



Safe Water Advisory Group Meeting

Conference Room A at City Hall, 1 Junkins Avenue
Wednesday, June 17, 2026

For the Zoom recording: <https://youtu.be/QcimtXTbHHE>

Draft Minutes

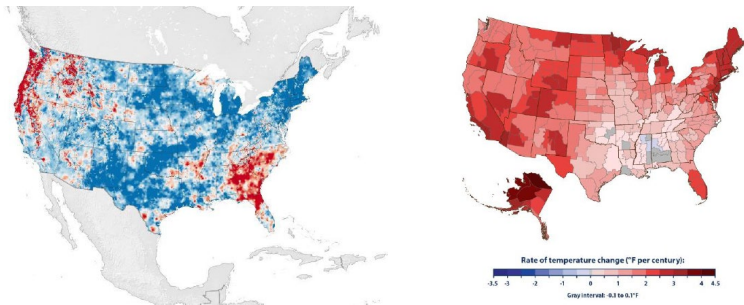
Attending:

Chair Andrea Amico, Councilor Michelle Flynn, Councilor Rich Blalock, Dan Finan, Katrie Hillman, Shan Zuidema. Staff: Al Pratt, Mason Caceres. Absent: Laurel Schaider, Rep. David Meuse, State Sen Rebecca Perkins Kwoka, Steve Adler, Rich DiPentima, Chief Bill McQuillen, Kim McNamara. Guest: Anne Mallenfant, CDM Smith Senior Project Manager.

1. **Welcome, Introduction & Approval of March 11 minutes – Andrea Amico, SWAG co-chair**

On a motion by Councilor Flynn, seconded by Hillman, the minutes were approved unanimously. Membership update - Andrea Amico greeted new member Shan Zuidema who is a hydrology researcher working with UNH on how contaminants are affecting wildlife, water quality, etc. Formerly did intensive sampling with the US Geological Survey on groundwater in Waterbury CT. Interested in the topic, focusing ever more closely on water quality issues.

2. **Drinking Water Quality and Climate Variability** - Anne Malenfant, PE, Senior Project Manager - CDM Smith presented the information she provided to the spring NEWWA Water Quality Symposium on the intersection of climate change and water treatment to focus on the root cause of treatment issues CDM clients were experiencing. Why are treatments not working as well? Seeing increasing organics and decreasing alkalinity which is more reactive to chlorine (from water treatment) in cycles of concentrated rainfall events (left, below), rising temperatures (right, below) and droughts. Storm events, droughts, wildfires and extreme temperatures impact water sources resulting in turbidity, pathogens requiring disinfection, organics (TOC, UV254, DBPs), algae and other contaminants, and metals (iron and manganese)



When it comes to water treatment, the impacts to groundwater versus surface water vary, making treatment dependent on individual water sources. The key takeaway is “Know your water.”

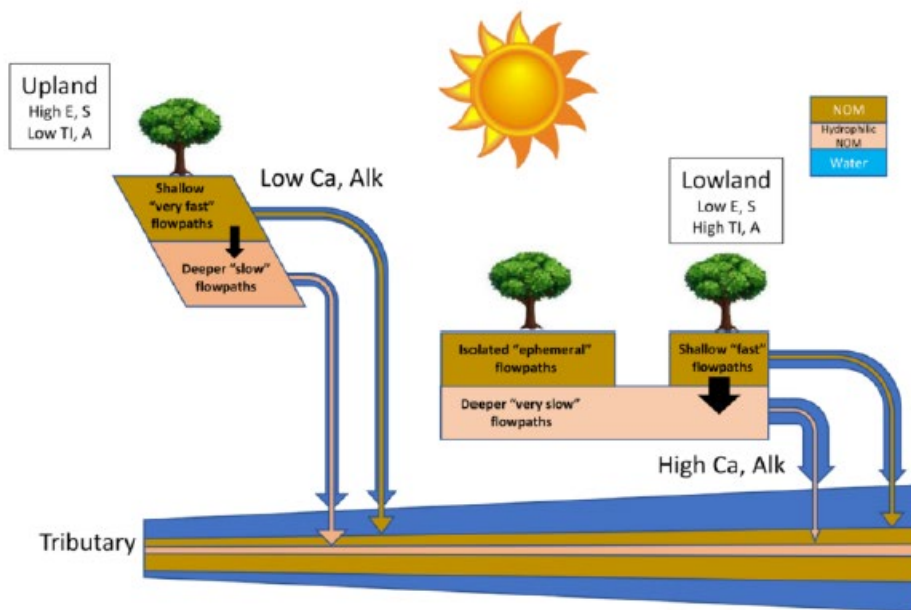
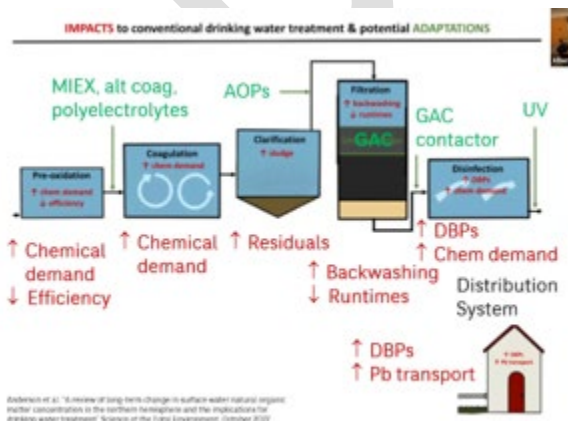
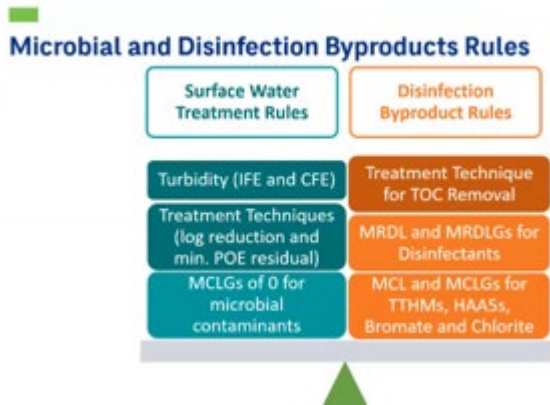


Fig. 11. Dry Weather Schematic. (E =mean elevation, S =mean slope, TI =topographic index, A =watershed area).

And then find the balance in treatments:



EPA is in the middle of reviewing the Microbial and Disinfection Regulations. The Working Group recommendations are seeking balance between surface water treatment rules and disinfection byproduct rules



Following the 6-year review cycle, this year should include a review of regulations for chlorite, giardia lamblia, HAA5 and TTHMs

Six Year Review Candidates for Revision

- **Six Year Review 1**
 - Total Coliform Rule ➤ Revised Total Coliform Rule
 - Removed the Total Coliform MCL – focus on E. Coli
 - “Find and Fix” approach
- **Six Year Review 2**
 - Arcylamide, Epichlorohydrin, Tetrachloroethylene (PCE), Trichloroethylene (TCE)
- **Six Year Review 3**
 - Chlorite, *Cryptosporidium*, *Giardia lamblia*, HAA5, Heterotrophic Bacteria, *Legionella*, TTHM, Viruses
- **Six Year Review 4 (none)**

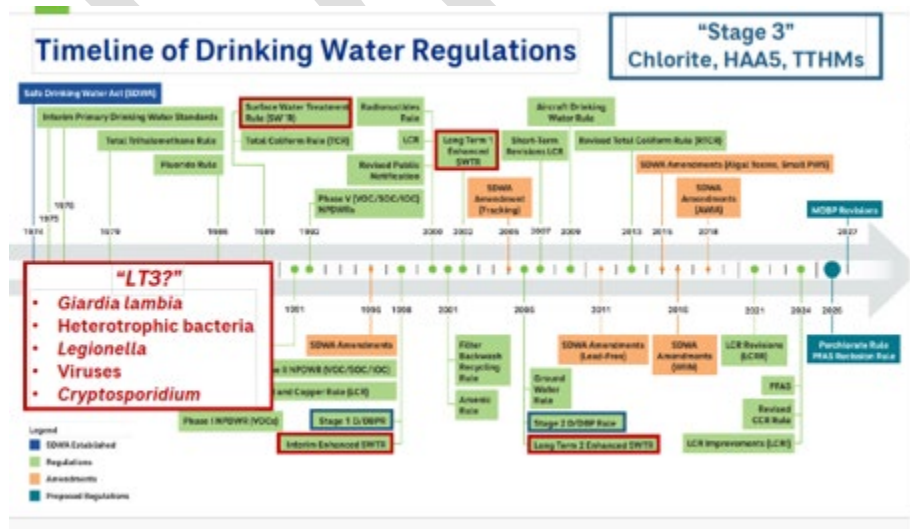
SYR1
(2003)

SYR2
(2010)

SYR3
(2016)

SYR4
(2024)

But the deadline has been postponed:

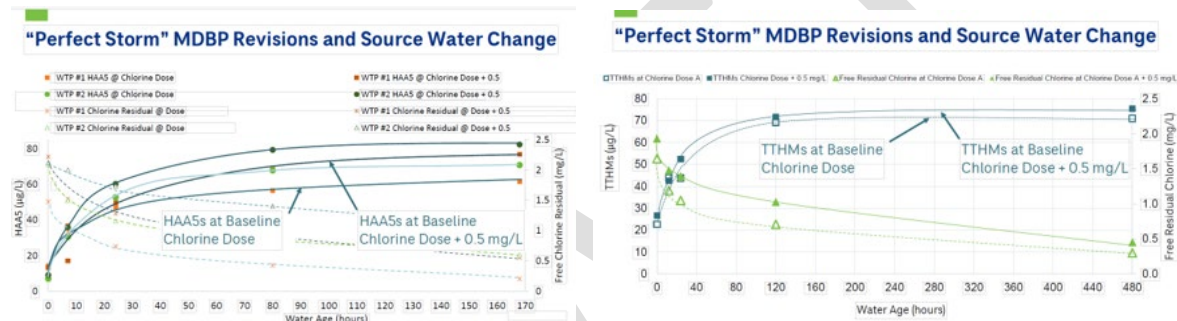


The National Drinking Water Advisory Council MDP Working Group has recommended:

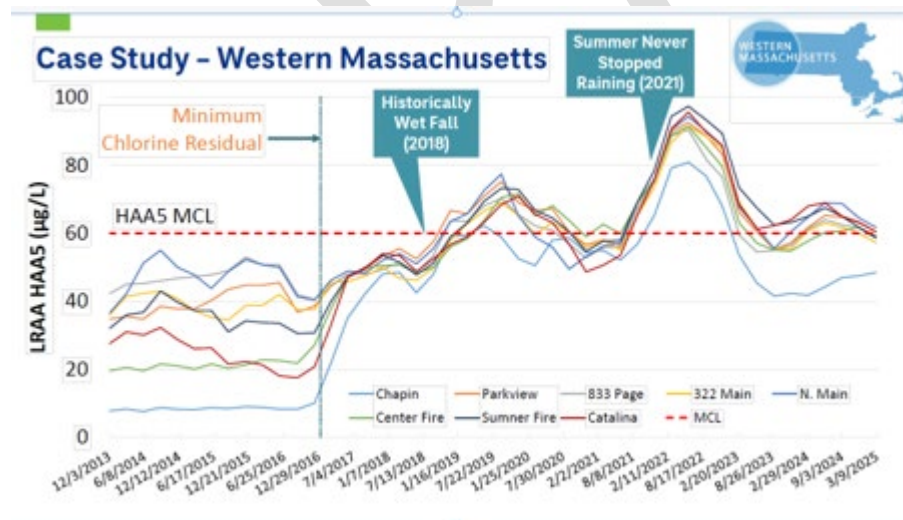
- Chlorine: change 'non-detect' to 'up to 0.5 mg/L and 0.7 mg/L for total chlorine, revision of monitoring sites and elimination of repeated low or non-detect disinfectant residual sites
- DBPs of Emerging Concern: toxicity is the driver, need more data, use chlorite, bromate, HAA5 and TTHMs as indicators for the 700+ other contaminants

Proposed regulations (in summer 2027, not 2025) to maintain chlorine residual to 0.2 mg/L, storage tank rule revisions, chloramine guidance and GWUDI. AWWA, AMWA and ASDWA recommend revisions to chlorine residual levels, review of DBP monitoring sites, and rule changes for water storage tanks.

“Perfect storm” impact of “a little more chlorine” example:



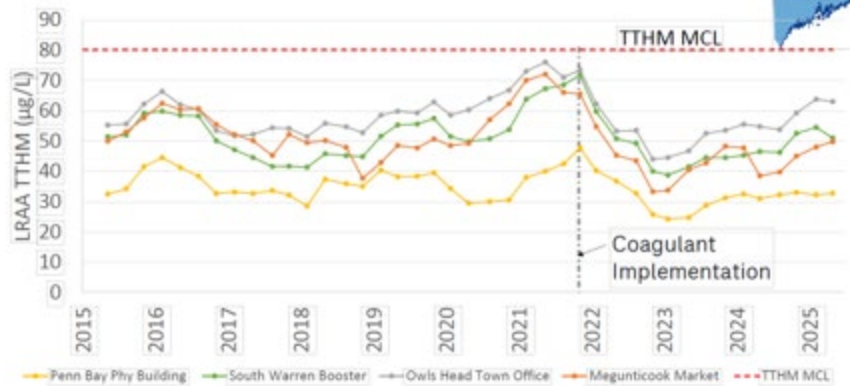
Case Study 1: Fluctuation in chlorine minimum residual relative to HAA5 60 MCL over wet and drought periods (long term increase in precipitation) in Western Massachusetts case study:



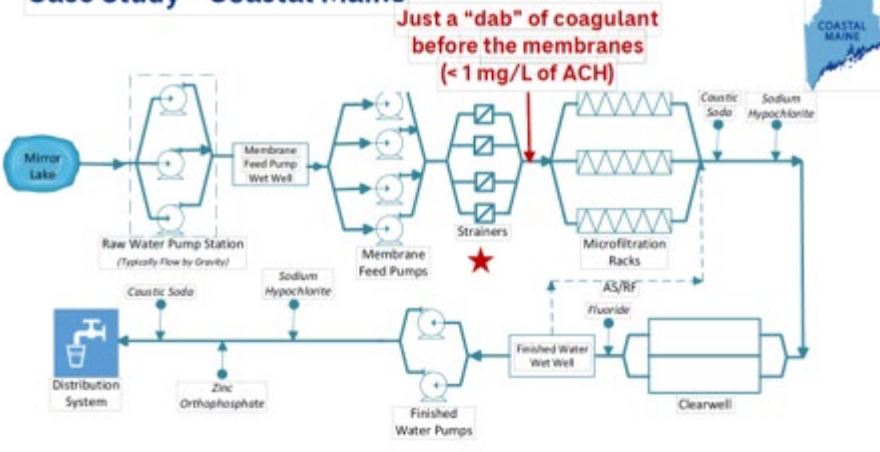
Optimization included flushing in the distribution system, reduced tank storage, tank mixing, use of coagulant, rapid versus slow sand filters, source water monitoring. Long term capital consideration for clarification before filtration.

Case Study 2: The issue in the Coastal Maine study was increasing TTHMs. The solution was adding coagulant “ahead of” the membrane filtration:

Case Study - Coastal Maine



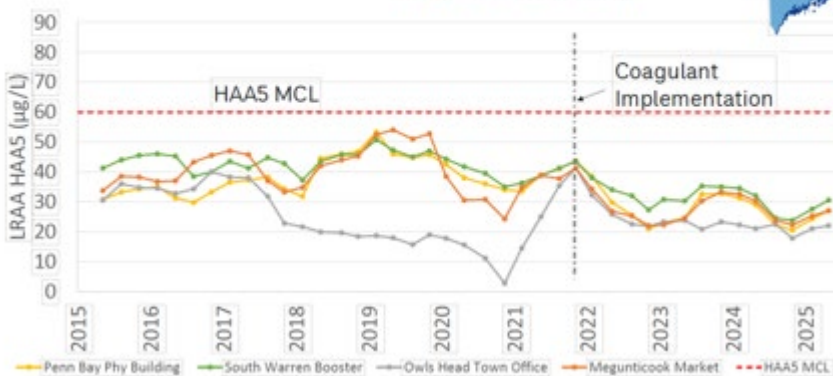
Case Study - Coastal Maine



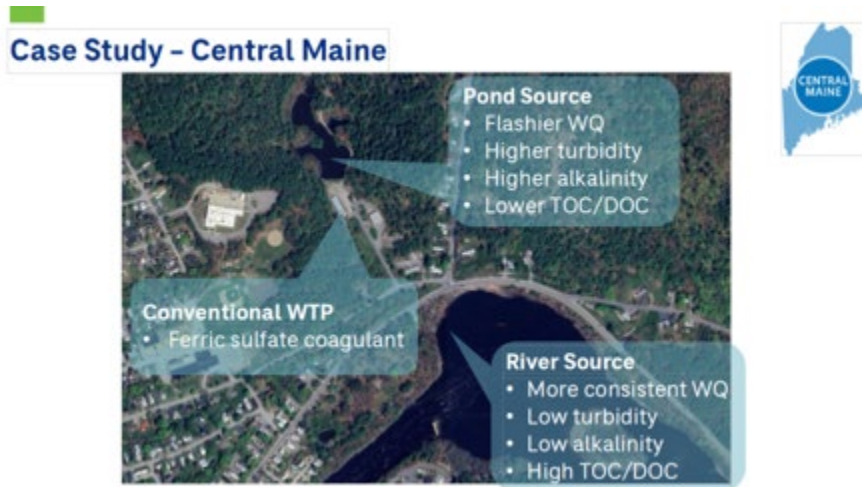
Which also kept the HAA5 below the threshold MCL

Case Study - Coastal Maine

Been able to maintain a stronger chlorine residual - biodegradation is gone but that is okay!



Case Study 3, Central Maine: The issue was that pond versus river surface water sourcing was no longer producing intended treatment results. Intense rains were increasing alkalinity due to turbidity and increased amounts of organics which the ferric coagulant did not address.



Adding soda ash to the raw water improved the ability to balance pH and alkalinity.

Take home messages:

- Be aware of changing source water quality
- Treatment operations are becoming more complicated
- Think about current compliance and proposed MDBG regulations.
- Understanding historical data and trends can inform changing condition decisions
- Plan operations and capital investment accordingly

Contact: Anne Malenfant, PE PMP, CDM Smith, malenfantA@cdmsmith.com, 617.452.6638

Q. How does this affect Portsmouth?

A. TTHM and HAA5 levels fluctuate seasonally in the Portsmouth Water System – must monitor closely and adjust treatment accordingly, e.g with pre-filter oxidation, or adding coagulant to turn dissolved organics into larger solids that can then be filtered. DBPs are tested quarterly throughout the system. There are several dead-end locations and old pipes throughout the distribution system where chlorine residuals are limited. Water can be flushed by opening hydrants to replace aging water with freshly treated water from the system. Planning GAC pilot test for Madbury filters to address both organics and PFAS, but it's expensive as the GAC needs changing more often than for PFAS filtering alone. Also affected by manganese binding to filter media which complicates the treatment.

Portsmouth benefits in having the Bellamy Reservoir surface water as the primary source and multiple groundwater supply wells. The drought has impacted neighboring towns more than Portsmouth because they rely on groundwater sources that are affected by prolonged drought periods.

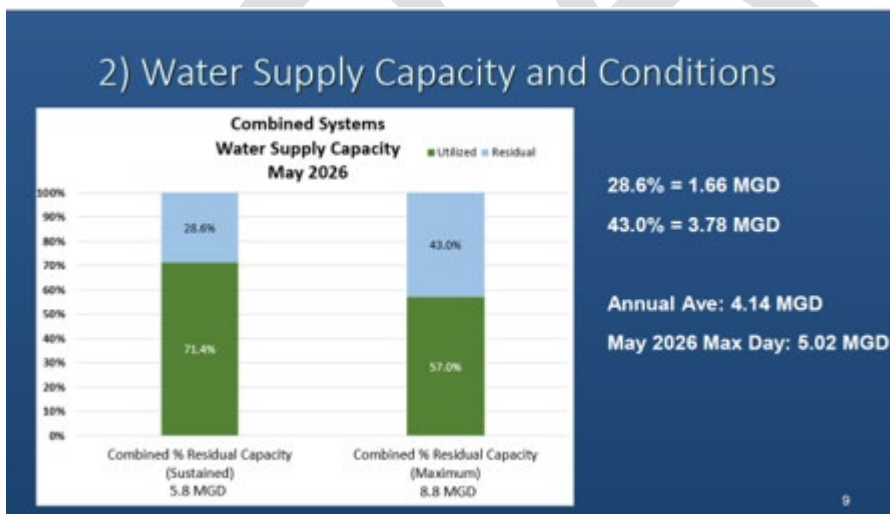
The best way to protect against the impacts of intense rainfall runoff, and therefore organics and nutrient loading, is to limit development that increases impervious surface area.

3. Quarterly Water Supply/Water Master Plan Update – Al Pratt, Water Resource Manager & SWAG co-chair

Working against 2002 and 2013 Water Master Plans shows much of the infrastructure work is complete. The 2013 Plan predicted that development growth would cause increased water demand and require greater capacity; but demand is currently below the anticipated projected levels thanks to repairs in the water mains and more efficient water use.



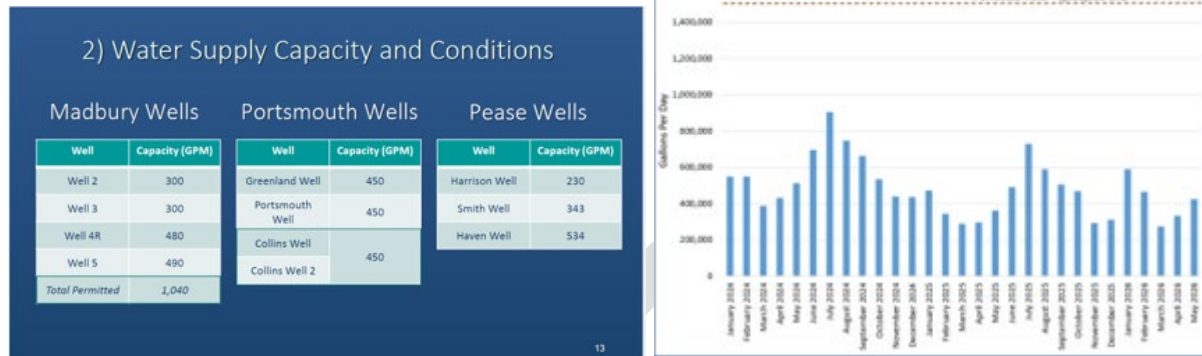
Demand versus supply is in good standing relative to the water system capacity: for May 2026, 71.4% (4.1 million gallons per day) was used, leaving a 28.6% surplus of supply.



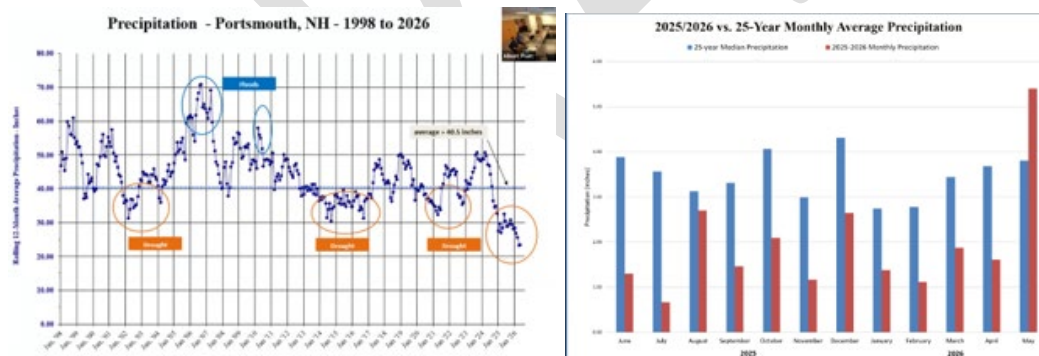
Bellamy Reservoir has a total capacity of 773 million gallons at the spillway elevation (full level). As the level approaches the lower screen (capacity 482 million gallons) there is a greater concern for higher concentrations of iron, manganese, turbidity and organics that accumulate at lower depths. The reservoir can be aerated to reduce iron and manganese concentrations; and as the better-quality water remains in the upper layer of the Bellamy, the intake draws water from this layer during times of drought. Recharge of the Bellamy Reservoir has been sufficient regardless of below-average

cumulative rainfall. Flows into the reservoir are compared to those measured by the USGS gauge in Oyster River.

The Madbury wells are permitted to draw 1.5 million gallons/day from the aquifer. When Collins Well 2 is introduced to the system, it will supplement Collins Well 1 supply.

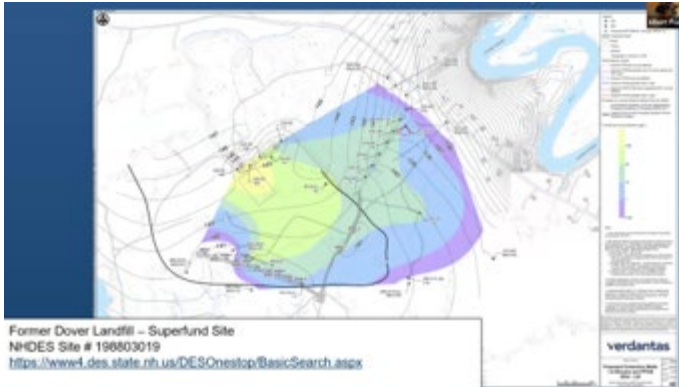


Precipitation measured at Pease is 42% below normal. Drought continues to persist from the start of the winter season. Voluntary water use restrictions are in place – primarily asking for irrigation limits and for residents to avoid washing cars/houses. Hand watering is still ok. Next step if needed would be odd/even watering. Notified via Smart911 system, City Newsletter, website and social media. Has not received any media attention yet.



Source Water Protection and Management

Dover is moving ahead with remediation of the Tolend Landfill groundwater, which is situated adjacent to the northern portion of the Bellamy Reservoir. They have provided EPA with 100% design plan for the pumping system and to capture groundwater in the southern plume area. The first step in construction is to build the access road and extend the piping. The soils are a complicated mix of sand, silt and clay. Testing results and the treatment system designs are available on the NHDES OneStop portal.



Other facility improvements:

- \$114k dam repair to seal seepage cracks accomplished in May
- Greenland well PFAS treatment – 90% design plans, expecting to bid in September to start construction over the winter and into summer 2027 (installing two 10' GAC treatment vessels) – PFOS was under 4 MCL last quarter when it had historically been in the 6 to 7 range. Received approval for \$3 million/Portsmouth and \$1.5 million/Pease NHDDES settlement disbursement funds. Have also received approval for a \$6.5 million NH SRF loan for the project.
- Considering relocation of the Portsmouth Collins treatment (2 GAC filters) closer to the Portsmouth well where there are higher PFAS levels. Design in FY27 for construction in 2028-30. Need to acquire small NHDOT right of way.
- Storage tank work:
 - Spinney (Fall 2026) spot repair and paint – planning to draw the tank down to 200,000 gallons (lower than that affects water pressure) and then drain to the Spinney Road storm drain and Rte 1 overflow but have to monitor the wetland for flooding. The water level in Lafayette tank may be increased while Spinney is offline to maintain pressure.
 - Newington Booster Station Tank (1.5 million gallons) is scheduled for repair and painting in the spring of 2027.
 - Lafayette 7.5 million gallons, added mixing and scheduled for spot repairs in Fall 2027.

Distribution System:

- Replacing water mains in alignment with Complete Streets drainage and wastewater project work but many old cast-iron pipes need replacing. 100-year plan means City replaces 2 miles/year, at a cost of about \$2 million per mile.
- Inventorying service lines for copper and lead. Completed Maple Haven neighborhood potholing and now working in Elwyn Park

Regulations:

88 compounds on the EPA contaminants of interest list; required to sample 30 in 2028-29

Financials

- New rate model and comprehensive water and sewer rate study has been approved to keep up with the cost of delivering service.
- Meter replacement program to ensure accurate usage data. Water & Sewer Billing Office moving to the Public Works building.
- Ongoing management of the Water Enterprise Fund.

4. **Community education update** – Amico reported she, Al Pratt and Rep. Meuse met with Health Office Kim McNamara to discuss educational outreach regarding PFAS impacts beyond drinking water (personal products, etc.) and determined that these were outside the mission of SWAG but that SWAG will be supportive of those programs and potential partnerships with the Portsmouth Public Library.

5. PFAS update - Al Pratt

Portsmouth well groundwater levels holding steady. Collins/Greenland are close to 4 ppt limit. Blend of Madbury water sources at 2 ppt, which is the same as raw water. EPA rules are still in the process of revision. April 2026 revision focuses on PFOA and PFOS and the change does not affect Portsmouth the need to treat the Greenland, Portsmouth and Collins Wells.

PFAS Update

**12-Month Rolling Average
July 2025 – June 2026**

	EPA MCL (2026)	PM MCL	Madbury WSP Blend	Madbury Well 2	Madbury Well 3	Madbury Well 4	Madbury Well 5	Portsmouth Well	Collins Well	Greenland Well	Port WSP
12-MONTH ROLLING AVERAGE 2025 Q2											
Perfluorooctanesulfonic acid (PFOS)	ng/L	18	0.0	0.7	0.4	0.3	1.0	0.5	3.1	2.0	0.0
Perfluorooctanoic acid (PFOA)	ng/L	4	0.0	1.0	1.2	1.2	0.7	0.9	5.8	4.2	0.0
Perfluorobutanoic acid (PFBA)	ng/L	4	0.0	2.0	2.6	2.4	2.0	2.1	7.2	3.7	0.0
Perfluoropentanoic acid (PFNA)	ng/L	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ng/L	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perfluorobutanesulfonic acid (PFBS)	ng/L	1	0.0	0.0	1.0	1.0	0.8	1.5	0.9	0.5	0.0
Hazard Index*		1	0.0	0.1	0.0	0.0	0.1	0.8	0.2	0.2	0.0

* Hazard Index MCL = (PFOA/DA/10)+(PFBS/2000)+(PFNA/10)+(PFHxS/10)

<https://www.portsmouthnh.gov/publicworks/water/portsmouth-water-system-pfas-updates>

32

Compound	MCL (2025) (ng/L)	Revised MCL (pending-2026) (ng/L)
PFOA	4.0	4.0
PFOS	4.0	4.0
PFHxS	10	-----
PFNA	10	-----
HFPO-DA (GenX)	10	-----
Mixture (PFHxS, PFNA, HFPO-DA & PFBS)	Hazard Index <1	-----

Amico noted that the roll back is disheartening and advised of two EPA dockets currently open for public comment: the rollbacks and the two-year delay. Hearings are July 7 – registration by July 1 to participate. Written comments deadline is July 20

Docket 1 (rescission of standards for four PFAS): [regulations.gov/docket/EPA-HQ-OW-2025-0654](https://www.regulations.gov/docket/EPA-HQ-OW-2025-0654). This is re: the rollback on EPA rescinding the maximum contaminant levels for PFHxS, PFNA, GenX, and the Hazard Index mixture.

Docket 2 (two year compliance extension for PFOA and PFOS): [regulations.gov/docket/EPA-HQ-OW-2025-1742](https://www.regulations.gov/docket/EPA-HQ-OW-2025-1742). This is re: extending the compliance deadline to 2031.

For questions related to the public hearing, please contact PFANPDWR@epa.gov.

<https://www.eventbrite.com/e/public-hearing-for-proposed-regulations-related-to-pfas-in-drinking-water-tickets-1988851418130?aff=oddtcreator>

6. **Legislative update - NH State Rep David Meuse** – Amico will provide any updated spreadsheet provided.
7. **Community updates** - reported on her participation in two conferences:
 - a. 5th National PFAS Conference, June 8-10 where she spoke to 400 attendees on Children's Health & PFAS and provided a workshop on PFAS clinical care for 40 healthcare providers (also available online to earn continuing education credits)
 - b. National PFAS Contamination Coalition – a grassroots organization with national participation from FL, CO, MN, AZ, MI, PA, MA, WA and WI.

Katie Hilman reported on the Changemaker Program, funded by a \$12 million donor through the NH Charitable Foundation to create "Healthy water champions" in the communities around Great Bay. Supported by Melissa Paly at Conservation Law Foundation and Lynn Beccro, National Estuary Reservation. Community Conversation about PFAS session held June 16. Fall Bootcamp will take place starting September 10, 2026 for 6 nights every other Thursday to build water advocacy for the Salmon Falls and Piscataqua Rivers (each year focuses on a different watershed). Led by the Seven Rivers Foundation.

8. **Public comment – None.**

Meeting adjourned at 8:16 pm. Next meeting in September.