



Minutes

Nov. 4, 2022

*Remote via zoom*

**Attendees:**

**WAC Members:** Wayne Chouinard (Chair, Town of Arlington), **Kannan Vembu** (Vice Chair), **Adriana Cillo** (BWSC), **Craig Allen**, Dan Winograd, **George Atallah**, **James Guiod** (AB), **Karen Lachmayr**, **Martin Pillsbury**, **Mary Adelstein**, **Philip Ashcroft**, **Stephen Greene**, **Taber Keally** (NepRWA) (Members in attendance in **bold**)

**Guests:** Wendy Leo, Dave Duest, Sally Carroll, Katie Ronan, Denise Ellis-Hibbett, Matthew Dam (MWRA), Tom Fitzgerald (Newton), Jim Ferrara (NGrid), David White (Arlington ConComm), Joseph Nerden, Claire Golden, Nicole Galambos, Susy King (MassDEP), John Raschko, Caredwen Foley (Mass OTA), Kristin Anderson (Save the Alewife), Sarah Traore (CRWA), Ivan Cooper (civil environmental consultants), Rick Burns (consultant, MI), Phyllis Carter (MIT, Env. Mgt.), Daniel Moss (agroecology).

**Staff:** Andreae Downs (WAC)

**VOTE:** Oct. minutes approved

Remote participation (hybrid) approved

New Member recommendation to MWRA Board: Jim Ferrara, approved

EPA CERCLA listing for PFOA & PFOS (posted on the WAC [website](#))

**REPORTS:**

**MWRA Advisory Board: James Guiod:**

- Continue work with legal team on possible NPDES permit for Deer Island
- System expansion is an ongoing hot topic with the upcoming studies on potential opportunities and costs for towns on the North and South Shore as well as several communities in the MetroWest area. Dec. 5 at Boston College—will be a workshop on the issue. Join us!

- Staff continue to collect data and analysis for the annual Rate Survey. An update will be provided at the November meeting and the Survey will be available in January.

**MWRA: Wendy Leo:**

- CSOs–MWRA and Cambridge requested an extension of time for the EPA variance. Will take time–just coordinating the work is difficult, also environmental outreach and public outreach work. Update in December. (Anderson of Save the Alewife–part of the extension is to take climate change into account, greatly appreciated by her group.)
- Optimization study in Charles and Alewife – weir raising, and real-time controls to see if can improve performance. Many of the options examined could either cause flooding upstream or are more expensive and less effective than previous CSO work–most of the low-hanging and inexpensive work has been done. But communities are continuing sewer separation, which helps.
- Deer Island NPDES permit draft is now expected in January. MWRA expects to see all the communities named as co-permittees.
- Clinton NPDES permit is now final. Next step is requesting coverage–in effect January 1st or thereabouts. Changes are PFAS monitoring in industries, stricter ammonia limits (well under), reduced sampling, additional ambient monitoring.
- Sewage notification–few over the summer, a few in recent rains. Installing signs before next recreational season. Final public notification plan due January.
- Stormwater residual designation for Charles River & parking lots/large impervious surfaces: MWRA is examining whether will need additional permits under this RDA, and whether there are additional best practices they could implement.
- Projects continuing, despite supply chain issues. One getting started now is Braintree-Weymouth Pump Station–new screens, new pumps, in part due to wipes.
- Chelsea and Deer Island renovations continue and many staff at Navy Yard were told to be ready to move by February. Lease is up in May.

**EXECUTIVE DIRECTOR REPORT (details attached):**

- MWRA board notes–retention and recruitment continue to be an issue. Have 1,056 filled positions (up 6 from last quarter), but MWRA still has 100 jobs posted. People with commercial driver’s licenses in particular short supply. Higher rate of terminations (retirements, promotions, people leaving, etc.). MWRA is considering a compensation study. Further developing career ladders and going to job fairs

- Environmental Justice efforts–includes Google Translate to all pages, outreach to many of the EJ communities with sewer facilities.

**PRESENTATION: Matthew Dam, Director, Toxics Reduction & Control (TRAC) at MWRA**

**Trends and Challenges in TRAC**

May be more challenges than trends:

1. Staffing: TRAC group has 47 positions, but 11 were vacant at the end of 2021–retirements (½), internal promotions (but outside of TRAC) and hiring away. 14 positions were backfilled. 17 of our positions have new people (<1 year). TRAC does have strong internal candidates for promotions, but drains institutional knowledge. Entry-level positions are hardest to fill. Now have 3 vacant sampling associate positions. But TRAC is still covering all of their work.
2. Regulations & requirements–changing & developing. Not just CERCLA listing of PFAS, but PFAS in new permits. Clinton general permit includes PFAS testing requirements. Doing some monitoring already. Haven’t had time to review that data. This is partly short staffing, partly method changes. TRAC has sampled 82 out of 350 industrial connections.
  - A. EPA NPDES permit for the Clinton treatment plant includes new dischargers:

**PFAS challenges**

EPA Clinton NPDES permit PFAS industrial requirements

3. Beginning the first full calendar year after the effective date of the authorization to discharge under the General Permit, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

- Commercial Car Washes
- Platers/Metal Finishers
- Paper and Packaging Manufacturers
- Tanneries and Leather/Fabric/Carpet Treaters
- Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Draft Method 1633. Sampling shall be for the PFAS analytes required to be tested in Method 1633, as shown in Attachment H.

Most of these are already on TRAC’s radar. Clinton and Lancaster, which discharge into the WWTP do not have a lot of industry, or these users, so this is relatively easy for TRAC to monitor.

EPA's new required monitoring method for PFAS detects 40 compounds. Until this was unveiled, MWRA had been testing for 16 compounds. The below table is a screenshot from EPA's website:

Target Analyte Name	Abbreviation	CAS Number
<b>Perfluoroalkyl carboxylic acids</b>		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTriDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
<b>Perfluoroalkyl sulfonic acids</b>		
<b>Acid Form</b>		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecane sulfonic acid	PFDS	335-77-3
Perfluorododecane sulfonic acid	PFDoS	79780-39-5
<b>Fluorotelomer sulfonic acids</b>		
1H,1H, 2H, 2H-Perfluorobexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
<b>Perfluorooctane sulfonamides</b>		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEFOSA	4151-50-2
<b>Perfluorooctane sulfonamidoacetic acids</b>		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEFOSAA	2991-50-6
<b>Perfluorooctane sulfonamide ethanol</b>		
N-methyl perfluorooctanesulfonamide ethanol	NMeFOSE	24448-99-7
N-ethyl perfluorooctanesulfonamide ethanol	NEFOSE	1691-99-2
<b>Per- and Polyfluoroether carboxylic acids</b>		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
<b>Target Analyte Name</b>		
<b>Ether sulfonic acids</b>		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PFOSNS	756426-58-1
11-Chlorooctafluoro-3-oxadecane-1-sulfonic acid	11Cl-PFOSAS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFESA	113507-82-7
<b>Fluorotelomer carboxylic acids</b>		
3-Perfluoropropyl propanoic acid	3-3FTCA	356-02-5
2H,2H,3H,3H-Perfluorooctanoic acid	5-3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7-3FTCA	812-70-4

While this is a long list, industry sources say there are over 9,000 PFAS compounds.

DEP permit-language slightly different. Requiring SIUs (significant industrial users—who discharge to the system) to monitor for six PFAS annually. That doesn't add a lot of work, since only six industrial users in the discharge area.

3. PFAS Challenges—developing in-house capacity to test. Expensive to outsource. Looking for a new contractor for this new method now. MWRA has purchased instruments to sample for PFAS in-house—\$300/per test.
4. TRAC industrial coordinators are surveying each town to identify all the covered industries. When the Deer Island permit is final, MWRA will have to locate all the carwashes, for instance, in the sewer shed—which may be a lot.
5. The process of preparing to collect a sample for PFAS testing is extensive, as the reportable concentrations are very low (parts per billion) and PFAS are ubiquitous in our environment. For instance, in NH talked about preparing the night before taking a sludge sample—ensuring that staff involved are using PFAS-free soaps and makeup that might flake off into the sample. All our safety boots have PFAS, so need different boots. Have to wear all-cotton clothing, etc.
6. Permit requires composite sampling—which requires more contact and equipment than the current method—which is a grab sample (composite is

several samples over time, grab gets one sample at one time). MWRA and others doing such sampling will need to avoid plastics containing PFAS in the equipment.

7. Deer Island permit—when it arrives—will require additional resources for MWRA to comply with the sampling and testing requirements if they are similar to those in the Clinton permit.

#### Review of FY22:

##### Inspections and Permitting

- TRAC inspected all 184 SIUs
- TRAC issued 350 Industrial permits
- TRAC completed 1,436 inspections of industrial facilities
- 554 inspections of oil/water separators at vehicle maintenance facilities and other garages
- 119 inspections of septage haulers and septage receiving sites.

##### Monitoring

- TRAC collected all required SIU monitoring of 159 SIUs.
- TRAC staff completed 1,452 sampling events at industrial/commercial facilities
- TRAC staff completed 1,472 non-industrial sampling events to support WW Ops

##### Enforcement

- TRAC issued a total of 224 Notices of Violations to industrial and commercial facilities
- 14 higher-level enforcement actions (13 Notices of Noncompliance, and 1 Penalty Assessment Notice)

TRAC FY22 Annual Report- <https://www.mwra.com/annual/tracindustrialwastereport/iwr-2022.pdf>

Annual reports—14 years of them—requirement of the permits and are available on the MWRA [website](#).

The sewer shed has seen an overall decrease in SIUs, but number of permittees are up—because now that includes dentists and their amalgam separators (removes mercury) The 1,436 inspections are in-person, entering a facility. Oil/water separators keep grease from entering the system and clogging pipes.

TRAC does monitoring independent of what EPA requires of industries. Sampling again is in-person grab sampling.

Also, the non-industrial sampling is within the MWRA system that ensures there aren't contaminants in the sewage that might cause issues downstream.

**Q: Has the number of industries in the region changed?** Are there more or fewer industrial users?

A: They are dropping slowly—a couple of years ago, we had closer to 200 and now we're at 185-190 big industrial users. The types are changing—not as many platers and computer board manufacturers. But the number of permits is up, partly because we are regulating more industries—all the dentists is 750 permits.

**Q: What's the procedure when you have chronic industrial violators?**

We follow MWRA's enforcement response plan. We take each case by case.

**Q:** I know CLF sued MWRA to say chronic violators have never been sanctioned.

Matt can't comment.

**Q:** MWRA provides lab services for the three watershed organizations and there have been some complaints, when we don't have the data, we can't do additional projects.

When you are short staff, **are there other options for help with lab work?** We have so many labs and schools.

**Matt:** can't speak for the director of lab services, but I know they are facing similar staffing shortages. Doesn't know what strategies they are looking at. TRAC is a client of the lab services also.

**Wendy:** Environmental quality is also a client of the lab. They can send some samples out, but that does cost additional money. As a client, we would rather have our own lab be able to process our samples, because when we send it offsite, we worry about possible delays. Commercial labs are also facing the same hiring issues. One of our consulting labs in NH just went out of business. I think it's a regional, probably national, problem.

**Q: What levels of PFAS are you testing for? Is it ppb or larger?**

**A:** moving to ppt (trillion), but there is a range of non-detects because the sampling methods aren't sensitive enough to detect at that level. And wastewater is complicated because there is just so much in it.

Rick Burns (MI): labs in his state are also having difficulty detecting at the levels EPA wants. Did get some results by notifying labs ahead of time about what they want to test for.

**Q: Have industries been asked to disclose their use of PFAS in their processes or products?**

**A:** MWRA has asked. We partner with OTA and ask industries to work with OTA to find the sources or replace PFAS. Industries have reached out to us to let us know that they had been in touch with OTA

Foley: TURA currently lists 172 individual PFAS that need to be reported to the state if industries are using them at or above the EPA Toxics Release Inventory (TRI) threshold level of 100 lb/year. In addition, under the Toxics Use Reduction Act, many short-chain PFAS (more than 2 consecutive fully fluorinated carbons) not otherwise listed, were added to the TURA list effective January this year and will need to be reported by July

1, 2023. The annual reporting thresholds are in the tens of thousands of pounds, so we expect not to hear from those companies using less than that amount. But at least in last year's and this year's TURA and TRI reports we are getting some data. Many of these PFAS have been phased out of production for manufacturing use already. But starting July of next year, we should have more information on large-volume users. Preliminary 2021 TRI data has shown less use of the 172 EPA PFAS nationally than EPA expected, and none in Massachusetts, above the 100lb/year threshold. They attribute this to the de minimis exemption for PFAS, which is 1% for all PFAS except PFOA, which is 0.1%. EPA has proposed getting rid of the TRI de minimis exemptions for use of PFAS in industry because they are not seeing reporting of PFAS use above those levels, which they had expected. Also, next year, MA will be asking for reporting on 180 TRI-listed PFAS above the de minimis exemption, but if EPA removes the exemption, MA will also.

Burns—come & pay attention to MI, because we are leading the way on this PFAS issue. Setting precedent. Finding more PFAS because we are looking & identifying more of them. [Link](#)

Q: in chat—**can CSO facilities remove PFAS?**

A: No—they are not designed for PFAS. They do remove solids and floatables, which can include some PFAS.

**WAC Next meeting: January 6 is virtual**

# Director's Report October 2022

## Water Resources Commission 10/13

**Executive Director's Report Vandana Rao**-- introducing two new members--Christine Hatch (UMass Amherst) and Jason Duff; Still in a drought. Rain in Sept. and some of Oct., which is fortunately not in intense bursts, but long enough & slow enough to percolate down. WRC is participating again in "Imagine a Day without Water" Oct. 20. Theme: those who live without adequate drinking water/sanitation today.

### **Update: Hydrologic Conditions and Drought Status Erin Graham**

Temperatures--mostly normal across most of the state

Precipitation, normal to above normal--(eastern MA mostly normal); deficits at Cape & Islands, northeast)

Streamflow--improved in Sept. Some gauges in Northeaster (Ipswich, Parker), and on the Cape are still low.

Groundwater: Mixed still.

Crop moisture index--good, just Cape & Islands low.

All regions improved--except Cape & northeastern zone (Parker, Ipswich). Level 1 most areas/

Outlook: October--probably normal temperatures, no strong signal for precipitation. Drought likely to persist across most of the state, some improvement possible on the Cape.

### **Discussion: Draft WRC Annual Report, FY2022 Anne Carroll**

Last year very busy--cutting edge research on drought

Tracking hydrologic conditions & reporting on drought

Drought dashboard--new

Flood hazard management program--bringing back Joy Duperault

Interbasin Transfer--admitted Auburn

New water conservation standards and oversight of state water programs




**Presentation: Water Management Act Regulations (310**

**CMR 36.00) Revisions 2022--Kathy Baskin, MassDEP**

Fairly narrow changes, but meant to address drought. So when Secretary announces a drought, non-essential water use would automatically be restricted.

Duan LeVangie: changes: multi-year drought storage, non-essential outdoor water. New conditions for registered water users, effective dates, orders, violations and penalties.



## Registration Renewal Proposal

- During drought- condition nonessential water use
  - Align registrations with Drought Management Plan using drought status

State Drought Plan	Nonessential Outdoor Water-Use Restrictions
Level 1-Mild	1 day per week watering, before 9 a.m. or after 5 p.m.
Level 2-Significant	Hand-held hoses or watering cans only, before 9 a.m. or after 5 p.m.
Level 3-Critical	Ban on all nonessential outdoor water use
Level 4- Emergency	Ban on all nonessential outdoor water use

4

For those with reservoirs--require at least 3x “registered volume”

Public athletic fields and parks are exempted (although they should be watering at night, not during mid-day) because of the high public use/good, and the cost (including excess water) of replacing fields that get too much wear when too dry.

Discussion on whether handicaps urban systems like Fall River. Pushback from Rao and others--nearby cities managed, and only non-essential outdoor watering is restricted.

# 10/17 Potential Impacts of PFAS CERCLA Designations on Clean Water Utilities

Basics of CERCLA

Reasons to comment, if only briefly

NACWA's comments

Tool for NACWA members to see if your utility will trigger CERCLA

Devon Goodrich (NYC Law Dept): CERCLA 101--the Comprehensive Environmental Response, Compensation and Liability Act.

This is designed to facilitate cleanups of hazmat. Commonly called "superfund" law, and can be used to designate such sites & recover costs

But also allows private entities to duke it out with other private entities

Superfund was intended to raise a lot of money to clean up priority sites, but was a limited source of funds. So usually, EPA doesn't do its own cleanups, but requires others to do them.

What is the procedure?

Takes 5-10 years to evaluate the potential for a hazmat threat. There is an expedited version for something that is imminent.

--tabletop, historic data, followed by listing (worst haz waste sites) --this starts the formal process to study the site & select a remedy--look at exposures of humans, food chain--main one is drinking water. Also, soils, vapor intrusion, air migration.

Once scored, then formal listing--with public comment.

That kicks off the remedial process--EPA compiles documentation & sampling data. Then sets up "preliminary remediation goals" (PRG) sets a background level of contamination. If a PRG is too close to background levels, it becomes very costly to achieve success.

Convenes a CAG (community advisory group)

EPA then looks at a feasibility study and publishes it (RI/FS) for public comment. These are supposed to be cost effective.

EPA then proposes a plan --may include several phases, includes public comment & public meetings. Focus on source control and removing haz substances.

Record of Decision (ROD)--the report which includes a remedy for the site and explains which cleanup alternatives will be used. It is the basis for all subsequent orders to perform remedial work.

EPA can do the remedy, but usually issues orders to perform or fund remedial work. Not doing the required work subjects the polluter to treble damages.

Afterward, EPA monitoring and review and will determine if recontamination is happening. If not, further action may be ordered.

Who is liable: current owners or operators, past o/o, generators or transporters of haz. Substances. WWTP can be considered a generator or transporter of PFAS.

What is a "release"? Huge number of ways, active and passive, but if haz substances are entering the environment, it's likely.

What is a haz substance--can be designated under CWA, solid waste disposal act, Clean Air Act, or Toxic Substances Control Act.

Strict, and joint & several.

All "natural resource damages" that can be triggered.

Even if EPA takes no action against WWTP, CERCLA listing allows others to do so.

Metro Water Recovery--Emily Jackson

EPA needs WWTP operators to submit comments. EPA may not realize the impact on WWTPs

Nov. 7, 2022 deadline for WWTP stories--likely to be extended, but NACWA is looking for utility stories to populate their comments.

9 Broad topics:

Do not need to be a CERCLA expert to submit comments.

Topics:

EPA erroneously says this won't impact taxpayers

WE are the public--WWTP are public entities. Ratepayers are taxpayers

Polluter pays--oversimplification for the utility sector

Utilities are critical infrastructure--vital sanitation services for the health of communities. Role is to treat sewage, not man-made chemicals added later.

POTWs have been planning for national and local water quality improvements--prioritized already. What priorities cannot get across the finish line if you have to pivot to PFAS. How does this impact national or local progress on these priorities?

CERCLA--2 types

--releases--reportable quantification, not intended for passive receivers. No national PFAS source elimination. How can POTWs reduce the amount of PFAS entering wastewater? --how often we sample, where finding PFAS

--historic contamination

Pretreatment--no silver bullet for source elimination. Difficult when sources are commercial or domestic. PPQ is unmeasurable and basically 0

EPA does not "intend" to target WWTP. But liability under CERCLA still there--named by EPA. Need a new, clear statutory exemption for WW sector.

Biosolids: cannot be eliminated or avoided.

Your management practice--why that's best for the community--GHG, landfill capacity

No technical terminus--so far, no current technology to eliminate and destroy PFAS at scale. Currently can concentrate or move it. Policy is ahead of technology. No place to put PFAS until it can be destroyed.

NACWA's comments:

## Major Concern: Failure to Consider Implications of Proposed Designations on Clean Water Utilities

- Ways clean water utilities can become CERCLA PRPs:
  - Land ownership
  - Stormwater/wastewater & biosolids management
- What do utilities do about biosolids?
  - Land application, landfilling, and incineration can all lead to CERCLA liability, but utilities need all three options
- What does this mean in terms of reporting requirements?
  - Monitoring to determine RQ absent validated test method and sufficient lab capacity?
  - SSOs and CSOs?
- What do existing statutory exclusions cover?
  - *Normal application of fertilizer* – court rulings excluding fertilizers containing hazardous substances
  - *Federally permitted releases* – likely need actual NPDES permit limits or at a minimum express disclosure during permit application process to qualify



## Major Concern: Failure to consider costs to local communities...or anyone else

- Sources of cleanup liability:
  - NPL listings
  - Reopening of existing NPL sites to add PFOA/PFOS remediation
  - Voluntary remediation activities
  - Automatic state law triggers
- EPA's position: It is "statutorily precluded" from considering such potential cleanup costs
  - But isn't CERCLA literally all about cleanup costs?
  - And isn't designating most of the country a potential superfund site and every homeowner doing a load of laundry a PRP relevant to an "arbitrary and capricious" analysis?
  - And didn't the Supreme Court rule that "necessary" language like that in CERCLA 102(a) actually *mandates* cost considerations?



The National Association of Clean Water Agencies

NACWA 

## Major Concern: No end game

- No comprehensive PFAS source control - even PFOA and PFOS phase-out voluntary
- Unprecedented ubiquity – PFAS substances are EVERYWHERE
- No known end game
  - How to remediate?
  - What levels of remediation protective of human health and the environment?
  - What do utilities do with biosolids?
  - How will agency address domestic and commercial sources?
  - CERCLA normally comes last, not first



The National Association of Clean Water Agencies

NACWA 

NACWA's Asks:

Source control: turn off the tap before cleanup

Narrowly tailor PFAS exemption for clean water utilities

Invest in R&D for PFAS control and destruction

Coordination among EPA offices

Regulatory clarifications on the scope for “normal application of fertilizer” and “federally permitted release”

NACWA will have a tool for utilities to enter their own data.

PFAS can also be transported via stormwater--either to the facility or the water.

EPA could regulate PFAS as a class under CERCLA.

## 10/19 MWRA Board

**REPORT OF THE CHAIR**--drought is now milder. Reminder that leaving a drought often takes longer than entering one. MWRA supply remains steady. Celebration of the 50th anniversary of the Clean Water Act and success in the Boston Harbor Cleanup. MWRA water supply entrance fee waiver acclaimed by Baker Administration.

**REPORT OF THE EXECUTIVE DIRECTOR**--EPA chose Boston Harbor as their example of a successful Clean Water Act project. Congratulates COVID monitoring team. Save Harbor/Save Bay recognized the team & Steve Rhode for that work. EPA audit of MWRA lead & copper procedures--clean bill of health. Winthrop is first community to exceed limits in new procedure. Will be notifying all residents of lead risk and lay out schedule to replace 100 lead lines/year. Assured residents that MWRA water is the best in the country. DEIR submitted for the Metro Tunnel water supply project. Major milestone--1600-page document.

## EXECUTIVE SESSION

### i. Approval of September 14, 2022 Executive Session Minutes

#### A. Litigation

##### 1. Conservation Law Foundation, Inc. v. Massachusetts Water Resources Authority, USDC, No. 1:22-CV-10626: Update (verbal)

## WATER POLICY & OVERSIGHT

### A. Contract Amendments/Change Orders

#### 1. Section 4 Walnut St. Bridge Pipe Restraint Replacement: Change Order

--bridges Lowell Line tracks, near Somerville HS. Bridge replaced in 1939, 1897 pipe. Couldn't inspect the bridge until got access from MBTA and Keolis.

## PERSONNEL & COMPENSATION

### A. Information

#### 1. Recruitment and Retention Efforts--Michelle Gillen and Andrea Murphy:

1,056 FTEs, up 6, and feeling more optimistic. Seems positions hard to fill. Terminations up year over year. Also hoping can do a compensation study, but only one bid. Continue to develop career ladders. Networking and mentoring fairs.

### B. Approvals

1. PCR Amendments – October 2022--2 in fleet services, Chemist 1 in Lab Services is new for lead & copper rules; increasing pay for OMC laborers in order to recruit & retain. Have 14 vacancies there--need commercial driver's licenses Class B and are all over the state. Plan to hire & train for the needed license.

2. Appointment of Manager, Metro Maintenance--William Carter, currently at DI.

3. Appointment of Director, Human Resources--Wendy Chu. Will replace Andrea Murphy. Internal promotion, currently labor lawyer.

## ADMINISTRATION, FINANCE & AUDIT

### A. Information

1. Update on Environmental Justice Efforts--requirement. Many of MWRA service areas are EJ communities. Have a [web page](#) as well as a pipeline page (internal). Added Google Translate to the MWRA website. Translating individual documents,



but starting with fact sheets and future projects. Staff summaries are already including a paragraph on impacts and benefits for EJ communities.

## 2. Delegated Authority Report – September 2022--

## 3. FY22 Year-End Capital Improvement Program Spending Report--

Substantial completion:

- Chelsea Creek Headworks Upgrades - \$82.5 million
- Deer Island Treatment Plant Gravity Thickener Rehab - \$20.2 million
- Deer Island Chemical Tank and Digester Pipe Construction - \$8.8 million
- Wastewater Metering Equipment Replacement - \$3.9 million
- Dorchester Interceptor Sewer Construction - 4.2 million
- Tops of Shafts 6, 8, 9A Rehab - 2.2 million
- Deer Island Combined Heat & Power Alternatives Study - \$1.1 million
- Harbor Outfall Monitoring and Loading System Upgrade - \$0.2 million

Significant progress:

- Nut Island Headworks Odor Control and HVAC Improvements Construction - 73% complete
- Tunnel Redundancy Preliminary Design & MEPA Review – 46%

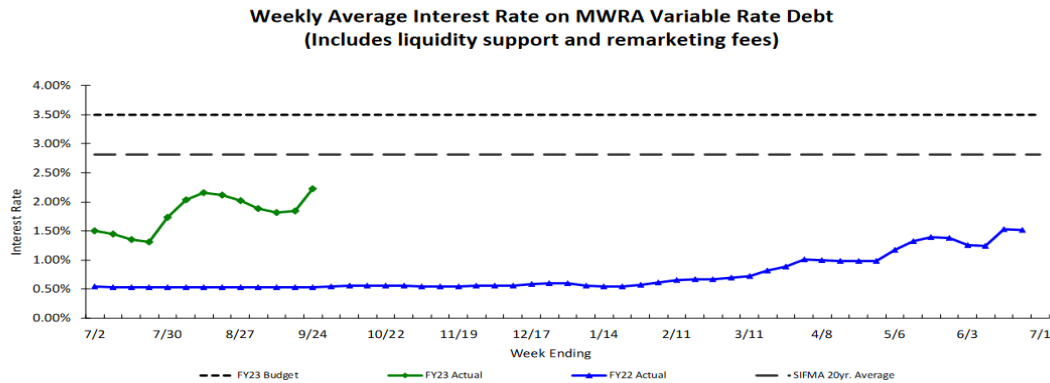
~33% under budget for FY22, mostly due to delays. Containing costs by pre-buying. Vitale: having difficulty at BWSC with supply chain issues. MWRA anticipated similar issues, and pre-purchase materials to avoid delays.

## 4. FY22 Year-End Financial Update and Summary--Operating budget

Chemical costs somewhat insulated because of contracts. This fiscal year may see differences. Wages & salaries under by ~9%. Debt service variance in positive territory--used for another defeasance. Revenue variance \$1.5m, mostly interest income.

5. FY2023 Financial Update and Summary as of September 2022-- budget variance patterns continue in large part. Exceptions: wages & salaries still under budget. Variable rate bonds--budget with assumed interest rate expense of 3.5%.

The graph below reflects the FY23 actual variable rate trend by week against the FY23 Budget.



Meanwhile, interest income is also going up.

Inflation: MWRA assumed 15% increase in costs, but sodium hypochlorite came in at 180%. Electricity--\$23m/year. Got bids for 7% of load: had been paying \$98 MW/hr., now \$189. But overall, the budget is doing fine--in part because nearly 60% of it is the debt service.

## B. Approvals

1. Amendment to the Eighty-Fifth Supplemental Resolution-- borrowing the max (\$11m) from Clean Water Trust in order to lower interest costs.

## C. Contract Amendments/Change Orders

1. Dental Insurance: Dental Service of Massachusetts, Inc. d/b/a Delta--no increase in the rates.

2. Senior Web Developer Consultant: Computer & Engineering Services, Inc. -- Vitale--prices are competitive for

3. Application Developer Consultant: Lancesoft,

## WASTEWATER POLICY & OVERSIGHT

### A. Information

#### 1. 2021 Outfall Monitoring Overview--Betsy Reilley:

Annual report--30th year of monitoring. In general, no degradation of the Bay as a result of moving the outfall.

--Effluent quality excellent (15 years of Platinum Award)

--Water quality remains good. Flounder liver disease remains low.

--Contingency Plan exceedances not affected by outfall (*Alexandrium*, oxygen)

MWRA is participating in several studies of contaminants of emerging concern--no final results. PFAS monitoring is required now in NPDES permits for influent, effluent and biosolids. Video showing healthy sea anemones, fish, lots of biodiversity.

#### 2. MWRA Industrial Waste Report #38: Industrial Pretreatment Program Annual Report to EPA for FY22--Matt Dam: Annual report to EPA, required.

2300 sewer users, but focus on significant industrial users. Many vacancies this year in TRAC. But did inspect all 184 SIUs and all monitoring.

### B. Approvals

#### 1. Financial Assistance Agreement/Memorandum of Understanding with BWSC for Further Improvements to Four BWSC CSOs

Brian Kubaska--reminds Board of the \$912m that MWRA has already spent, and 35 projects completed. Documented accomplishments. Reduced overflows from 3.2 billion gallons/year to 414 million 93% of remaining CSO is treated.

MWRA is committed to improve the 16 CSO outlets that are still not meeting the goals. 6 --Chelsea, East Boston and Somerville in construction or all designed. Six remaining challenging CSOs. This MOU will address 4 outlets--Charlestown's BOS017--will adjust an interceptor. Fort Point Channel--three of six remaining outlets do not meet goals. BOS062 and 65--raising weir, adjusting pipes. BOS070--Dorchester brook--BWSC is implementing sewer separation in South Boston.

Laskey--great relationship between MWRA and CSO communities. Serving EJ communities. Good investment financially for MWRA.

Walsh--what's your confidence level that MWRA will meet LTCP goals? (laughter--pretty high)

## 1020 NACWA Webinar on PFAS costs for WWTP

Biosolids costs in the Northeast increased already by 37%. NACWA is expanding its study of PFAS costs both to update the numbers and expand the geography covered. Hope for a comprehensive estimate of PFAS costs and understand the social/environmental implications of PFAS regulation of WWTPs.

Technology Review:

All have drawbacks or other considerations--

## Technology Review

Technology	Pretreatment	Operating Temperature & Pressure	PFAS Reductions*
Incineration	Dewatering	1,500°F to 1,600°F	Preliminary research indicated PFAS not found in ash. PFAS release into air needs to be understood.
Pyrolysis	Dewatering & drying	900°F to 1,600°F	Preliminary research indicated PFAS in biochar. Other byproducts may contain PFAS.
Gasification	Dewatering & drying	1,200°F to 1,500°F	Preliminary research indicated PFAS destruction in biochar. Other byproducts may contain PFAS.
**Thermal Oxidation	Dewatering	1,500°F to 1,600°F	Preliminary research indicated PFAS destruction in sludge. Other byproducts may contain PFAS.
SCWO	Dewatering	> 705 °F (374 °C) > > 221 bar	Preliminary research indicated PFAS destruction in biochar.
HTL	Dewatering	> 482-842°F (260–450 °C) > 70–250 bar	PFAS destruction not well understood. Conversion of PFAA precursors to stable PFAAs and the desorption of PFAS from sludge is observed

\* PFAS reduction percentages and the PFAS compounds reduced is not consistently defined in the literature, and hence needs to be better understood

\*\* Similar to incinerator, but with auxiliary fuel fired burner.

Some WWTP have added technologies to address PFAS, but none of these were done primarily to address PFAS, but as an add-on

Some of these are pilots. Seeing a growing number of emerging technologies to address PFAS.



## Systems & Projects in the United States

PROJECT OVERVIEW

Facility and Location	Technology Provider	Type of Technology
Silicon Valley Clean Water, CA	Bioforcetech	Biodry and Pyrolysis
Rialto, CA	Anaergia	Thermal Dry and Pyrolysis
Orange County Sanitation District	374 Water	Super critical water oxidation
Morrisville, PA	Ecoremedy LLC	Thermal Dry and Gasification
Schenectady, NY	Biowaste Pyrolysis Solutions	Dual Thermal Dry and Pyrolysis
Linden Roselle Sewage Authority, NJ	Aries Clean Energy	Thermal Dry and Gasification
Fairbanks, AK	Plasma Arc	High temperature incineration
Buffalo, MN	Veolia	Thermal Dry and Thermal Oxidation
Warren, MI	Veolia	Thermal Dry and Thermal Oxidation
City of Edmonds, WA	Ecoremedy LLC	Fluid Lift Gasification

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- Thermal processing projects in the US are targeting energy recovery and biosolids residual minimization, which may aid with PFAS destruction
- Full-scale implementation should include risk management
- Pilot testing can help mitigate risks

Goal of the study is to capture cost drivers, and then be able to advocate nationally for better regulation.