

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 4, 2022

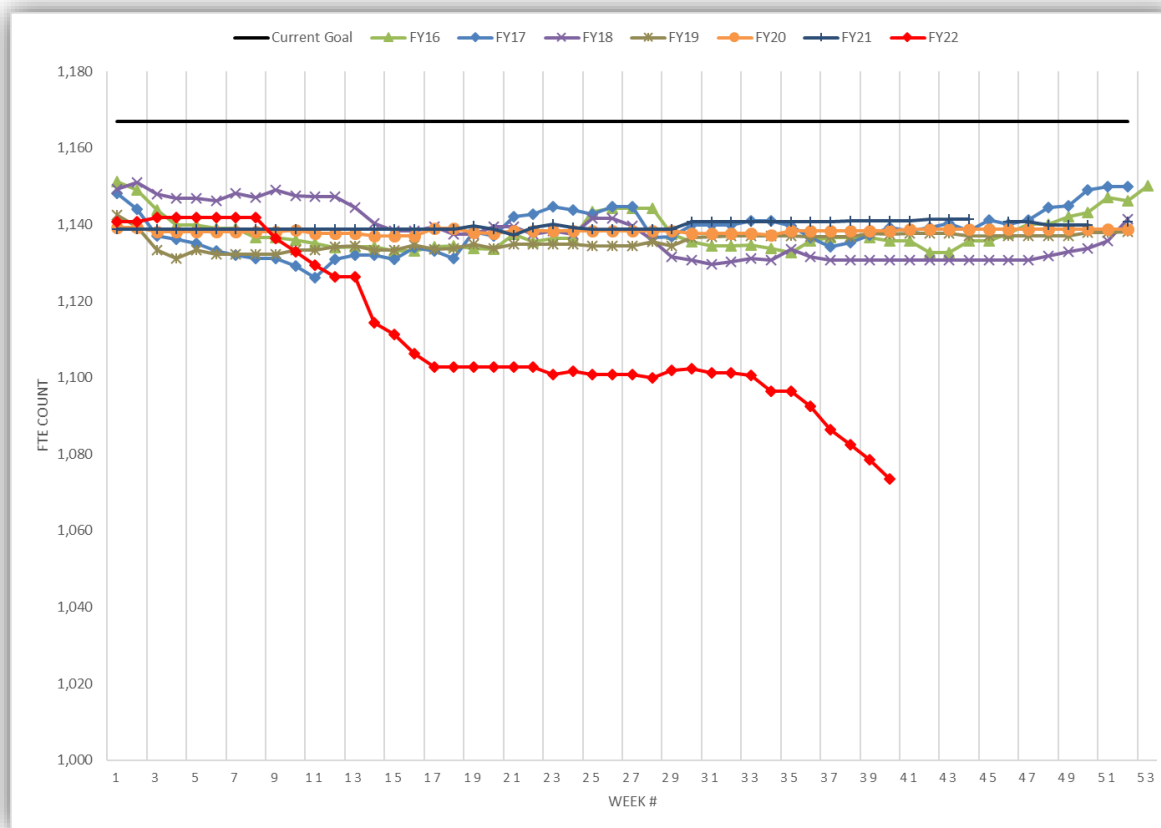


Current Challenges



Staffing

- Staffing has dropped significantly in the last year
- We're finding it difficult to attract candidates for certain positions
- We're exploring ways to attract and retain staff





PFAS in Wastewater - The Bad News

- About 40% of MWRA's fertilizer pellets are sold in Massachusetts and Maine
- Maine has now banned any land application of biosolids and Massachusetts is in the process of developing PFAS thresholds and/or limits for the land application
- 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. But those options are not easy





PFAS in Drinking Water - The Good News

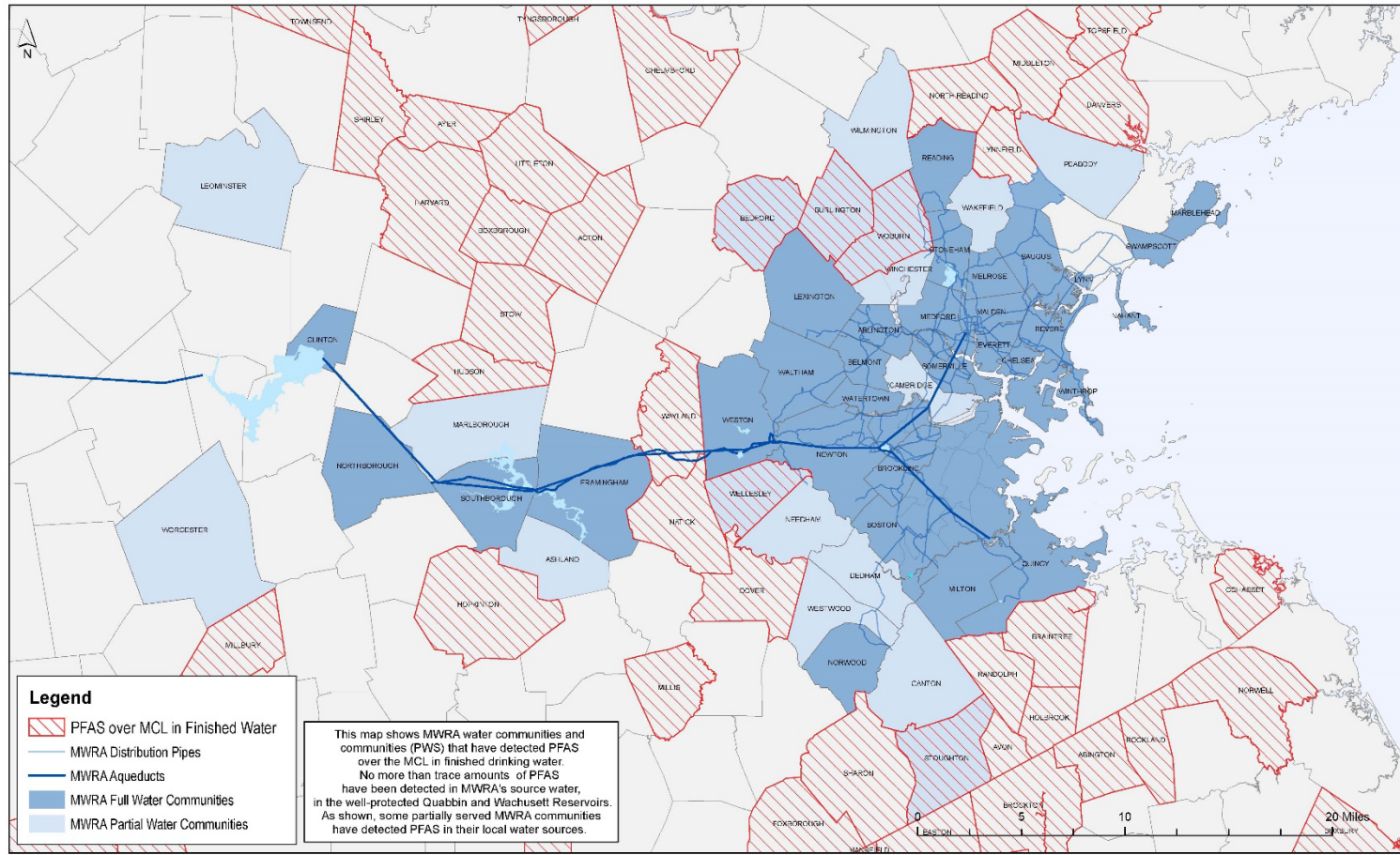
- MassDEP set a standard of 20 parts per trillion in 2020 for the sum of six PFAS compounds
- Because MWRA's source waters are so well protected, we found no more than trace amounts in the drinking water
- Several communities with PFAS in their source waters have inquired about joining the MWRA system:
 - Hopkinton
 - Lynnfield Water District
 - Sharon
 - Wayland
 - Wellesley
 - Weymouth





Communities with PFAS

MWRA Water System and Communities with PFAS Detections





Funding for Water System Expansion Studies

- MWRA is receiving \$550,000 in Federal ARPA money for two studies:
 - South System: \$300,000
 - Ipswich River Basin: \$250,000



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 420 million gallons today (87% reduction)**
 - 93% of remaining CSO is treated
- Demonstrable water quality improvements





CSO Long-Term Control Plan - Remaining Challenges

- 16 Outfalls Remaining – Unlikely to Meet Volume and/or Activation Goals
 - 6 outfalls where work in underway and completion is expected after December 2021
 - 10 outfalls where investigations are on-going; no plans are in place yet
- Example areas where work has been completed or is underway
 - Cambridge Partial Sewer Separation
 - Chelsea CHE008
 - East Boston (BOS003, BOS009, BOS014)
 - Fort Point Channel
 - Somerville Marginal (MWR205 & SOM007A/MWR205A)



Upcoming Capital Projects



Metropolitan Tunnel Redundancy - Update

- The first phase of geotechnical investigations was completed in 2021
- Second phase starting this fall:
 - RFP date: September 2022
 - Estimate cost: \$13.5 million





Metropolitan Tunnel Redundancy - Update

- Currently preparing Draft and Final Environmental Impact Reports, which will identify the proposed locations of tunnel shaft sites and tunnel alignments
- Final design and Construction Manager expected to be awarded in 2023
- Construction expected to begin in 2027



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





Deer Island Cryogenic Oxygen Plant - Design and ESDC

Estimated cost: \$6.3 million

RFP Date: July 2022





Cottage Farm Chemical Building and Diesel Engines

Estimated cost: \$1.8 million

RFP Date: July 2022





Wachusett Lower Gatehouse Pipe Replacement - Resident Engineering and Inspection

Estimated cost: \$600,000

RFP Date: August 2022





Deer Island Digester and Storage Tank Rehab - Design and ESCD

Estimated cost: \$6 million

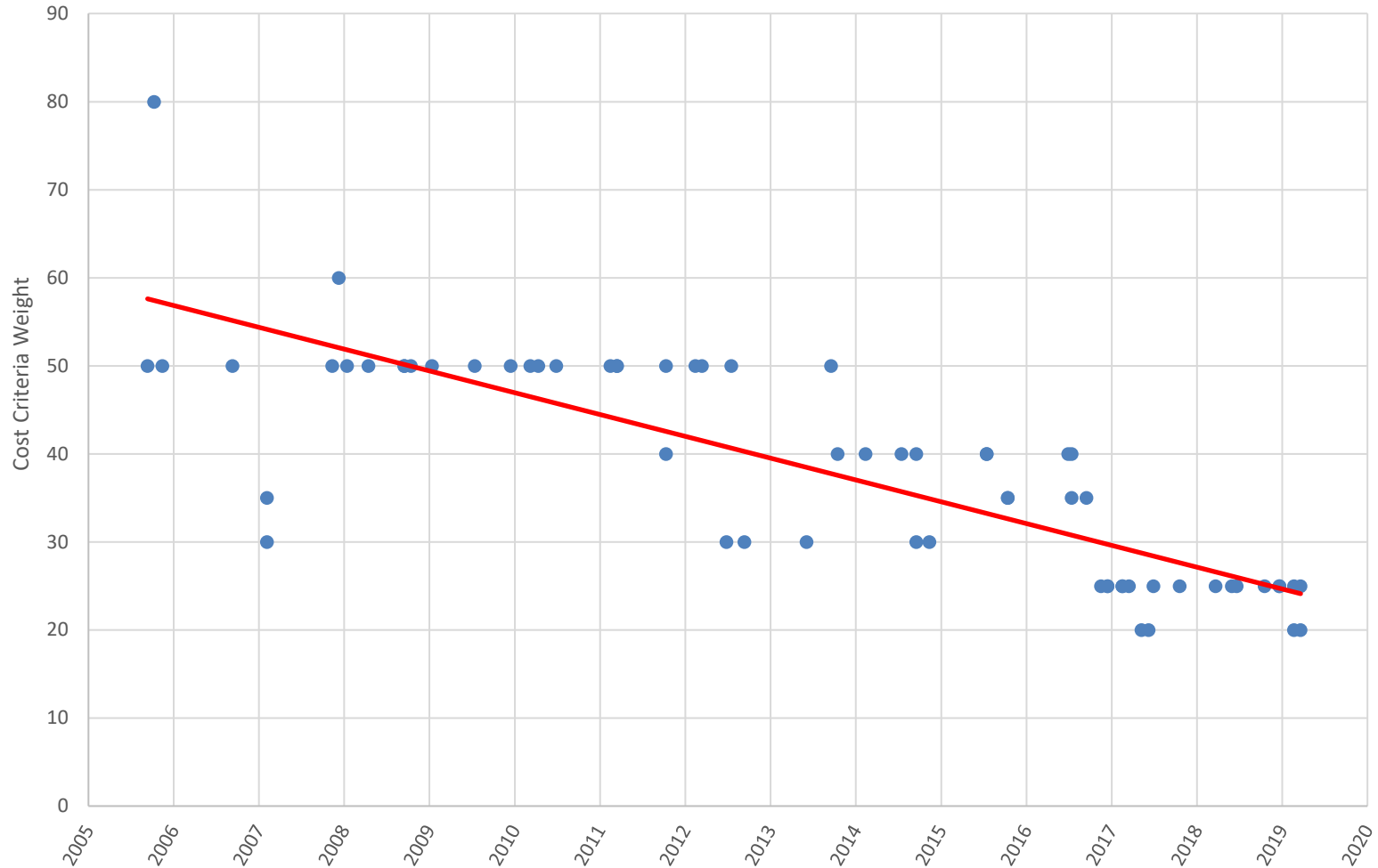
RFP Date: September 2022





Cost Criteria Weight Continues its Downward Trend

Cost Criteria Weight - 2005-Present





Upcoming Design Projects

Program / Project	Subphase	RFP Advertisement Date	Estimated Contract Amount (\$s in Millions)
Facility Asset Protection	Remote Headworks Shaft Access Improvements ESDC/REI	May-22	\$0.3
Metro Redundancy Interim Improvements	Waltham Water Pipeline Resident Engineering Inspection	May-22	\$2.0
Waterworks Facility Asset Protection	Masonry/Structural Repair Design/Engineering Services During Construction	Feb-22	\$1.6
Carroll Water Treatment Plant	Technical Assistance 13	Jun-22	\$1.2
Carroll Water Treatment Plant	Technical Assistance 14	Jun-22	\$1.2
DI Treatment Plant Asset Protection	Cryogenics Plant Equipment Replacement Design-Engineering Services During Construction-Resident Engineering Inspection	Jul-22	\$6.3
Siphon Structure Rehabilitation	Siphon Structure Phase 1 Resident Engineering Inspection	Jul-22	\$0.2
Facility Asset Protection	Cottage Farm Chemical Building & Diesel Engine Design	Jul-22	\$1.8
Facility Asset Protection	Hingham Pump Station Rehab Design	Aug-22	\$1.9
Waterworks Facility Asset Protection	Beacon St Line Design/Engineering Services During Construction	Aug-22	\$1.2



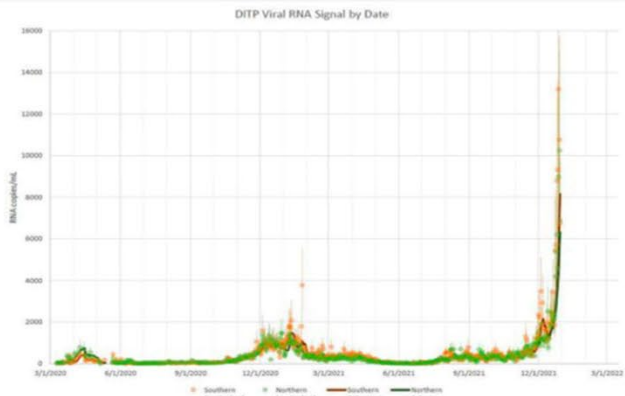
Upcoming Design Projects

Program / Project	Subphase	RFP Advertisement Date	Estimated Contract Amount (\$s in Millions)
Quabbin Transmission Syst.	Wachusett Lower Gatehouse Pipe Replacement Resident Engineering Inspection	Aug-22	\$0.6
Facility Asset Protection	Belle Isle Rehab Des/ESDC/REI	Sep-22	\$1.0
DI Treatment Plant Asset Protection	Digester & Storage Tank Rehab Design/Engineering Services During Construction	Sep-22	\$6.0
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Resident Engineering Inspection	Sep-22	\$7.3
Metro Tunnel Redundancy	Geotechnical Support Services	Sep-22	\$13.5
DI Treatment Plant Asset Protection	As-Needed Design 10-1	Oct-22	\$1.8
DI Treatment Plant Asset Protection	As-Needed Design 10-2	Oct-22	\$1.8
DI Treatment Plant Asset Protection	As-Needed Design 10-3	Oct-22	\$1.8
Metro Redundancy Interim Improvements	CP2 Tops of Shafts Resident Engineering Inspection	Oct-22	\$0.3
DI Treatment Plant Asset Protection	Combined Heat Power Design/Engineering Services During Construction/Resident Engineering Inspection	Oct-22	\$14.5
Facility Asset Protection	Intercept Renewal 7 Resident Engineering Inspection	Nov-22	\$1.3
New Connect Mains-Shaft 7 to WASM 3	Sect 24, 25, 47, 75, 59, & 60 Resident Engineering Inspection	Dec-22	\$4.3



Coronavirus detected in Boston-area waste water reaches ominous new highs

By Maria Elena Little Endara Globe Correspondent, Updated December 31, 2021, 10:00 a.m.



Test results from MWRA's pilot study to track waste water at the Deer Island treatment plant for indicators of COVID-19 infection. MASSACHUSETTS WATER RESOURCES AUTHORITY

CATCHING A WAVE

Water agency joins hunt to thwart virus