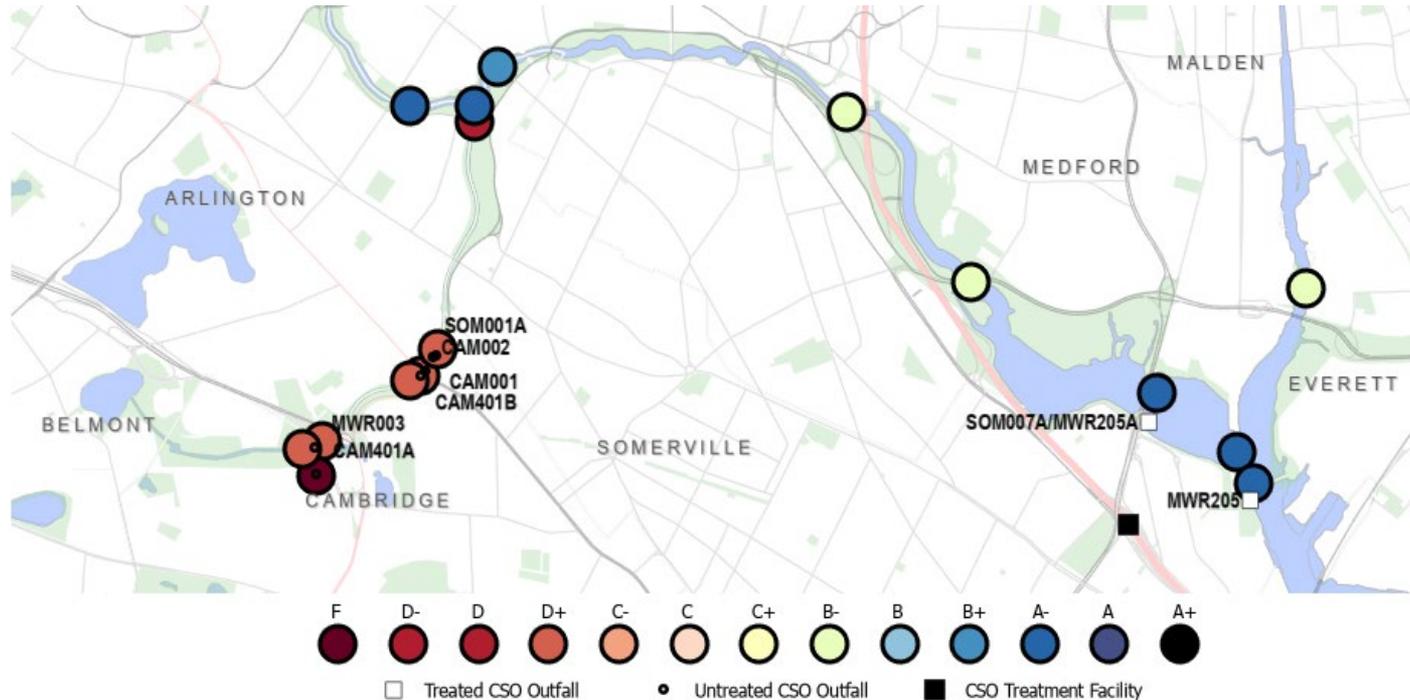
Based on EPA Report Card methodology developed by Mystic River Watershed Association.

*Includes long-term monitoring data using swimming and boating *E. coli* criteria under dry and wet weather conditions (2015–2024)*



Mystic/Alewife Water Quality Is Mixed

Alewife Brook **does not meet** *E. coli* standards often, **even upstream of all CSOs.**
The Upper Mystic River **meets** *E. coli* standards **most of the time.**



Based on EPA Report Card methodology developed by Mystic River Watershed Association.

*Includes long-term monitoring data using swimming and boating *E. coli* criteria under dry and wet weather conditions (2015–2024)*



Water quality exceedances from CSOs occur concurrently with impacts from other sources (e.g., stormwater, upstream boundary conditions) and when CSO discharges occur the duration of exceedance due to CSO discharges is short.

When considering higher levels of control, water quality modeling demonstrates the diminishing return on investment.



Financial Impacts



CSO Control Plan Potential MWRA Spending by Category

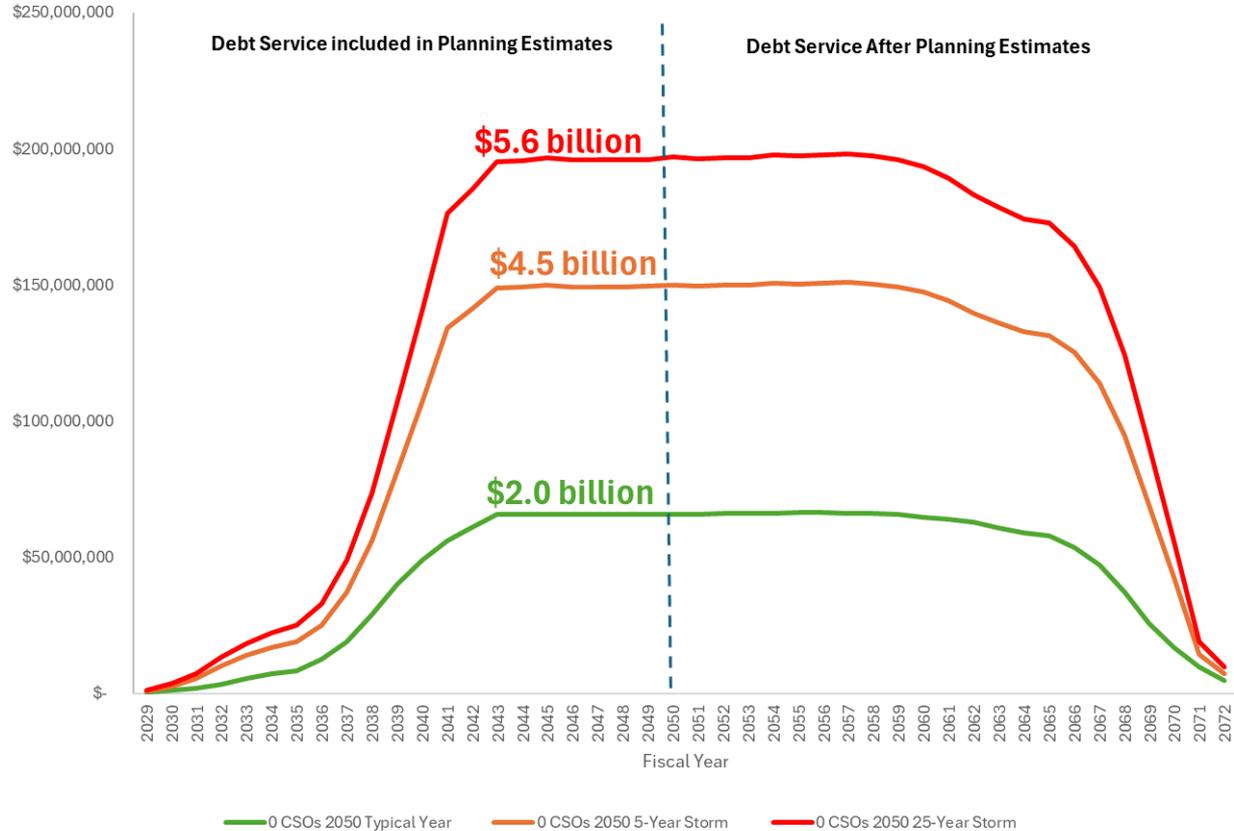
- Estimated MWRA CSO project costs presented in the CSO Control Plan are in today's dollars
- Present day costs are escalated at 2.5% to reflect potential future dollar values

CSO Control Level	CSO Costs in 2026 dollars	Spending (2.5%/year)	CSO Costs in Future dollars
0 CSOs in a 2050 Typical Year	\$ 763,700,000	2028-2042 →	\$ 1,011,274,416
0 CSOs in a 2050 5-Year Storm	\$ 1,730,000,000	2028-2042 →	\$ 2,297,632,930
0 CSOs in a 2050 25-Year Storm	\$ 2,270,000,000	2028-2042 →	\$ 3,014,813,150



Projected Debt Service

Projected Debt Service by CSO Control Alternative

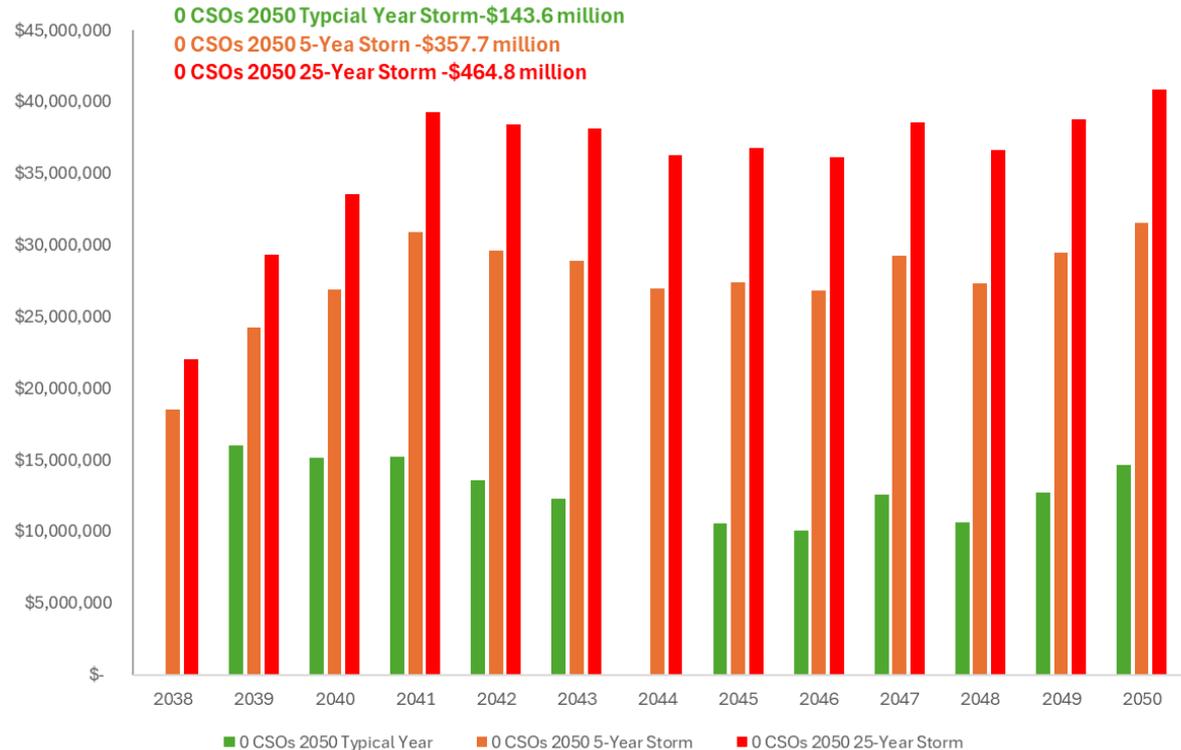




Revenue Bond Coverage Requirement

- The projected additional debt service resulting from CSO spending results in increased assessments to meet coverage.
- MWRA has not had to raise funds to meet the coverage requirement since the 1990s.
- Rating Agencies have indicated that erosion of coverage levels could result in negative ratings actions.

Assessment Increase to Meet Coverage Requirement

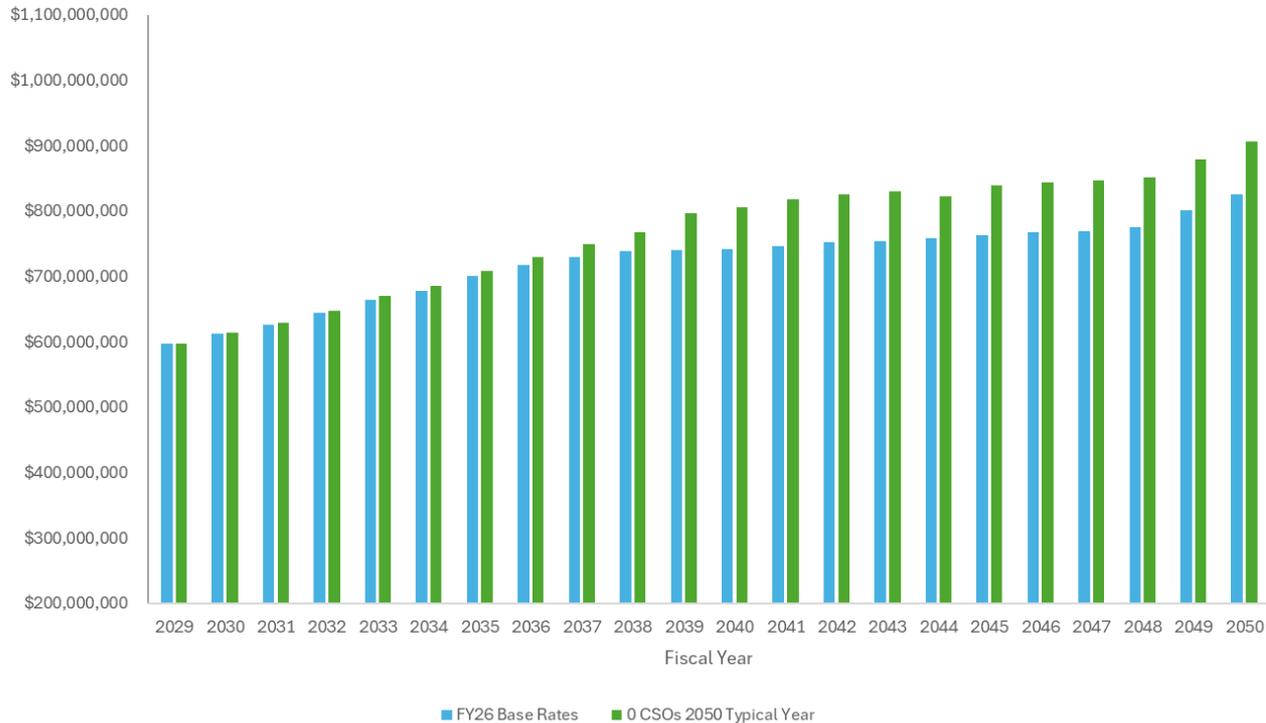




Sewer Assessment Impacts – 2050 Typical Year

- Assessments would increase by \$954.1 million over baseline.

Sewer Assessment Impact of CSO Spending
0 CSOs in a 2050 Typical Year

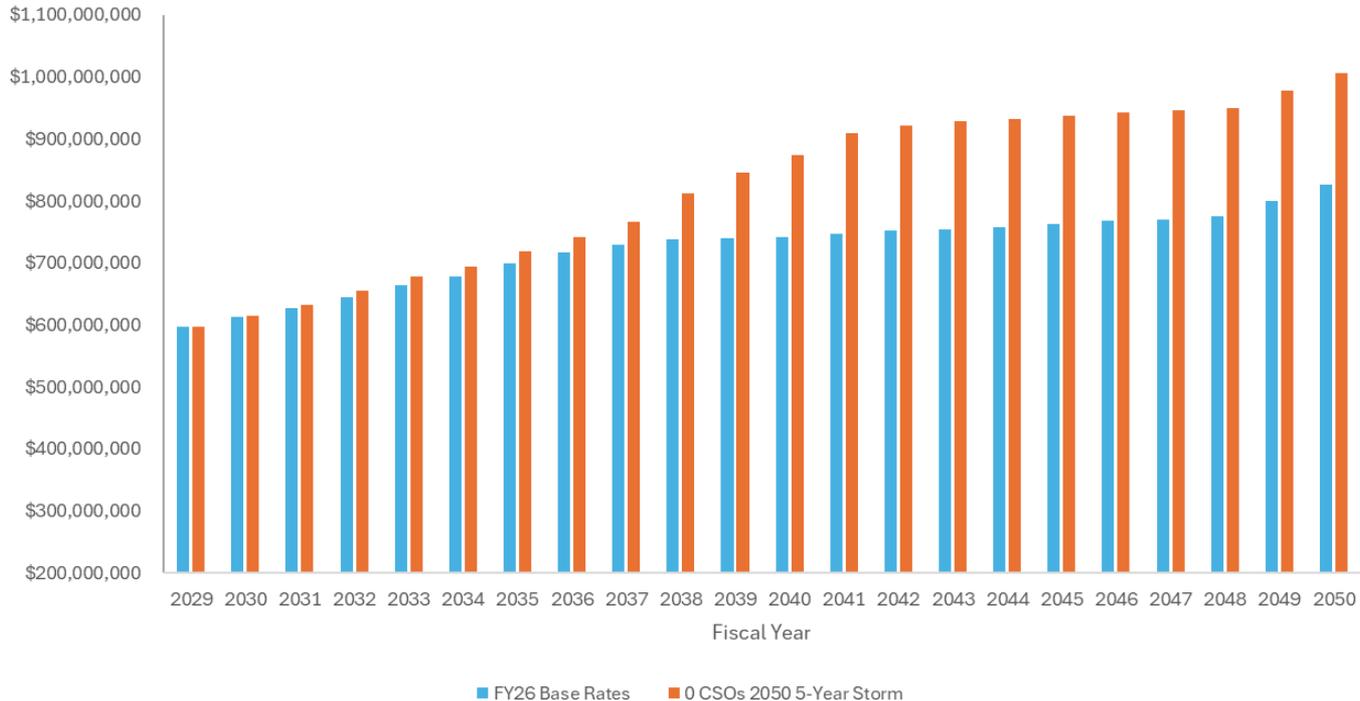




Sewer Assessment Impacts – 2050 5-Year Storm

- Assessments would increase by \$2.2 billion over baseline.

Sewer Assessment Impact of CSO Spending
0 CSOs in 2050 5-Year Storm

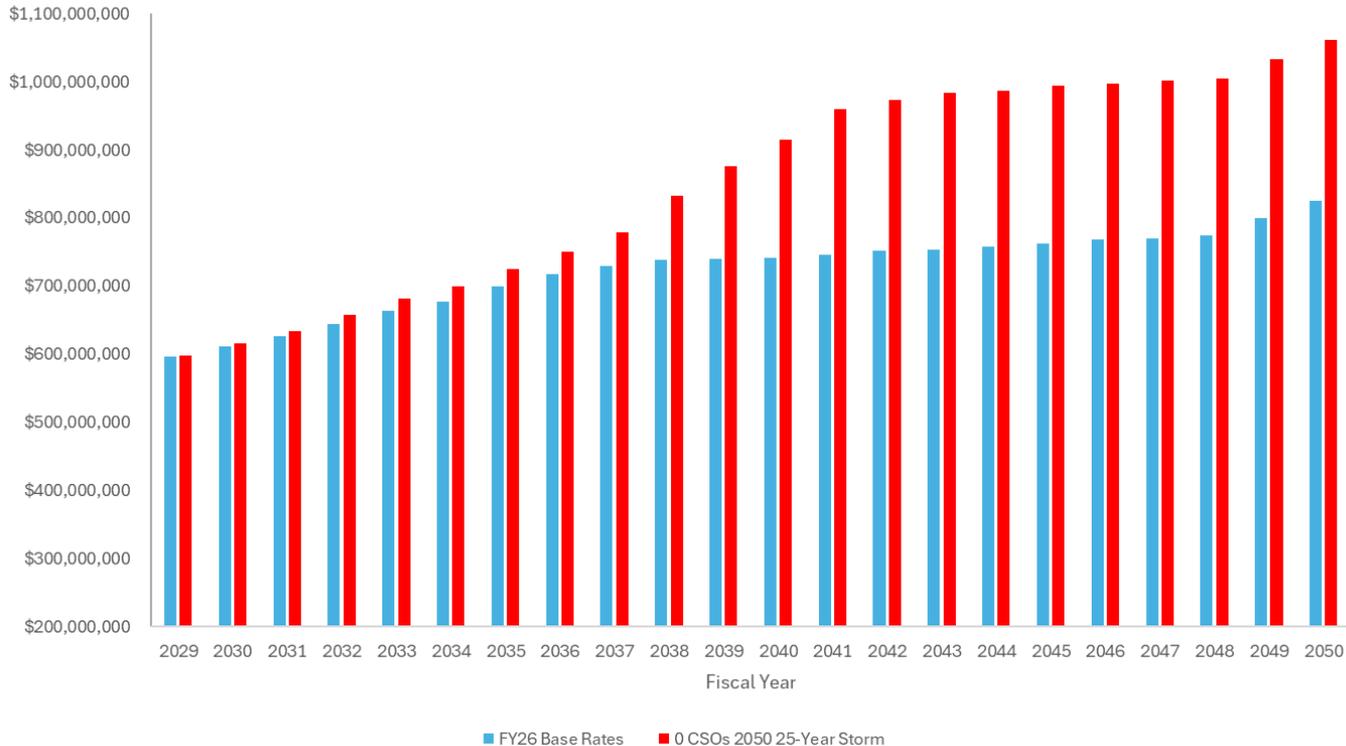




Sewer Assessment Impacts – 2050 25-Year Storm

- Assessments would increase by \$2.9 billion over baseline.

Sewer Assessment Impact of CSO Spending
0 CSOs in 2050 25-Year Storm





Sewer System Household Impacts

Projected Sewer System Household Charges

	<u>2029</u>		<u>2050</u>
FY26 Base Rates	\$ 999	→	\$ 2,337
0 CSOs 2050 Typical Year	\$ 999	→	\$ 2,380
0 CSOs 2050 5-Year Storm	\$ 999	→	\$ 2,433
0 CSOs 2050 25-Year Storm	\$ 999	→	\$ 2,462

Historic Sewer System Household Charges

	<u>2002</u>		<u>2026</u>
Historical Household Charges	\$ 286	→	\$ 884



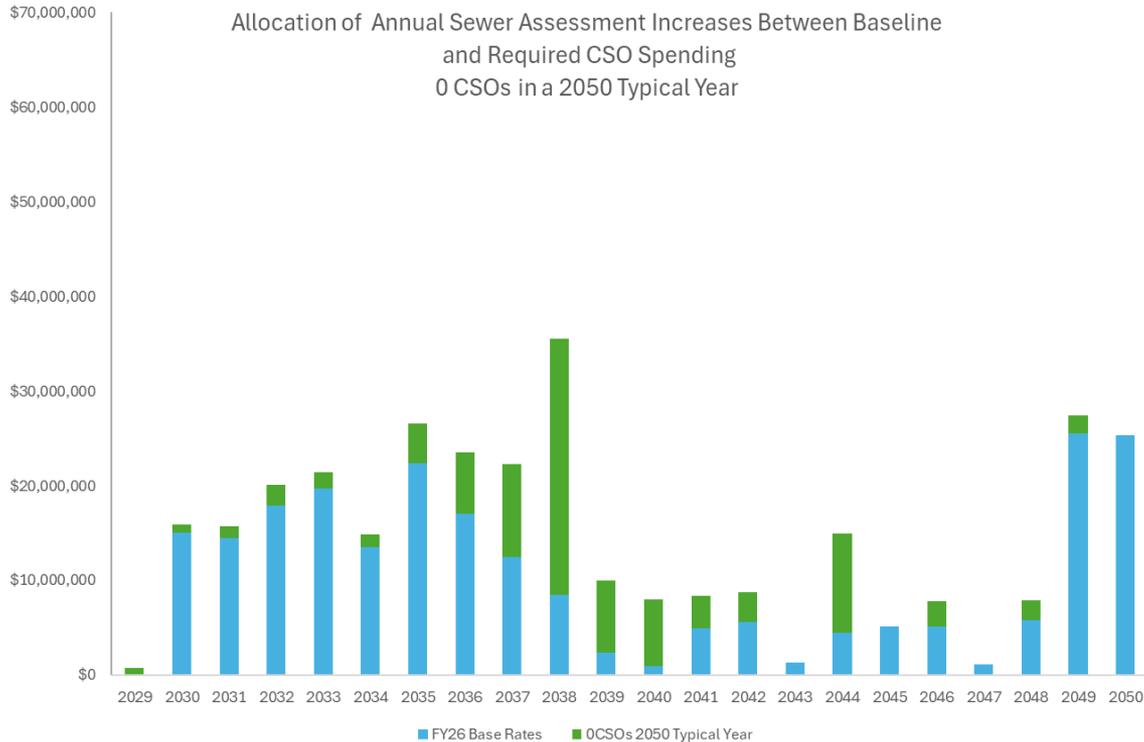
Long-Term Assessment Management

- MWRA has worked closely with its Advisory Board to provide predictable and sustainable annual assessments to member communities.
- Actively manage operating costs by reducing headcount, pursuing operational efficiencies, consolidating facilities and pursuing green energy and other efficiencies.
- Given historic pressures from capital spending, MWRA established five-year spending caps on capital spending.
- Managing debt service costs through bond structuring, refunding for interest rate savings, defeasances and maximizing subsidized borrowing from the SRF.
- Active budget management has reduced actual and projected spending between FY22 and FY26 by \$168.6 million.



Long Term Assessment Management – 2050 Typical Year

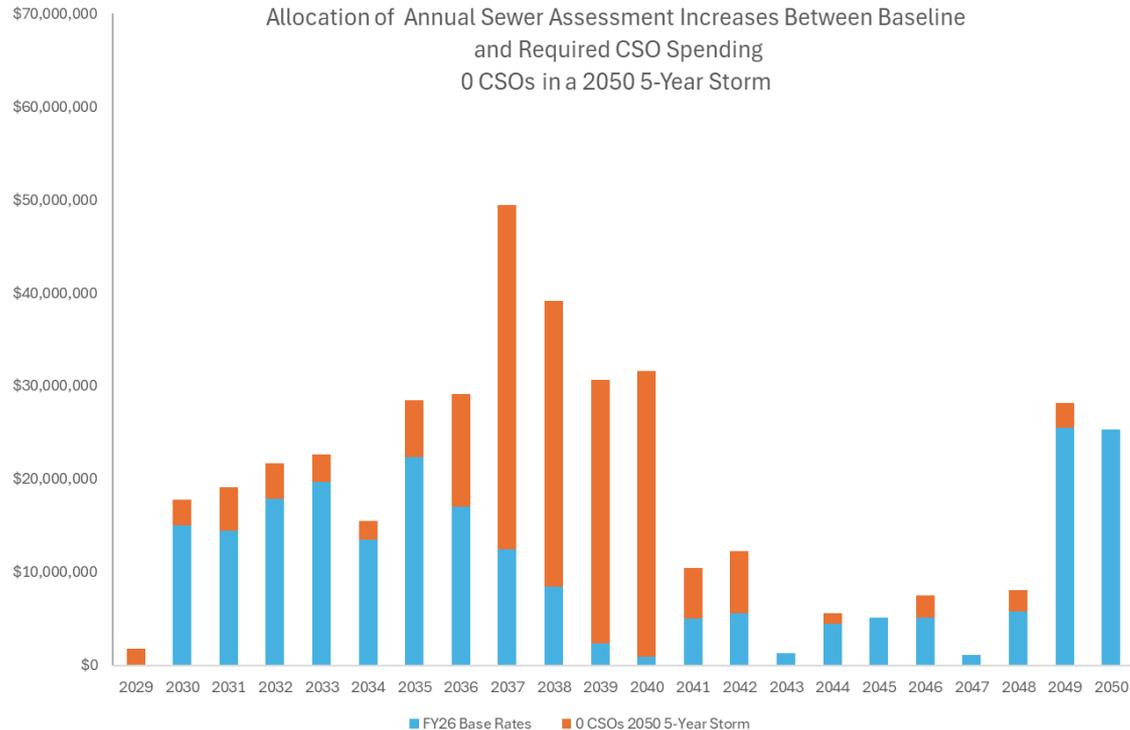
- Historically 64% of total Capital Spending has been on mandated or regulatory required projects which limits MWRA's ability to manage assessments.





Long Term Assessment Management – 2050 5-Year Storm

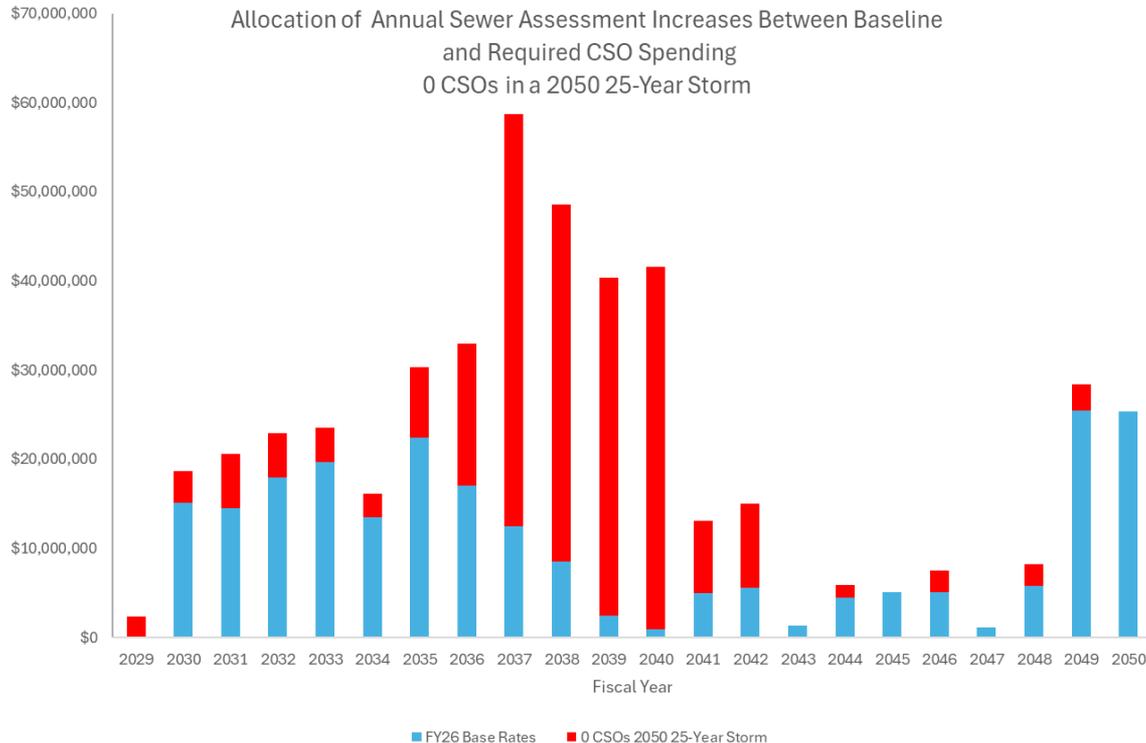
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Long Term Assessment Management – 2050 25-Year Storm

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Long Term Assessment Management

- Large portions of the Sewer System spending driven by mandated spending will limit MWRA's flexibility in managing rates.
- To ensure sustainable and predictable future assessment MWRA will have to limit non-mandated spending.
- 35 of the 43 communities in the Sewer System receive all or a portion of their water from MWRA's Waterworks System.
- In FY26, the ratepayers in those 35 communities account for 88% of MWRA's total combined water and sewer revenue.
- All operating expenses will have to be reviewed to reduce spending levels.
- All capital spending would have to be reprioritized with some projects being delayed or cancelled.



Top 5-Sewer Assessment Communities by Dollar Value

- The ratepayers in these five communities paid 46% of MWRA's combined water and sewer assessment in FY26.

Community	2050 Typical Year	2050 5-Year Storm	2050 25-Year Storm
Boston Water and Sewer Commission	\$ 272,890,957	\$ 623,963,011	\$ 817,409,406
Cambridge	\$ 51,309,999	\$ 117,319,906	\$ 153,692,436
Newton	\$ 42,316,678	\$ 96,756,748	\$ 126,754,110
Quincy	\$ 40,544,196	\$ 92,703,982	\$ 121,444,870
Somerville	\$ 32,113,415	\$ 73,427,068	\$ 96,191,562
Total	\$ 439,175,244	\$ 1,004,170,716	\$ 1,315,492,384



Bottom 5-Sewer Assessment Communities by Dollar Value

Community	2050 Typical Year	2050 5-Year Storm	2050 25-Year Storm
Westwood	\$ 5,806,459	\$ 13,276,423	\$ 17,392,494
Wilmington	\$ 5,653,609	\$ 12,926,933	\$ 16,934,652
Ashland	\$ 5,178,768	\$ 11,841,213	\$ 15,512,328
Hingham Sewer District	\$ 3,781,879	\$ 8,647,236	\$ 11,328,126
Holbrook	\$ 3,564,510	\$ 8,150,224	\$ 10,677,027
Total	\$ 23,985,226	\$ 54,842,028	\$ 71,844,627



Next Steps



Early 2026 Activities

- Request MWRA BOD Approval to move forward with Draft Plan
- Draft recommended plan due to EPA and DEP April 30, 2026



Further 2026 Activities

- Public mtg #7 on draft recommended plan
- Public hearing and public comment period
- Additional outreach in affected communities
- Team reviews comments and modifies plan



2027 and Beyond

- Final plan submitted January 2027
- EPA and DEP review the plan for further CSO control
- Design of projects
- Construction