WATER BOARD MEETING AGENDA

Tuesday, June 10, 2025 5:00 – 6:30 pm

This meeting will be hybrid both in person at the Cambridge Water Department located at 250 Fresh Pond Parkway and available virtually on Zoom:

https://cambridgema.zoom.us/webinar/register/WN_L_8u0HkdSQ-90xPnVCnGEg

A. MINUTES OF MAY 15, 2025, MEETING

B. MANAGING DIRECTOR'S REPORT

- PFAS
- Drought Status Update
- FY26 Water Budget Overview

C. OPERATIONS

- Transmission and Distribution
- Fresh Pond Reservation; Cambridge Watershed; Site Plan Review
- Water Operations
 - WTP Operational Status
 - Water Quality
- Engineering & Program Development
 - GIS
- Business
 - FY25 Cross Connection Program Results through May 2025
 - FY25 Consumption through May 2025
 - Water Fund Balance as of 6-30-2024

D. ACTION ITEMS

• None

E. MISCELLANEOUS CORRESPONDENCE and ITEMS OF INTEREST

- Letter (emailed) to Lealdon Langley, Director Mass DEP Bureau of Water Resources, Re: DRGP -125 Spring Street, Lexington May 22, 2025, from Jamie O'Connell
- Fresh Pond Day 2025 flyer
- Response to Awaiting Report #25-24 to conduct outreach and communicate the drought status from the Managing Director of the Water Department, Mark Gallagher

F. NEW BUSINESS

None

G. NEXT MEETING DATES/AGENDA

September 9th, 2025: TBA/TBD

MEETING MINUTES

May 13th, 2025

This meeting is available virtually on Zoom and in person. This meeting is being recorded. This meeting was called to order at 5:01 p.m. Those in attendance were:

Cambridge Water Board (CWB): Ann Roosevelt, James Burruss

Cambridge Water Department (CWD): Mark Gallagher, Fred Centanni, Rich Lagerholm, Katherine Orciuch, and Rich Holly.

A. MINUTES OF APRIL 15, 2025, MEETING

Ms. Roosevelt requested that the attendees be updated, and a time added for the end of the treatment plant tour.

Ms. Roosevelt moved, and Mr. Burruss seconded the motion to approve April 15, 2025, minutes as amended. The vote was unanimous in favor of the motion.

B. MANAGING DIRECTOR'S REPORT

<u>PFAS Update</u>: Q2 April PFAS6 sampling results were discussed. The results for the sum of the PFAS6 compounds were ND (Non-Detect) The individual test results for each compound tested are included in the table below for reference:

JPDATED 4/28/25

Cambridge Water Department Per- and Polyfluoroalkyl Substances (PFAS) Montoring - Analytes detec Entry Point to the Distribution System (EPDS) aka Finish Water

C.A.S.#	Compound Name	MasDEP MCL	Quarter I (January-March) 1/8/2025 ng/L (ppt)	Quarter II (April-June) 4/14/2025 ng/L (ppt)
1763-23-1	Perfluorooctane Sulfonic Acid (PFOS)	x	*TRACE	ND
335-67-1	Perfluorooctanoic Acid (PFOA)	×	6.35	*TRACE
355-46-4	Perfluorohexane Sulfonic Acid (PFHxS)	x	*TRACE	ND
375-95-1	75-95-1 Perfluorononanoic Acid (PFNA) x		ND	ND
375-85-9 Perfluorohepatanoic Acid (PFHpA)			*TRACE	ND
335-76-2	Perfluorodecanoic acid (PFDA)	×	ND	ND
	Sum of PFA:	S6 detected	6.35	ND
	Quarterly Complian	ce Average		

NID- Not detected

The Quarter II results reflect PFAS6 sampling results after completion of the annual GAC filter media replacement in all six filters from Mid-January – March 2025.

Questions/Comments: Do the filters remove the additional PFAS compounds? Although not regulatory, CWD does test for a few additional PFAS compounds, and we have seen very similar results to the required compounds.

<u>Drought Status Update</u>: Mr. Gallagher gave an update of the Declared Drought status. Cambridge's status is currently Level 1 - Mild Drought. Reservoir recharge is close to ~ 75% of full capacity.

<u>Presentation - Distribution Capital Improvements</u>, Rich Holly

Questions/Comments: Mass Ave Partial Construction Phase 1A Contract, CWD will be installing new water main between the floating bus stops. Additionally, CWD will be exploring funding options to replace additional water main along Mass Ave.

Questions/Comments: Could the water main be replaced at night in order to minimize congestion on Mass Ave? No for several reasons, in particular the noise and the fact that there will be several utilities such as Verizon and Eversource that will have to do work as well.

Questions/Comments: Does CWD have a long-term plan to replace water main on busy streets like Broadway? CWD does have a 5-, 10- and 20-year plan. CWD also works closely with DPW on Chapter 90 and Sewer Separation street reconstruction projects.

C. OPERATIONS

Transmission and Distribution:

Questions/Comments: None

Watershed:

Questions/Comments: CWD has recently filled the open Working Supervisor Parks Maintenance Craft Person position, what does this position do? Among other responsibilities, this position oversees the reservation landscaping maintenance workers to ensure they are performing the tasks assigned per contract.

Questions/Comments: What is the dewatering discharge during the geothermal well construction project? A casing will be driven into the ground for the transfer of geothermal energy. Because of its distance from the reservoir, the potential of impacts to the Watershed are minimal.

Questions/Comments: The April water supply summary report showed a huge drop on the 21st in storage capacity. This was caused by a network data transmission/reception issue and not an actual water storage event.

Water Operations:

Questions/Comments: None

Engineering:

Questions/Comments: None

Business:

Questions/Comments: None

D. ACTION ITEMS

None

E. MISCELLANEOUS CORRESPONDENCE AND ITEMS OF INTEREST None

F. NEW BUSINESS

None

G. NEXT MEETING DATES/AGENDA - Meetings via Zoom

• June 10, 2025: Approved/TBD

Ms. Roosevelt moved, and Mr. Burruss seconded the motion to adjourn the meeting at 6:15 pm. All were in favor of the motion.

B. MANAGING DIRECTOR'S REPORT

- PFAS
- Drought Status
- FY26 Water Budget Overview

C. OPERATONS – Transmission and Distribution, May 2025

- Continue working with and supporting DPW regarding sewer separation, Chapter 90 Street and Sidewalk Reconstruction, and Common Manhole Removal Contracts.
- Scheduling lead water service replacements within DPW Chapter 90 Contract 25.
- Work with DPW and contractors on several water main projects that include:
- River Street Sewer Separation Project We are working with the DPW Project Contractor on the replacement of 8,000 feet of old 6-12" Cast Iron Pipe with new 8-12" ductile iron, including all service valves and hydrants.
- **DPW Chap 90 Contract 25** Working with DPW Project Engineers and Contractor on water distribution infrastructure upgrades:
 - o Dana St Replace 2200 ft 10" unlined Cast Iron with 8" cement-lined Ductile Iron to include all valves, hydrants, and service connections and remove all lead service lines.
 - O Sciarappa St Replace 1780 ft 6" unlined Cast Iron with 8" cement-lined Ductile Iron to include all valves, hydrants, and service connections and replace all lead service lines with copper.
 - O Haskell St: Replacing ~700 feet of 6" unlined cast iron with 8" cement-lined ductile iron, including all valves, hydrants, service connections, and lead service line removal(7 lead services)
- **DPW Sewer Separation Port Project** Working with DPW Project Engineers and Contractor on water distribution infrastructure upgrades replacing 12,509 feet of water main in the Port area to include all valves, hydrants, service connections and removal of all lead service lines.
- **DPW Mass Ave 4 Phase 1 -** Working with DPW Project Engineers and Contractor on water distribution infrastructure upgrades within the Mass Ave bike lane project from the Cambridge Common to Alewife Brook Parkway. This includes water main sections, valves, hydrants, and service connections, and the removal of all lead service lines.
- MassDOT (Boulevard Project #607981) We continue to engage in ongoing meetings and discussions with MassDOT regarding the McGrath O'Brien Highway reconstruction project, spanning from Third Street to Rufo Road. The project is tentatively scheduled to begin construction in April 2027.
- **Distribution Staff** Continue to field lead line calls from residents who have received notices. (~5/day) Calls include notifying residents of the options to renew lead service lines.

May 2025 Distribution Work

•	Work Orders Completed	33
•	Leaks Repaired	6
•	Lead Services Renewed	2
•	Hydrants Repaired/Replaced	15
•	Valves Repaired/Replaced	1
•	Gateboxes Reset/Replaced	2
•	Valves Exercised	408
•	Inspections Performed	263
•	Dig Safe Utility Markouts	805

C. OPERATIONS – Watershed, May 2025

- I. Fresh Pond Reservation:
 - 1. Huron Pine Grove Pilot Project 5 Test plots selected and fenced to test different restoration strategies.
 - 2. Little Fresh Pond Study Hatch Associates will assess Little Fresh Pond and make recommendations for in-lake water quality improvements.
- II. Cambridge Watershed:
 - 1. Winter Street Gatehouse Repairs: Underwater work completed. The contractor is executing repairs in the dry well.
 - 2. Stony Brook Gatehouse Low Sluice Gate Repairs: Issue with stem fabrication. No updates.
 - 3. Open Watershed Technical Supervisor Position: Conducted interviews.
- III. Reporting and Website:
 - 1. Site Monitoring Program Tool: Ongoing.
- IV. Projects Overview:
 - 1. Construction projects in Waltham at 305 Second Ave and 40 Sylvan Road are ongoing.
 - 2. 1265 Main Street Phase II redevelopment received a permit from the Waltham Conservation Commission. The permit requires the developer to work with CWD to perform a hydrologic study of a downstream malfunctioning stormwater treatment basin (WA-17) and implement recommendations for water quality improvement. CWD is working with the developer to identify opportunities for construction. No updates.
 - 3. Plans for redeveloping 1342, 1345, 1362, and 1486 Main Street, Waltham are in development.
 - 4. Bridge replacement and roadway construction at Rt 2A over I-95 in Lexington is ongoing.
 - 5. MassDOT D4 Highway Depot redevelopment in Lexington has largely completed construction. Site stabilization ongoing.
 - 6. Multiple subdivision or multi-unit housing projects in Lexington and Weston are in the pipeline (Weston: 0 Wellesley St, and 269 North Ave; Lexington: 15-17 Fairland St). Construction is currently ongoing for a small subdivision at 576 North Ave in Weston. Construction of an apartment complex at 751-761 Boston Post Road has started.
 - 7. 104 Boston Post Road (Weston) Housing Appeals Committee (HAC) hearings concluded in April 2021. The HAC issued a decision June 22, 2023 to overturn the Weston Zoning Board of Appeals denial of a comprehensive permit. CWD is supporting the Law Department as the case moves through litigation. No updates.
 - 8. 149-151 Spring Street, Lexington parking lot expansion proposal is in permitting. The applicant has submitted a new Notice of Intent after receiving a positive determination of applicability for Lexington's local wetlands bylaw. CWD is reviewing the new application.
 - 9. Enbridge (Algonquin Gas Transmission, LLC) Route 2 Metering and Regulation Station On CWD's behalf, Hatch Associates has been reviewing plant material and restoration planting procedures on site to ensure long term project viability. Planting and required restoration work is mostly completed.
- V. Comment Letters/Hearings: CWD submitted formal verbal and/or written comments regarding:
 - 1. 125 Spring Street, Lexington CWD submitted a comment letter to MassDEP regarding their "Tentative Determination to Issue Antidegradation Authorization to Discharge to an Outstanding Resource Water". The proponent's plan to install a geothermal well network at the site requires groundwater dewatering activities ultimately discharging to the Hobbs Brook Reservoir. The proponent will treat for PFAS, but CWD requested clarification from MassDEP on the proponent's responsibility to treat for chlorides.
 - 2. Lincoln Nursery School, Lincoln CWD submitted emailed comments to the Lincoln Conservation Commission regarding minor changes proposed to the school grounds. No issues identified.

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- 3. 24 Sandy Pond Road, Lincoln submitted emailed comments to the Lincoln Conservation Commission about a proposed fence installation. No issues identified.
- 4. Keolis Railroad, Lincoln CWD requested field verified confirmation of spray/no-spray zones.
- 5. 1362 Trapelo Road, Waltham Submitted emailed comments to Waltham ZBA regarding a proposed redevelopment. CWD supported the proposed decrease in impervious cover and requested a condition limiting salt use on the emergency access road to circle the building.
- 6. 1601 Trapelo Road, Waltham CWD reviewed a permit for fuel storage and determined that the proposed tank would be outside required water supply setbacks. CWD requested that an emergency spill response plan be developed to avoid any material from entering the drainage system.
- 7. 404 Wyman Street, Waltham Submitted emailed comments to the Waltham Conservation Commission regarding a proposal to construct two new courtyard areas and reconfigure the existing building entrance. CWD requested that the O&M plan restrict patio salt use and CWD recommended converting lawn to pollinator meadow plantings and using native plants wherever possible.
- 8. 175 Wyman Street, Waltham CWD submitted emailed comments to MassDEP supporting a 30-day extension allowing the applicant more time to install a PFAS treatment system to an existing, permitted dewatering discharge to Hobbs Brook Reservoir.
- 9. 45 Drabbington Way, Weston Submitted comments to the Weston Conservation Commission requesting the replacement of canopy trees proposed to be lost during a residential construction project.

VI. Communications:

- 1. 751-761 Boston Post Road, Weston Reviewed SWPPP reports provided by the environmental monitor during construction. No issues identified.
- 2. I-95/Route 2 Rest Area, Lexington Reviewed SWPPP report. No new or significant issues identified.

VII. Site Visits:

- 1. Regular watershed patrols by caretakers ongoing
- 2. Cambridge Property, Mill St, Lincoln Residents reported downed trees on Cambridge property 5/23 to the Lincoln Conservation Commission. CWD to investigate, but likely debris our caretakers moved over historic trails to discourage illegal mountain and dirt biking activities.

VIII. Hazmat:

1. Truck Fire: CWD responded to reports of a tractor trailer fire on Route 128 SB at exit 43B (Winter Street, Waltham) 5/27. Waltham FD did not report a fuel release and used ~3,000 gallons of water to put out the fire. Area storm sewers are routed directly to the Hobbs Brook Reservoir. VOC samples taken at the receiving portion of the reservoir confirmed no significant release. MassDEP responded and determined that no follow-up action was necessary.



CITY OF CAMBRIDGE

MASSACHUSETTS
Water Department
250 Fresh Pond Parkway
Cambridge, MA 02138
617 349 4770
Fax 617 349 6616



June 2, 2025

MAY 2025 WATER SUPPLY SUMMARY REPORT

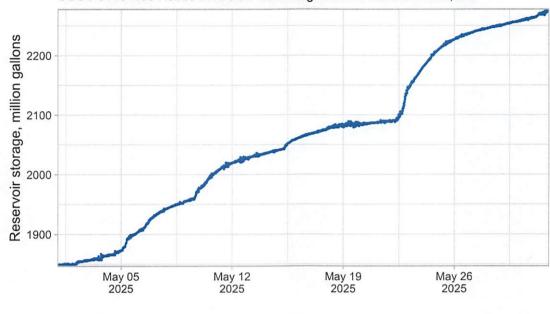
Highlights

- The May percent water supply system capacity of 78% (based on 2.9BG usable capacity) is:
 - ➤ 15 percentage points higher than April 2025 (63%);
 - > 15 percentage points lower than May 2024 (93%); and
 - > 12 percentage points higher than May 2016 (66%, the month before the 2016-2017 drought started)
- Precipitation at the Lincoln Field Office in May 2025 totaled 6.41 inches, 3.05 inches above the National Climate Data Center (NCDC)'s monthly normal at Bedford Hanscom Field (3.36 inches).
- As of May 20th, the drought status set by the MA EEA Secretary is at Level 0 Normal. This means we are no longer in a drought.

Storage

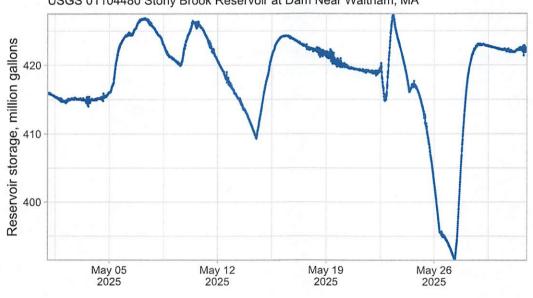
Figure 1: Hobbs Brook Reservoir Storage, May 2025

USGS 01104430 Hobbs BK Below Cambridge Res Nr Kendall Green, MA



Provisional data subject to revision.

Figure 2: Stony Brook Reservoir Storage, May 2025
USGS 01104480 Stony Brook Reservoir at Dam Near Waltham, MA



Provisional data subject to revision.

Figure 3: Fresh Pond Reservoir Storage, May 2025

USGS 422302071083801 Fresh Pond in Gate House at Cambridge, MA

**Gold Brown B

Figure 4: CWD % System Capacity, Water Years 2016 and 2017 (drought), 2024, and 2025 $\,$

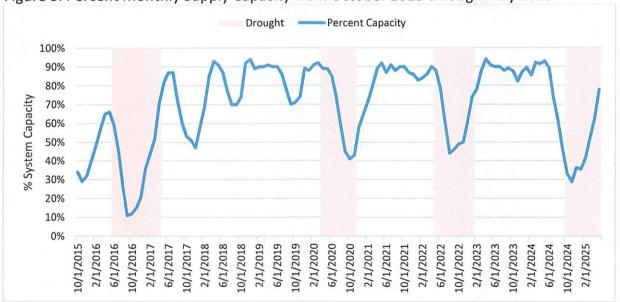


Table 1. Monthly Recharge Rates (% Water Supply Capacity/Day), Water Year 2025

Date	% water supply capacity	Monthly Recharge Rate (%/day)*	Days until June 1, 2025	Projected % Water Supply Capacity on June 1, 2025	Recharge Rate (%/day) Needed for 90% Capacity by June 1, 2025
10/31/2024	33.0				
11/30/2024	28.9	-0.137	183	4	0.492
12/31/2024	36.4	0.242	152	73	0.592
1/31/2025	35.5	-0.029	121	32	0.744
2/28/2025	41.3	0.207	93	61	0.986
3/31/2025	52.6	0.365	62	75	1.45
4/30/2025	62.5	0.330	32	73	2.81
5/31/2025	77.8	0.494	1		

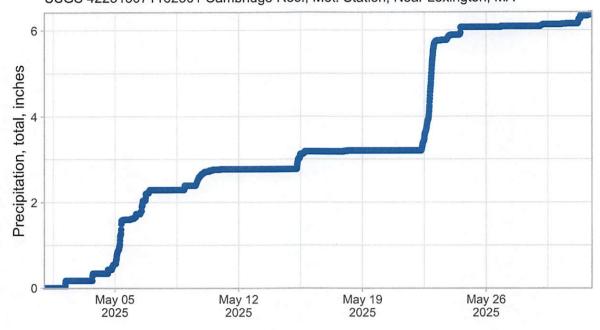
^{* %} water supply capacity gain or loss/day, calculated based on the difference in % water supply capacity at the start and end of each monthly interval

Figure 5. Percent Monthly Supply Capacity from October 2015 through May 2025



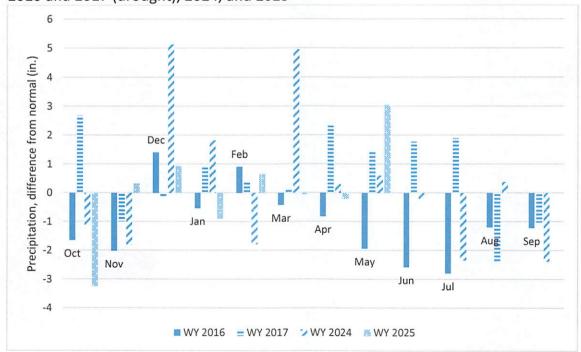
Precipitation

Figure 6: Precipitation measured at Lincoln Field Office, May 2025
USGS 422518071162501 Cambridge Res., Met. Station, Near Lexington, MA



Provisional data subject to revision.

Figure 7: Monthly Precipitation (Lincoln Field Office) Relative to Normal, Water Years 2016 and 2017 (drought), 2024, and 2025



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Jamie O'Connell joconnell@cambridgema.gov 617-349-4781

Real-time data available on the web at Cambridge Water Supply Monitoring Locations - USGS Water Data for the Nation

C. OPERATIONS - Water Operations, May 2025

Plant Operations May 2025:

• Production: 387.21 MGD

• Monthly Average: 12.49 MGD

• Daily Maximum: 14.44 MGD (5/4/2025)

• Daily Minimum: 9.84 (5/21/2025)

Water Quality/Laboratory

There were 0 total coliform positives for May
 May: 108 samples collected for compliance

- PFAS
 - o Next compliance sample to be collected in Quarter 3 (July 2025)

C. OPERATIONS - Engineering and Program Development

Monthly Report: May 2025

MEETINGS ATTENDED

- River Street Water Main Project
- Weekly DPW Construction meeting

CONSTRUCTION / WATER USE PERMITS

• 25 construction permits issued in April 2025

PROJECTS & OTHER ACTIVITIES

Utility Design Reviews:

Provided engineering feedback on utility design plans for the following addresses: 106 Inman St., 12 Maple Ave., 70 – 72 Prince St., 169 Allston St., 18 – 24 Thingvalla Ave., Dunster Street Fire Hydrant Relocation, 101 Dunster St., 747 Cambridge St., 326 Rindge Ave., 17 Fifth St., 55 Broadway, 60 Vassar LN., 200 Technology Sq., 585 Third St., 600 Main St., 1 Cedar St., 8 – 10 Thingvalla Ave., 351 Cardinal Mederios Ave., 35 Tremont St., 150 – 152 Whittemore Ave., 142 Amory St., 303 Harvard St., 1904 – 1910 Massachusetts Ave., 252 Lexington Ave., 460 Massachusetts Ave., 8 Adam Terrace, 387 Norfolk St., 55 – 57 Museum St., 68 Kinnaird St., 66 Kinnaird St., 56 Hayes St., 34 Wendell St., Cottage St. WM Crossing in Watertown, 42 Reed St., 1807 Cambridge St., 5 – 7 Rockwell St., 40 Fairmont St., 127 Broadway, 1010 Memorial Dr., 121 – 123 Broadway, 309 Broadway, 10 Rodgers St., 31 – 33 Thingvalla Ave., 13 Tremont St., 21 – 23 Verdun St., 200 Auburn St., 75 First St., 62 Whittemore Ave., 24 Newell St.& 26 Jay St.

- Private Development & Coordination with DPW:
 - o Harvard Square Kiosk
 - o River Street Streetscape Project
 - o Jefferson Park Federal Parcel
- City Projects Water Main (WM):
 - o Coordination with Eversource Gas for citywide utility replacement
 - o Active WM projects:
 - River Street
 - Dana Street
 - Mass Ave
 - Chestnut Street
 - Haskell Street
 - Kirkland Road
 - Chetwynd Road (in-house)
 - Hillside Avenue (in-house)

GIS & DATABASE UPDATES

- Ongoing GIS edits to distribution maps and valve/hydrant systems.
- Continuing to update the Fire Hydrant Database and system valve IDs as part of the valve exercising program.
- Continued tracking of lead service lines using in-house system "Megalodon".
- Updating the "Service Cards" spreadsheet linking card locations with sketches for field identification.
- Development of a "List of All Lead Services" report for inclusion in the Monthly Lead Report.
- Compilation of monthly summary reports on lead service line elimination.
- Edits for citywide GIS water maps, adding service information and performing quality control.
- Updated the WM/Service Leak Layer with Distribution Division work orders (2013–2025).
- Continued use of Viewpoint Cloud to process demolition and building permits.

COMPLETED ITEMS

- Annual Fire Hydrant Flushing & Testing completed with Cambridge Fire Department (CFD) limited due to drought conditions.
- Hired a two Engineering Interns expected to start their orientation next week (June-December 2025).

C. OPERATIONS - Business, April 2025

FY25 Billings

Month	Billed Water Consumption	Month	Billed Water Consumption	
July	707,653	January	521,856	
August	362,781	February	275,032	
September	314,330	March	199,210	
October	764,179	April	462,089	
November	366,975	May	294,728	
December	259,807	June	0	
		FY25 TOTAL	4,528,640	
		FY24 TOTAL	4,531,048	-0.05%

Cross Connection Program Results

May

Total Tests Fails 530 11

Water Fund Balance: \$6.2 M (6-30-2024)

D. ACTION ITEMS

None

E. MISCELLANEOUS CORRESPONDENCE and ITEMS OF NTEREST

- Letter (emailed) to Lealdon Langley, Director Mass DEP Bureau of Water Resources, Re: DRGP 125 Spring Street, Lexington May 22, 2025, from Jamie O'Connell
- Fresh Pond Day 2025 flyer
- Response to Awaiting Report #25-24 to conduct outreach and communicate the drought status from the Managing Director of the Water Department, Mark Gallagher

F. NEW BUSINESS

None

G. NEXT MEETING DATE/AGENDA

• September 9th, 2025: TBA/TBD

C-14



CITY OF CAMBRIDGE

MASSACHUSETTS Water Department 250 Fresh Pond Parkway Cambridge, MA 02138 617 349 4770 fax 617 349 6616



May 22, 2025

sent via email: massdep.npdes@mass.gov Lealdon Langley; Director Massachusetts Department of Environmental Protection Bureau of Water Resources

Re: DRGP- 125 Spring Street, Lexington

Dear Mr. Langley,

The City of Cambridge Water Department (CWD) appreciates the opportunity to comment on MassDEP's Tentative Determination to Issue Antidegradation Authorization to Discharge to an Outstanding Resource Water from the site at 125 Spring Street in Lexington (Site).

The Cambridge (aka Hobbs Brook) Reservoir, the City's largest drinking water reservoir, is a Class A water body and the Outstanding Resource Water that will receive the proposed discharge from the Site. The Cambridge Reservoir has been designated as "impaired for chlorides" on the 2022 Massachusetts Integrated List of Waters for the Clean Water Act (AU_IDs MA72014 and MA72156). The Applicant has reported current groundwater chloride levels at the Site of 1,670 mg/L in the "overburden well" and 1,140 mg/L in the "rock well" (see Table 1 of the Haley and Aldrich April 7, 2025 memorandum to MassDEP). Both concentrations exceed the acute and chronic toxicity standards for chloride as defined in the Massachusetts Surface Water Quality Standards (314 CMR 4.06). They also exceed the Secondary Maximum Contaminant Level (MCL) for chloride in treated drinking water as defined in 310 CMR 22.00. Cambridge water quality sampling data has shown that chloride concentrations in the reservoir continue to trend upward, and the existing water treatment facility process cannot remove chloride from the City's drinking water. For these reasons, chloride source control is critical for protecting and maintaining the Cambridge Reservoir's Public Drinking Water Supply and Aquatic Life uses designated in 314 CMR 4.00 and for preventing degradation per the Antidegradation Provisions in 314 CMR 4.04(1).

On page 3 of their April 7, 2025 memorandum to MassDEP, Haley and Aldrich explain that the Applicant anticipates treating for chlorides prior to off-site discharge (emphasis added):

Based on groundwater quality testing conducted to date, **chloride**, **total dissolved solids (TDS)**, **and PFAS are anticipated to be treated prior to off-site discharge**; therefore, water quality will be improved and not impaired. The remainder of the parameters were below applicable NPDES water quality limits.

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However, MassDEP's Tentative Determination omits chloride and TDS as required pollutants for treatment. CWD does not have a good understanding of, nor a means to quantify the relative impact that the proposed discharge would have on its drinking water supply. Therefore, CWD respectfully requests clarification from MassDEP on the Applicant's obligation to ensure that the proposed discharge does not further degrade the City's drinking water with respect to chlorides.

Sincerely,

David Kaplan, Watershed Manager, CWD dkaplan@cambridgema.gov

617-349-4770

CC: Cambridge Water Board
Mark Gallagher, CWD, Managing Director



celebrate cambridge water, sustainability, & community at

fun & games

the second Saturday of

free & open to all!

saturday, june 14th

free popcorn

live wildlife



250 Fresh Pond Parkway walk the property!

live music & excitement!

arts & crafts



local sustainability resources



truck climbaboards! become a junior ranger!

water treatment plant open house

> See it for yourself, at our 15th annual Fresh Pond Day

live music, truck climb-aboards, kids arts & crafts, tours, local sustainability resources, & more!

extra parking at danehy park, 166 New Street more info at www.cambridgema.gov/FreshPondDay contact tpuopolo@cambridgema.gov / 617-349-6489



fresh pond reservation 250 fresh pond pkwy

DO



City of Cambridge

Executive Department

CMA 2025 #143 IN CITY COUNCIL June 9, 2025

To the Honorable, the City Council:

Please find attached a memorandum regarding Awaiting Report #25-24 to conduct outreach and communicate the drought status from the Managing Director of the Water Department, Mark Gallagher.

Very truly yours,

Yi-An Huang City Manager



To: Yi-An Huang, City Manager

From: Mark Gallagher, Managing Director

Date: 6/4/2025

Re: Water Department Response to Council Policy Order POR 2025 #45

Response to Council Policy Order POR 2025 #45

Date of Order: March 31, 2025

ORDERED:

That the City Manager be and hereby is requested to work with relevant City departments to do more outreach to residents, businesses, and property owners to communicate the drought status and take all measures to reduce nonessential water use citywide, and provide a report on citywide water usage and water supply; and be it further

ORDERED:

That the City Manager be and hereby is requested to report back to the City Council in a timely manner.

Executive Summary

This response outlines the City's communication strategies, interdepartmental coordination, water conservation efforts, regulatory updates, and drought management activities in response to ongoing drought conditions from July 2024 through May 2025. It also details the implementation of enforceable water restrictions and provides updates on citywide water supply status.

I. Public Outreach and Communication

Objective: Increase awareness and promote compliance with drought restrictions and sustainable water use.

Public Outreach

The Water Department's communications plan includes keeping residents, businesses and other members of our community informed of changes to the drought status by the state's Energy and Environmental Affairs, important steps the community is required to take in order to adhere to drought regulations, and the promotion of sustainable water use practices.

Thus far in 2025, the City has issued three advisories related to ever-changing drought conditions, while simultaneously promoting ongoing water conservation, including the use and purchase of rain barrels to conserve water for residential irrigation purposes.

In order to create awareness with the broader community, the communications strategy has been focused on reaching a number of key audiences:

 Direct outreach and follow-up with the City's largest water users, including our local universities and largest property owners.

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- Direct outreach to the Business Associations and Neighborhood Associations
- Direct outreach to local places of worship and key City partners, including the Cambridge Housing Authority
- Outreach, follow-up and coverage with/from local media with a focus on the Cambridge Day, Harvard Crimson, 22-CityView, CCTV, and greater Boston radio
- Direct outreach to City employees
- Additional promotion was conducted with other key influencers in the City.

Furthermore, the City has been intentional in effectively leveraging its core communications channels:

- Multiple lead stories were featured in the City's Daily Update newsletter, which reaches over 16,000 subscribers and has a 60% open rate
- Multiple alert notifications were issued to all local users on NextDoor, which has nearly 33,000 members in the City of Cambridge
- New stories were prominently featured on the City website homepage for multiple weeks when the drought status was elevated
 - Overall, drought-related information was viewed approximately 3,500 times in the last 12 months
- Social media campaigns were implemented, including a concentrated campaign between April 26-May 13, 2025. That campaign resulted in nearly 9,000 views from users on Facebook, Instagram, Threads, and Bluesky.
- Drought status and water use restriction banners were added and prominently displayed on the city's homepage, individual department homepages and the city's on-line bill paying homepage.
- Billing stuffers were updated and added to every envelope for each billing cycle. (See figure 1 example)



Below are recommendations for residents and businesses:

- Minimize overall water use
- Follow local water use restrictions
- · Fix any toilet or faucet leaks immediately
- Aggressively reduce indoor water use by taking shorter showers, running dishwashers and washing machines only on a full load

For more information, please visit https://www.cambridgema.gov/Water or email CWD@cambridgema.gov

Figure 1 – Billing Stuffer Example

II. Interdepartmental Coordination

The Water Department met with other city department heads and division managers of areas where high outdoor water use is typical:

 Provided information and held meetings with the DPWs Parks, Forestry and Golf course divisions, to discuss water conservation for essential outdoor water use as well as required bans for non-essential outdoor water use.

- Made announcements and provided weekly drought status and water restriction updates for city contractors and private developers during the weekly DPW city-wide construction coordination meetings.
- Coordinated with the Fire Department leadership and canceled the annual city-wide hydrant flow testing.

III. Regulatory Measures

An amendment to City Ordinance 13.08.090 was enacted April 7, 2025, in compliance with the Water Management Act (310 CMR 36.07).

The Water Management Act (M.G.L. c. 21G) became effective in March 1986. The Act authorizes the Massachusetts Department of Environmental Protection (MassDEP) to regulate the quantity of water withdrawn from both surface and groundwater supplies. The purpose of these regulations (310 CMR 36.00) is to ensure adequate water supplies for current and future water needs.

 Water Management Act Amendment – January 20th 2023: Registrants shall establish enforceable restrictions limiting nonessential outdoor water use. Such restrictions shall be in place during a drought declaration by the Secretary of Energy and Environmental Affairs for the drought region and nonessential outdoor water use shall be restricted in accordance with 310 CMR 36.07(2)(c)

Per the requirements of the state Water Management Act, the Water Department worked directly with the Law Department to develop an amendment to the city's existing Water System Regulation ordinance 13.08, to develop enforceable non-essential outdoor water use restrictions. The proposed amendment to 13.08.090 was ordained by the City Council on April 7th, 2025 (See Appendix A for amended ordinance)

Since the enactment of the amendment to ordinance 13.08.090, Water Department staff have been trained on the non-essential outdoor water use restrictions for each of the four drought status levels and which outdoor water uses are considered essential and therefore exempt under current regulations. CWD staff have also been tasked with enforcement of the ordinance and are now required to investigate any violations that are observed in the field or reported to the department. Fortunately to date we have not had to issue any warnings or citations but have responded to multiple phone calls and emails from residents and businesses requesting information or clarifications regarding the new restrictions. Since the enactment of the amendment the drought status has improved from a Level 3 (Critical) to Level 0 (Normal).

IV. Drought Conditions Overview (2024–2025)

From July 2024 through May 2025, Cambridge experienced significant drought conditions, primarily due to prolonged periods of below-average precipitation. These conditions led to critical drought declarations, necessitating water conservation measures and highlighting the importance of sustainable water management practices.

Drought Conditions Timeline

- Summer to Fall 2024: Beginning in mid-2024, Cambridge and the broader Northeast region faced escalating drought conditions. By November 2024, the Northeast region, including Cambridge, was elevated to a Level 3 – Critical Drought status due to prolonged lack of rain. This marked the second critical drought in Cambridge within two years.
- Winter 2024–2025: Despite snowfall in February 2025, freezing temperatures prevented effective groundwater recharge, exacerbating drought conditions. By March 2025, the entire state, including Cambridge, remained under significant or critical drought designations.
- Spring 2025: In early May 2025, the state experienced rainfall that improved drought conditions.
 Consequently, the Central, Northeast, and Connecticut River Valley regions were downgraded from Level 3 Critical Drought to Level 2 Significant Drought.
- On May 20th due to continued above average precipitation, the State Drought Task Force held a special mid-month meeting, and the Secretary of Energy and Environmental Affairs downgraded the drought level for the Northeast region to Level 0-Normal.

V. Precipitation Impacts

Throughout this period, Massachusetts experienced a significant precipitation deficit. From August 2024 to March 2025, the state had a rainfall deficit of 8–13 inches. The snowfall in February 2025 did little to alleviate the drought, as prolonged sub-freezing temperatures prevented snowmelt from replenishing water sources. (See Figure 2)

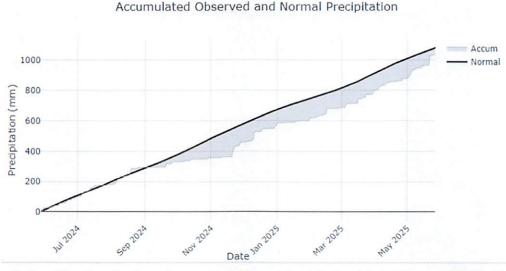


Figure 2 - National Weather Service - Accumulated/Normal Precipitation July 2024 - May 2025 Bedford MA

During the water year from October through June, the Cambridge water supply system typically does not see significant recharge from spring snow melt but is more dependent and directly affected by precipitation, tributary stream flow and ground water levels for reservoir recharge. For the water year 2024-2025 precipitation levels around the Cambridge watershed remained slightly below average through the winter and into early spring. Coupled with the residual effects of the prolonged drought and continued lack of normal precipitation, by late February the reservoir storage level was still

approximately one billion gallons below the fifteen-year median. Through March and April precipitation levels remained slightly below normal and though reservoir recharge continued to increase, storage levels remained well below normal. In May, precipitation frequency and duration increased significantly, and precipitation levels were approximately 3.2 inches higher than normal. (See Figure 3)

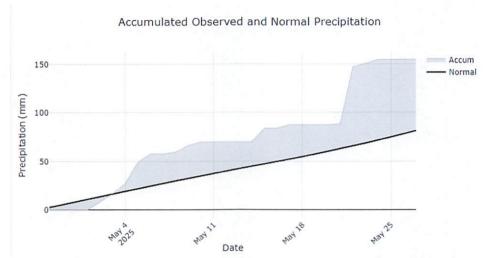


Figure 3 - National Weather Service - Accumulated/Normal Precipitation May 2025 Bedford MA

The above average precipitation in May provided a much-needed boost to reservoir storage levels and provided over 300 million gallons of additional water storage, significantly reducing the deficit from the 15-year median. (See Figure 4)

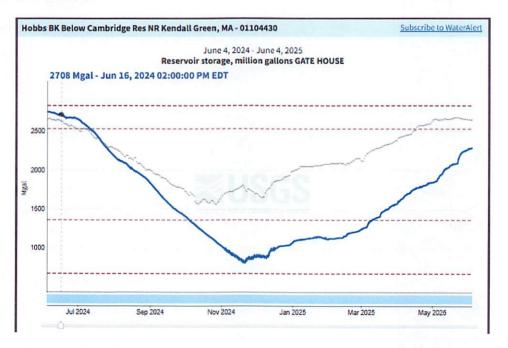


Figure 4 - Hobbs Brook Reservoir water storage level June 2024 - May 2025 (Blue Line = 2024-2025 level – Gray Line = 15 Year Median)

As we head into the warmer summer months with our reservoirs still at a slight deficit, precipitation levels will continue to be a critical factor in our water system's ability to meet the associated increased water demands.

VI. Water Supply Management

The cities' drinking water supply system consists of three in-series reservoirs, the Hobbs Brook, Stony Brook, and Fresh Pond Reservoirs. Hobbs and Stony Brook Reservoirs drain a 24 square mile basin in Lexington, Lincoln, Waltham and Weston, MA. Fresh Pond Reservoir is a glacial kettle-hole lake located in Cambridge with no natural inlets or outlets. Hobbs Brook Reservoir is fed by Hobbs Brook and other unnamed tributaries that discharge directly into the reservoir. Water is released from the Hobbs Brook Reservoir dam at Winter Street in Waltham, which joins Stony Brook about 1.5 miles downstream. Stony Brook Reservoir is fed by Stony Brook and a small tributary from Weston. Both reservoirs receive additional inflows from surface overland flow, engineered drainage systems, groundwater, and direct precipitation. From the Stony Brook Reservoir, water is piped through an underground aqueduct to Fresh Pond Reservoir where it is stored prior to treatment. Fresh Pond raw water is purified at the Walter J. Sullivan Water Treatment Plant (WTP) and pumped to Payson Park Reservoir, a covered storage facility located in Belmont, MA. From there, water flows by gravity to the City of Cambridge distribution system.

The largest of the reservoirs, Hobbs Brook Reservoir, reaches its maximum elevation at ~169.6 feet (NAVD88), its maximum depth at approximately 25 feet, and at full capacity, holds approximately 2.5 billion gallons of water. Stony Brook Reservoir reaches its maximum elevation at ~68.9 feet, its deepest point is approximately 30 feet, and at full capacity contains roughly 418 million gallons of water. Fresh Pond Reservoir reaches its maximum elevation at ~5.3 feet, its maximum depth is 50 feet, and at full capacity, holds roughly 1.5 billion gallons.

While the Watershed's primary storage reservoir is Hobbs Brook Reservoir, in the winter and spring months it is largely unused. Due to its vast size and relatively small watershed, Hobbs Brook Reservoir is slow to fill up. This winter hiatus is necessary for Hobbs Brook Reservoir to regain the water transferred to the downstream reservoirs in the summer months. Conversely, Stony Brook Reservoir is relatively small compared to its large watershed and fills much faster than Hobbs Brook Reservoir. Water from Stony Brook Reservoir is enough to supply our demand during the winter and spring months and is piped to Fresh Pond Reservoir. In times of above average precipitation, excess water is released to the Charles River to maintain safe dam operating levels. The average annual daily water demand in the City of Cambridge is typically 12 to 13 million gallons per day (MGD).

Based on these standard operating procedures, the Hobbs Brook recharge cycle typically starts in the fall and continues through spring of the following year. During the 2024-2025 drought, the accumulative effects of continued below average precipitation and subsequent higher daily demands from August into October of 2024 required the continued use of Hobbs Brook reservoir to supply supplemental water late into November. The extended use coupled with below average reservoir recharge rates, resulted in the

Hobbs Brook reservoir being drawn down to its lowest level since the drought of 2016. In November as Hobbs Brook reservoir levels neared critical levels, CWD began preparations for supplementing the city's water supply with resources from the Massachusetts Water Resources Authority (MWRA) if conditions did not improve.

In late November, precipitation levels and frequency began to normalize, which provided enough recharge to the Stony Brook reservoir to meet the daily demand and allow Hobbs Brook to start the winter recharge cycle and prevent the need to activate the MWRA for supplemental water. Over the following months CWD continued to closely monitor Hobbs Brook recharge rate and potential for full recovery prior to June 2025 and the start of summer. (See Figure 5)

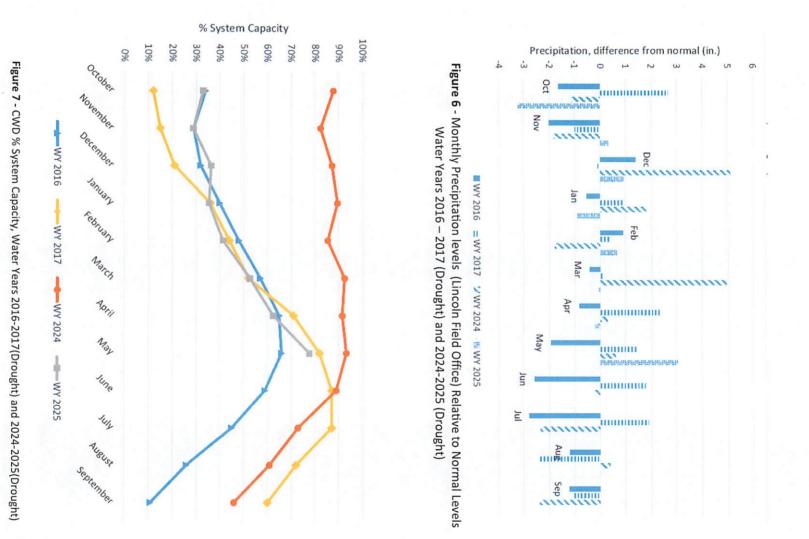
Date	% water supply capacity	Monthly Recharge Rate (%/day)*	Days until June 1, 2025	Projected % Water Supply Capacity on June 1, 2025	Recharge Rate (%/day) Needed for 90% Capacity by June 1, 2025
10/31/2024	33.0				-
11/30/2024	28.9	-0.137	183	4	0.492
12/31/2024	36.4	0.242	152	73	0.592
1/31/2025	35.5	-0.029	121	32	0.744
2/28/2025	41.3	0.207	93	61	0.986
3/31/2025	52.6	0.365	62	75	1.45
4/30/2025	62.5	0.330	32	73	2.81
5/31/2025	77.8	0.494	1		-

^{* %} water supply capacity gain or loss/day, calculated based on the difference in % water supply capacity at the start and end of each monthly interval

Figure 5 - Monthly recharge rates (%Water Supply Capacity/Day) Water Year 2025

Though there is no way to predict future precipitation levels, comparing current precipitation and recharge data with previous drought years, a direct correlation between precipitation and reservoir levels can be made. Monitoring and analyzing data from previous years allows us to identify potential trends to make management decisions and preparations for contingency plans as needed. (See Figures 6 and 7)





1.4.a

As of June 2025, system storage reached ~78%, still below historical norms but continuing to increase slowly. Historical data suggests that as long as precipitation levels remain normal or above normal the current supply capacity will be able to meet demand throughout the summer. The current NWS and NOAA three-month seasonal precipitation outlook for Massachusetts is positive and indicates that precipitation is leaning towards slightly above normal for June – August 2025. We must note however that these are only predictions and actual precipitation levels may be different, and the best practice is to continue to promote water conservation.

VI. Conservation Measures

In response to the critical drought conditions, Cambridge implemented several water conservation measures:

- Restrictions: The city banned nonessential water use, including automatic lawn sprinklers and irrigation systems.
- Public Outreach: Residents were urged to conserve water by taking shorter showers, running dishwashers and washing machines only with full loads, and promptly fixing leaks.
- Engagement with Large Users: The city contacted major water users, such as Harvard University
 and the Massachusetts Institute of Technology (MIT), to encourage voluntary reductions in
 water consumption.

Though it is difficult to quantify any direct effect that the imposed water restrictions and increased public outreach had on water conservation, water production comparisons (FY24 vs. FY25) show reduced usage following bans and outreach. Water production data shows that between the months of July - November of FY25, water use was consistently higher than for the same period in FY24. During FY25 from November – April (excluding Jan*), water consumption rates decreased and remained equal to FY24 levels.. Overall, the data indicates that the water bans and public outreach contributed to reduced water consumption. (See Figure 8)

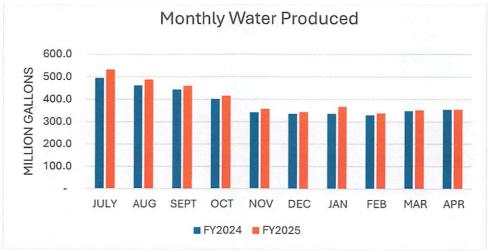


Figure 8 - FY24 - FY25 Monthly water production comparison

^{*}In January 25 there was a slight increase in water production which can be attributed to an above average number of water main breaks and subsequent water loss caused by several weeks of sub-freezing temperatures.

VII. Recommendations

To enhance water resilience and prepare for future drought conditions, the following measures are recommended:

- Infrastructure Investment: Encourage residents, businesses and institutions to implement rainwater harvesting systems to capture and store rainwater for non-potable uses, reducing demand on municipal water supplies.
- Public Education: Continue educating residents and businesses on water conservation practices and the importance of sustainable water use.
- Policy Development: Develop and enforce policies that promote water efficiency in new developments and renovations.

APPENDIX A - Drought Ordinance Amendment

13.08.090 - Water restriction authority.

A. The Water Board shall have the power to restrict the use of hand-hose or automatic sprinkler or similar devices to such hours of the day as it may deem necessary pursuant to G.L. c. 41, §69B, and the City Manager or if designated, the Managing Director of the Water Department, shall limit nonessential outdoor water use during a drought declaration by the Secretary of Energy and Environmental Affairs for the drought region, pursuant to 310 CMR 36.00; and for any violation of such restrictions the occupant of the premises shall be liable to the penalties imposed in Section 13.08.110 for a waste or improper use of water and Chapter 13.12 of this code. A

drought declaration by the Secretary shall restrict water uses as follows:

- 1. In accordance with 310 CMR 36.07(2)(c), if the Massachusetts Secretary of Energy and Environmental Affairs declares a drought in the region, county or watershed, such restrictions shall be in place during a drought declaration and nonessential outdoor water use shall be restricted as follows:
 - a. Level 1 (Mild Drought). All nonessential outdoor water uses restricted to no more than one day per week, before 9:00 a.m. and after 5:00 p.m., except that watering of ornamentals and flower gardens with drip irrigation, hand-held hose or watering cans may be permitted.
 - b. Level 2 (Significant Drought). All nonessential outdoor water uses banned, except that watering of ornamentals and flower gardens with drip irrigation, hand-held hose or watering cans may be permitted.
 - c. Level 3 (Critical Drought) or Level 4 (Drought Emergency). All nonessential outdoor water uses are banned.
- 2.For withdrawals for the maintenance of golf course greens, tees, fairways, and roughs during a drought declaration by the Secretary of Energy and Environmental Affairs for the drought region, registrants shall comply with the following restrictions on nonessential outdoor water use:
 - a. Level 1 (Mild Drought). Irrigation of fairways shall be reduced to 80% of normal, irrigation of roughs shall be reduced to 50% of normal, and there shall be no irrigation of landscaping and ornamentals.
 - b. Level 2 (Significant Drought). Irrigation of fairways shall be reduced to 60% of normal, and there shall be no irrigation of roughs, landscaping and ornamentals.
 - c. Level 3 (Critical Drought) or Level 4 (Drought Emergency). Irrigation of fairways reduced to 40% of normal, and there shall be no irrigation of roughs, landscaping and ornamentals.

- 3. The Water Board shall have the power to implement nonessential outdoor water use restrictions that are more stringent than those set forth in 310 CMR 36.07(2)(c), as described in Section 13.08.090 A, 1 through 2, and D.
- 4. Once implemented, pursuant to 310 CMR 36.07(2)(c), restrictions on nonessential outdoor water use at least as restrictive as described in Section 13.08.090 A, 1 through 2, and D, shall remain in place for the respective declared drought level until the drought level is changed by the Secretary.
- 5. The Water Department in accordance with G.L. c. 40, §41A, may, upon notification to the water takers, shut off the water at the meter or curb cock or by other means as the case may be, during a drought, hurricane, conflagration or other disaster when in the opinion of the department of environmental protection an emergency exists.
- B. Public Notification of a Drought Declaration: Notice to the public of all provisions, including all restrictions, requirements and conditions imposed by the City as part of a drought declaration shall be made as soon as possible, but no later than 48 hours following the declaration of a drought and the City may utilize any of the following forms of notice: publication in a newspaper of general circulation within the City, notice on the City website, signage on major roadways or intersections, reverse 911 calls, social media, public service announcements on local media, informal posting, or other such means reasonably calculated to reach and inform all water customers.
- C. Notice of Termination of Drought Declaration: Upon notification to the City that the declaration of a drought has been terminated by the Secretary, the public will be notified of the termination in the same manner as the notification of its imposition.
- D. The following is a list of outdoor water uses that will not be restricted under the new conditions (pursuant to 310 CMR 36.03):
 - a) for health or safety reasons, including public facilities used for cooling such as splash pads and swimming pools, and for washing of boats, engines, or marine equipment to prevent negative saltwater impacts or the transfer of invasive aquatic species, and for the preservation of trees, including trees on private property, by using slow release watering bags or other slow release systems, because trees promote the health, safety and welfare of residents for multiple reasons, including but not limited to improving air quality and reducing urban heat island impacts;
 - b) by permit, license, statute or regulation;
 - c) for the production of food, including vegetable gardens, and fiber;
 - d) for the maintenance of livestock;
 - e) to meet the core functions (those functions essential to the commercial operations) of a business, including but not limited to:
 - 1. plant nurseries as necessary to maintain stock;
 - 2. golf courses as necessary to maintain greens and tees, and limited fairway watering per 310 CMR 36.07(2)(c)2.a. through c.;
 - 3. venues used for weddings or similar special events that limit watering to hand-held hose or drip irrigation as necessary to maintain gardens, flowers and ornamental plants;
 - 4. professional washing of exterior building surfaces, parking lots, driveways and/or sidewalks as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement in the course of construction, reconstruction or renovation work;
 - f) for irrigation of public parks before 9:00 A.M. and after 5:00 P.M.,
 - g) for irrigation of public and private recreation fields, including those operated by schools, colleges, universities and athletic associations, before 9:00 A.M. and after 5:00 P.M.,
 - h) for irrigation of publicly-funded shade trees and trees in the public right-of-way; or
 - i) to establish a new lawn as necessary to stabilize soil in response to new construction or following the repair or replacement of a Title 5 system.

E. Enforcement of Penalties: Any person who violates any provision of this Section 13.08.090 shall be liable to the City in the amounts listed below: 1 st violation: Warning, 2 nd violation: \$100, 3rd violation: \$200, 4th and subsequent violations: \$300. Each day of violation shall constitute a separate offense.

a) Violation— Criminal Penalty. Any person who violates any provision of this Section 13.08.090 may be subject to a fine not exceeding three hundred dollars, and each day's violation shall constitute a separate offense. For purposes of this section, the enforcing officers shall be employees of the Water Department designated by the City Manager or if designated, the Managing Director of the Water Department, Police Officers, Animal Control Officers and the Director of the Animal Commission.

b) Violation—Noncriminal disposition.

Whoever violates any provision of this Section 13.08.090 may be penalized by a noncriminal disposition as provided in G. L. c. 40, §21D. Each day of violation shall constitute a separate offense. The enforcing officers shall be employees of the Water Department designated by the City Manager or if designated, the Managing Director of the Water Department, Police Officers, Animal Control Officers and the Director of the Animal Commission. The penalty for each violation shall not exceed three hundred dollars.

APPENDIX B - 2024 - 2025 Drought Status declaration history:

From October 11th, 2024 through May 20th, 2025, Cambridge and the Northeast region of Massachusetts remained in different levels of drought as declared by the state Secretary of Energy and Environmental Affairs. The monthly state drought status updates were as follows;

October 11th, 2024 - Massachusetts Secretary of Energy and Environmental Affairs, increased the drought level for the Northeast Region (Which includes Cambridge) from Level 0-Normal to a level 1-Mild drought.

November 19th, 2024 - Drought level increased from Level 1-Mild to a Level 3-Critical drought.

Non-enforceable water ban on non-essential outdoor water use enacted.

December 6th, 2024 - Drought level remained at Level 3-Critical.

Non-enforceable water ban on non-essential outdoor water use remained in effect.

January 8th, 2025 - Drought level decreased from Level 3-Critical to Level 2 Significant.

Non-enforceable water ban on non-essential outdoor water use remained in effect.

February 7th, 2025 - Drought level increased from Level 2 Significant to a Level 3-Critical

• Non-enforceable water ban for non-essential outdoor water use remained in effect.

March 7th, 2025 – Drought level remained at Level 3-Critical drought.

• Non-enforceable water ban on non-essential outdoor water use remained in effect.

<u>April 7th, 2025</u> - City Council Ordains amendment to City Ordinance 13.08.090 to include enforceable drought status water ban regulation

April 9th, 2025 - Drought level decreased from Level 3-Critical to Level 2 Significant.

• Enforceable water bans for non-essential outdoor water use enacted.

May 9th, 2025 - Drought level decreased from Level 2-Significant to Level 1-Mild.

Enforceable water bans for non-essential outdoor water use remain in effect.