THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for January 14, 2021

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

Minutes approved April 8, 2021

Members in Attendance:

Vandana Rao	Designee, Executive Office of Energy and Environmental Affairs (EEA)
Linda Balzotti	Designee, Department of Housing and Community Development (DHCD)
Anne Carroll	Designee, Department of Conservation and Recreation (DCR)
Duane LeVangie	Designee, Department of Environmental Protection (MassDEP)
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Kate Bentsen	Designee, Department of Fish and Game (DFG)
Thomas Cambareri	Public Member
Marcela Molina	Public Member
Vincent Ragucci	Public Member
Kenneth Weismantel	Public Member
Samantha Woods	Public Member

Members Absent

Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)

Others in Attendance:

Erin Graham	DCR/Office of Water Resources
Marilyn McCrory	DCR/ Office of Water Resources
Matthew Mostoller	Acton Water District
Jennifer Pederson	Massachusetts Water Works Association
Sara Cohen	DCR
Greg Kahoun	Dover Water Resources Committee
Dave Fox	Raftelis
Vanessa Curran	DCR
Katie Ronan	Massachusetts Water Resources Authority
Lynn Gilleland	EPA, Region 1
John Scannell	DCR
Lexi Dewey	Water Supply Citizens Advisory Committee
Andreae Downs	Wastewater Advisory Committee-
Vicki Halmen	Town of Ipswich

Rao called the meeting to order at 1:03 p.m.

Agenda Item #1: Welcome and Introductions

Rao announced that the meeting was being recorded for the purpose of meeting minutes only 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 Director's Report and Drought Response Updates

Rao called attention to documents in members' meeting packets, in particular, the Water Resources Commission's decision on the town of Burlington's request for an interbasin transfer and two comment letters to the Massachusetts Environmental Policy Act office related to potential interbasin transfers. Rao also provided an update on drought conditions, noting that rainfall in November and December had contributed to a return to normal conditions, and the EEA secretary had declared an end to the drought in Massachusetts.

Samantha Woods joins the meeting at 1:10 p.m.

Agenda Item #3: Update: Hydrologic Conditions and Drought Status Update

Graham provided an update on the hydrologic conditions for December 2020. She noted that precipitation was above normal for all regions, except for the Western region, where precipitation was normal. She added that precipitation has been normal to above normal for the past three months and this has contributed to the recovery of the other indices. Streamflow was above normal. Groundwater levels continue to improve. Rao noted that recovery in individual wells may lag, but at the regional scale, groundwater levels have recovered.

Graham continued reporting on other indices, noting that lakes and impoundments continue to fill, with reservoirs in the Southeast drought region making a nice recovery. She added that season-to-date snowfall is on track, but most of the snowpack has disappeared, except for an area in the northwest corner of the state. December temperatures were on the warm side. The year 2020 saw above-normal average temperatures for all of the Northeast climate sites, with Boston recording its warmest year on record, and Worcester recording its second-warmest year on record. The U.S. Drought Monitor showed no drought or abnormally dry conditions by the end of the month. Neither the monthly nor seasonal drought outlook shows drought development.

Weismantel asked (1) if staff has evaluated performance of the new drought indices during the latest drought and (2) if many people changed behavior when the drought was in effect. Rao responded that the indices provided an earlier indication of the onset of drought. She added that the impact of the COVID-19 pandemic made it hard to discern the impact of drought on water use, noting that residential water use was affected by so many people working from home, while commercial water use declined. She acknowledged the need to evaluate performance of the new indices and the updated plan for drought response.

Woods asked if the hydrologic conditions report is published online. Carroll provided instructions for finding the report on the mass.gov Water Data Tracking web page (https://www.mass.gov/info-details/water-data-tracking).

Bentsen asked how a large snowfall event is captured in the snowpack report. Graham offered several options for reporting snowfall.

Cambareri described conditions on Cape Cod, noting that groundwater levels were very high at the beginning of the drought and dropped to a normal level by the end of the drought. He added that "normal" conditions have changed in the last three years, with more pond shoreline being exposed than has been observed in the past, and he noted that pond shorelines provide a "window" into the aquifer levels.

Woods reported that reservoirs in Scituate refilled quickly after a three-inch rain event. She also reported that baseline demand has increased twenty percent because of changes resulting from the COVID-19 pandemic and that this increase is being sustained, even in winter. She also reported pandemic-related operational challenges for the water supplier, including reduced staffing because of illness or requirements for social distancing. For example, meter upgrades, which can help the system monitor water use during a drought and which are typically done in the slow season, were postponed.

LeVangie reported the MassDEP has tried to remain flexible with conditions on permits. Pederson noted other challenges facing water suppliers and reported that the financial impact of the pandemic on water supply operations may be evident for years to come. She added that the priority for water systems is vaccinating essential workers as soon as they are eligible.

Rao announced that DCR has appointed Vanessa Curran in the position of Assistant Director of the Office of Water Resources. She commended Curran for the increased responsibilities that she took on over the past year and for stepping quickly into the duties of her new position, particularly with an increase in the number of Interbasin Transfer Act projects.

Agenda Item #4: Vote on the Minutes of November 2020

Rao invited a motion to approve the meeting minutes for November 12, 2020.

V O T E	A motion was made by Weismantel with a second by Ragucci to approve the meeting minutes for November 12, 2020. The roll-call vote to approve was unanimous of those present.

Agenda Item #5: Presentation and Discussion: Best Management Practice Guide for Water Suppliers on Water Data Management and Analysis, with case study application

Rao reviewed work by staff over the past several years in investigating best practices related to water rates. An outcome of this work is recognition of the importance of gathering data on water use to help guide and target water conservation efforts. She introduced Sara Cohen of DCR and staff to the WRC, and Kate Bentsen of DFG.

Cohen noted that stakeholders have expressed concern for many years about the impact of water conservation on revenues. She described how the work on water pricing evolved, starting with the update of the Massachusetts Water Conservation Standards. This was followed by a series of efforts that were conducted in partnership between water resources staff at DCR and Division of Ecological Restoration staff at DFG. These efforts included an outreach survey that was sent to every MA public water supplier to gather information on their water rate-setting experiences; a case study report highlighting lessons learned from water suppliers' rate-setting experiences; a well-attended workshop on rate setting conducted by the Alliance for Water Efficiency (AWE); development of a best practices guide on managing and analyzing water-use data, which involved issuing another survey to water suppliers and holding a supplier focus group; technical assistance with water data analysis to the town of Ipswich; and development of content on data management and pricing for the water conservation toolkit website.

Cohen noted that staff had presented results of the outreach survey and case study report to the Water Resources Commission in October 2018 and invited members to review the documents,

including a two-page summary of the case study report, which can be found on the Water Rates and Data Management page on the online Massachusetts Water Conservation Toolkit. She noted that the current presentation would describe the data management and analysis best practices guide and the Ipswich technical support effort.

She reminded those in attendance that among the lessons learned from the case study report was the importance of data management and record-keeping, data analysis, and communication. These are focused on in the BMP guide.

Cohen outlined the three sections of the guide – data collection and management, data assembly and preparation, and data analysis and interpretation – and then described each section in detail.

Best practices for data collection and management include metering all accounts, even nonrevenue accounts, and reading them at the same frequency; metering monthly, even if unable to bill monthly; eliminating or reducing estimated meter readings; eliminating or correcting meter reading errors; investigating evidence of tampering, leaks, or theft; backing up meter data and preserving it in perpetuity; and correcting source data for any errors identified in meter reading and billing.

She then described the key elements of the section on data assembly and preparation for analysis. These include determining whether to collect basic, intermediate, or advanced data; guidance on where to obtain the data; suggestions for how to file and format the data; and recommendations for quality control measures and preparing the data for analysis.

She noted that the bulk of the report is dedicated to the third section, data analysis and interpretation, which uses data from a Massachusetts supplier to illustrate the approach described. She explained that the data analysis section of the guide shows how analyzing water use data can deepen a water supplier's understanding of their system; inform decision-making around rates, financial planning, and conservation programming; and help in communicating messages to decision makers and customers. This effort starts with defining the challenges and priorities for the water system, such as peak capacity or revenue stability concerns, and determining the questions to be answered by the analysis.

Bentsen then provided details on technical assistance that was provided to the town of Ipswich by Division of Ecological Restoration staff, using the best management practices guide as a framework. As background, she explained that the town bills monthly, has a seasonal rate structure, and had upgraded its metering system to smart meters. She explained that the water-use analysis grew out of a water-neutral growth project funded by the Metropolitan Area Planning Council.

Bentsen explained that the team used Ipswich's data to develop user profiles and then analyzed these profiles to inform water conservation strategies. She explained that discretionary use was calculated by subtracting total winter use from total summer use.

Bentsen showed results of the analyses in a series of graphs. The analysis showed an increase in summertime water use in all the years analyzed. It also showed that single-family residences drove the increase in summertime water use. Further analysis showed that 60 percent of

discretionary use comes from the top ten percent of households. An analysis of commercial accounts yielded similar results, with sixty-two percent of total commercial water use in summer being attributed to the top ten percent of commercial accounts.

She noted that this analysis showed that for both residential and commercial accounts, the largest percentage of summer or discretionary water use can be attributed to about ten percent of users. She concluded by noting that collecting and analyzing data and creating these water-use profiles can help to inform water conservation strategies. In the Ipswich case, the analysis showed that water conservation outreach can be targeted to the small number of high users, saving time and effort. She noted that the town has also adopted a water-use mitigation bank, which can be a funding source for conservation outreach, and the town is conducting a cost-of-service study to determine the department's financial needs.

Wijnja requested insight on the types of high users among commercial accounts. Bentsen explained that high summertime water use by some commercial accounts may be related to the essential nature of that use, while for others, there may be room for improving efficiency.

Weismantel commented on the usefulness of these analyses. He cautioned that some commercial users may have private wells for irrigation and that this use may not show up in the analysis of the public supply accounts. Rao observed that much useful analysis can be done by collecting just basic data.

Woods described similar analyses in the towns of Scituate and Norwell, with similar results. She noted challenges in determining the number of people per household, identifying seasonal population, and changing the behavior of some of the highest water users.

Halmen commented that the analysis was an eye opener for the town and will allow the water department, with its limited resources, to focus its outreach efforts on a smaller number of customers. She noted that having the data on who the high users are, coupled with hourly and seasonal data from smart meters, will help the water department in reaching out to these customers. She also commented on the value of these data in understanding the system's expenses, revenues, and needs, which will help in revising its rate structure. She thanked state agency staff for their technical assistance.

LeVangie noted that results were similar in the analyses done in developing the Healthy Lawn, Happy Summer Toolkit, which the Division of Ecological Restoration developed in cooperation with MassDEP. He cautioned that the highest users may be the least responsive to price signals.

Pederson requested that the best practices guide be made more widely available. Cohen and Rao agreed that the guide should be distributed to water suppliers, and offered to work on this, perhaps through distribution lists that MassDEP has in place and through the Massachusetts Water Works Association. Cohen also noted that the guide is currently available on the Water Conservation Toolkit website.

Pederson asked how the town of Ipswich is targeting enforcement of its watering bans. Halmen acknowledged that enforcement is a tremendous challenge, especially for a small water department, adding that some people do not change their watering behavior in response to

higher prices. She added that it is often a small number of people who are the problem and are the hardest to reach. Carroll commended the town for its efforts, including implementing a seasonal rate structure, and, after the 2016 drought, adopting a new bylaw and updating its drought plan.

In response to a question from Cambareri about how the team distinguished between indoor and outdoor water use, Bentsen explained winter use was subtracted from summer use as a proxy for distinguishing indoor and outdoor use. LeVangie added that summer-to-winter differentials can be skewed by a few users. Cambareri explained that he was interested in understanding the percentage of residential water use that generates wastewater, noting that this has implications for nitrogen generation.

Cambareri leaves the meeting at 2:50 p.m.

Cohen noted how data can guide analyses and tell a story. She commented on the value of having monthly data in allowing a water department to establish a household's discretionary use. She then brought the discussion back to the best management practices guide, explaining that the guide goes a step further than what the Ipswich analysis looked at, examining some of the revenue implications of the water-use patterns identified. In the case study in the guide, two issues of concern for the community were peak demand and revenue instability. The guide walks through an analysis that looks at the revenue that comes specifically from discretionary use in this community and found that fifty percent was attributed to just ten percent of households. Cohen added that this type of analysis can help water departments anticipate the impact that targeted conservation outreach to top users may have on revenues and get ahead of the large deficit problems by modifying rates to ensure the recovery of essential revenue, even in the face of reduced peak demand.

Woods commended the team's work and suggested adding guidance on enforcement. She noted that smart metering is an important tool for data collection and enforcement and asked if the state could provide funding assistance. She also noted an increase in swimming pool installations and asked if there are other sources of water or best management practices for pools. Woods requested a link to the BMP guide, and Bentsen noted it can be found at https://www.mass.gov/guides/data-management-and-analysis.

Rao invited suggestions on how to disseminate the report more widely and make it easier to use at the local level. Pederson offered assistance in publicizing the report. She noted the complexity of the topic and emphasized that the approach needs to be simplified. She suggested that the state seek approval for training contact hours on this topic. She also commented on the challenges of enforcing watering bans and pointed out new challenges, such as PFAS and maximum contaminant levels, that water suppliers must also address.

LeVangie noted the challenges of increasing water rates at the highest tier. He offered MassDEP's help with messaging, such as explaining why peak demands increase costs. Cohen suggested framing this message in terms of a fair allocation of cost recovery, a concept that is generally supported by rate payers and decision-makers. Weismantel cited an example in Hopkinton of a commercial landlord who was in the top five percent of water users but refused to comply with watering bans.

Carroll leaves the meeting at 3:12 p.m.

Rao asked for feedback on what type of proactive support the state could provide. Halmen spoke of the challenges facing small water suppliers, including limited resources and staffing to handle a multitude of demands. She agreed that assistance with messaging about the importance and cost of water would be a help. Pederson suggested having state staff accompany water department staff on enforcement calls. Woods noted that watershed organizations seek to work in partnership with public water suppliers and can offer technical assistance and help with community outreach. Rao suggested that state staff can participate in meetings.

Cohen noted that new content will be added to the Massachusetts Water Conservation Toolkit and that water suppliers should check this toolkit frequently for resources, tools, and ideas. She noted that software exists to do the types of analyses discussed, but requested feedback on any enhancements that might be useful or on whether the state should invest in developing a tool for analysis. Weismantel noted that getting the data is the hard work.

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

Meeting adjourned, 3:18 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes, November 12, 2020
2. Correspondence dated December 14, 2020, from Water Resources Commission to MEPA Office regarding the Final Environmental Impact Report (FEIR) for the City of Taunton's Comprehensive Wastewater Management Plan
3. Correspondence dated December 22, 2020, from Water Resources Commission to MEPA Office regarding the Single Environmental Impact Report (SEIR) for the Town of Barnstable's Comprehensive Wastewater Management Plan (CWMP)
4. Report of the Findings, Justifications, and Decision of the Water Resources Commission Relating to the Approval of the Town of Burlington's Request for an Interbasin Transfer Pursuant to M.G.L. Chapter 21 §8C
5. Interbasin Transfer Act project status report, December 23, 2020
6. Hydrologic Conditions in Massachusetts, December 2020 (available at https://www.mass.gov/info-details/water-data-tracking)
7. Link to *Guide to Collecting, Managing, and Analyzing Water Usage Data*: https://www.mass.gov/guides/data-management-and-analysis
8. Link to *Water-Neutral Growth in the Town of Ipswich*, May 2020: https://www.ipswichma.gov/877/Water-Neutral-Growth-Plan

Compiled by: mjm
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 251 Causeway Street, 8th floor, Boston, MA 02114.*