THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for March 9, 2017

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

Minutes approved May 11, 2017

Members in Attendance:

Vandana Rao	Assistant Director of Water Policy, 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)
Beth Card	Designee, Department of Environmental Protection (MassDEP)
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Thomas Cambareri	Public Member
Raymond Jack	Public Member
Paul Matthews	Public Member
Kenneth Weismantel	Public Member
Bob Zimmerman	Public Member

Members Absent

Todd Richards	Designee, Department of Fish and Game (DFG)
Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)

Others in Attendance:

Stephen Mabee	MA Geological Survey
Peter Weiskel	U.S. Geological Survey
David Boutt	UMass Amherst
Andreae Downs	WAC
Jennifer Pederson	Mass. Water Works Assn.
Duane LeVangie	MassDEP
Michele Drury	DCR
Erin Graham	DCR
Bessie DiDomenica	DCR
Jennifer Sulla	EEA
Marilyn McCrory	DCR
Gabby Queenan	Mass. Rivers Alliance
Vanessa Curran	DCR

Rao called the meeting to order at 1:04 p.m.

Agenda Item #1: Executive Director's Report

Rao provided an update on the meeting of the Drought Management Task Force held on March 7, 2017. The Commonwealth is still very much in a drought though there have been some significant improvements as compared to last summer and fall. All 6 regions are still at some level of drought. The Connecticut River and Southeast Regions are at a Watch level. The remaining four regions are at Advisory. These levels are the Task Force's recommendations. Secretary Beaton will finalize the drought declaration, likely today.

Rao provided an update on a drought meeting held by NOAA the prior week. It was the second such meeting. Federal agencies and the New England states gave updates. The ultimate goal is to try to come up with a drought early warning system for New England states.

Agenda Item #2: Update: Hydrologic Conditions

Carroll provided an update on the hydrologic conditions for February 2017. There is some cautious optimism about improvements seen in all regions except the Southeast. Precipitation was slightly below average. The 12-month SPI is still triggering drought levels. Shorter-term measures are in the normal range. Streamflow was good in February, with no streams remaining at record lows or below the tenth percentile, but began to drop in the Southeast in March. Groundwater is showing similar trends. There are still three wells at record lows, two in the Connecticut River Region and one in the Southeast, and three in the tenth percentile range, but this is far fewer than a few months ago. Reservoir levels have shown excellent improvements. All are normal except for the Cambridge system. This is likely because it was substantially drawn down due to having MWRA backup and also larger systems take longer to recover. The U.S. Drought Monitor shows some differences between their map and the Task Force's observations, in the Southeast (USDM shows less severe) and Western (USDM shows more severe) regions. Differences are likely due to methodology (USDM does not look at groundwater or reservoirs, different scale of resolution). The seasonal drought outlook indicates drought removal is likely in the Southeast, but at the Task Force meeting Alan Dunham of NWS stated that the longer outlook could be different if it was updated with the most recent March data.

Zimmerman stated that Cambridge did not respond to or declare a drought until they needed to start purchasing water from MWRA. Prior to this outdoor watering was not limited. The cost of buying from MWRA is very high and Zimmerman wonders what this did to residents' water bills, especially for those who cannot afford it. Zimmerman feels Cambridge acted irresponsibly for not responding to water shortages earlier. It would be in the Commission's interest to look at a more even statewide response during drought.

Rao noted that many communities in MA were proactive in enacting water use restrictions, above and beyond what is in their permits. Certainly it would be ideal for communities to be very cautious with water use during a drought. The impact of buying MWRA water does not get transferred to customers right away; it might be months later or at the end of the fiscal year. It will be a while before that impact reaches individuals. There is a monetary impact of conservation/reduction in use.

Matthews arrives.

Zimmerman noted that the Commission has not taken much time to discuss price points and effects on individuals and families and should consider impacts on water customers.

Carroll stated that the chapter on rates in the Water Conservation Standards does touch on this issue. It could be discussed further during the final revisions of the standards.

Card added that water revenues are needed for infrastructure upgrades. It is difficult to balance the need to charge enough for water to get the needed revenue while also making sure people can afford it.

McCrory clarified that Zimmerman was talking about the lack of water use restrictions on Cambridge's part, rather than the rates they are charging.

Continuing the update on hydrological conditions, Rao noted the current lack of snowpack. In a typical year there would be some snow on the ground. Right now there is hardly any or none depending on location. This could be worrisome.

Wijnja attended a cranberry growers meeting the previous day. This year could be challenging as some groundwater levels are lower now than last year in the Southeast. Presentations on water-conserving irrigation techniques were given.

Cambareri noted that groundwater levels on the Cape have receded and are going down instead of recharging as they should typically be at this time of year. The Hyannis water district in Barnstable is also having some water quality issues (contamination with emerging contaminants of concern) and is buying water from Yarmouth.

Agenda Item #3: Vote on the Minutes of June 2016 and January 2017

Rao invited a motion to approve the meeting minutes for June 9, 2016.

VOTE	A motion was made by Weismantel with a second by Balzotti to approve the meeting minutes for June 9, 2016. The vote to approve was unanimous of those present with one abstention (Wijnja).

Rao invited a motion to approve the meeting minutes for January 12, 2017.

VOTE	A motion was made by Weismantel with a second by Balzotti to approve the meeting minutes for January 12, 2017. The vote to approve was unanimous of those present, with two abstentions (Wijnja and Zimmerman).

Agenda Item #4: Presentation: Groundwater Storage Changes Across Massachusetts from 1960-Present

David Boutt of UMass Amherst gave a presentation on changes in groundwater storage in MA. He discussed the timing of how hydrologic systems respond to change. His research looks at how changes in groundwater storage impact the amount of water being driven to streams. Boutt presented two short studies. Monthly temperature, precipitation and streamflow levels were gathered around New England. Different aquifers respond differently to climate variability as subsurface materials impact groundwater flows. In dry periods, if groundwater levels fall enough, not as much water is driven to streams. During wet periods, the groundwater and surface water levels are strongly linked. Boutt's research was aimed at quantifying total volumes of water going in and out of different aquifers. The time it takes systems to respond depends on aquifer/stream connectivity as well as the properties of the aquifer.

He is also researching the isotopic composition of waters across the state to try to trace the timescales of response. Physical measures of hydrologic change are important but don't give the whole picture. It takes time for precipitation to go into the ground and then into streams. He

measures the stable isotopes of water. Heavy isotopes fall from the sky first and light isotopes evaporate first. He uses the understanding of this process to trace water through the system. There is a strong seasonal signal of this process as it is temperature dependent. Over the last 30-40 years there has been a change in isotopic composition of water due to the warming of the Arctic. Where the water is coming from is changing and it's visible in the water's composition. He is taking and gathering samples of groundwater and precipitation from many areas in the state to build a monitoring network. In the monitoring network they try to pair groundwater and stream isotopic measurements. Extreme storm events such as Hurricane Irene can be observed in the record. It took nearly a year for that water to be flushed out of the system. The current drought can also be observed.

Comments, questions, and responses:

- Rao noted that the 2000's were a very wet period for MA. Some significant differences are shown between that time period and the current period in the record.
- Jack thanked Boutt for pointing out the need for long-term observations.
- Weismantel asked if concentrated forms of these rare isotopes can be injected into one location and tracked throughout a system. Answer – some researchers have done that on small scales.
- Weiskel pointed out that the water shown in groundwater storage is not necessarily available to be pumped by wells.
- Rao suggested a future discussion could center around the recovery time of groundwater.

Agenda Item #5: Discussion and VOTE: Proposed Addition to Water Needs Forecasting Policy and Methodology.

Card explained that MassDEP is working through a schedule of Water Management Act permitting across basins in the state and the Cape is on their schedule. In meetings with Cape water suppliers, there were questions on water needs forecasts due to large seasonal swings in population.

Carroll provided a summary of the Water Needs Forecasting method and described the special method for the Cape. Revisions to the method were approved in 2007 and 2009. Staff at OWR start about 18 months from the date a permit is issued and issue draft forecasts before basin-wide public meetings are held, generally around 12 months before the application is due. Key data include three to five years of water use data from communities' annual statistical reports. Other data gathered include the population served and anticipated significant changes to water use. Population and employment projections come from the census, MassDOT, and UMass.

Matthews asked how it is handled if there are differing population projections. Answer – decisions are made on a case by case basis, looking at data from the regional planning agency and getting their input on which projection makes the most sense. Additionally the town planner may be consulted.

Carroll continued that the residential volume is carried forward using the population projection. The non-residential volume is calculated based on the average day demand volume for non-residential use for a period of time and then incorporating the growth rate based on the employment forecast.

Weismantel asked how for example a biotech company which would use a huge amount of water would be taken into account. Answer - supplier is asked if they have any significant increases expected on the horizon not reflected in the projections.

Zimmerman asked to delay the vote by one month, noting that he has to leave but is very interested in voting, and knows Fish and Game is interested as well and they are not present.

Card stated she was hoping to vote today as MassDEP is actively working with Cape water suppliers on their permits and can't move forward without the vote being finalized.

Zimmerman noted that Fish and Game has comments to make and it would be worthwhile to wait until next month to vote if possible. Rao responded that she is aware of efforts by DEP and DCR staff to work with Fish and Game and thinks their concerns have been allayed and will be addressed in an amendment to the memo prior to taking the vote.

Carroll continued that there was already a special method for the Cape due to seasonal variation in population which is not reflected in population or employment growth estimates. Even with the special method the seasonal growth was not being adequately reflected. Proposal is to increase the buffer to 10% for Cape communities to address greater uncertainty in seasonal swings in population.

LeVangie explained that language was added to address Fish and Games' concern that the mitigation requirement would be affected, which it is not.

Queenan asked if there was concern that other communities not on the Cape but that have seasonal population increases might want to ask for similar increases. Answer – yes but this increase is limited to Cape and Island communities only. Further the data show that these off-Cape towns do not experience nearly the increase in summer population that Cape towns do. It would need to be brought back to the Commission for any other communities. The existing special method has also only been used for Cape and Island towns.

Zimmerman departs.

Rao invited a motion to approve the revision to section on "Buffer Amount" in the Water Needs Forecasting Policy and Methodology, as outlined in the memo from WRC staff, dated January 31, 2017, amended to include the following additional language: "Note that the standard conditions are still applicable, baseline will still be calculated based on 2003-2005 volumes and all withdrawals over baseline require mitigation where feasible."

V O T E	A motion was made by Jack with a second by Cambareri to approve the revision to the section on Buffer Amount in the Water Needs Forecasting Policy and Methodology. The vote to approve was unanimous of those present.

Weismantel asked if anything was being done to gauge how communities are reacting to this policy or collecting any feedback, on both the forecasts and the permits. Card responded that MassDEP is holding outreach meetings and forums, and is mandated to report to the legislature in July. LeVangie outlined the public aspects of the permitting process.

Agenda Item #6: Discussion: Draft Water Resources Commission Annual Report, FY 2016

Rao introduced the topic and noted that WRC is obligated to submit this report to the legislature. Carroll reviewed the draft WRC annual report. Changes made include adding photos on one page and moving text into tables to summarize each program. Please send any comments on content or format.

Matthews asked for more discussion regarding the strategy for release of the report. This will occur at the next WRC meeting.

Meeting adjourned, 2:58 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes
   a. June 9, 2016
   b. January 12, 2017
2. February 2017 Hydrologic Conditions in Massachusetts (available at http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/monthly-water-conditions.html)
3. Draft Water Resources Commission Annual Report, FY 2016
4. Proposed Addition to Water Needs Forecasting Policy and Methodology
   a. Memorandum dated January 31, 2017, from WRC staff to the Water Resources Commission regarding Proposed Addition to Water Needs Forecast Methodology
   b. Redline/strikeout version of *Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation* (revised May 2009).
5. Correspondence from Water Resources Commission, dated February 8, 2017, regarding compliance with conditions of approved interbasin transfers:
   a. Hopkinton Water Department
   b. Canton Water Department
   c. Shrewsbury Water Department
6. Interbasin Transfer Act project status report, February, 2017

Compiled by: VC

Agendas, minutes, and other documents are available on the web site of the Water Resources Commission at www.mass.gov/eea/wrc under "MA Water Resources Commission Meetings." All other meeting documents are available by request to WRC staff at 251 Causeway Street, 8th floor, Boston, MA 02114.