Draft Updated Combined Sewer Overflow Control Plan

June 2, 2026

Tonight's Agenda

6:00 PM	**Welcome and meeting overview**
6:10 PM	**CSOs: Understanding the challenge and what we can do to fix It**
6:30 PM	**Choosing the draft recommended plan** • **Charles River recommended alternative** • **Mystic River recommended alternative** • **Alewife Brook recommended alternative**
6:45 PM	**Financial Considerations**
7:00 PM	**How to officially comment on and learn more about the plan**
7:15 PM	**Questions and answers**
8:00 PM	**Adjourn**

Where can you learn about the Draft Plan?

OPPORTUNITIES TO LEARN MORE ABOUT THE PLAN:

- Read the Draft Plan Online at: https://voice.somervillema.gov/joint-cso-planning
- Listen to tonight's presentation (live, or after the fact)
- Attend Office Hours throughout the summer, both in-person and virtual

Scan to Read the Draft Plan Online:

Where can you learn about the Draft Plan?

Office hours schedule and format – see website for details

Date	Location
June 15, noon-2pm	Virtual
June 22, 5-7pm	In person in Boston
June 29, 5-7pm	In person in Somerville
July 13, 5-7pm	Virtual
July 16, 5-7pm	In person in Cambridge
August 10, noon-2pm	Virtual
August 10, 5-7pm	In person in Somerville
August 24, 5-7pm	In person in Boston
September 10, 5-7pm	In person in Cambridge

Where can you officially comment on the Draft Plan?

OPPORTUNITIES TO SUBMIT PUBLIC COMMENTS

Attend the Public Hearings:

Thursday, Sept. 17, 2026, 6 p.m.
Thursday, Sept. 24, 2026, 6 p.m.

Public comment accepted until September 30, 2026

Submit Comments in the Online Portal:

Comments can be submitted to the project team electronically using our online portal:

https://us.planengage.com/updatedcsocontrolplan/page/home

Submit Comments by Email:

Comments can be emailed to the project team:

UpdatedCSOControlPlan@aecom.com

Submit Comments by Mail:

Electronic comments are preferred, however written comments addressed to "Draft Updated CSO Control Plan Partners" can be mailed to the following address:

MWRA
Attn: Draft Updated CSO Control Plan
2 Griffin Way
Chelsea, MA 02150

Menti Poll

1. Where do you live?
2. Where do you work?
3. How many previous CSO Control Plan public meetings have you attended?
4. How did you hear about this meeting?

Go to

www.menti.com

Enter the code

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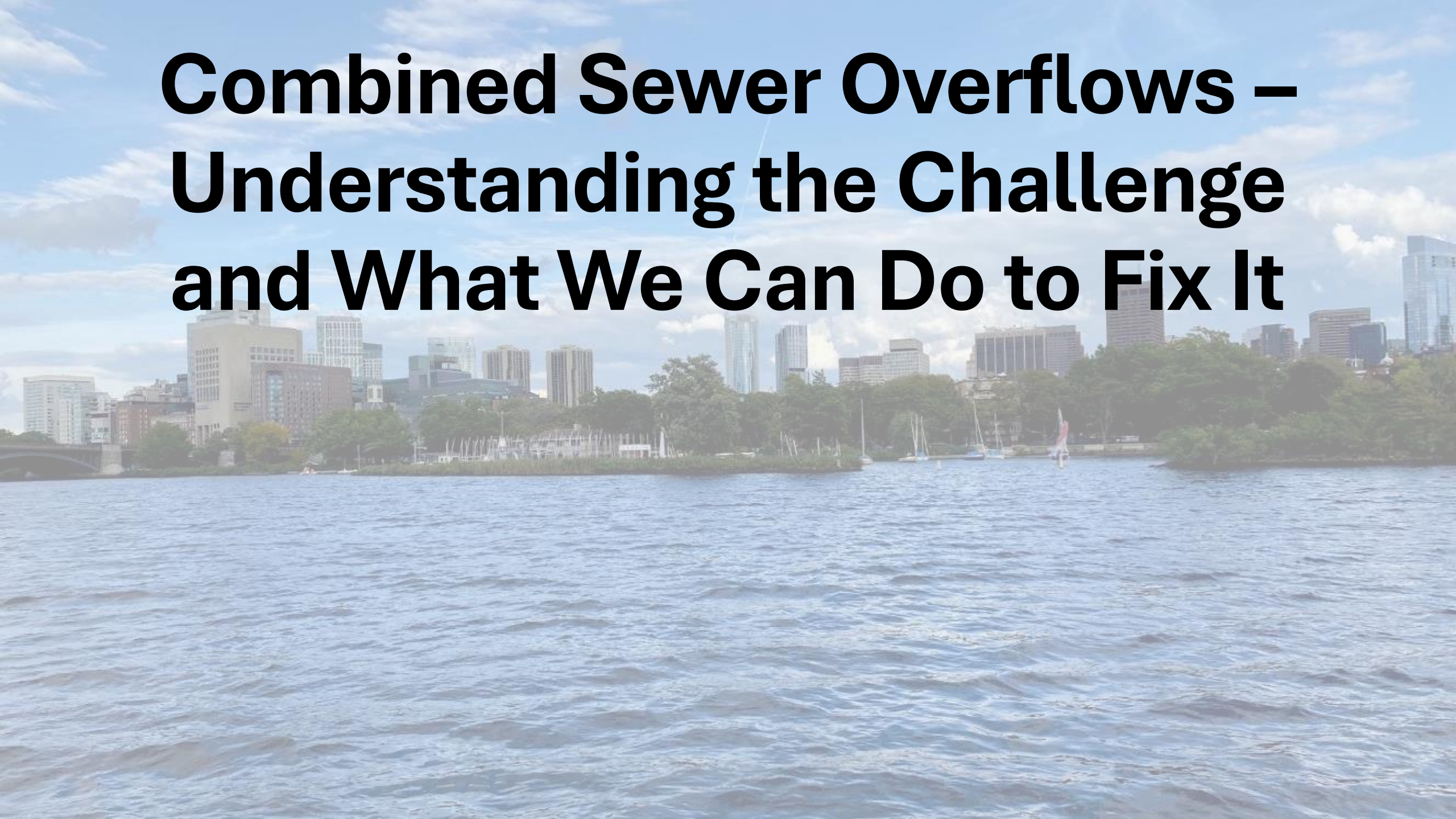


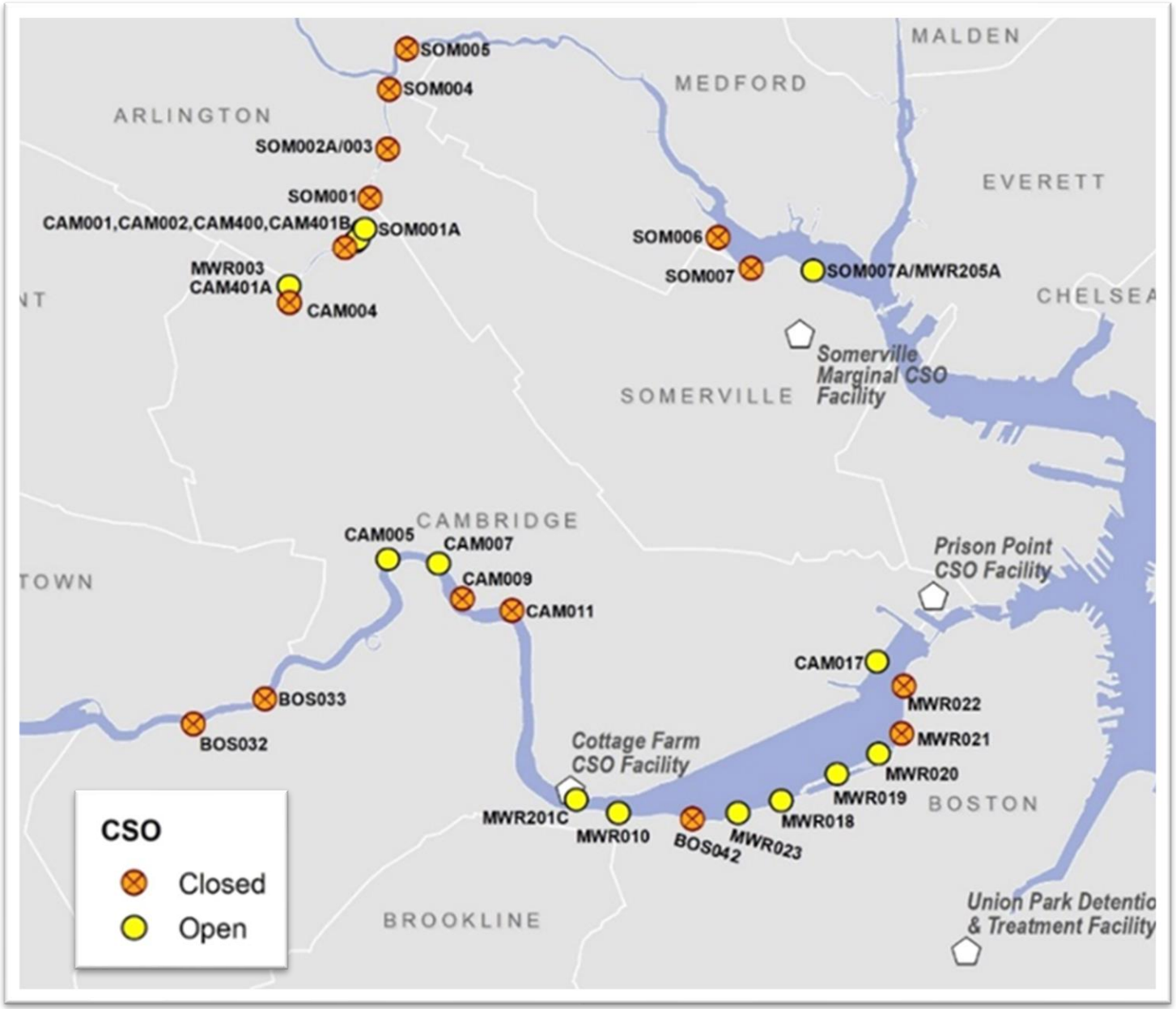
Combined Sewer Overflows – Understanding the Challenge and What We Can Do to Fix It

Project Partners

City of Somerville

City of Cambridge

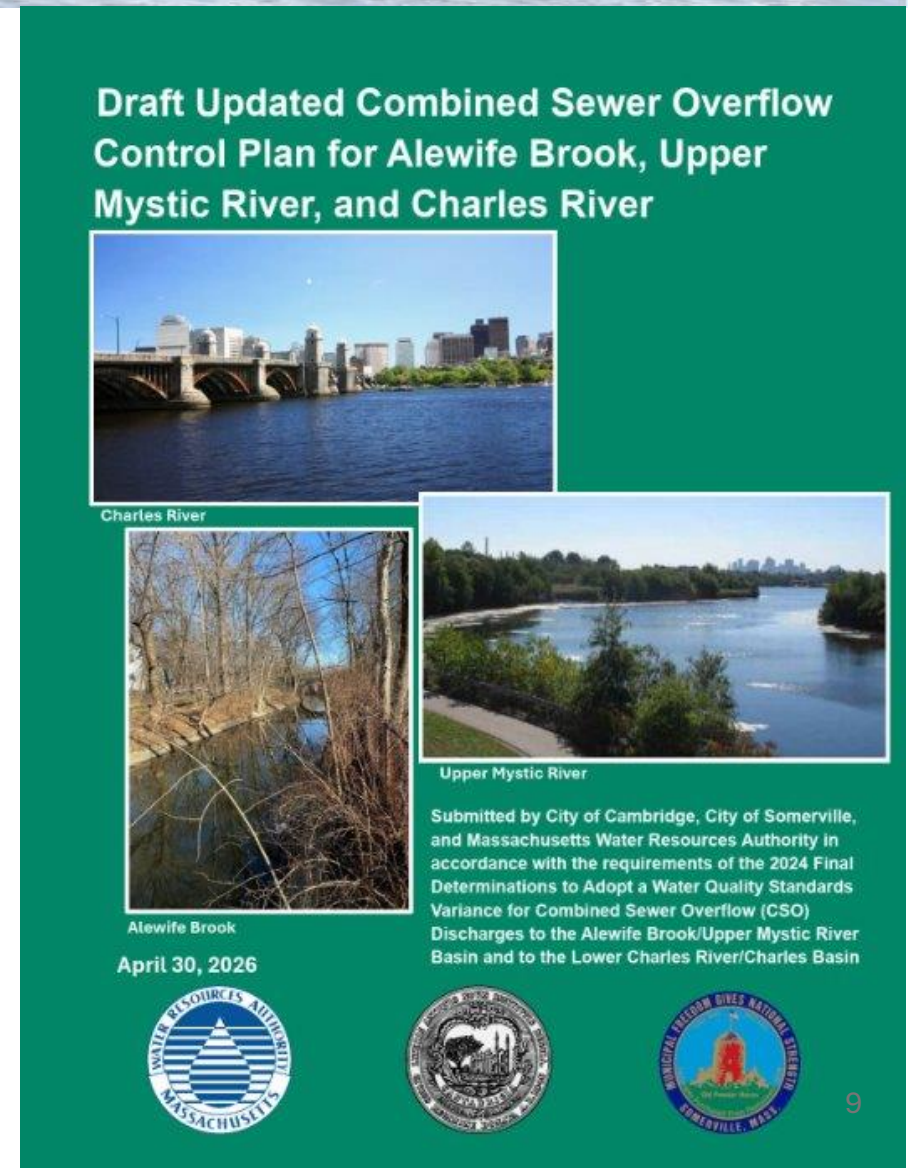
Massachusetts Water Resources Authority (MWRA)



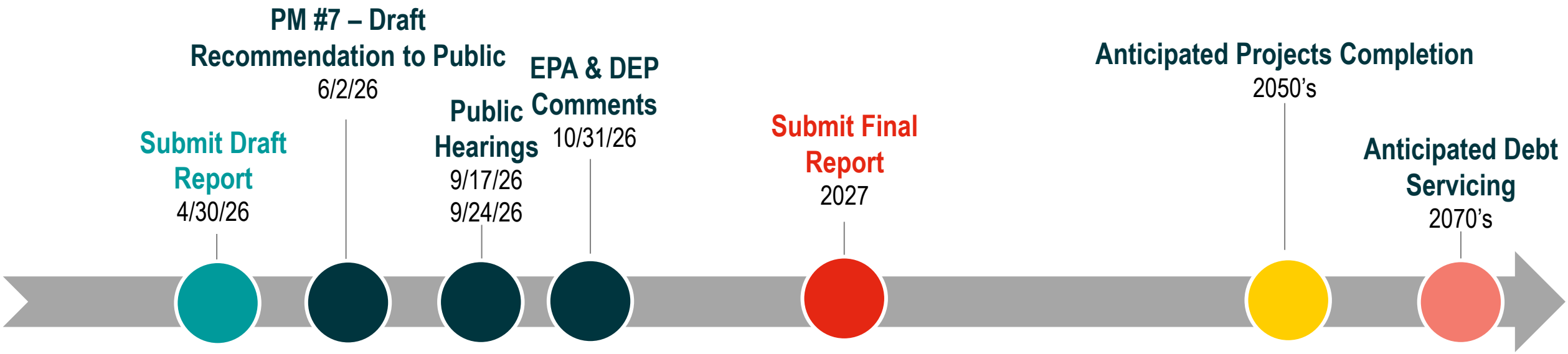
https://voice.somervillema.gov/joint-cso-planning

The Draft Plan at a Glance

- Accounts for increased precipitation due to climate change
- Eliminates CSOs in 2050 Typical Year
- Substantially reduces CSOs in larger storms
- Incorporates green stormwater infrastructure
- Recognizes impacts of potential projects, including affordability



Introduction to the Draft Updated CSO Control Plan



Draft Report Write-up
3/1/26 - 4/30/26

EPA and DEP Review Period
4/30/26 – 10/31/26

Public Comment Period
4/30/26 – 9/28/26

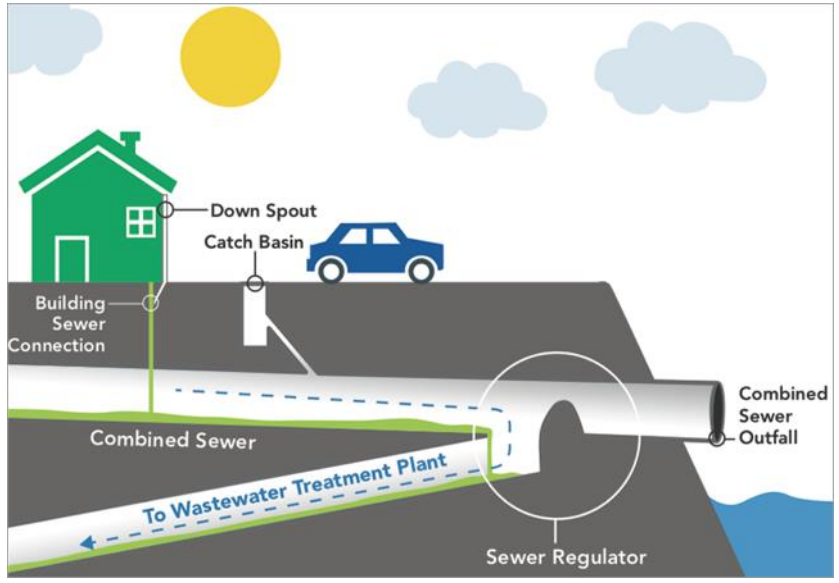
Project Team to Incorporate Comments
11/1/26 – early 2027

Project Implementation
2027 – 2050's

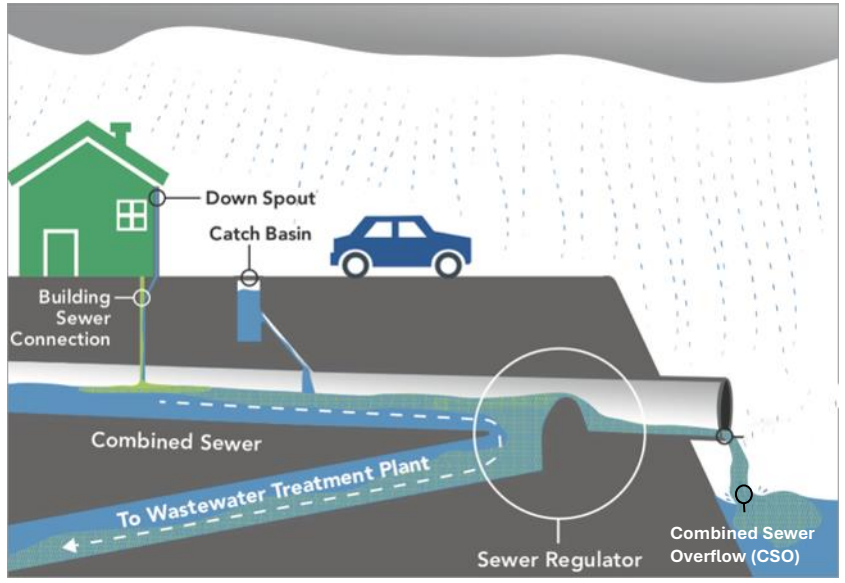
Project Debt Servicing
2027 – 2070's

Sewage & Drainage Systems

Combined System



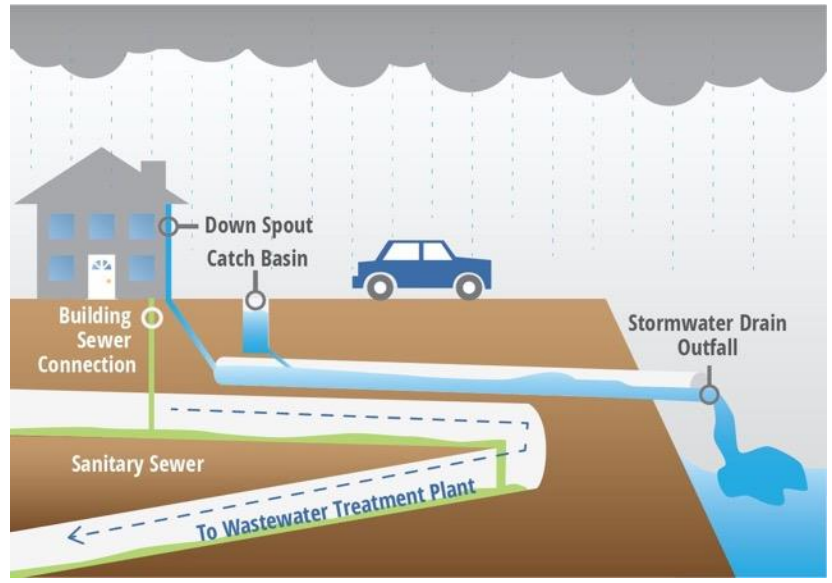
No or Moderate Rain



Heavy Rain

- Older, inner urban core, downstream
- Combined Sewer Overflows (CSO)
  - ~14 hours per year at limited locations
  - All other flows to Deer Island for treatment

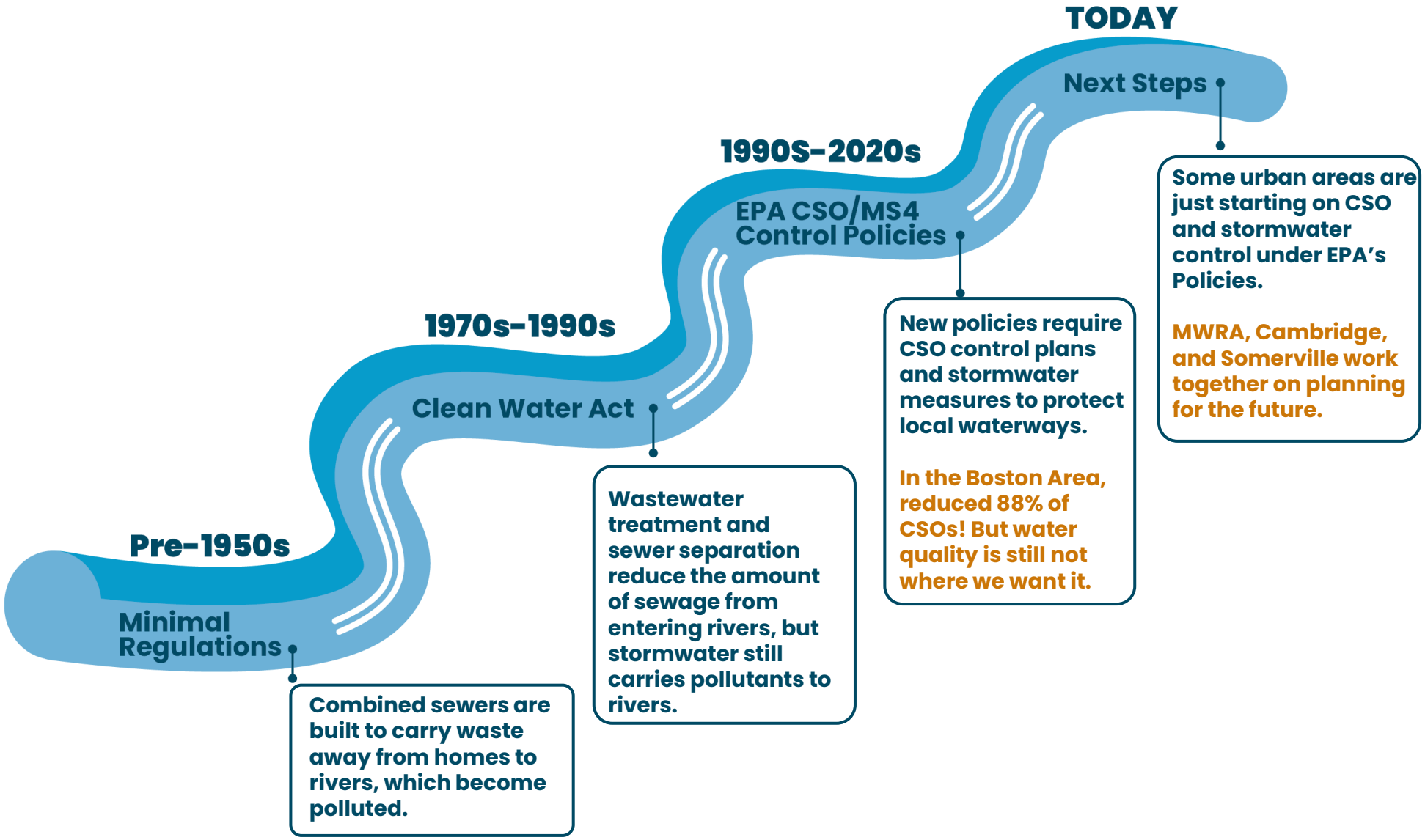
Separate System



Any Rain

- Newer, upstream areas
  - Inflow/Infiltration
- Stormwater "MS4"
  - 90+ days per year at many locations

The History of Stormwater and Sewage Control



Staying at the Leading Edge of CSO Control

Changed Waterbody Context

- Starting from already reduced CSO discharges
- Stormwater remains a key challenge

Strong Team and Tools

- Expanded team of experts
- Enhanced modeling and planning tools
- Regional partnership

Climate-Ready Planning

- First to integrate climate projections
- New 2050 Typical Year based on future rainfall

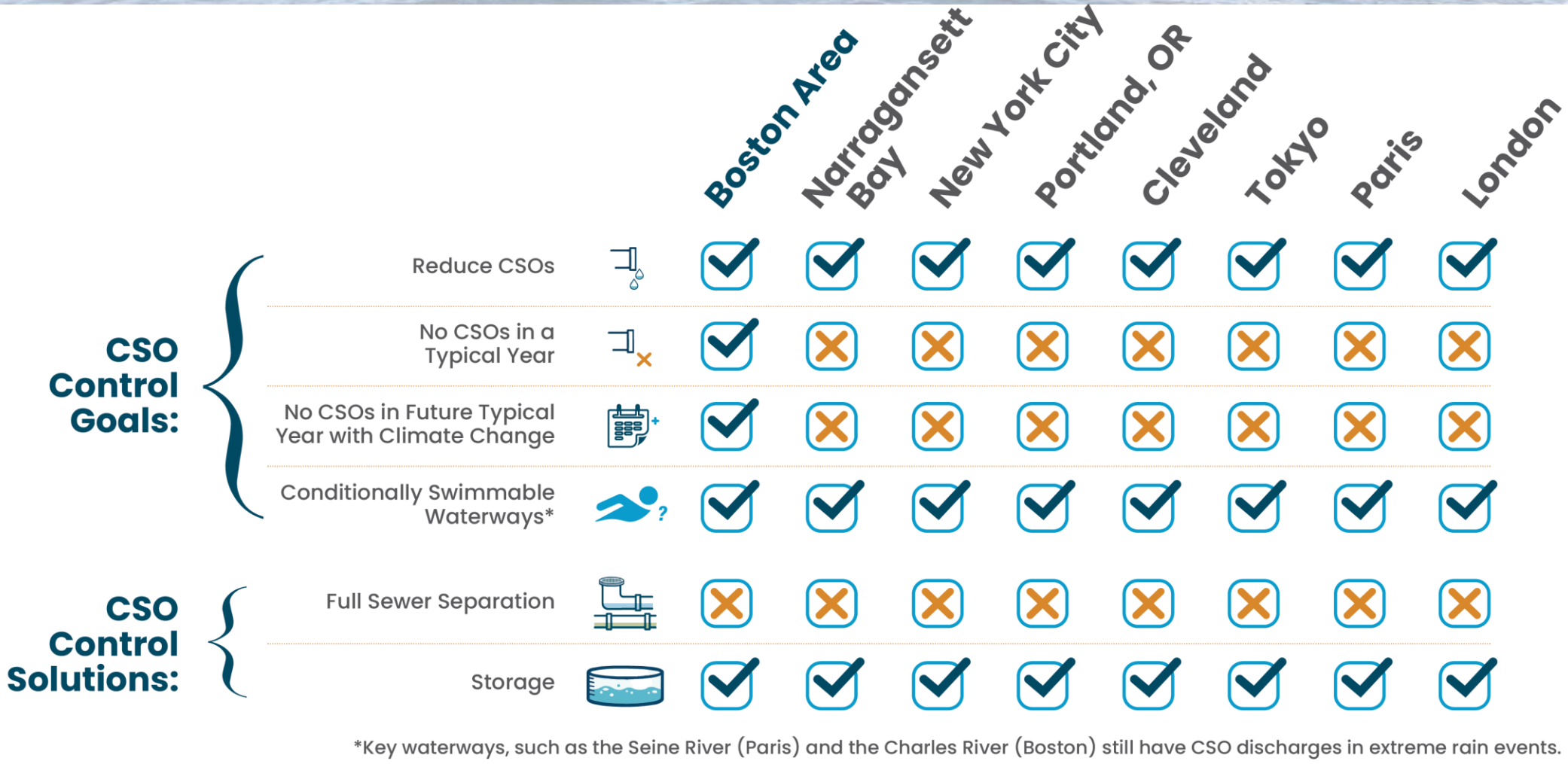
Advancing CSO Control

- Higher performance targets
- Evaluation up to elimination
- Goal: elimination in 2050 Typical Year

Draft Plan – Strategic Selection of CSO Tools that Work

- Sewer Separation – 549 acres
- Green Stormwater Infrastructure
- Storage – 25.5 million gallons
- Conveyance – 4 major pipes

A Look at CSO Control Planning in Major Metropolitan Areas

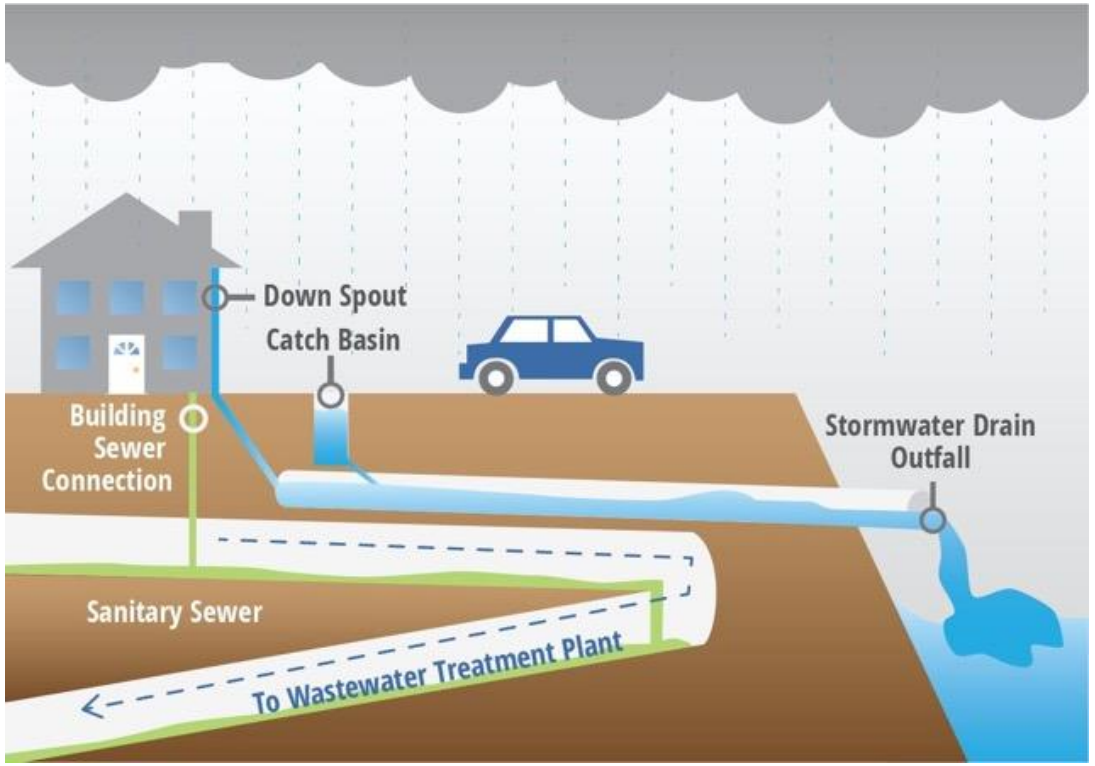


*Key waterways, such as the Seine River (Paris) and the Charles River (Boston) still have CSO discharges in extreme rain events.

What a CSO Plan Can't Do

- Mitigate localized flooding as climate change overwhelms local drainage systems
- Mitigate river flooding
- Restore streams or habitat
- Address Sanitary Sewer Overflows (SSOs) as climate change overwhelms local sewer systems
- Eliminate water quality impacts from stormwater discharges

Separate Systems



Any Rain

There are Multiple Sources of Pollution

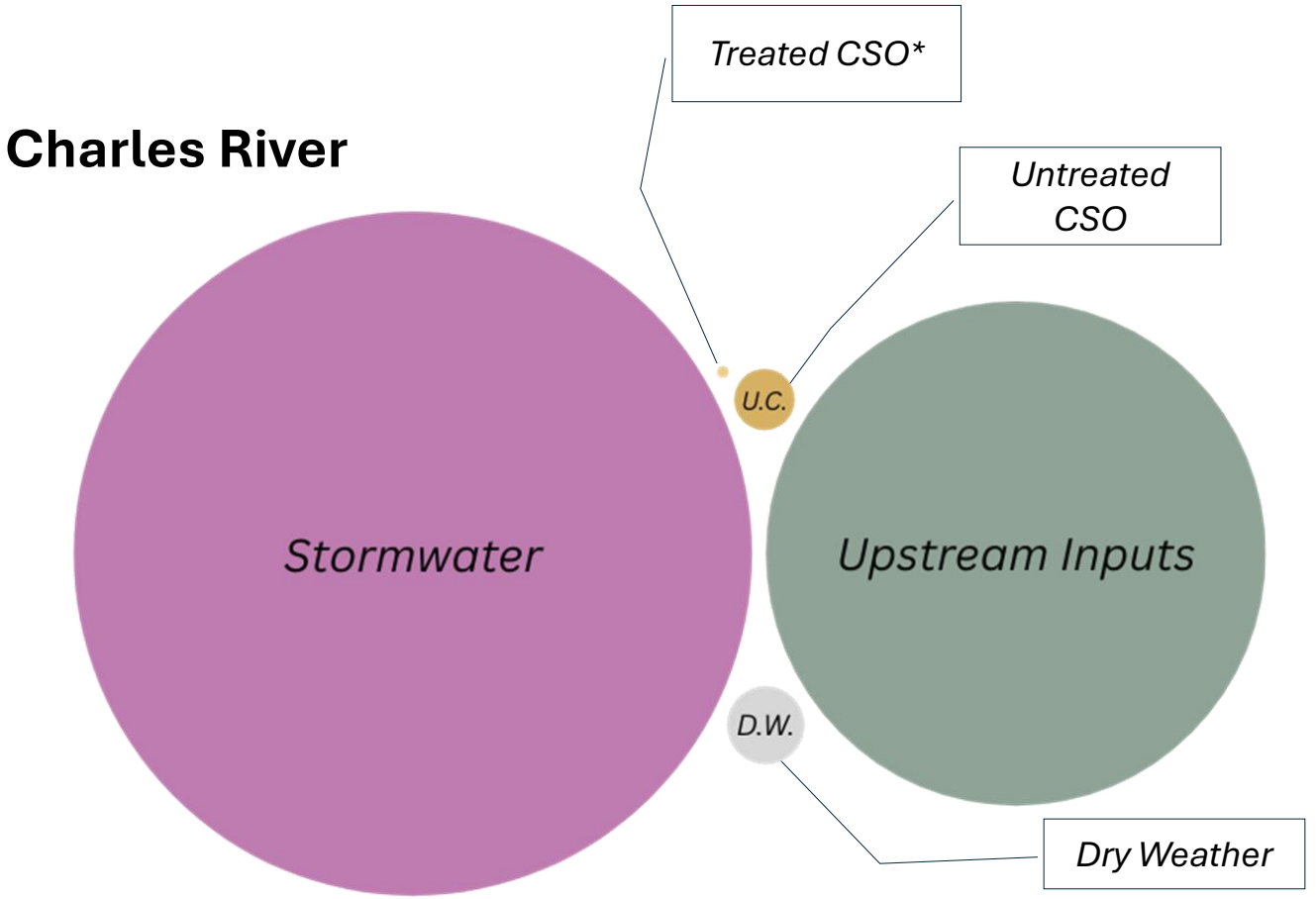
Pollutants affect water quality, environmental health, and public health.
CSOs are one source of those pollutants.

Dry weather (perpetual)	**Stormwater** (every time it rains)	**CSOs** (large, intense storms)
• Illicit sewer connections • Leaky sewer pipes • Wildlife and dog excrement • Decomposing leaves	• Pathogens (bacteria, viruses) • Oil and grease • Nutrients (Phosphorus, Nitrogen) • Trash • Others	• 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

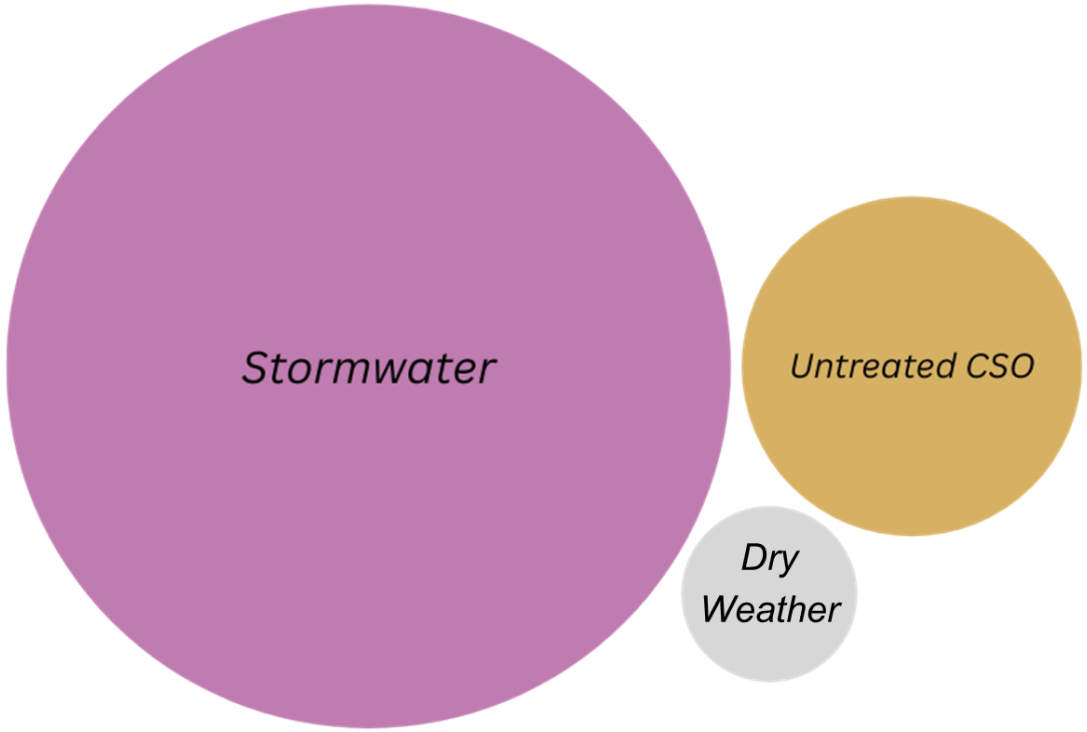


* Treated CSO is disinfected before discharge

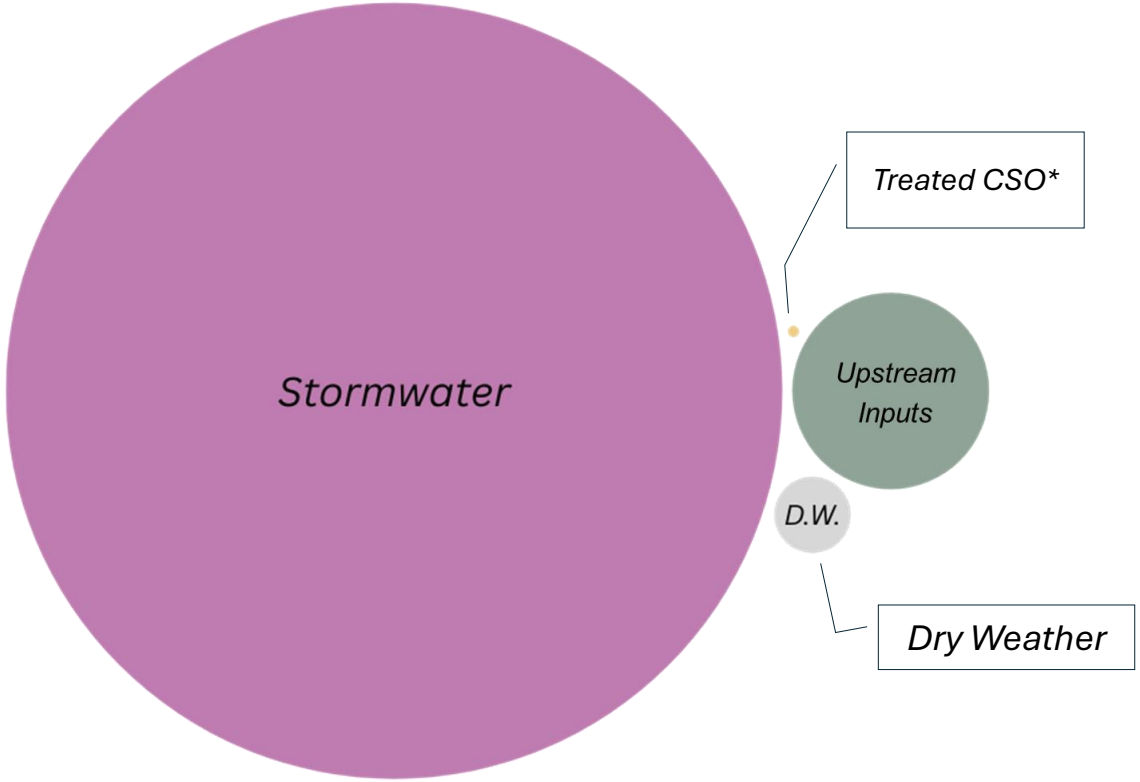
Water Quality – Current Sources of Pollution

Relative annual proportions of *E. coli* by source

Alewife Brook



Upper Mystic River



* Treated CSO is disinfected before discharge

The Key Takeaways from the Partners

We are committed to continue **reducing** and **eliminating** CSOs and believe the recommended plan is the **right next step** towards that goal.

- **Continues Progress:** Builds on decades of regional investments and is still ahead of national policy
- **Balances Affordability:** Recommendations are both bold and mindful of ratepayer costs
- **Recognizes Constraints:** Focuses on solutions that can be constructed in our dense urban environment
- **Plans for the Future:** First CSO plan to account for future climate conditions.
- **Eliminates CSOs in 2050 Typical Year:** And reduces CSOs in larger events

Choosing the Recommended Plan

Future storms = more rain

- 2050 planning horizon (2039 to 2069) for the CSO Control Plan (first in the nation!)

- <u>2050 Typical Year (TY)</u>
  - More storms with more rain
  - More storms with higher intensity
  - Largest storm 3.3 inches over 24 hours
  - 98 storms in TY

- 2050 Design Storms (24-hours)
  - 5-Year = 5.3 inches
  - 25-Year = 7.8 inches

Future storms = more rain

Storm Events Now and in the Future		
Storm Frequency	**Current Rainfall (inches in 24 hours)**	**Future (2050) Storms[2,3] (inches in 24 hours)**
2-yr	3.3	4.0
5-yr	4.3	5.3
25-yr	6.3	7.8

Actual Storm Events		
Event Date	**Rainfall**	**Future Storm Equivalent**
Ida (Sept, 2021)	**5.2 inches (over 17 hours)**	Close to 5-year
March 2010	**6.2 inches** **(24-hr depth around the peak)** **10.3** (over 59-hours)	Close to 10-year

REFERENCES

1. Perica, S., Pavlovic, S., StLaurent, M., Trypaluk, C., Unruh, D., Martin, D. 2015. NOAA Atlas 14: Precipitation-Frequency Atlas of the United States; Volume 10 Version 3.0: Northeastern States. https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html

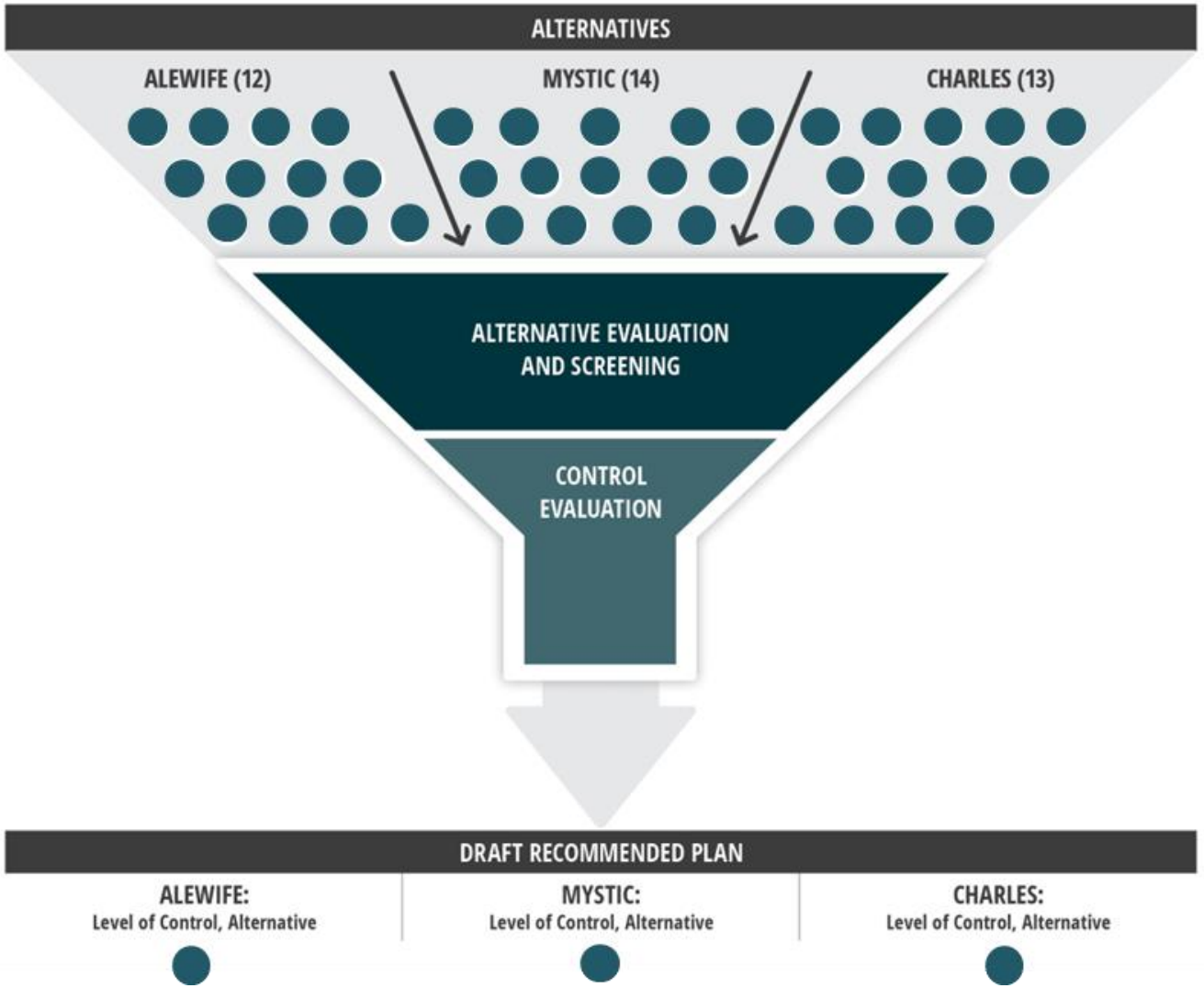
2. Steinschneider, S., & Najibi, N. (2022). Observed and Projected Scaling of Daily Extreme Precipitation with Dew Point Temperature at Annual and Seasonal Scales across the Northeastern United States, Journal of Hydrometeorology, 23(3), 403-419. https://journals.ametsoc.org/view/journals/hydr/23/3/JHM-D-21-0183.1.xml

3. Climate Resilience Design Standards & Guidelines. Climate Resilience Design Standards Tool. https://resilientma.org/rmat_home/designstandards/

What Levels of CSO Control did the Partners Evaluate?

- Limited CSOs in 2050 Typical Year
- Zero CSOs in 2050 Typical Year
- Zero CSOs in 2050 5-Year Storm Event
- Zero CSOs in 2050 25-Year Storm Event
- Full Sewer Separation

Alternatives Evaluation: Taking a Balanced Approach



- timeline to CSO reduction
- limiting neighborhood impacts
- land acquisition
- construction complexity
- protecting existing open space
- resulting water quality
- cost relative to water quality benefit
- affordability for the ratepayers
- Protecting environmental and **public health = underlying goal**

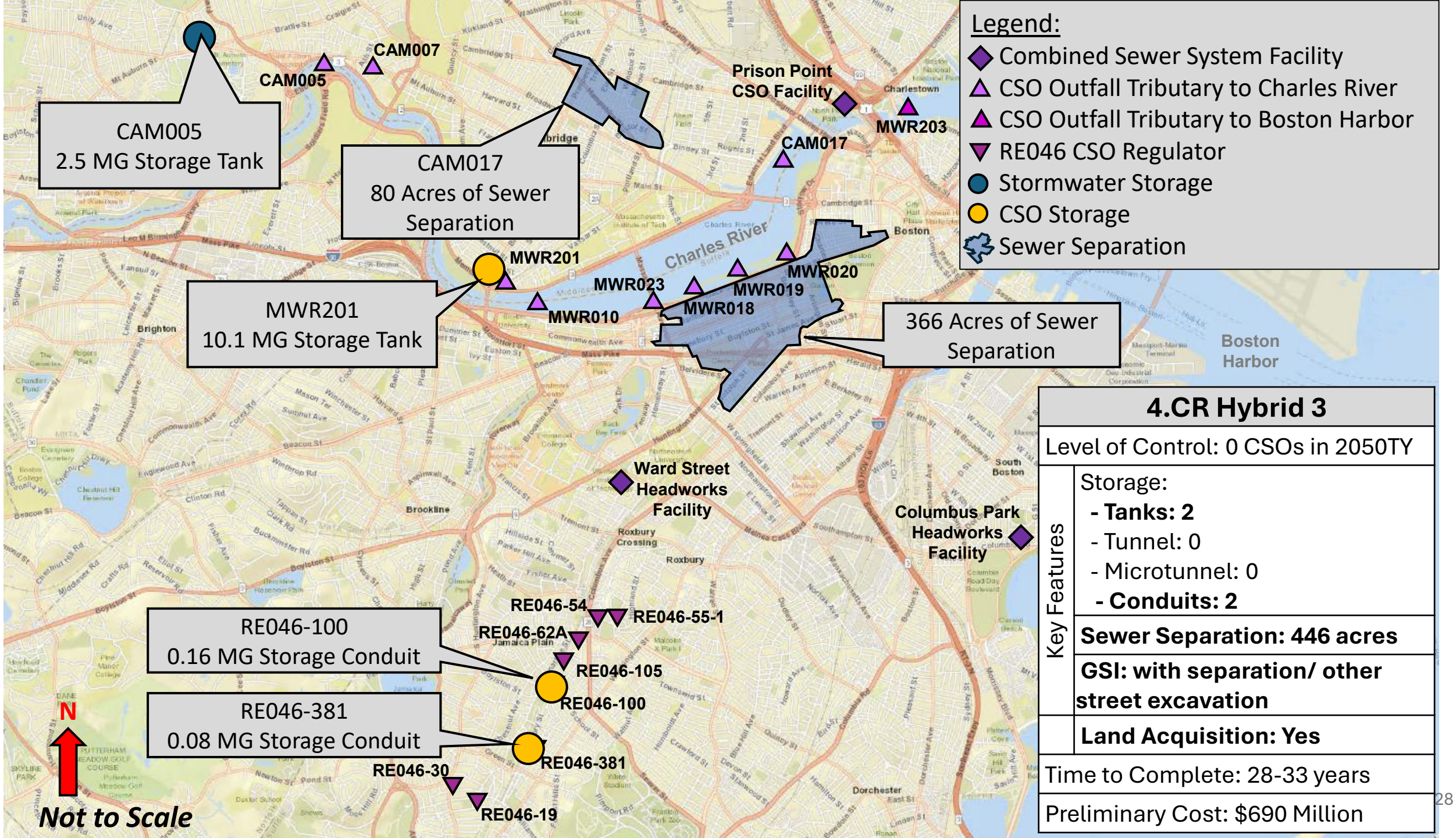
Factors that informed our recommendations

- CSO is not the only contributor to poor water quality: stormwater impacts

- Sewer separation alone **does not eliminate overflows**
  - Still have untreated discharges due to remaining inflow and I/I
  - Separated stormwater degrades WQ

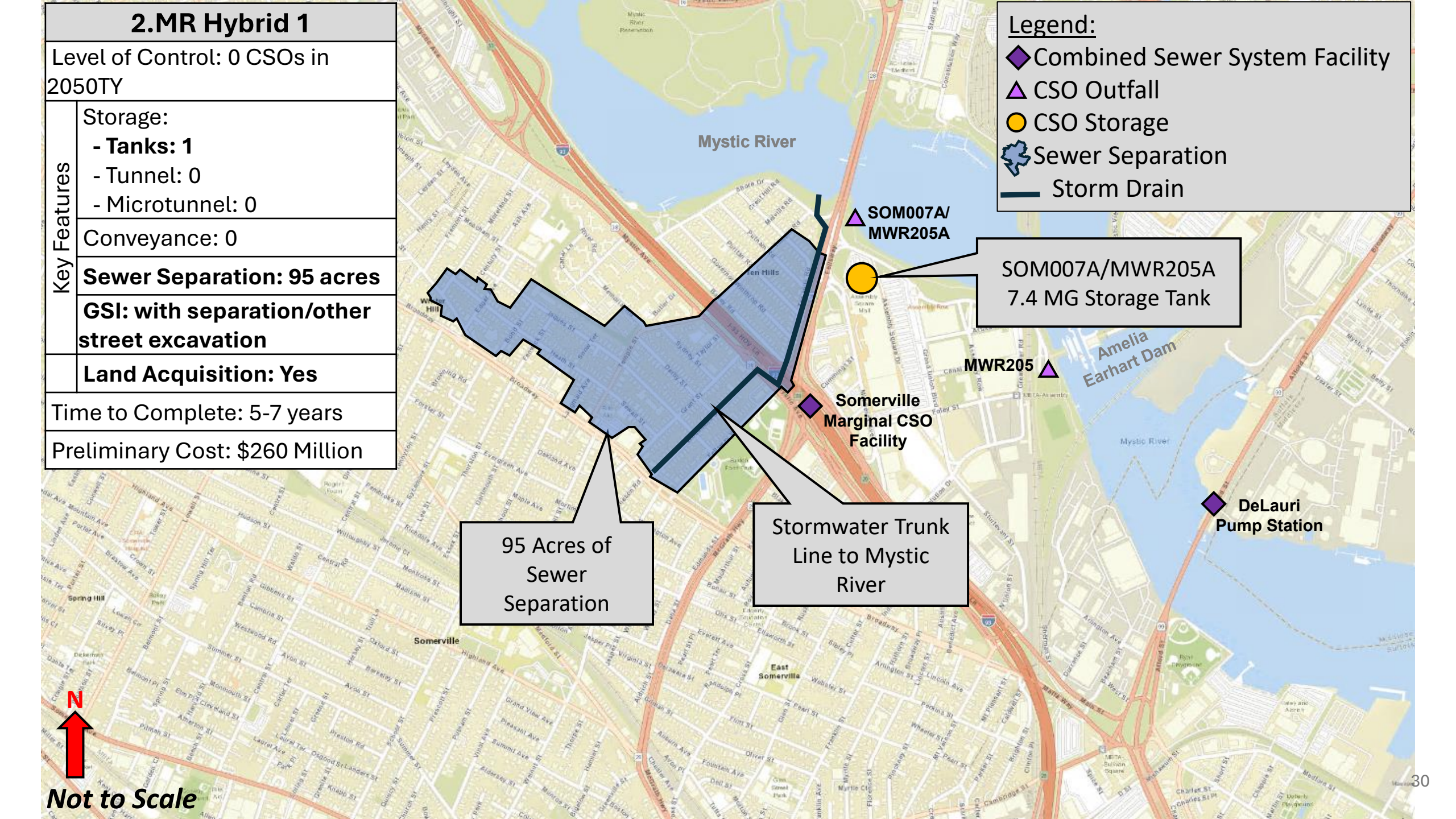
- **Large storms overwhelm our existing system capacity** and leads to flooding and degraded water quality

Charles River
Draft Recommend Alternative

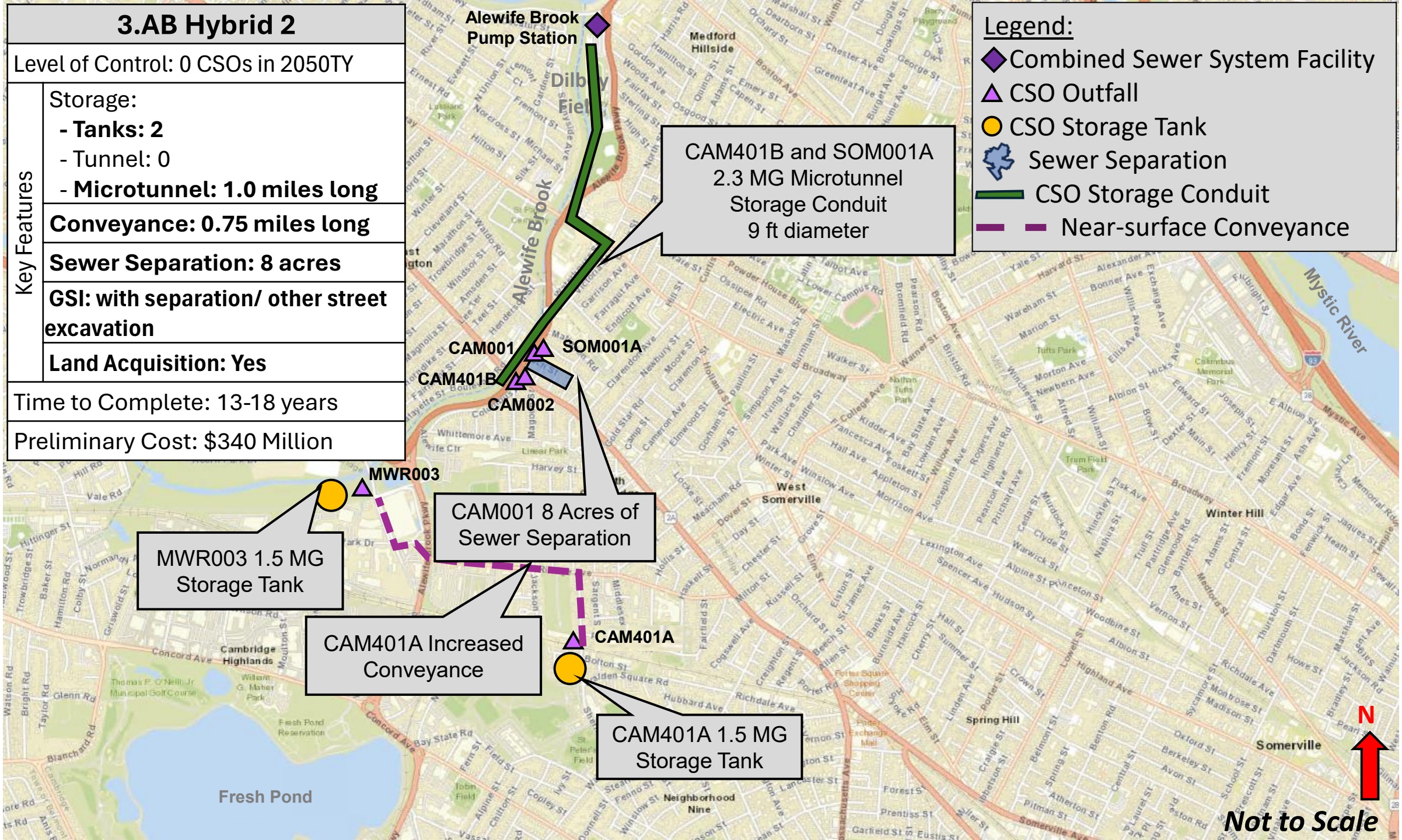


4.CR Hybrid 3	
Level of Control: 0 CSOs in 2050TY	
Key Features	Storage: **- Tanks: 2** - Tunnel: 0 - Microtunnel: 0 **- Conduits: 2**
	Sewer Separation: 446 acres
	GSI: with separation/ other street excavation
	Land Acquisition: Yes
Time to Complete: 28-33 years	
Preliminary Cost: $690 Million	

Mystic River
Draft Recommended Alternative


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
Mystic River
SOM007A/ MWR205A
SOM007A/MWR205A 7.4 MG Storage Tank
MWR205
Amelia Earhart Dam
Somerville Marginal CSO Facility
DeLauri Pump Station
95 Acres of Sewer Separation
Stormwater Trunk Line to Mystic River
Somerville
East Somerville
Spring Hill
N
Not to Scale

Alewife Brook
Draft Recommended Alternative


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 Pump Station
CAM401B and SOM001A 2.3 MG Microtunnel Storage Conduit 9 ft diameter
CAM001
SOM001A
CAM401B
CAM002
MWR003
MWR003 1.5 MG Storage Tank
CAM001 8 Acres of Sewer Separation
CAM401A Increased Conveyance
CAM401A
CAM401A 1.5 MG Storage Tank
Alewife Brook
Mystic River
Fresh Pond
Medford Hillside
West Somerville
Winter Hill
Spring Hill
Somerville
Cambridge Highlands
Neighborhood Nine
N
Not to Scale

Summary of Draft Recommendations

Receiving Waterbody	Alternative Name	Level of Control	Cost	Duration
Alewife Brook	3.AB Hybrid 2	0 CSOs in 2050 TY	$340M	13-18 years
Upper Mystic	2.MR Hybrid 1	0 CSOs in 2050 TY	$260M	5-7 years
Charles River	4.CR Hybrid 3	0 CSOs in 2050 TY	$690M	28-33 years
		Total Cost	**$1.29B**	

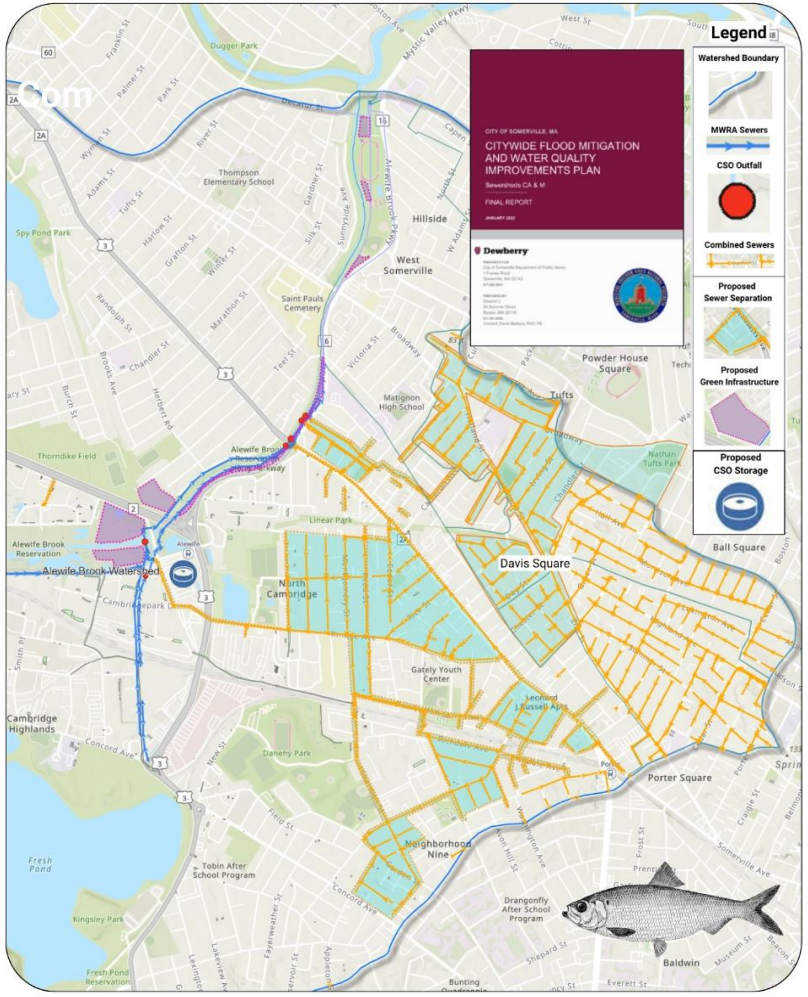
Alewife Brook Community CSO Elimination Plan

Plan developed by advocacy group Save the Alewife Brook

Initial take aways from our comprehensive review:

- Based on the unified model, the proposed plan results in 9 overflows in the 2050 TY
- The plan needs to also include large stormwater pipes and pumping facilities
- The plan needs to account for significant stormwater storage and treatment costs

We will meet with the group to discuss the plan in more detail in the next few weeks



Financial Considerations

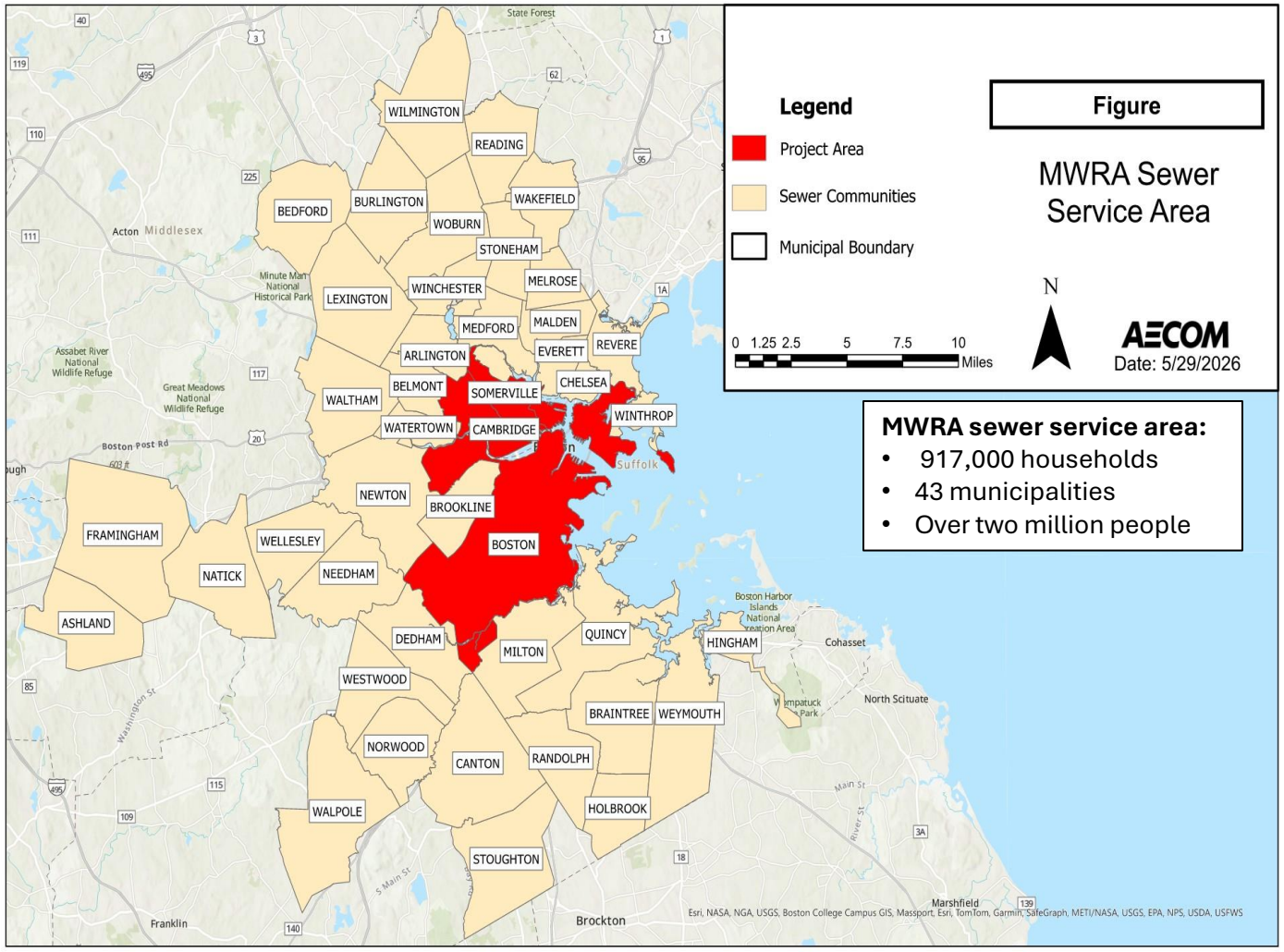
Financial Capability Assessment (FCA)

- Each Partner performed FCAs for **all levels of CSO control**
- FCA is a requirement of the CSO control plan
- Help in understanding a community's ability to implement long-term Clean Water Act (CWA) control plans
- Helps in negotiating construction schedules
- **Not** a methodology for defining affordability

Limitations of Financial Capability Analysis (FCA)

- Median Household Income does not capture income variability across communities
- Cost of Living not reflected (metro-Boston area is expensive)
- Assessment does not account for future economic shifts, inflation, or demographic changes, which could affect affordability over time

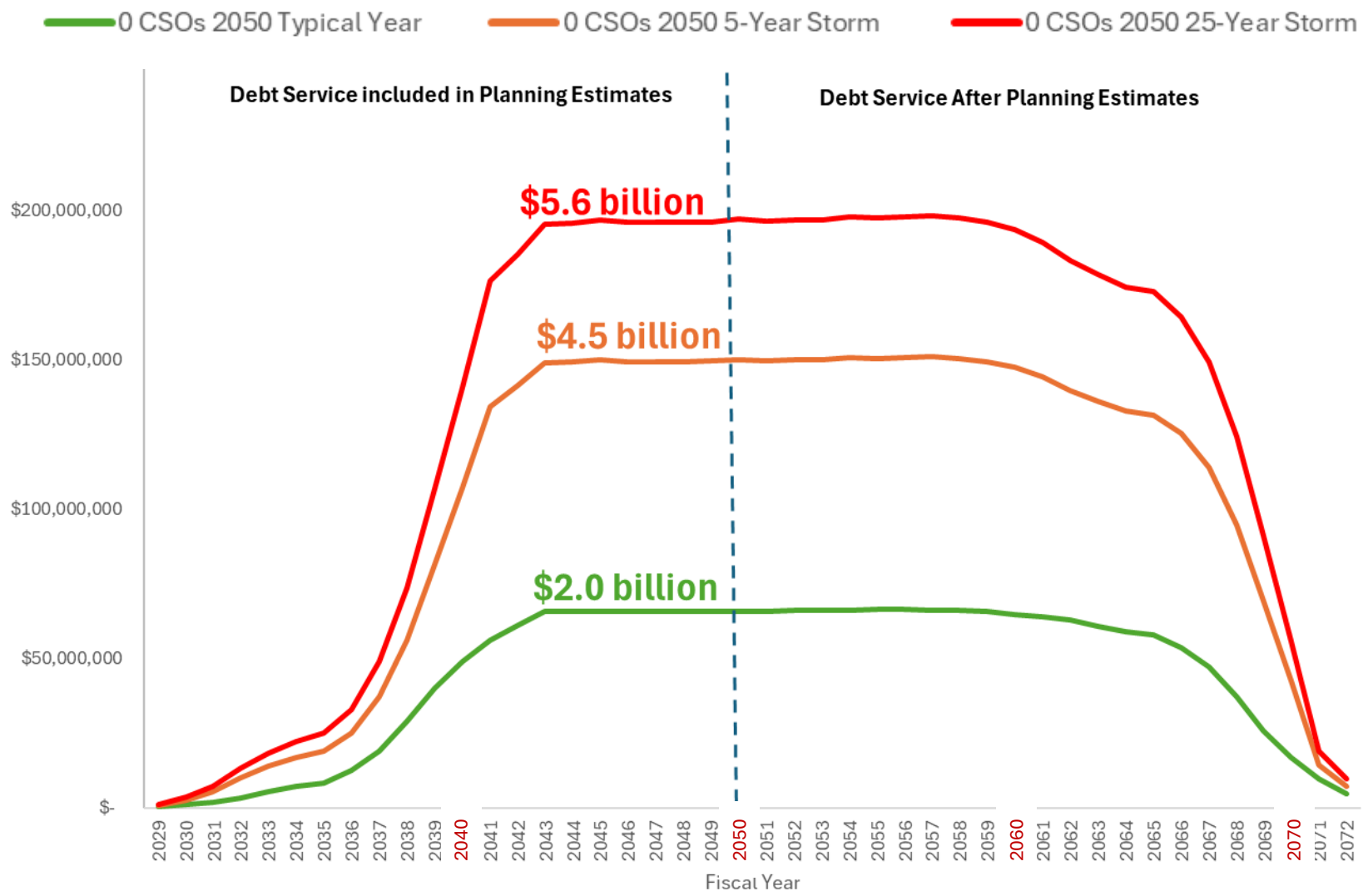
Financial Impacts – MWRA ratepayers



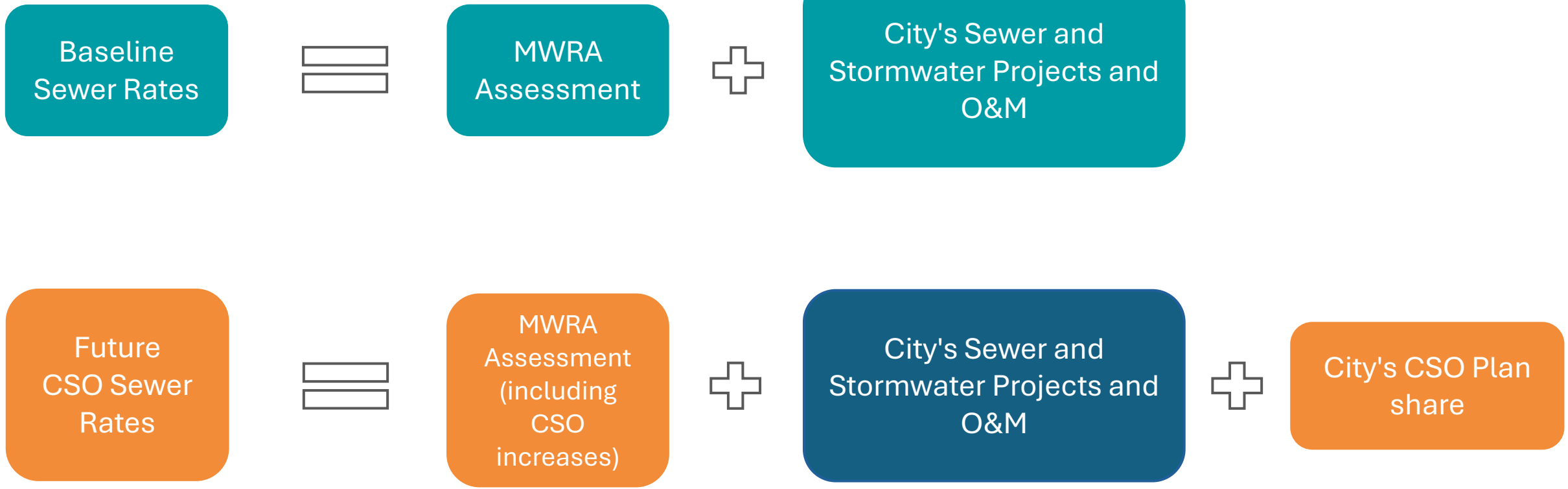
MWRA Service Area

- **Each household in the service area will pay for MWRA's share of the recommended CSO control alternative.**
- MWRA rates need to fund significant investment to maintain MWRA's wastewater system infrastructure:
- **$763.7 million** for MWRA's share of the Draft Recommended Plan is in addition to the $2.36 Billion CIP.
- MWRA Advisory Board prepared a tool for calculating community financial impacts.

MWRA Projected Debt Service by CSO Alternative



Sewer Rate Impacts for Cambridge and Somerville



Financial Impacts – City of Cambridge

Rate increases will be significant year over year.

The Draft Recommended Plan:

- Achieves the highest level of CSO control that does not go into double digit rate increases.
- Balances level of CSO control with more manageable rate increases than higher levels of CSO control.

	Baseline	Limited 2050 TY	(recommended) 2050 TY	2050 5-YR	2050 25-YR	Full Sewer Separation
FY 2027	7.50%	9.00%	9.00%	15.00%	20.00%	16.00%
FY 2028	7.50%	9.00%	9.00%	15.00%	20.00%	16.00%
FY 2029	7.50%	9.00%	9.00%	15.00%	20.00%	16.00%
FY 2030	3.00%	4.00%	4.00%	15.00%	20.00%	15.00%
FY 2031	3.00%	4.00%	4.00%	15.00%	15.00%	10.00%
FY 2032	3.00%	4.00%	4.00%	8.00%	15.00%	10.00%
FY 2033	3.00%	4.00%	3.00%	8.00%	10.00%	10.00%
FY 2034	3.00%	3.00%	3.00%	6.00%	10.00%	5.00%
FY 2035	3.00%	3.00%	3.00%	2.00%	2.00%	5.00%
FY 2036	3.00%	3.00%	3.00%	2.00%	2.00%	3.00%
FY 2037	3.00%	3.00%	3.00%	2.00%	2.00%	3.00%
FY 2038	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
FY 2039	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
FY 2040	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
FY 2041	3.00%	3.00%	3.00%	2.00%	2.00%	2.00%
FY 2042	3.00%	2.00%	3.00%	2.00%	2.00%	2.00%
FY 2043	3.00%	2.00%	3.00%	2.00%	2.00%	2.00%
FY 2044	3.00%	2.00%	3.00%	2.00%	2.00%	2.00%
FY 2045	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2046	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2047	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2048	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2049	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2050	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2051	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2052	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2053	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2054	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2055	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
FY 2056	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

Projected Cambridge Rate Increases

Financial Impacts – City of Cambridge ratepayers

City of Cambridge ratepayers will see a **larger annual sewer bill by 2056** with the recommended alternative than already planned, but not nearly what is projected for alternatives with greater CSO control.

Alternative	Current FY 2026 Annual Bill *	Projected FY 2056 Annual Bill*	Percent Change
Baseline	$1,233	$3,173	+157%
2050 TY (recommended)	**$1,233**	**$3,341**	**+171%**
2050 5-YR	$1,233	$5,308	+330%
2050 25-YR	$1,233	$7,686	+523%
Full Sewer Separation	$1,233	$5,381	+372%

* average single family residential household bill

Financial Impacts – City of Cambridge ratepayers

More Cambridge households will have high sewer bills.

Alternative	Percent of households with unaffordable* sewer bills by 2045
Baseline	23.3%
2050 TY (recommended)	**24.8%**
2050 5-YR	34.2%
2050 25-YR	46.2%
Full Sewer Separation	38.5%

* sewer bill more than 2% of the median household income. Today 17.9% of households in Cambridge fall into this category.

Financial Impacts – City of Somerville

City of Somerville **rate increases will be significant** year over year.

The Recommended Plan balances level of CSO control with more manageable rate increases than higher levels of CSO control.

	Baseline	Limited 2050 TY	(recommended) 2050 TY	2050 5-YR	2050 25-YR	Full Sewer Separation
FY 2026	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
FY 2027	15.0%	20.0%	20.0%	20.0%	20.0%	22.0%
FY 2028	15.0%	15.0%	17.0%	15.0%	20.0%	22.0%
FY 2029	14.0%	15.0%	17.0%	15.0%	20.0%	22.0%
FY 2030	12.0%	15.0%	17.0%	15.0%	20.0%	22.0%
FY 2031	7.5%	10.0%	10.0%	7.0%	16.0%	22.0%
FY 2032	3.0%	5.0%	9.0%	7.0%	7.0%	22.0%
FY 2033	3.0%	5.0%	5.0%	7.0%	7.0%	10.0%
FY 2034	3.0%	2.0%	3.0%	6.0%	7.0%	10.0%
FY 2035	2.0%	2.0%	2.0%	6.0%	3.0%	10.0%
FY 2036	2.0%	2.0%	2.0%	6.0%	3.0%	10.0%
FY 2037	2.0%	2.0%	2.0%	6.0%	3.0%	6.0%
FY 2038	2.0%	2.0%	2.0%	6.0%	3.0%	6.0%
FY 2039	2.0%	2.0%	2.0%	6.0%	3.0%	6.0%
FY 2040	2.0%	2.0%	2.0%	6.0%	3.0%	6.0%
FY 2041	2.0%	2.0%	2.0%	1.0%	1.0%	6.0%
FY 2042	2.0%	2.0%	2.0%	1.0%	1.0%	5.0%
FY 2043	2.0%	2.0%	2.0%	1.0%	1.0%	3.0%
FY 2044	2.0%	2.0%	2.0%	1.0%	1.0%	3.0%
FY 2045	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2046	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2047	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2048	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2049	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2050	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2051	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2052	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2053	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2054	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%
FY 2055	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%

Financial Impacts – City of Somerville ratepayers

City of Somerville ratepayers will see a **larger annual sewer bill by 2055** with the recommended alternative than already planned, but not nearly what is projected for alternatives with greater CSO control.

Alternative	Current FY 2026 Annual Bill	Projected FY 2055 Annual Bill	Percent Change
Baseline	$852	$2,094	+146%
2050 TY (recommended)	**$852**	**$2,600**	**+205%**
2050 5-YR	$852	$2,976	+249%
2050 25-YR	$852	$3,109	+265%
Full Sewer Separation	$852	$7,409	+770%

The Key Takeaways from the Partners

We are committed to continue **reducing** and **eliminating** CSOs and believe the recommended plan is the **right next step** towards that goal.

- **Continues Progress:** Builds on decades of regional investments and is still ahead of national policy
- **Balances Affordability:** Recommendations are both bold and mindful of ratepayer costs
- **Recognizes Constraints:** Focuses on solutions that can be constructed in our dense urban environment
- **Plans for the Future:** First CSO plan to account for future climate conditions
- **Eliminates CSOs in 2050 Typical Year:** And reduces CSOs in larger events

How to officially comment on and learn more about the plan

Where can you learn about the Draft Plan?

OPPORTUNITIES TO LEARN MORE ABOUT THE PLAN:

- Read the Draft Plan Online at: https://voice.somervillema.gov/joint-cso-planning
- Listen to tonight's presentation (live, or after the fact)
- Attend Office Hours throughout the summer, both in-person and virtual

Scan to Read the Draft Plan Online:

Where can you officially comment on the Draft Plan?

OPPORTUNITIES TO SUBMIT PUBLIC COMMENTS

Attend the Public Hearings:

Thursday, Sept. 17, 2026, 6 p.m.
Thursday, Sept. 24, 2026, 6 p.m.

Public comments will be accepted from now until September 30, 2026

Submit Comments in the Online Portal:

Comments can be submitted to the project team electronically using our online portal:

https://us.planengage.com/updatedcsocontrolplan/page/home

Submit Comments by Email:

Comments can be emailed to the project team:

UpdatedCSOControlPlan@aecom.com

Submit Comments by Mail:

Electronic comments are preferred, however written comments addressed to "Draft Updated CSO Control Plan Partners" can be mailed to the following address:

MWRA
Attn: Draft Updated CSO Control Plan
2 Griffin Way
Chelsea, MA 02150

Project Info & Contacts

For additional information on the project, see the project website:

https://voice.somervillema.gov/joint-cso-planning

Or contact

Cambridge: Lucica Hiller - lhiller@cambridgema.gov

Somerville: Gina Cortese - gcortese@somervillema.gov

MWRA: Jeremy Hall - jeremy.hall@mwra.com

Questions & Answers

Questions & Answers

- You will have up to one minute to share a question.
- Raise your hand in Zoom to join the queue.
- Once you are "promoted", you will be able to turn on your camera and microphone.
- Share your name, affiliation if relevant, and your question.
- Please be respectful.
- Please be mindful of the timer in the top bar of Zoom, which will show the countdown. Office hours are available if you an in depth question.

"Raising your hand" in Zoom

Click the “Raise Hand” button on the webinar controls toolbar

If you are calling in:

- Dial *9 to raise your hand
- Dial *6 to unmute and mute

If you change your mind, please lower your hand