THE MASSACHUSETTS WATER RESOURCES COMMISSION

FY2024 ANNUAL REPORT

The Commonwealth of Massachusetts
Maura T. Healey, Governor | Rebecca L. Tepper, Secretary, Executive Office of Energy and Environmental Affairs

MEET THE WATER RESOURCES COMMISSION

THE COMMISSION'S ROLE AND STRUCTURE

The Water Resources Commission (Commission or WRC) was established in 1956 by the Massachusetts Legislature and was set up to address flood prevention and water conservation among other things. It is responsible for developing, coordinating, and overseeing the Commonwealth's water policy and planning activities to ensure that Massachusetts will have plentiful water to support health, safety, economic development, and ecological vitality for generations to come.

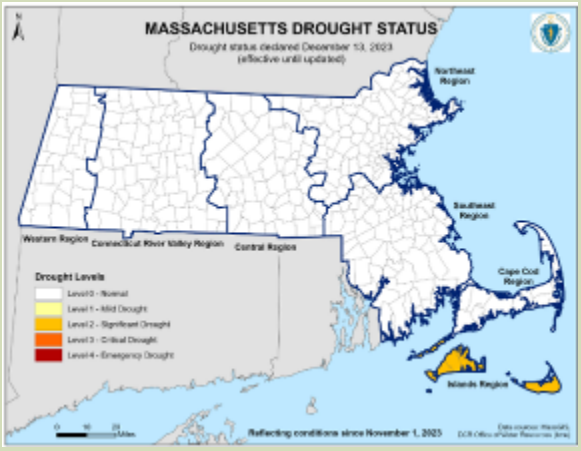
The twelve-seat Commission includes five public members and appointees from seven state agencies or offices.

The Commission's Executive Director, based at the Executive Office of Energy and Environmental Affairs (EEA), and its technical staff, based at the Department of Conservation and Recreation's (DCR) Office of Water Resources, work with state and federal agencies and members of the public to support the Commission's work.

RESPONSIBILITIES OF THE COMMISSION

The responsibilities of the Commission, highlighted below and described in this report, establish the scientific and policy foundation for the sustainability of Massachusetts' water resources.

- Establish statewide Water Conservation Standards and policies to encourage efficient use of water
- Administer the Interbasin Transfer Act
- Cooperate with the United States Geological Survey (USGS) and manage the statewide precipitation network to provide real-time water data for monitoring and research
- Approve the Massachusetts Drought Management Plan, monitor hydrologic conditions, and advise the state Drought Management Task Force during drought
- Provide water needs forecasts for communities' long-range planning and permits
- Develop and provide a forum for public input, coordination, and diverse viewpoints on current and long-term water policies and issues
- Act as the state coordinating agency to assist in the implementation of the National Flood Insurance Program



PROGRAM DESCRIPTIONS AND FY2024 WORK

TRACKING HYDROLOGIC CONDITIONS AND ADVISING ON DROUGHT

Staff gage at A-1 Reservoir in Westborough, January 2024

Commission staff monitors and analyzes hydrologic conditions monthly and produces a report covering precipitation trends, stream-flows, groundwater levels, lakes and impoundments levels, and other hydrologic data. Staff uses these data to monitor for droughts, inform the Commission at its monthly meetings, and, as needed, advise the state's Drought Management Task Force (DMTF).

Of the hydrologic monitoring networks, staff manages the precipitation network, which provides data from 50 active stations in Massachusetts and has been in operation since 1956. Other networks are operated cooperatively with the U.S. Geological Survey (USGS).

In FY24, the DMTF met to track drought in the Islands Region, which lasted from November 2023 through March 2024. Level 2—Significant Drought was declared during the worst part of the drought.

In FY24, the Commission approved the updated MA Drought Management Plan, which included approving the Evaporative Demand Drought Index (EDDI) as the new Evapotranspiration Index. Staff worked with the Northeast Regional Climate Center at Cornell University to recommend EDDI as the new Evapo-transpiration Index and add it to the Massachusetts Drought Dashboard (www.mass.gov/massdd). This national data product is live on the dashboard at the weekly and monthly time scales.

THE USGS COOPERATIVE PROGRAM

The U.S. Geological Survey and the state have had a cooperative, hydrologic monitoring partnership since 1904. The program currently maintains and provides data from the following stations: 59 real-time streamflow, 32 manual and 61 automated groundwater, 7 precipitation, and 4 tidal. State staff from MassDEP and the state geologist at UMass Amherst perform monthly manual measurements at groundwater wells. Steve Mabee retired as state geologist in February of 2024. Brian Yellen was identified as the new state geologist in late FY24 and is anticipated to officially begin the position in FY25.

In FY24, staff worked with USGS to analyze the groundwater and streamflow networks for meeting state needs and potential sites for expanding the networks. A meeting of state and federal partners was held to gain feedback on the expansion recommendations. The expansion is anticipated to take place in FY2025 and FY2026.

FLOOD HAZARD MANAGEMENT PROGRAM

Executive Order 149 (1978) designated the Commission as the state coordinating agency to implement the National Flood Insurance Program (NFIP) and implement the flood plain management criteria for state-owned properties in special hazard areas. Through the Commission's Flood Hazard Management Program (FHMP), staff provides technical assistance to NFIP communities on a wide range of matters, including floodplain management best practices, flood-resistant standards for construction, floodplain mapping issues, flood insurance questions, and mitigation options to reduce flood losses.

Highlights of the FHMP **in FY24** include:

- Support and technical assistance directly to 326 MA communities (92.8% of all MA communities)
- Review of dozens of MEPA projects in 109 communities
- 26 training events on topics including floodplain construction codes, the state model bylaw, FEMA maps and mapping processes, substantial improvement & substantial damage, pre-disaster planning for post-disaster work, and floodplain management basics for floodplain administrators
- 36 one-on-one meetings with local communities to offer guidance on specific projects or issues
- Work on numerous special projects including the 2021 BRIC building code project, Flooding & EJ Communities in MA, the statewide floodplain management Framework and more
- Developed and finalized the first-ever FHMP Strategic Plan

Flooding in Attleboro, September 12, 2023

FACILITATION AND CONSENSUS BUILDING

Commission staff provides facilitation and process design support for collaboration and consensus-building on water-related matters across the state. **In FY24**:

- Staff co-facilitated and provided process design services to the North Shore Water Resilience Task Force, a multi-sector group chaired by Senator Bruce Tarr. It aims to improve water supply resilience and ecosystem health in the Ipswich River Watershed. Staff also provided technical support on two Task Force subcommittees.
- The Task Force reached consensus on a "Joint Narrative" describing the challenges and opportunities facing the watershed, contracted three studies to help evaluate potential regional actions, and explored how water conservation could improve regional resilience.
- Staff provided facilitation services to a multi-stakeholder group (legislators, regional planning agencies, environmental advocacy groups, and the chamber of commerce) exploring whether regional collaboration could improve water resource sustainability and ecosystem health in Southeastern MA. A FY24 milestone was contracting with the Consensus Building Institute (funded by the South Shore Economic Development Corporation) to evaluate the collaborative potential among ten communities. The evaluation will be completed in FY25.

THE INTERBASIN TRANSFER ACT (ITA)

The ITA protects Massachusetts' vital water resources and the communities that rely on them by requiring Commission review of proposals to transfer water or wastewater between river basins. It ensures:

- Hydrology and environmental resources in the donor basin are protected
- The receiving basin is using water as efficiently as possible
- The process is transparent and promotes robust public input

In FY24, the Commission voted to approve the following project:

- Town of Westport Request for Determination of Insignificance

Additionally in FY24, staff:

- Brought proposed revisions to the ITA Performance Standards before the Commission, with a vote to approve expected in FY25
- Commemorated the 40th anniversary of the ITA
- Monitored continued compliance with Conditions for previously approved ITA projects
- Provided consultations to project proponents with potential new interbasin transfers

WATER NEEDS FORECASTS

Commission staff works with public water suppliers to develop 15- to 20-year water needs forecasts, using a methodology approved by the Commission. The forecasts are used by suppliers in applying for Water Management Act (WMA) permits and in long-range planning. **In FY24,** staff consulted with MassDEP and four public water suppliers in three river basins (Concord, South Coastal, and Buzzards Bay) to review, revise, or prepare new water needs forecasts.

OVERSIGHT OF STATE WATER PROGRAMS

By statute, the Commission reviews certain water regulations promulgated by the Department of Environmental Protection (MassDEP), and other water resource-related programs, providing a forum for public comment.

In FY24, the Commission heard a presentation and discussion on proposed resilience updates to the Massachusetts Wetlands Protection Act, Water Quality Certification, and Chapter 91 Regulations (310 CMR 10.00, 314 CMR 9.00, and 310 CMR 9.00). The Commission also heard an update from MassDEP staff on EPA's new drinking water regulations for PFAS.

PL566 SMALL WATERSHED PROTECTION PROGRAM

This program continues to oversee the operation, maintenance, and repair of state-owned PL566 flood control lands across the Commonwealth.

FY2024 SPECIAL PROJECTS

Low Flow Statistics at Gaged and Ungaged Sites

In cooperation with Commission staff, USGS calculated low flow statistics at least impacted gages across the Commonwealth. To determine these statistics at other locations in the state, regression equations were developed on the low flow statistics at least impacted gages considering a wide range of characteristics such as basin area, aquifer characteristics, land use, precipitation, and water use. These regression equations are used in the USGS StreamStats application to allow users to get low flow statistics for any point on a stream in the Commonwealth. **In FY24,** the statistics at least impacted sites, regression equations, and the report were finalized. Public release of the products by USGS are expected in early FY25.

Drivers of Low Flow

Recently, new record low flows are being set with each drought even as annual precipitation increases. USGS in collaboration with Commission staff continued to explore spatial and temporal regression techniques to determine the factors contributing to this trend. These factors include climate variables, contributing area characteristics, land use, and water use. This project will continue through FY25.

Streamflow & Groundwater Network Analyses

Federal and state stakeholders met in May 2024 to review draft recommendations on locations to discontinue due to high human impact and on filling gaps in the network such as spatial gaps or aquifer material types. Following the meeting, WRC staff and USGS finalized recommendations for creating more comprehensive networks. The recommendations will begin to be implemented in FY25.

Groundwater Flooding Vulnerability Mapping

Working with Commission staff, the University of Massachusetts at Amherst created the first statewide, steady-state groundwater model that estimates average groundwater table depth. Groundwater flooding risk was categorized based on these current depths with respect to its ability to reach underground utilities, basements, septic systems, and stormwater controls. To determine future risk under climate change and based on projected precipitation increases, recharge rates were increased and their impact on groundwater levels and flooding risk were assessed. Sea level rise considerations were also modeled and included in the final future scenarios. Results were analyzed for impact by land use and environmental justice areas. The first public release of products on MassGIS and the report are expected in FY25.

Photo credit: David Boutt

Evaluation of Lakes and Impoundments Drought Index for the MA Drought Management Plan

Commission staff contracted with USGS to evaluate the MA Drought Management Plan Lakes and Impoundments Drought Index. USGS evaluated a subset of the currently monitored water bodies to test the index and document the methodology. A draft data release and draft report were completed in FY24. Public release of the final products by USGS is expected in FY25.

Guidance for Local Water Suppliers on Developing Local Drought Management Plans

Commission staff worked with the consultant Comprehensive Environmental, Inc. (CEI) along with a steering committee comprised of MassDEP staff and representatives from the water supply community to develop guidance to assist public water suppliers in the creation of Local Drought Management Plans. Draft guidance was completed in FY24. The guidance will be finalized and made available in FY25.

Drought Retrospectives for the 2020-2021 and 2022-2023 Droughts

Commission staff, with assistance from an EEA intern, developed draft retrospective reports for the 2020-2021 and 2022-2023 droughts. The retrospectives include background information, an overview of the conditions that led into the droughts, and data highlights including monthly summaries of the hydrologic conditions during those time periods. The documents are undergoing review, with release expected in FY25.

Ipswich River in Hamilton in August 2022

Integrated Water Data Access and Visualization

MassDEP and Commission staff contracted with USGS to undertake an extensive evaluation of, and improvements to, water data storage, access, sharing, and analysis needs within the Water Management Act program and the ITA regulatory review and water needs forecasting processes. USGS will coordinate with EEA IT in developing a detailed roadmap for the project and in creating processes for centralized data warehousing and internal/public-facing data access and visualization tools.

WATER CONSERVATION

OUTREACH

In FY24, Commission staff and multiple partner organizations developed a new tool called the MA Native Plant Palette, a user-friendly, interactive web application designed to help people of all skill levels explore native plants. The tool is intended to help build climate resiliency into residential landscapes by making native plant gardening more accessible across the state.

Staff also continued to support the Growing Wild for Pollinators program, another effort helping to build drought resiliency through native plant landscaping.

Commission staff maintained the promotional partnership with EPA's WaterSense program through water efficiency education and outreach for WaterSense campaigns such as Fix-A-Leak Week.

WATER EFFICIENCY ADVISORY COMMITTEE

In FY24, staff created the Water Efficiency Advisory Committee, a group of stakeholders with representation from water suppliers, environmental groups, and state agencies that meets regularly to discuss ideas for advancing water efficiency initiatives across the state.

ALLIANCE FOR WATER EFFICIENCY

In FY24, Commission staff continued efforts to keep MA water efficiency priorities on the national stage by serving on AWE's education & outreach and research committees, multiple sub-committees and working groups, and the advisory committee for AWE's 2nd annual Water Efficiency and Conservation Symposium.

WEBLINKS

Interbasin Transfer Act: www.mass.gov/interbasin-transfer-act

Precipitation Data: https://www.mass.gov/info-details/precipitation-data

Drought: https://www.mass.gov/drought-management

Flood Hazard Management Program: www.mass.gov/guides/floodplain-management

Water Needs Forecasts: www.mass.gov/doc/water-needs-forecast-policy-and-methodology/download

Water Conservation Standards: www.mass.gov/service-details/details-on-the-2018-massachusetts-water-conservation-standards

Massachusetts Water Conservation Toolkit: mass.gov/conservemawater

USGS: www.mass.gov/cooperative-water-resource-planning-program

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CURRENT COMMISSION MEMBERS AND DESIGNEES

AGENCY MEMBERS:

Executive Office of Energy and Environmental Affairs
Chair & Member - Rebecca L. Tepper, Secretary
Designee - Vandana Rao,
Commission Executive Director

Executive Office of Housing and Livable Communities
Member - Edward M. Augustus Jr., Secretary
Designee - Chris Kluchman

Department of Conservation and Recreation
Member - Brian Arrigo, Commissioner
Designee - Anne Carroll

Department of Environmental Protection
Member - Bonnie Heiple, Commissioner
Designee - Kathleen Baskin

Department of Agricultural Resources
Member - Ashley Randle, Commissioner
Designee - Hotze Wijnja

Department of Fish and Game
Member - Tom O'Shea, Commissioner
Designee - Todd Richards

Office of Coastal Zone Management (non-voting member)
Member - Alison Brizius, Director
Designee - Tyler Soleau

PUBLIC MEMBERS:

Thomas Cambareri, Centerville, MA
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Kenneth Weismantel, Hopkinton, MA
Samantha Woods, Norwell, MA