



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

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**Meeting Minutes for December 19, 2019**

100 Cambridge Street, Boston, MA, 1:00 p.m.

Minutes approved \_\_\_\_\_

**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)
Michelle Craddock	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)
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**Others in Attendance:**

Matthew Mostoller	Acton Water District
Jen Pederson	Massachusetts Water Works Association
Erin Graham	DCR
Benjamin Rau	U.S. Geological Survey
Viki Zoltay	DCR
John Scannell	DCR
Kate Bentsen	DFG/Division of Ecological Restoration
Andrea Downs	Wastewater Advisory Committee
Katie Ronan	Massachusetts Water Resources Authority
Tara McManus	Weston & Sampson
Jennifer D'Urso	MassDEP
Marilyn McCrory	DCR
Vanessa Curran	DCR
Sara Cohen	DCR
Ryan Kingston	MA Department of Energy Resources

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Rao called the meeting to order at 1:05 p.m.

**Agenda Item #1: Executive Director's Report**

Rao introduced and welcomed Samantha Woods as a new Water Resources Commissioner, a public member, filling the vacant spot after the retirement of Bob Zimmerman. Samantha was a member of the WRC's Water Conservation Workgroup and has valuable and extensive experience in water issues. Rao also highlighted in the Commission's packet the MEPA notification regarding Burlington's application to purchase water from MWRA and their DEIR

submittal. Staff will be reviewing the DEIR for completeness and will submit comments to MEPA by January 10. Carroll noted that Rao was recently honored at the MA Rivers Alliance Annual meeting, receiving their 'River Friend' award for her work on the MA Drought Plan. Rao responded that she is very proud of the plan and couldn't have done it without the staff, for which she requested and received a round of applause.

**Agenda Item #2: Hydrologic Conditions Report**

November was below average for precipitation but most of the indices remain at normal with nothing of concern yet. Streamflow is now depicted with a new graphic and metrics. For most of the month gages were normal, with only 2 gages slightly below for a short time period. We continue to see a lot of variability. Groundwater showed a wide range. Some of the lower wells are a relic from the dry September conditions and some are from this month's deficit. The Cape on the other hand had several wells on the high end. Lakes and Impoundments are all normal. No drought expected in the near term.

**Agenda Item #3: Vote on the Minutes of October and November 2019**

Rao invited motions to approve the meeting minutes for October and November 2019.

V O T E	A motion was made by Ken Weismantel with a second by Linda Balzotti to approve the meeting minutes for October 10, 2019.
	The vote to approve was unanimous of those present.

V O T E	A motion was made by Ken Weismantel with a second by Vin Ragucci to approve the meeting minutes for November 14, 2019.
	The vote to approve was unanimous of those present with Linda Balzotti abstaining.

**Agenda Item #4: Highlights from the 2019 Water Smart Innovation Conference**

Rao reminded the Commission that Anne Carroll and Michelle Craddock attended the 2019 WSI Conference and presented on some of the work we are doing in MA.

Carroll highlighted the three major themes of the conference: Lots of new technology, new data management approaches, and robust testing of new technologies. Carroll shared some examples from the "internet of things" of smart meters and water smart software that are designed to help save water. Craddock mentioned an example of how water utilities have loaned smart meters to customers with high bill complaints to help explain their use. Carroll mentioned that one of the companies is willing to provide a demo unit to MA if we can figure out where it could be used.

Craddock highlighted some examples of studies that tested these new technologies. For example, San Antonio conducted a well-designed study with a test and a control group to evaluate rebates on different irrigation controllers. Craddock then highlighted what MA has been doing around water use data including developing a guidance document on how to analyze the data including helpful metrics and how to calculate them.

Comments, questions, and responses:

Rao asked about the cost of software. Mostoller replied that the cost is about 30K a year and it is very helpful and worth the price, helping with billing, real time water viewing and giving the utility a holistic view. It also helps with outreach and has reduced paper billing to half.

Craddock invited the audience to share their experiences with these new technologies. Ragucci responded that North Reading has water smart software and he can view his water use on his phone. Mostoller utilizes his meter technology to help de-escalate angry customers by showing them data on their irrigation system which has been very helpful in explaining high bills.

Pederson added a point of perspective that the significant rebate programs in the Western US will not be needed here because they have far greater supply constraints. MWWA does share new technologies with their members at their March meeting and could help try to find someone to take the demo meter. Mostoller highlighted procurement challenges when trying to purchase a service rather than a product and other challenges including lack of stability around new companies that aren't well established or understood. Ragucci highlighted that these products really can help change behaviors by bringing our water use to our attention with real time, readily accessible delivery.

Rao asked how the state could better support use of these new technologies and several responded that grants and other funding would help. Additionally, help with procurement challenges would be useful. Woods suggested staff could write up a case study from towns that are using some of these new technologies including frequently asked question, pros and cons. Rao recapped next steps for state staff which included developing case studies on new technologies which we can put on our new water conservation website and looking at ways to simplify procurement or scoring products or trying to get the products on Environmentally Preferable Products (EPP) lists.

Rao then noted that a few new people had joined the meeting and asked them to introduce themselves. Marcella Molina introduced herself, along with Andrea Downs, Ryan Kingston and Jen D'Urso.

**Agenda Item #5: Discussion on Draft WRC Annual Report, FY2019**

Rao introduced Carroll to summarize the Annual Report and invited comments. Carroll highlighted major accomplishments including substantial work on the MA Drought Plan, wrapping up the well replacement grant and documenting lessons learned, IBT approvals for Ashland and Crescent Ridge Dairy, review and revision of 8 water needs forecasts in 6 major basins, and publishing the revised Water Conservation Standards. Carroll thanked the members of the Water Conservation Working Group in the audience including Matt Mostoller and Samantha Woods.

Balzotti noted that the undersecretary listed for DOH is incorrect and should be changed to Chrystal Kornegay. Weismantel liked the format and didn't think it needed to be any shorter. Pederson requested the report clarify that several of the items the WRC was briefed on such as lead in schools they do not have oversight of.

**Agenda Item #6: Presentation on M36 Audits in Massachusetts to Improve Water Management**

Rao introduced the topic stating that the WRC wanted to understand the lessons learned from several years of DEP Water Audit Grants. LeVangie provided the background on DEP policy around unaccounted-for water and how they moved into supporting water audits through grants. He then introduced McManus, who was the lead consultant on the water audit grants. McManus summarized how the M36 process works and highlighted lessons learned and challenges. Lastly, Mostoller discussed Acton's specific experience conducting six audits, including four with the MassDEP grant program.

See the full presentation at <https://www.mass.gov/doc/presentation-m36-grant-program-overview/download>

McManus explained that a water audit is an additional tool to: assist PWSs with revenue management, assist with conservation, provide higher customer confidence, provide higher PWS confidence, set capital priorities, and respond to regulations.

She then walked the Commission and audience through the AWWA free software and highlighted the key components of the audit, defining them and giving some examples, including real and apparent losses, and revenue and non-revenue water. McManus then briefly described the inputs and differences between "top down" audits (the first step) and "bottom up" audits (a more detailed follow up look at specific components of revenue or non-revenue water).

McManus summarized the key findings from the 38 Top-Down Audits and 22 Bottom-Up Audits for a total of 41 different Public Water Systems (PWSs), conducted by Weston and Sampson under the DEP M36 Grant Program. Areas on which PWSs should focus were:

- 1) Volume from own sources – accuracy of master meters
  - Outdated master meters
  - Limited calibration
- 2) Customer metering inaccuracies
  - QA/QC
  - Reading vs. billing databases lead to billing inaccuracies
  - Aging/inaccurate meter populations
- 3) Systematic data-handling errors
  - Data collection
  - Unbilled unmetered usage

Comments, questions, and responses throughout the presentation:

Woods asked for clarification on the data validity score and why "volume from own sources" is often a high priority for attention. McManus stated that this is an area that can be challenging to pin down. It includes source meters, which can have calibration and other inaccuracies.

Rao asked where the data comes from and how long it takes to fill out the audit. McManus replied that much of it comes from the ASR, but it is important to have all the key players in the room to make sure one has all the data. Rao asked about the split between revenue and non-revenue water across the systems McManus has worked with. McManus said it is different for each system.

Mostoller's takeaways: The M36 audit is an important management tool. It puts a dollar value on losses. Having a third party for validation is helpful. The DEP grant program has a tight timeline, but it is helpful to have a deadline. The audit is a process but not a one-time process; it is ongoing and important to measure a system's progress against itself. Measuring against a neighboring community is not helpful as each system is different. Water theft is real, and the audit process helps identify unauthorized connections. Emphasis on team effort to complete an audit is helpful. Component analysis does provide insights about specific data areas.

Weismantel asked whether UAW is reduced following completion of the audit. McManus replied that yes, on average that is correct. Weismantel asked whether there were corresponding financial data on funds saved. McManus replied that financial data are available and Weismantel suggested that we all should do a better job getting that information out. Weismantel asked how many communities are doing a desktop audit every year. LeVangie replied that the ASR serves as that desktop level look. Weismantel highlighted that 50% of the communities are not meeting the 10% UAW standard. This is not good, and we need to do better. LeVangie and Pederson noted that in 2018, DEP's functional equivalence process allowed permittees to conduct an audit if they are not meeting the 10% standard. Over time this will mean that more communities will likely conduct audits. Pederson highlighted that the process can help you make business decisions to see where you get the most savings for your money.

Carroll asked whether the three presenters would be interested in offering today's presentation as a webinar and/or training. Pederson asked that people recognize that water loss is just one small part of what the water supply community must deal with. The water suppliers are challenged with many demands, and their time and resources to devote to audits are limited.

Meeting adjourned, 3:24 p.m.

**Documents or Exhibits Used at Meeting:**

1. WRC Meeting Minutes:
  - a. October 10, 2019
  - b. November 14, 2019
2. FY19 Draft WRC Annual Report (Draft, Dec. 5, 2019)
3. Interbasin Transfer Act project status report, December 5, 2019
4. 2020 Meeting Schedule, Water Resources Commission
5. Public Notice from the Water Resources Commission to the Massachusetts Environmental Policy Act Office: Receipt of a Request for Approval of an Action to Increase the Present Rate of Interbasin Transfer under the Interbasin Transfer Act, MGL Chapter 21
6. Section 8B-8D, Town of Burlington, MA
7. November 2019 Hydrologic Conditions in Massachusetts (available at <https://www.mass.gov/water-data-tracking>)

Compiled by: AC

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, 8<sup>th</sup> floor, Boston, MA 02114.