

The logo for ACEC (Association of Clean Water Engineers and Scientists), consisting of a yellow arc above the letters "ACEC" in a blue serif font, with a reflection effect below.

ACEC

MWRA Update

Frederick A. Laskey
Executive Director

May 17, 2023

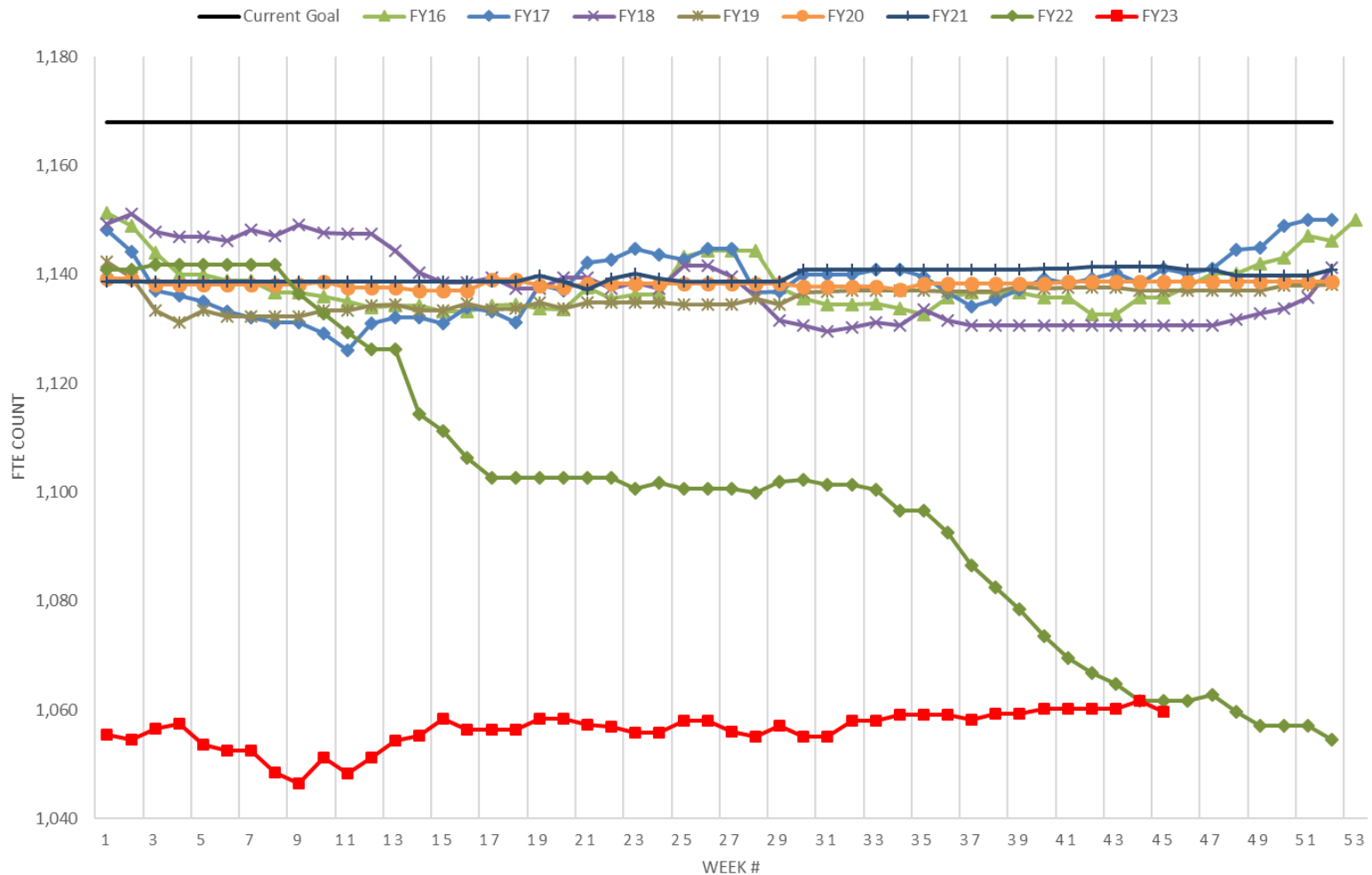


What's New



Staffing

- Like everyone else, we are still having trouble recruiting engineering staff, among other positions





PFAS in Wastewater

- MWRA beneficially reuses its biosolids as fertilizer that is sold to variety of locations in Massachusetts and other states. MWRA produces about 100 dry tons per day
- If MWRA is unable to continue to reuse its biosolids due to PFAS, we will need to find other options to dispose of them, such as land fill or incineration





PFAS in Drinking Water

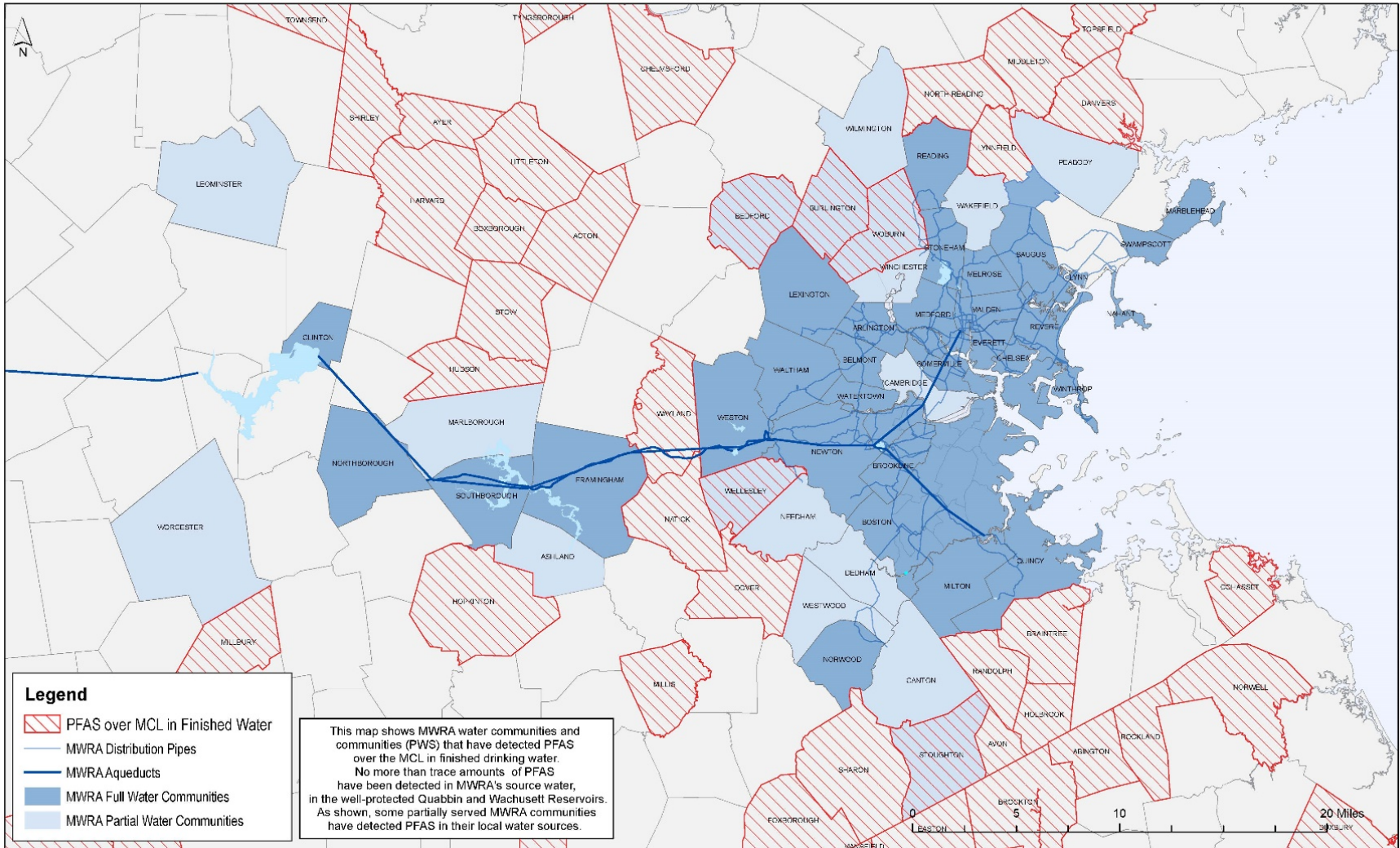
- Because MWRA's source waters are so well protected, we found no more than trace amounts in the drinking water
- MassDEP set a standard of 20 parts per trillion in 2020 for the sum of six PFAS compounds
- In March 2023, EPA released draft National Primary Drinking Water Regulations for six PFAS compounds. Based on current and historic sampling results, MWRA will easily meet these standards





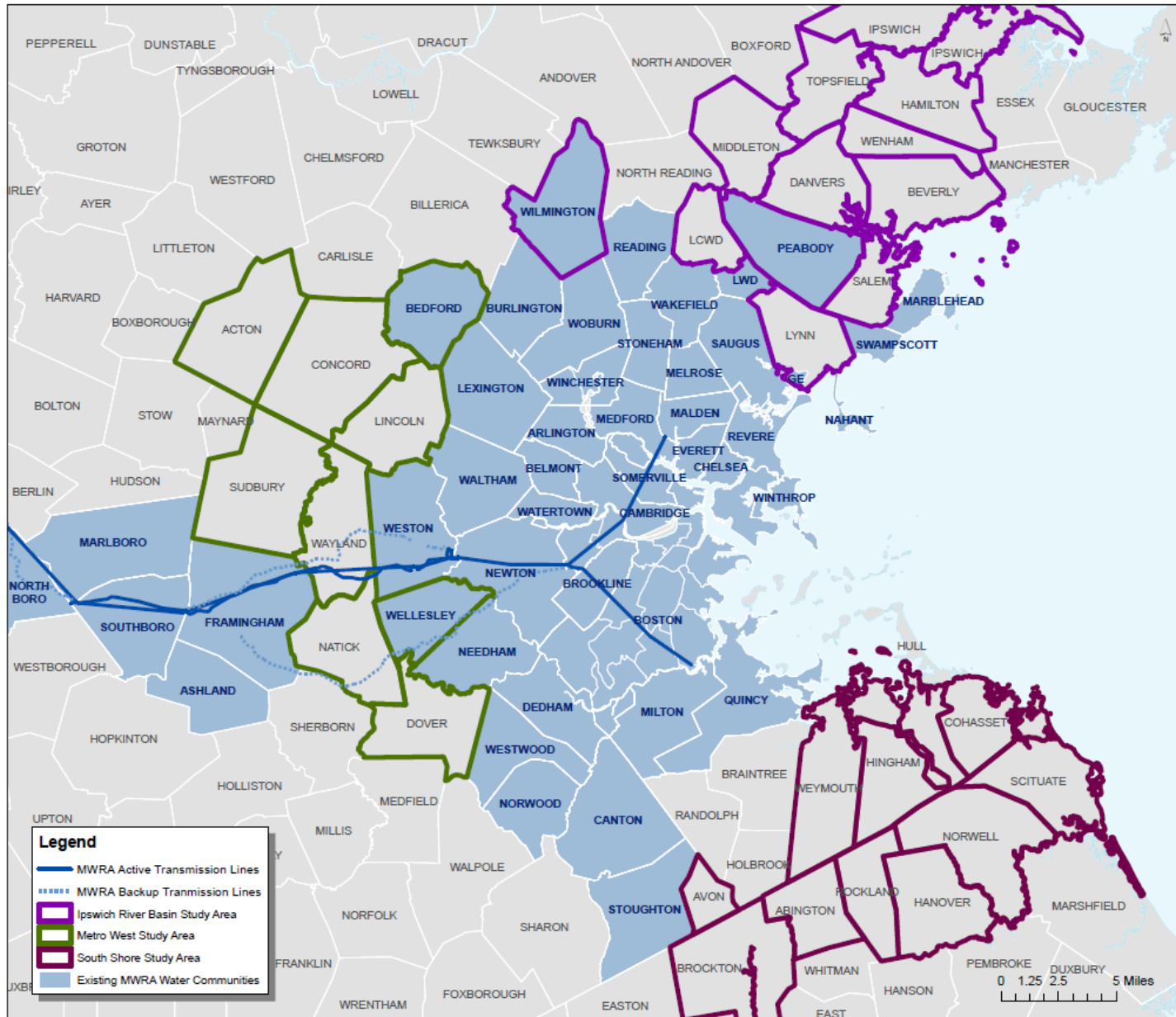
Communities With PFAS

MWRA Water System and Communities with PFAS Detections





System Expansion Study Areas





Entrance Fee Waiver

- MWRA's Advisory Board recommended a five-year waiver of the entrance fee to join the MWRA water system for communities
 - dealing water quality concerns, such as PFAS
 - looking for increased economic development opportunities
- The amount of new water sold shall not exceed 20 million gallons per day
- Discussions are ongoing with several communities about joining



CSO Long-Term Control Program - Accomplishments

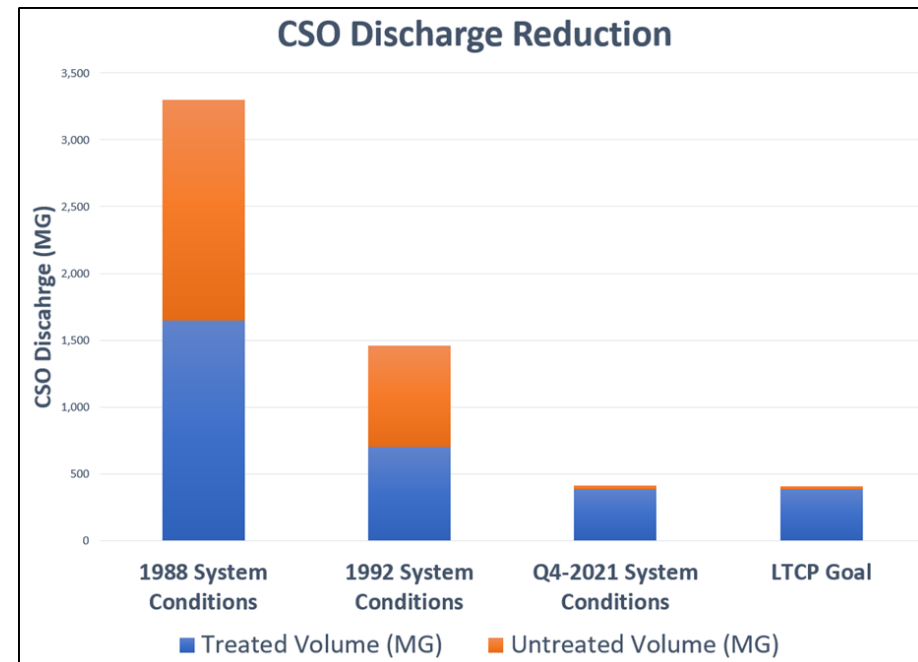
- Completion of 35 major CSO control projects
- Compliance with 183 court milestones
- \$912 million investment to date
- Reduction in number of CSO outfalls
 - 35 of 84 outfalls closed
 - CSO discharges to South Boston Beaches eliminated (25-year level of control)
- Reduction in volume from late 1980s
 - **Reduced from 3.3 billion gallons per year to 396 million gallons today (87% reduction)**
 - 93% of remaining CSO is treated
- Demonstrable water quality improvements





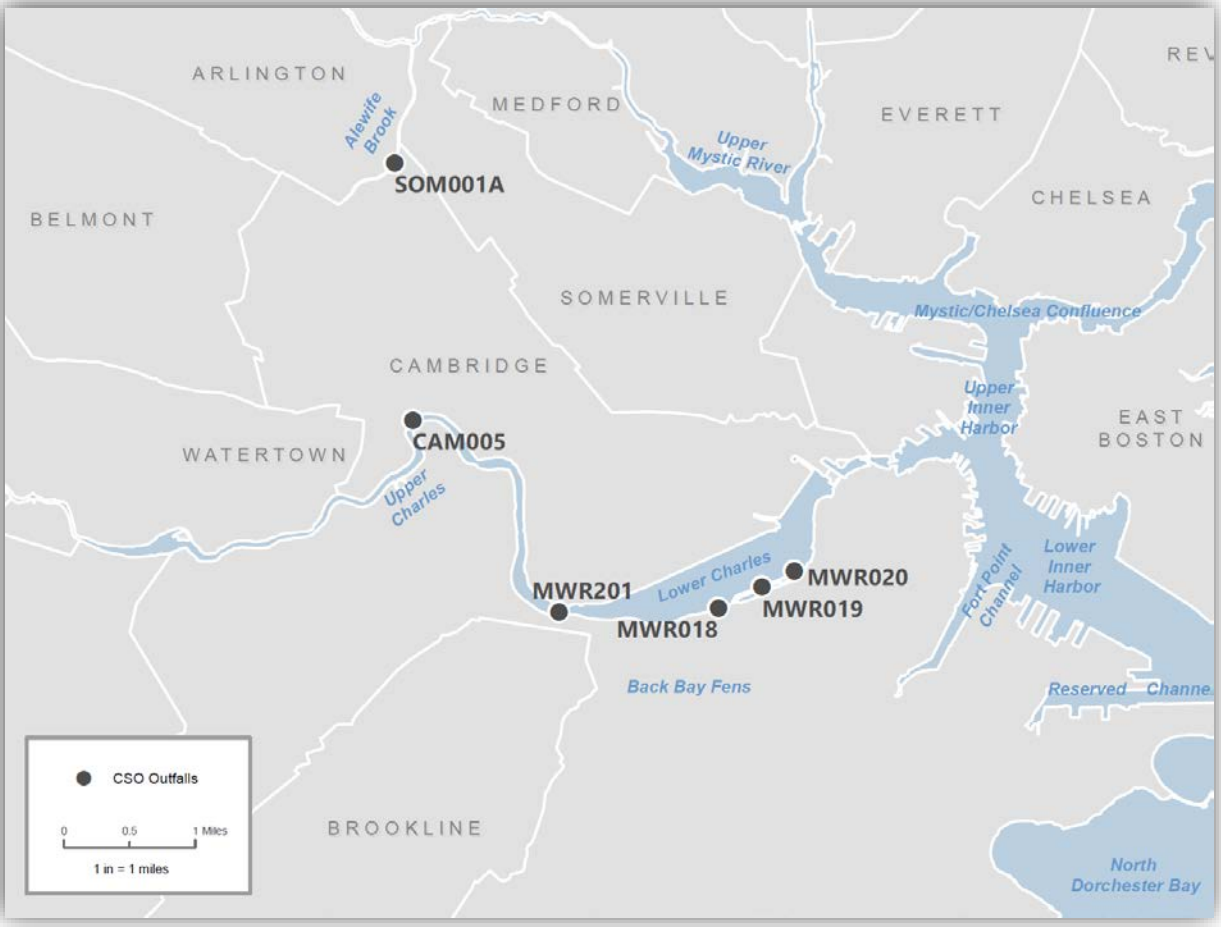
Current

- The MWRA and its CSO partners continue working to bring CSO in-line with Long-Term Control Plan goals with:
 - 2 CSO additional CSO now meeting 8 CSO with projects advancing forecast to meet by end of 2024
 - 6 CSO where investigations and cost development are progressing to help in accessing cost/benefit for further work
- CSO communities have a number of projects planned or underway that will further reduce CSOs





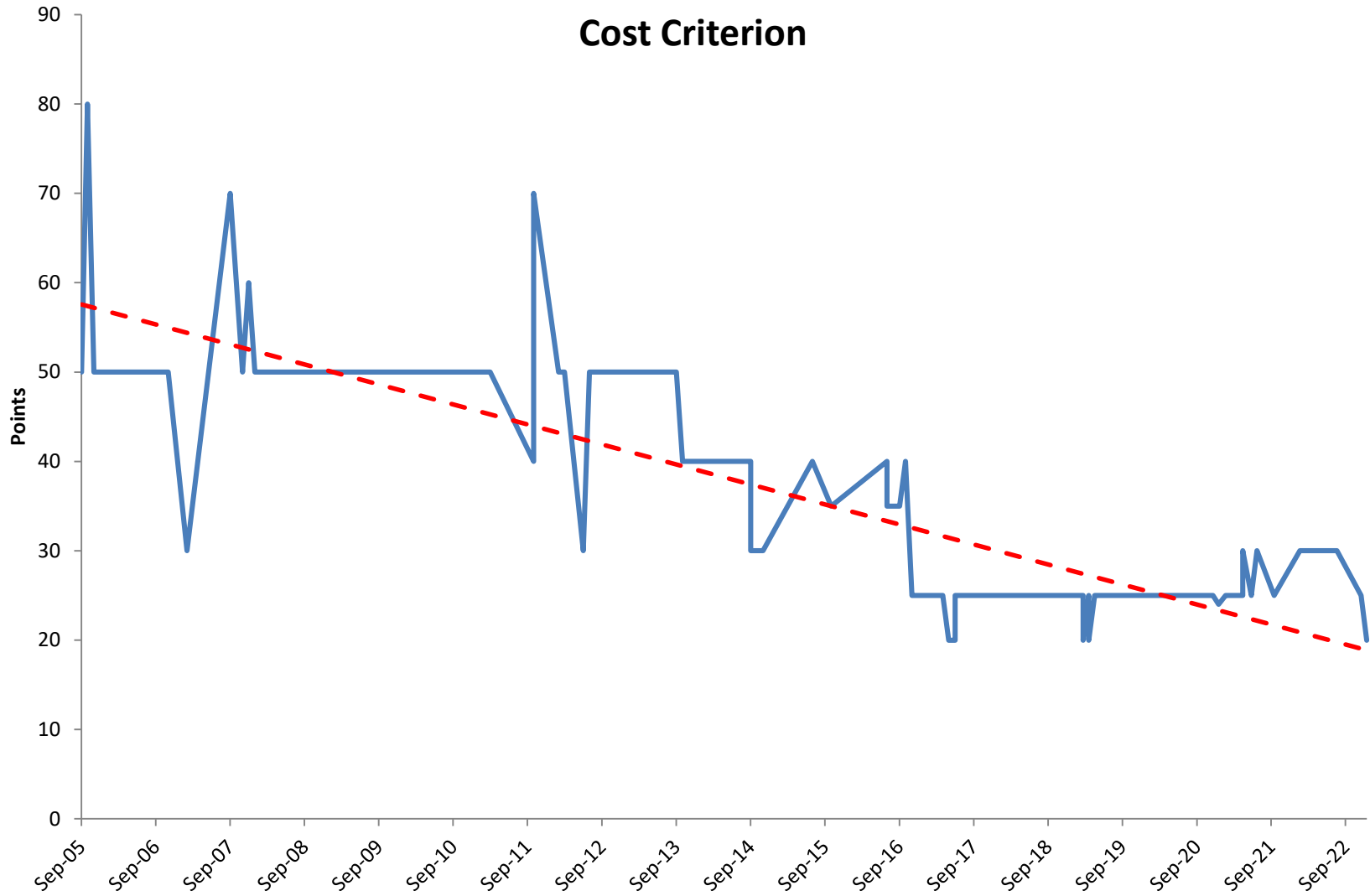
Six Challenging Outfalls



- Alewife Brook
 - SOM001A
- Upper Charles River
 - CAM005
- Lower Charles River
 - Cottage Farm
 - MWR018
 - MWR019
 - MWR020



Cost Criteria Weight Continues its Downward Trend





We're Moving!

- After 38 years in the Charlestown Navy Yard, MWRA's new headquarters is now at Deer Island
- Navy Yard staff are consolidating between Deer Island and our Chelsea facility

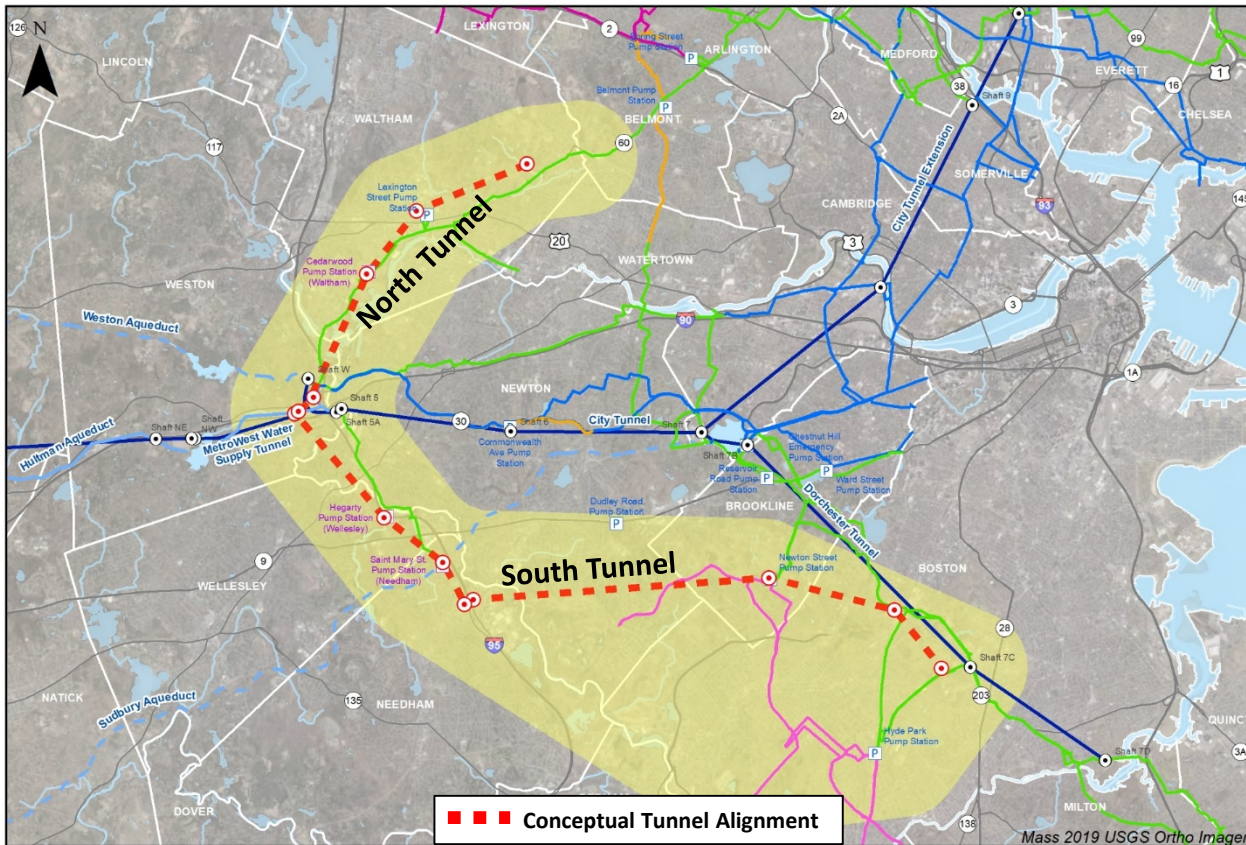




Upcoming Capital Projects



Metropolitan Water Tunnel Program



- ~14.5 miles of deep, hard rock, pressure tunnel
- Tunnels will begin in the Weston (I-90/I-95 vicinity)
- Northern Tunnel - ~4.5 miles, ends at Waltham/Belmont line
- Southern Tunnel - ~10 miles, ends in Mattapan near American Legion
- Six intermediate connections to existing water infrastructure
- Construction anticipated between 2027 and 2040
- FY24 CIP ~ \$1.8B



Tunnel Program Schedule

- Overall Tunnel Program Schedule
 - Preliminary Design will be complete in early January 2024
 - A large geotechnical investigation program has started and will run through 2025
 - Targeting Final Design to start in ~mid 2024, procurement will start in late 2023
 - Anticipate hiring a Construction Manager in ~2026
 - Targeting first tunnel construction contract to bid in 2027
 - Program completion by 2040





Deer Island Combined Heat and Power

- The current use of digester gas at Deer Island meets greater than 94% of the heat needs of the plant and over 22% of the electrical demand
- We continue to evaluate ways to improve the combined heat and power system to gain efficiencies in the use of digester gas to:
 - Reliably and economically meet energy needs
 - Maximize on-site generation
 - Reduce electricity purchases
- Expect to advertise Design/ESDC in November 2023





Deer Island Clarifier Rehab - Phase 2, Resident Engineering

Estimated cost: \$7.3 million

RFP Date: September 2023





Cottage Farm PCB Abatement

Estimated cost: \$1.8 million

RFP Date: May 2023 (bids due June 9)





Upcoming Design Projects

Project	Subphase	RFP Advertisement Date	Estimated Contract Amount (\$ in Millions)
<u>FY24 Anticipated Awards</u>			
Facility Asset Protection	Cottage Farm PCB Abatement - Design/Construction Administration	May-23	\$1.8
DI Treatment Plant Asset Protection	Digester & Storage Tank Rehab Design/Engineering Services During Construction	May-23	\$6.0
Facility Asset Protection	Belle Isle Rehab Deigns/Engineering Services During Construction/Resident Engineering Inspection	Jul-23	\$1.9
Facility Asset Protection	Steel Tanks Improvements Resident Engineering Inspection	Jul-23	\$1.1
DI Treatment Plant Asset Protection	As-Needed Design 10-1	Jul-23	\$2.4
DI Treatment Plant Asset Protection	As-Needed Design 10-2	Jul-23	\$2.4
DI Treatment Plant Asset Protection	As-Needed Design 10-3	Jul-23	\$2.4
Metro Redundancy Interim Improvements	Shaft 5 Improvements Resident Engineering Inspection	Jul-23	\$0.3
Hydraulic Relief Projects	Somerville-Marginal New Pipe Conn. Resident Engineering Inspection	Jul-23	\$0.5
Siphon Structure Rehabilitation	Siphon Structure Phase 1 Resident Engineering Inspection	Jul-23	\$1.0
Facility Asset Protection	Somerville-Marginal CSO Facility Rehab Design/Construction Administration	Jul-23	\$3.0
New Connect Mains-Shaft 7 to WASM 3	Section 75 Extension Resident Engineering Inspection CP-1	Jul-23	\$1.2
Metro Redundancy Interim Improvements	CP3 Tops of Shafts Resident Engineering Inspection	Jul-23	\$0.3
DI Treatment Plant Asset Protection	HVAC Design/Engineering Services During Construction	Aug-23	\$3.0



Upcoming Design Projects

Project	Subphase	RFP Advertisement Date	Estimated Contract Amount (\$ in Millions)
Metro Redundancy Interim Improvements	CP2 Tops of Shafts Resident Engineering Inspection	Aug-23	\$0.5
Facility Asset Protection	Hayes Pump St Rehab Resident Engineering Inspection	Sep-23	\$1.0
Facility Asset Protection	Hingham Pump Station Rehab Design	Sep-23	\$1.9
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Resident Engineering Inspection	Sep-23	\$7.3
Nor Ext High Service New Pipelines	Resident Engineering Inspection CP-2	Sep-23	\$1.5
Facility Asset Protection	Sections 4, 5, 6, 186 - Design Construction Administration/Resident Inspection	Oct-23	\$2.0
Cathodic Protection Of Distribution Mains	Cath Protection Shafts E, L, N&W Resident Engineering Inspection	Oct-23	\$1.0
NIH Redundancy & Storage	NIH Storage - Design	Oct-23	\$6.7
Waterworks Facility Asset Protection	Masonry/Structural Repairs Design/Engineering Services During Construction	Oct-23	\$1.1
Waterworks Facility Asset Protection	Steel Tank Improvements Resident Engineering Inspection Phase 2	Oct-23	\$0.8
DI Treatment Plant Asset Protection	Combined Heat Power Design/Engineering Services During Construction/Resident Engineering Inspection	Nov-23	\$14.5
Waterworks Facility Asset Protection	Beacon St Line Design/Engineering Services During Construction	Nov-23	\$4.9
DI Treatment Plant Asset Protection	Fire System Replacement - Resident Engineering Inspection	Dec-23	\$4.8
South Spine Distribution Mains	Section 22 - Design/Engineering Services During Construction	Dec-23	\$2.7