THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for April 12, 2018

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

Minutes approved September 13, 2018

Members in Attendance:

Vandana Rao, Chair	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)
Douglas Fine	Designee, Department of Environmental Protection (MassDEP)
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Michelle Craddock	Designee, Department of Fish and Game (DFG)
Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Kenneth Weismantel	Public Member
Marcella Molina	Public Member
Vincent Ragucci	Public Member

Members Absent:

Thomas Cambareri	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Hong-Hanh Chu	EEA
Jennifer Sulla	EEA
Sara Cohen	DCR
Marilyn McCrory	DCR
Michele Drury	DCR
Viki Zoltay	DCR
Vanessa Curran	DCR
Erin Graham	DCR
Jennifer Pederson	MWWA
Kate Bentsen	DFG/DER
Duane LeVangie	DEP
Beth Card	MWRA
Kathy Bell	Green Industry Alliance
Stephen Estes-Smargiosi	MWRA
Chris Seariac	Needham DPW
Steve Cusick	Needham DPW
Wayne Castonguay	Ipswich River Watershed Association
Gabby Queenan	Massachusetts Rivers Alliance

Rao called the meeting to order at 1:05 pm with a roll call.

Agenda Item #1: Executive Director's Report

Rao opened by calling attention to Earth week next week. The State is organizing several activities and State Staff are attending events organized by other organizations. She hopes that people will find a way to participate.

Rao went on to discuss the revised Water Conservation Standards (WCS) and comments received. The draft was released last month and about 30 comments letters or emails were received. Staff is still going through the comments so we are not ready for full discussion today but we will have brief discussion. We'll have a full discussion next month.

Rao recalled that Weismantel asked for information at the last meeting about towns' achievement of performance standards in the last few years. The State has had these standards for over 10 years and they have been included in MassDEP permits. Commissioners received an email from Rao with the requested information. Rao turned it over to LeVangie, MassDEP to provide additional details. LeVangie referenced a handout and the information he has compiled. LeVangie gave some background, describe the Annual Statistical Reports (ASRs) received from PWSs including pumping, information on federal or local census, percentage of town served, percentage of water going to residential, commercial etc. If MassDEP detects a big change in numbers, then they follow up with the permittee. He said that for calculating the RGPCD, residential water use is separated out from all other uses. For UAW, any confidently estimated municipal use is removed which includes firefighting, flushing, main breaks, tank overflows, street cleaning and others. These values are all presented on MassDEP's website since 2009.

LeVangie proceeded to review the data on the handout for statewide averages performance standards for years 2012 through 2016. He noted that data has been consistent over these years with average RGPCD values ranging from 57 to 58, and UAW averages from 13% to 15%. LeVangie pointed out that the averages across utilities are not true averages as they are not weighted by the population served by each utility. In addition to averages, the lowest and highest values are presented. The second table presents the number of PWSs that are in compliance year to year. RGPCD compliance is steady over the years from 77 to 82 percent meeting the standard. UAW compliance was lower ranging from 41 to 49 percent in compliance.

UAW is a tougher metric to meet because of the older infrastructure in the State relative to other areas; so the standard was updated to include functional equivalence. MassDEP works with towns to review data and troubleshoot to achieve a lower the UAW. The percent UAW values ranged from 0 to 67 percent for all utilities and all five years.

Weismantel thanked LeVangie for the data and said that this answered all his questions from last time. Perhaps next time we could look at the UAW sensitivity. How many would be compliant if the standard was 12 or 15 or 18 percent. If we're only getting less than half people meet the UAW consistently over the past five or six years, then maybe we are setting expectations a little low. Maybe we artificially set a standard that is too high a bar and difficult to meet. People make their 10 percent by increasing denominator and decreasing the numerator?

LeVangie said that he can provide that information at a future meeting. He also clarified that the PWSs in the table counted as not meeting the standards are not necessarily out of compliance. They may simply not have the RGPCD and UAW requirements applied to them.

Weismantel worried that if we make a standard way below that, then we are setting up for failure. He would rather look at 10-20 percent that cannot make it.

LeVangie explained that previously if standards were not met, the utility was required to take more actions - more leak detection, more frequent billing etc. - until the standard was met. New permitting has 'functional equivalence'. If utilities fail to meet the standards two out of three years, then they must do an M36 audit which MassDEP pays for via grants. The audit will tell if data are accurate and give a validity score. If that score is high then it will point to areas to focus on. So MassDEP has moved to an action response rather than meet a certain standard response. Carroll said that the standards were crafted carefully including both of those concepts - the 10% for UAW is a first cut but an audit can show where the PWS can act within its system to reduce UAW.

Rao added that these standards were first put in in 2006. There was very careful language crafted to provide flexibility knowing that not all utilities will meet the standards but they should at least show progress. Without a goal, movement may not happen. The State has worked with the Massachusetts Water Works Association to understand issues with implementation, and has tried to find money to fund audits and take actions. This is a long-term process because there are many that cannot complete all necessary actions within five years. We will need more than 5-6 years of data, maybe a decade or two to see real progress.

Carroll mentioned that at the New England Water Works Association (NEWWA) conference there was a presentation by a consultant who has done many of these audits under the MassDEP grants. 40 have been completed.

Weismantel affirmed that goals are ok and maybe even at higher level but not sure that the standard is correct. PWSs were concerned before because there weren't enough wells to serve summer demand and on water conservation notice every other year. UAW goes back into the ground so not too bad for the environment. As long as UAW isn't because of metering issues at the well or at customers' homes. It seems there is a correlation between those who have high UAW and those with high RGPCD. As a water commissioner, he would be concerned because that is a revenue source. But if the PWS doesn't care to act then where does the Commonwealth's interest come in? Graham added that calling it non-revenue water rather than UAW may make it more of an interest to water commissioner and boards. Also, the WCS metering chapter talks about metering and testing to see where errors are to adjust replacement program

Fine asked if there was feedback from PWSs about the value of the audits. We've received it from consultants but what about PWSs. Seariac responded that Needham PWS had one done for them in the first round of grants two years ago and found it very helpful.

Pederson answered that it's heavy lifting upfront but PWSs are finding it helpful especially since it includes all non-revenue water not just leaks. She agreed that it would be helpful to call it non-revenue water and much more than leaks. And the process should be easier after the initial audit. The cost is ~$100,000 for a consultant to do. The State doesn't require the full M36, such as third party validation of data. It's a great first start but we need to continue to promote it and the grant program has done well to raise awareness that folks should be doing this.

Duane answered Weismantel's earlier question by stating that a 25% of UAW is not just a revenue issue for the PWSs. MassDEP must balance all permitees in a basin and protect 11 different interests outlined in the Water Management Act. If UAW is high, then Mass DEP cannot justify legally giving that PWS more water.

Rao thanked LeVangie because it helped answer lots of questions raised at prior meetings and helps us think through the UAW aspect. Over time we can move more and more towards the full M36 but we're in a good place by having created a hybrid and testing it with assistance.

Agenda Item #2: Hydrologic Conditions Report

Zoltay referred to the Hydrologic Conditions report. March saw uneven precipitation throughout the State, from 60 to 200 percent of normal. The West, Connecticut River Valley, and Central regions had low precipitation while Northeast, Southeast and Cape received above normal precipitation due to coastal storms. Streamflow and groundwater show spatial similar trends. Only one gage in the State is below normal but streamflow has been steadily declining in March from significantly above normal to ending slightly below normal. A few scattered wells below normal but not enough to trigger any indices. Record high groundwater levels on Cape and Islands. Reservoirs are considered normal. Weather and drought outlooks project near normal conditions.

Rao noted that one well on the groundwater map that shows in red was discussed with USGS. The well is likely not functioning properly. It has not recovered since 2016 drought. Zoltay added that the well was replaced under the USGS grant because USGS had run tests on the well and ran out of options on remediating it.

(Hydrologic Conditions Report is available at: https://www.mass.gov/service-details/hydrologic-conditions-reports)

Agenda Item #3: Vote on the Minutes of December 2017

Rao invited a motion to approve the meeting minutes for December 14, 2018.

VOTE	A motion was made by Weismantel with a second by Ragucci to approve the meeting minutes for December 14, 2017. The vote to approve was unanimous of those present, with two abstentions.

Agenda Item #4: Presentation and Potential Vote on Interbasin Transfer Act Policies to be Rescinded

Rao introduced the next item saying that the revised Interbasin Transfer Act (ITA) regulations have incorporated certain policies, so these policies are no longer needed as stand-alone documents.

Drury referred to a copy of the 2018 promulgated regulations in the Commissioners' package. Based on Weismantel's suggestion, staff reviewed old policies adopted by the Commission and found two that are now incorporated in the regulations. The first is the 1987 Wastewater Policy. This policy came about because the Commission received or was about to receive a major wastewater transfer request from MWRA and saw that the regulations at that time did not address the transfer of wastewater. The Act and the 1986 regulations required minimizing transfers through water conservation and use of local sources in the receiving basin. In the case of the MWRA, the receiving basin was the ocean, which made no sense. So the 1987 Wastewater Policy addressed how to consider application of certain criteria to an interbasin transfer (IBT) for wastewater. These have now been incorporated into the updated regulations.

The second policy was adopted in 2014, and addressed insignificance determinations for lakes or ponds where the applicant may not have control over outflow rates from the lake/pond, and so is unable to enhance streamflow below the lake or pond. The regulations as originally written only considered streamflow as the environmental metric for insignificance. In cases where it was felt that the small volume would not harm the lake or pond there was no way to evaluate the request under insignificance, and so the applicant usually had to go through the full review process. This policy that was adopted to address this gap is also now part of the existing regulations.

Callaghan asked if the wastewater part is all in one place in the regulations. Drury answered that wastewater is addressed in the definitions (313 CMR 4.02) and in 4.09, under the list of items the applicant must provide. Callaghan asked because this is the same information needed for the Ocean Sanctuaries Act.

Weismantel asked if there were any other policies to be rescinded. Drury answered that this is all under the ITA. He also requested that the WRC provide formal delegation to Staff to represent the WRC at regional meetings and other functions. Rao answered that we will come back with details on delegation in another meeting.

V O T E	A motion was made by Weismantel with a second by Balzotti to rescind the 1987 Guidelines for Interpreting the Interbasin Transfer Act's Criteria for Approval as Applied to: An Interbasin Transfer of Wastewater (1987) and the 2014 Guideline for the Interpretation of 313 CMR 4.04(3) and 4.04(4) Request for Determination of Insignificance as Applied to Transfers Primarily Derived from Lakes, Ponds, Reservoirs, or Other Impoundments as they have been incorporated into the 2018 revised regulations 313 CMR 4.00. The vote to approve was unanimous of those present.

Agenda Item #5: Follow-up Presentation on Summer Water Conservation Community-Based Social Marketing (CBSM) pilot project

Craddock introduced herself as the manager of the streamflow restoration program of the Department of Fish and Game. The pilot project was completed last summer working with Action Research consultants (AR). DER is interested in the topic of summer outdoor water use because water use is highest when streamflow is lowest which can lead to significant impacts to aquatic life. Since DER is a non-regulatory agency, it is looking for other ways to influence water use and understanding barriers for users to reduce use.

Previous efforts to try to change behavior were not very successful and included education with general informational and financial considerations to drive change. CBSM considers social and psychology factors to understand target audience, to better target messages and to better influence behavior. It is a five step process:

1. Identify the most important behaviors to target (e.g., which behaviors save the most water);

2. Identify community specific barriers and benefits to changing behavior via a mail survey;

3. Develop strategies which increase benefits for the desired action and reduce barriers;

4. Pilot strategies against each other and evaluate; and

5. Implement broadly.

DER worked with Ipswich River Watershed Association and Middleton and Wenham communities in implementing the project.

The project started in 2016 to develop prioritized list of target water use behaviors via a survey. The survey asked about background information, water use habits and perceptions of benefits and barriers for reducing watering lawns. The top two beliefs among those who used the most water were that grass dies when it is not watered and that there is not much water saved by reduced lawn watering.

The pilots were conducted in Wenham and Middleton where they tested two strategies. The first strategy was "feedback" which consisted of a household receiving a mailing comparing its water use to neighbors similar to them. The second strategy was "commitment" which consisted of door to door delivery of an informational flyer and a homeowner committing to reducing water use by signing a commitment form. There was a third group that was the control group who did not receive either material. There were 125 households per strategy in each town.

Ragucci asked whether the project looked at private wells. Craddock answered that they left out private wells because there may be different barriers and strategies for private well owners so they may need different approaches. Private wells are also not metered so it would be difficult to measure changes in water use. Ragucci noted that people with private wells have green lawns and sprinklers on even when it is raining. Rao added since those wells are not metered it is likely that those residents do not know how much water they are using.

Craddock continued by noting that the final report with strategy materials in the appendices is available online. Craddock went on to review the challenges encountered in data collection and implementation including different billing quarters between towns that did not line up with summer high use period, paper versus digital data on water use, extreme data outliers and zero use values, the door-to-door visits having difficulty finding the decision makers at home. After the summer, water use was evaluated for reductions and a post-project implementation survey was sent to evaluate people's experiences.

Results measuring changes in water use are not statically significant but point to positive behavioral changes due to the strategies. In evaluating that summer's uses to previous summer's use for each strategy, "feedback" shows the greatest reduction but none of the numbers are statistically significant. Broken out by initial water use levels, reductions are much higher with the higher users. "Commitment" showed lower reductions because they were not able to connect face-to-face with many households. "Commitment" showed less reduction than "feedback" in both towns.

Callaghan asked what these results mean at the town level. Craddock stated that because of the small sample size, they did not calculate reductions as a percent of total town use.

Craddock continued to review the lessons learned which include: importance of pilot testing for identifying and addressing problems before broad implementation; delivering materials more than once; focusing on medium to high water users for greater reductions; using larger sample size; considering subgroups that have additional barriers (e.g., households that use lawn service companies); further addressing weather variables such as a rainy summer and continued importance of conserving.

Callaghan asked how much the project cost and whether they analyzed how much water saved versus the cost of program. Craddock stated that project cost was about $60,000. Cohen added that in previous projects they had costed out such a comparison and it's not favorable because of the low cost of water.

Pederson asked if the project looked at improvements in streamflow. Craddock said that this pilot project was very small scale so that would be looked at when full scale. Pederson added that she did not want the expectations for water superintendents to go door-to-door. Craddock agreed and said that because of the small scale pilot, one town's water superintendent took it on to go door-to-door himself.

LeVangie described how MassDEP is building on this work for the next phase where they are using the "feedback" or "comparison-to-neighbors" strategy. Three PWSs are participating- West Springfield, Concord, and Aquarion in Cohasset. They conducted an intercept survey where two people go to locations in communities and conduct the survey in person with passer byers. In

addition, surveyors showed the educational flyer from the DER project and sought feedback. This survey work was completed and just got results. The environment was a significant driver so they are adjusting the educational material to focus less on saving money and more on environmental and community benefits. The project will focus on high water users. Approximately 300 households are in the treatment and control group each. For the treatment group, the first comparison and educational materials will be mailed in May. The second mailing will be mid-July to show progress and a third one as follow-up in September after the watering season ends. MassDEP wanted a less labor intensive approach that PWSs may implement on their own.

Lessons learned so far include not conducting surveys outside a coffee shop in cold weather but definitely doing them in libraries where people are willing to talk. Approximately 50% of the people said they either do not water or water 1 to 2 days per week in the summer. Approximately 25% of the people said they water daily or multiple times per week. The last 25% of the people are in between. There is hope for funding next year to broaden the project. Towns have been helpful in providing data for the latest three years.

Queenan asked if the assumption is that this messaging, if all goes well, will be done during droughts or all years? And what is the cost? Carroll answered that it's intended for every year for normal conditions. We would need something different for drought because different behavior is needed and messages may be the same but with different wording. LeVangie agreed and added that they want to develop a model for others to use. Cohen added that they wanted to evaluate options that were low cost such as billing frequency and setting up a model that if it works would not need to be adjusted much to be reused elsewhere.

Craddock said that the vision is to have some tool to automate and help with the calculations that DER could provide.

Castonguay gave examples of towns where implementation was low cost and achieved a lot such as one superintendent taking on changing the culture around lawn watering and continued efforts over 10 years virtually eliminating it in one town. He also called attention to a moving target with respect to cultural norms. In the 90s door-to-door outreach worked but now people aren't home and it's very difficult to get their attention. Also landscaping is now outsourced or on auto-pilot with automated systems.

Wijnja asked about the source of the funding for the project. Craddock answered that it was from DER capital funds.

Molina asked what incentives were provided to residents and might they work for MassDEP. Craddock suggested that perhaps offering water audits. Some people were surprised to learn that the water department helped with audits. The feedback materials help with making people aware of how much water they are using and then they were interested in the benefit of a water audit.

Rao thanked the presenters and added that this work is very important because we talk so much about outreach and it's so helpful to have folks looking at what's effective.

Craddock's presentation is available at www.mass.gov/eea/wrc. The full report is available from the Massachusetts Division of Ecological Restoration at https://www.mass.gov/service-details/ipswich-river-flow-restoration.

Agenda Item #5: Discussion of the Revised Water Conservation Standards and Comments Received

Rao introduced the next item. She recalled that last month the WRC approved a draft of the revised WCS and it was put out for public comment. As requested by stakeholders, the comment period was scheduled for a longer period than normal, and lasted for six weeks. Comments were made in

workgroups and via letters from three general groups – water supply and associated groups, watershed and environmental groups, and a few individuals and other organizations. Staff has not finished reviewing and addressing all comments but they will have summary of comments next month when the commission will have an opportunity to discuss and revise.

Meeting was adjourned at 2:50 pm.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes for December 2017
2. Interbasin Transfer Act Policies to be Rescinded:
   a. Staff Recommendation
   b. 1987 Guidelines for Interpreting the Interbasin Transfer Act's Criteria for Approval as Applied to an Interbasin Transfer of Wastewater
   c. 2014 Guidelines for the Interpretation of 313 CMR 4.04(3) and 4.04(4) Request for Determination of Insignificance as Applied to Transfers Primarily Derived from Lakes, Ponds, Reservoirs, or Other Impoundments
3. Interbasin Transfer Act (313 CMR 4.00) as promulgated on March 23, 2018
4. Interbasin Transfer Act project status report, March 28, 2018
5. Summer Water Conservation Community-Based Social Marketing Pilot Project - Executive Summary, March 18, 2018: Full report available from the Massachusetts Division of Ecological Restoration at https://www.mass.gov/service-details/ipswich-river-flow-restoration.
6. Draft Revised Water Conservation Standards, available at https://www.mass.gov/massachusetts-water-conservation-standards
7. MassDEP handout on Statewide Averages from 2012 to 2016 for WMA RGPCD and UAW Performance Standards

Compiled by: VIZ
Agendas and minutes 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.