



THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for November 9, 2023

Meeting conducted remotely via Zoom meeting platform, 1:00 p.m.

Minutes approved February 8, 2024

Members in Attendance:

Vandana Rao	Designee, Executive Office of Energy and Environmental Affairs (EEA)
Christine Kluchman	Designee, Department of Housing and Community Development (EOHLC)
Kathleen Baskin	Designee, Department of Environmental Protection (MassDEP), left 3pm
Duane LeVangie	Designee, Department of Environmental Protection (MassDEP)
Anne Carroll	Designee, Department of Conservation and Recreation (DCR)
Todd Richards	Designee, Department of Fish and Game (DFG), left 2pm
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Thomas Cambareri	Public Member
Christine Hatch	Public Member
Vincent Ragucci	Public Member
Kenneth Weismantel	Public Member
Samantha Woods	Public Member, left 2:10 pm

Members Absent

Tyler Soleau Designee, Massachusetts Office of Coastal Zone Management (CZM)

Others in Attendance:

Vanessa Curran	DCR/OWR	Katie Kahl	UMass Amherst
Jason Duff	DCR/OWR	Elizabeth Gorda	DCR
Viki Zoltay	DCR/OWR	Victoria Wu	DEP
Sara Cohen	DCR/OWR	Capria Curtin	DEP
Erin Graham	DCR/OWR	Robin McNamara	DEP
Kara Sliwoski	DCR/OWR	Mike Nelson	DCR
Cristina Kennedy	DER	Nick Moreno	MEPA
Zachary Jenkins	DOER	Robert Braza	EEA
Christina McKeown	DCR	Seema Ravandale	DEP
Hilary King	EEA	Meghan Selby	DEP
Marielle Stone	DEP	Ian Balcom	DER
Sefatia Romeo Theken	DFG	Jennifer Hughes	MEPA
Andreae Downs	Wastewater Advisory Committee (WAC)	Lisa Rhodes	DEP
Samuel Erickson	DEP	Marybeth Groff	MEMA
Misty-Anne Marold	DFW	Tay Evans	DEP
Sarah Miller	MDAR	Areeg Abd-Alla	DEP
Jennifer Durso	DEP	Andrea Papa	EEA
Grace Ronca	DEP	Nicolina Fraietta	DEP
Elizabeth Liu	DEP	Alex Smith-Lin	DEP

Elisheva Thoreen	OTA	Gelila Zena	EEA
April Smith	DPU	Michael Woodman	DEP
Seldron Geziben	DEP	Kathy Ward	DCR
Christian Fleischer	EEA	Robin McNamara	DEP
Liz Gorrill	DER	Sasha Auer	DCR
Dan Crocker	DCR	Daniel Sampson	EEA
Jennifer Pederson	MWWA	Mia Mansfield	EEA
Nadia Madden	DCR	Nick Shuler	DEP
Stephanie Sanidas	DCR	Michael Stroman	DEP
Katharine Lange	Mass Rivers Alliance	Tim Biggs	DCR
Becca George	EOHLC	Judy Shmitz	DEP
John Macone	Merrimack River Watershed Council	Thomas Maguire	DEP
Matthew Sokop	DEP	Debra Berger	DCR
Sarah Bower	Mass Rivers Alliance	Tay Evans	DEP
Vin Malkoski	DMF		

Rao called the meeting to order at 1:02 p.m.

Agenda Item #1: Welcome and Introductions

Rao announced that the meeting was being recorded only for the purpose of meeting minutes and all votes would be taken by roll call. She invited those who wish to speak during the meeting to indicate this in the chat window. Members and attendees introduced themselves.

Agenda Item #2: Executive Directors Report

Rao briefly went over the materials in the meeting packet, and then reminded the commission that the December meeting will be held in person at the MDAR office in Southborough. She also described several conferences that staff attended over the past month, including the MA Floodplain Managers Conference and the Water Resource and Sustainability Symposium hosted by the New England Waterworks Association.

Rao asked commissioners if they had any announcements. Hatch agreed that the Floodplain Managers Conference was excellent. She also explained that she had received a call recently from a reporter regarding a public water system that was considering selling to a private company and was wondering if the commission had a stance or standard practices in place to safeguard the interests of the public during these water system transactions. Rao answered that she has not seen this type of transaction during her time, but that she thought there were cases of the opposite, in which a private water supply transitioned to a public water system. Baskin said she thinks Pine Hills sold to Aquarion, but she wasn't positive on the details. Rao stated that DPU regulates private water suppliers and that the conversation on whether certain guardrails should be put in place might need to involve both DPU and DEP. Cambareri described how the Town of Barnstable bought the Barnstable Water Company and that there were a lot of repairs needed, as well as more recent work needed to deal with PFAS, which would have been difficult for a private company to manage.

Rao mentioned that another consideration in the case that Hatch brought up is whether the transition is to private ownership or just private management with the water remaining in the public domain. Weismantel described a situation in Stow, MA in which a subdivision was on a privately owned water system and the owner had to get several loans for repairs. In order to pay the loans back the owner had to raise the rates by 300-400%, and then the owner died and the system was abandoned, forcing the entire subdivision to dig their own private wells. Weismantel explained this anecdote is an example of why he worries about the long-term viability of private water suppliers.

Woods described in more detail the situation with Hingham's water supply being bought back by the public from Aquarion. She explained that the DPU has governance over the rate-setting for private suppliers and that process is supposed to balance the public interest with that of the private profits for the company. She stated that Hingham felt that the private supplier was not prioritizing the maintenance of the system as much as a town or publicly owned service would, so the decision was made to purchase the supply and reinvest what would have been profit back into the infrastructure needs.

Pederson noted in the chat that DPU does regulate investor-owned water utilities, and that she thinks they are the best entity to handle protections for the public.

There were no other questions or comments by commissioners.

Agenda Item #3: Update: Hydrologic Conditions

Rao introduced Graham to present the Hydrologic Conditions Report for October 2023.

- *Temperature*: Monthly average temperatures were above normal.
- *Precipitation*: Precipitation was below normal to normal. Below-normal areas include the Southeast, Cape Cod, and Islands Regions. There was no snow cover at the end of October.
- *Evapotranspiration*:
 - *Crop Moisture Index (CMI)*: Abnormally moist and slightly dry/favorably moist conditions across the state at the end of the month.
 - *Evaporative Demand Drought Index (EDDI) 1-month and 2-month*: Normal to below normal.
- *Keetch-Byram Drought Index*: The Keetch-Byram Drought Index showed normal soil moisture conditions at the end of the month.
- *Streamflow*: Streamflow was above normal except for the Cape Cod Region where it was normal.
- *Groundwater*: Groundwater was below normal to much above normal. The Islands Region is the only region elevated at ISL 2.
- *Lakes & Impoundments*: Lake and Impoundment levels were above their 30th percentile and/or were at or near 100% full.
- *Drought status*: all regions are in Level 0 Normal Conditions.
- *US Drought Monitor*: At the end of October, the USDM showed no areas of drought.
- *NOAA Climate Prediction Center outlooks*: NOAA's November outlook shows chances leaning for below-normal temperatures and equal chances for below-normal, normal, or above-normal precipitation. NOAA's 3-month outlook shows chances likely for above-

normal temperatures and equal chances for below-normal, normal, or above-normal precipitation.

Rao and Graham discussed the Islands region being at index severity level 2 for groundwater. Rao asked what impacts might be occurring because of the low groundwater, but acknowledged that there is not as much demand this time of year so it might not be impacting water supply. Rao and Graham both stated that there appears to be a longer term, multi-year deficit and drought on the islands, despite the state not declaring a drought because of the other indices not tripping. Carroll added that based on discussions with the Drought Early Warning Systems group, people are less concerned with the conditions on the islands right now because there isn't much ET occurring, as well as the fact that we're heading into the winter months. Rao mentioned that if recovery doesn't happen over the winter, we could see more impacts in the spring and summer. Graham added that precipitation is another consideration and it's more difficult to track on the islands because there are few stations.

Cambareri said it was interesting that the Sandwich well is close to the water department's well fields which have been identified by USGS as potential areas of impacts, and that the Wellfleet well is near the new Eastham water supply. He wonders if there could be more pumping going on or new wells put in that could be impacting the groundwater levels. Rao stated that the network analysis that WRC staff is working on in collaboration with USGS and DEP will hopefully answer some of these questions, but that she wasn't sure if the two wells that Cambareri brought up have been part of the network analysis conversation, so she will make sure this thought is conveyed.

Richards asked if the instrumentation has been evaluated, particularly for Nantucket since it's showing such different results. Carroll responded that the same question came up at last month's meeting and USGS stated that the instrumentation had been checked and was functioning as it should.

Rao also commented that the one-month precipitation lookback was starting to show some deficits for the Southeast, Cape, and Islands, so this is something to keep an eye on for November.

Agenda Item #4: Vote: Meeting Minutes, August 2023

Rao invited a motion to approve the August 2023 meeting minutes.

V O T E	A motion was made by Weismantel with a second by Ragucci to approve the August 2023 meeting minutes, as amended with corrections and clarifications submitted by MassDEP. The roll-call vote to approve was unanimous of those present.
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Agenda Item #5: Vote: WRC Annual Report FY2023

Rao announced that the next item on the agenda was a vote on the WRC Annual Report for FY2023. She invited Carroll to give a quick overview of the final version of the report. Carroll went through the various sections of the report including the commission's structure and responsibilities, specific programs, highlights on the recently passed amendments to the WMA

regulations, and special projects that the staff worked on throughout the year. She also thanked the WRC for their ongoing guidance and support on all the work outlined in the report.

Rao invited a motion to approve the WRC annual report for FY2023 as written.

V O T E	A motion was made by Weismantel with a second by Kluchman to approve the WRC Annual Report FY2023.
	The roll-call vote to approve was unanimous of those present.

Kluchman asked for the link to the report to be shared, and Rao answered that she would share the link as well as send the report as a PDF to commissioners.

Agenda Item #6: Presentation: Revisions to the Massachusetts Drought Management Plan

Rao announced that the next agenda item was a presentation on recent revisions to the state's drought management plan (DMP). She noted that the plan was last updated in 2019, and that major revisions that have been made focus on changes to the crop moisture/evapotranspiration index. She reminded that in 2022 staff presented a change in this index to the Drought Management Task Force (DMTF), and that body accepted the changes. Those changes were pulled together into the DMP, were released to the public in July, and the comment period ended in August. Rao explained that the intent was to do the presentation on the changes today, and then have a final vote to accept the updated DMP at the December meeting.

Rao then went over the highlights of the changes made to the plan, including:

- Added Division of Marine Fisheries under DFG to the list of stakeholder representatives
- Added a description of the MWRA system and map
- Updated the section on drought history
- Added more detail to the section on communication processes during drought
- Minor updates to the table that outlines the drought response actions for each drought level
- Updated the WMA requirements based on updated regulations
- Updated community response guidance
- Added information on developing drought resilient water rates
- Amended the appendix on private wells with more details
- Changes to indices (most significant changes in the plan):
 - Revised calculations to include weekly calculations
 - Added a couple of streamflow data points on Cape Cod
 - Updated the maps for each of the indices
 - New evapotranspiration index

Rao invited Carroll to speak in more detail about the new evapotranspiration index, as this was the most significant change in the plan. Carroll explained that the need to update this index was identified several years ago when it became obvious that the crop moisture index was not providing signals. WRC staff then worked with the Northeast Regional Climate Center at Cornell and the New England Drought Early Warning Systems group to analyze and choose replacement

indices. She reminded commissioners that the chosen indicator was presented to the WRC in July 2022, and that this overview was to serve as a refresher on the chosen index.

Carroll explained that staff were looking to find a timelier identification of the early onset of drought, in particular a way to identify when precipitation may not actually be available or making it into the water budget because of factors like high temperature and evapotranspiration. Several criteria were evaluated for the possible replacement indices, which led to choosing the two-month EDDI (the same product that is recommended by NOAA). Carroll also mentioned that an appendix in the updated DMP describes the detailed analyses done to choose this indicator.

Lange asked if there would be a public comments document that summarizes the comments and how the agencies responded. Rao said that the next few slides covered this topic. Pederson noted that there was a typo in the private well appendix.

Carroll explained that written comments were received from MWRA, MWWA, and also various state agencies. There were eight general comments, three of which required quick changes, while the rest required more substantial changes. The sections that required more substantial changes were the general policy, declaration process, and drought indices and data sections. Carroll described the general policy comment as a request to look again at how the state declares drought compared to the U.S. drought monitor. Rao explained the difference between the two, which is that the U.S. drought monitor doesn't declare drought, it simply shows drought conditions. She also explained that there are ongoing efforts to make messaging more effective to try to bridge the communication gap, but that there would likely always be some level of confusion because they are two separate entities.

Carroll went on to explain that the next comment was from MWWA regarding the possibility that the current methodology was resulting in drought getting declared too frequently. Carroll added that it might seem that way because since 2019 there have been more frequent periods of drought compared to earlier years. She described a sensitivity analysis that staff completed by comparing the state's recommended drought levels with that of the U.S. drought monitor, and this comparison showed that the current plan was not causing an over-declaration of drought.

The next comment was a request to look at the other types of drought in the drought plan. Carroll stated that there was already a section on that, but ecological drought might have been missing. The second part of that comment was requesting the task force to look at different types of drought more independently. Carroll explained that the DMP approach is to look at drought more comprehensively and to weigh all factors collectively, and the method has been working.

Another comment was a request to add a specific piece of language from the WMA regulation revisions to the plan, but it was decided that the level of detail the commenter was looking for was not appropriate for the DMP document, which is a policy guidance document and not intended to describe details of specific regulations.

There was also a request to include a broader description of the MWRA system along with a map of their service area, which was included in the current draft.

Another comment was a request to further separate out each island within the Islands region. Carroll explained that this request was considered, but there is insufficient data to support further separating out this region, and therefore that change was not being recommended.

There was a request to weight the indices so that it's more clear which indices trigger declarations. Carroll explained that there is already some preference given to certain indices the way the plan is currently written, including guidance over which indices to focus on at the beginning and end of droughts.

There was also a request to include the groundwater network analysis as an appendix, which will be done once that analysis is complete. Similarly, there was a request to expand the lakes and ponds index to get more data points. Carroll agreed that this would be very beneficial, and there are ongoing efforts to determine if there are any bodies of water that would meet the criteria to get included in that index.

Another comment expressed concern over the ET index, specifically that the EDDI relies more heavily on temperature than precipitation. Carroll explained that this was intentional in the decision to choose the EDDI index, as temperature is having a larger impact on drought in recent years.

Lastly, there was a request to evaluate if the water levels for Ashumet Pond on the Cape are being impacted by nearby groundwater pumping. Carroll explained that staff reached out to the USGS expert for the Cape who said they believe the impacts from the nearby pumping are very limited and don't expect that it would have an impact. USGS stated that they felt strongly that that location should be kept as part of the network.

Rao repeated that there would be a vote on accepting these revisions to the DMP at the December meeting, after which the plan would be published online.

Weismantel asked if the increase in more rapid onset droughts was due to changes in conditions, or just changes in methodology. Rao explained that the experience of rapid onset droughts is happening all over the country, and some possible explanations are related to increased temperatures, changing wind patterns, and potentially more general affects of climate change. She added that since it is a more recent phenomenon, the causes are yet to be determined, although there are researchers looking into it. Weismantel added that it is public perception that ends up forming the response to drought, and that he is concerned about desensitizing the public if drought declarations become much more frequent. Rao explained that the more frequent droughts are happening across New England, and something that should be looked at more closely in the future is what the rest of the region is experiencing, and how our indices and what they're capturing compare to the rest of the region.

Baskin thanked the staff for conducting the analysis comparing the old methodology with the new methodology. She also noted that over the past ten years MA has been experiencing many record high average temperatures. Baskin also stated that the change to the methodology in 2019 made the drought response more nimble and allowed for the ability to both declare and move out of drought in a more timely manner.

Cambareri agreed that the updates to the plan are very good and thanked the staff for their efforts. He also acknowledged that the DMTF is a great opportunity for networking on drought conversations. Cambareri also voiced concern over the one data point for the lakes and impoundments index on the Cape and how that might influence the drought level declarations for that region. Rao acknowledged the concern and noted that the hope is that more data points can be added to the network.

Pederson asked if the comparison between the MA DMP and the U.S. drought monitor results could be shared, to which Rao responded that those results will certainly be shared.

Hatch commented that the DMP is very well researched and put together. She acknowledged the concern over getting desensitized to drought declarations with the more frequent rapid onset of drought conditions, but it is something that we will have to adapt to.

Pederson commented that she disagreed with the earlier description of the DMP as a policy guidance document because it references regulation and has a bigger impact that will affect MWWA members with its implementation. She also mentioned that she thinks droughts receding more quickly should be mentioned in addition to them beginning more quickly. Rao acknowledged Pederson's concerns and said the commission and staff will continue to work with her on how best to communicate with MWWA members and the public during droughts, as well as working to better understand what the challenges are on the ground for suppliers so that we can find ways to provide additional assistance.

Agenda Item #7: Presentation: 2023 Resilient Mass Plan Overview and Next Steps

Rao invited Marybeth Groff from MEMA and Mia Mansfield from EEA to give a presentation on the 2023 Resilient Mass plan.

Groff introduced herself as the hazard mitigation and climate adaptation coordinator at MEMA. She explained that Executive Order 569 passed in 2016 required the state to create a combined hazard and climate mitigation plan, and that MA was the first state in the country to do this combination. The first version of the plan was launched in 2018, and at this time over \$2 billion was allocated for climate resiliency, Executive Order 569 was codified, and the municipal vulnerability preparedness program (MVP) was created. Governor Healey then signed Executive Order 64 in 2023 which established the climate chief and Office of Climate, Innovation, and Resilience.

Groff went on to describe that the hazard mitigation plan is required by FEMA to make the state eligible for funding, but also provides a framework for evaluating risks and vulnerabilities. She noted that since 2010, MA has received over \$300 million of federal funding through FEMA.

She explained that the plan is required to be updated every five years, and with the most recent updates it has become the Resilient Mass Plan. The plan prioritizes projects based on the recently completed climate change assessment that looked at five different sectors across seven regions across the state. The plan also establishes 142 cross government and state agency actions to address climate change.

Groff gave an overview of the most significant risks that the climate change assessment identified, including rising temperatures, increased precipitation and associated coastal flooding, sea level rise, and severe weather. She also gave an overview of the risk and vulnerability assessment, which evaluated the potential impacts of climate change on humans, governance, infrastructure, the natural environment, and the economy, followed by an overview of the state's current capability and capacity to manage these risks. Gross also described several of the Resilient Mass Plan agency action items, including the establishment of the Resilient Mass Action Team and Leading By Example programs, as well as examples of specific actions to address such risks as extreme storms, high heat, and flooding from precipitation.

Groff introduced Mansfield to give an overview of the strategy section of the plan. Mansfield went into more detail on the 142 actions that are being proposed by the Resilient Mass Action Team. She explained that these actions are meant to specifically address some of the top hazards and impacts. She then noted that the actions are being tracked on the Resilient Mass Plan "action tracker" which can be found on their website along with the actual plan as well as other resources such as summary materials by region, sample presentations and social media content, and various data from the plan.

Mansfield went on to explain updates to the MVP program, which include efforts to have a greater focus on social and environmental equity and justice. She also mentioned the launch of the EEA Office of Climate Science, a new team to provide subject matter expertise on statewide climate data and projections and models. Rao added that one of the members of that new team is Caitlin Spence, who came to a previous WRC meeting and who has a strong background in hydrology and flooding. Rao explained that there will continue to be a lot of crossover between the WRC and the new climate team.

Rao thanked Groff and Mansfield for the presentation and noted that it's wonderful to see a science-based approach toward planning for future impacts, and then opened it up for questions or comments.

Wijnja asked what the process was for determining the five sectors that were included in the assessment and wondered about agricultural impacts. Groff explained that the sectors were carried over from the 2018 plan, and that agriculture was included in a couple of different places because it is related to multiple sectors. For example, impacts to agriculture could be an economic impact, but also a natural environment impact. Mansfield added that there is a section on agriculture in the actual climate assessment report.

Kluchman asked for more detail on the action tracker. Mansfield answered that they have a vendor who developed elements of the website, including the action tracker.

Rao commented that there is a lot of crossover in the actions being taken across all the different state agencies housed within the different secretariats, and the impact that all of the actions will have is actually much more than what is directly written into the plan. Groff added that the process included full stakeholder involvement, including at the local community level.

Rao asked Mansfield to briefly talk about the MVP program. Mansfield explained that this program has nine staff and has been around for about five years. She said a big focus of the

program right now is trying to make the information, tools, and policy priorities reflect environmental justice and equity. She said they have a \$20 million annual budget for the program, and this funding is used for a variety of projects across the state including building resiliency to risks like flooding and heat at the local level. Rao added that she believes virtually every city and town across the state has applied for and taken advantage of MVP funds since the program's inception.

Rao thanked Groff and Mansfield again for their presentation.

Rao invited a motion to adjourn the meeting.

V O T E	A motion was made by Weismantel with a second by Ragucci to adjourn the meeting.
	The roll-call vote to approve was unanimous of those present.

The meeting adjourned at 3:06 p.m.

Documents or Exhibits Used at Meeting:

ATTACHMENTS:

1. WRC Meeting Minutes: August 10, 2023
2. FY2023 WRC Annual Report
3. Draft Massachusetts Drought Management Plan 2023
4. Correspondence dated October 5, 2023 from the WRC to the MEPA Office regarding the Expanded Environmental Notification Form for the Ipswich Mills Dam Removal
5. Interbasin Transfer Act project status report, October 20, 2023

Compiled by: JD

Agendas, minutes, and other documents are available on the web site of the Water Resources Commission at <https://www.mass.gov/water-resources-commission-meetings>. All other meeting documents are available by request to WRC staff at 10 Park Plaza, 6th floor, Boston, MA 02116.