THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for June 13, 2019

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

Minutes approved September 12, 2019

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)
Doug Fine	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
Vincent Ragucci	Public Member

Members Absent

Todd Callaghan	Designee, Mass. Office of Coastal Zone Management (CZM)
Marcela Molina	Public Member
Kenneth Weismantel	Public Member

Others in Attendance:

Erin Graham	DCR
Peter Weiskel	United States Geological Survey
Katie Ronan	Massachusetts Water Resources Authority
Jen Pederson	Massachusetts Water Works Association
Kate Bentsen	DFG/Div. of Ecological Restoration
Vanessa Curran	DCR
Sara Cohen	DCR
Viki Zoltay	DCR
Duane LeVangie	DEP
Marilyn McCrory	DCR
Paul Locke	DEP
Xinyi Zeng	DFG/DER
Margaret Finn	DEP
Liz Walk	Representative Dykema's Office

Rao called the meeting to order at 1:02 PM.

Agenda Item #1: Executive Director's Report

Rao called attention to the coming end of the state fiscal year. In addition, there has been progress on the Water Conservation Tool Kit contract and the state is looking forward to engaging with a contractor to develop that tool kit and a clearing house.

Rao announced that Doug Fine is moving to the DEP Central Office in Worcester as the Deputy Regional Director for the Bureau of Air and Waste. Rao thanked Fine for his work on the Commission as the DEP representative, his efforts in moving activities forward on some very important matters, and his role in collaboration across agencies. Rao also noted her appreciation for their professional collaboration and friendship.

Fine acknowledged the move as a great opportunity to help fill a key gap in the central region office. He will be moving back to the Bureau of Air and Waste where he spent time before. In his last 4.5 years as the Assistant Commissioner for the water program at DEP and the Commissioner's representative on the Water Resource Commission, he has enjoyed the work and the phenomenal team of knowledgeable, dedicated professionals at DEP Bureau of Water. He feels the same about his work with the Commission and public stakeholders. The position in Worcester came up quickly and will start June 24th. Bringing on board his replacement is in its final stages and the person may join DEP in time for the next WRC meeting. Meanwhile Bob Brown, the Deputy Assistant Commissioner at the Bureau of Water Resources, will be stepping in for Fine.

Rao moved on to say that Agenda Item 5, a presentation on the Water Needs Forecasting Program, will be postponed. Michele Drury who was to make the presentation is unwell and could not make the meeting. Rao added that it was meant to be an update on the activities of the WRC staff related to water needs forecasts and there are not any time sensitive issues associated with this presentation.

Agenda Item #2: Hydrologic Conditions

Zoltay provided a summary of the hydrologic conditions in May 2019. After a wet April, May precipitation was mixed across the state with some areas below average and some areas above. Deficits were noted in the Connecticut River Valley, Central and Northeast regions. Daily streamflows declined through the month from above normal ending at just about normal. Average monthly streamflows were normal to significantly higher than normal. Variable rain in the past few months is starting to be reflected in the wide range of groundwater levels from below 25th percentile to greater than 90th percentile. Many reservoirs are still full. All drought indices are normal for all regions and there are no drought forecasts for the next three months. June is projected to have equal chances for below, at or above normal and slight chance for below normal precipitation.

Agenda Item #3: Presentation: PFAS in Massachusetts

Fine recalled that DEP updated the WRC on PFAS a few times and today wanted to provide a full overview on the topic. PFAS stands for per- and poly- fluoroalkyl substances, often referred to as "forever" chemicals in the press because of their exceptionally long half-life. The science and regulatory environment is rapidly evolving nationally and internationally. Massachusetts is one of the most forward-looking states in the nation along with some others in New England. Fine introduced the other presenters - Paul Locke, the Assistant Commissioner of the Bureau of Waste Site Cleanup and Margaret Finn, engineer in the drinking water program and one of DEP's PFAS experts.

Locke explained that PFAS are like hydrocarbons, but the hydrogen is replaced by fluorine. The carbon-fluorine bond is an extremely strong bond and short so other chemicals do not have

room to get in between the carbon and fluorine. This strong bond is why it persists in the environment. On the end of the chain is a functional group that gives it additional properties. For example, an acid compound that allows it to attach to other materials. This is used for coating items to repel water, stain, grease or other substance. The functional group attaches to the material and the carbon chain forms a barrier protecting it against water and other substances. The carbon-fluorine chains will hold together themselves with the functional groups hanging out and forming bubbles making it a great foaming agent. It is heat resistant, stain resistant, and water repellant and is very stable. Some PFAS are very toxic with longer chains proving to be more toxic. Health effects include cancers, endocrine disruption, and developmental effects with risks to the fetus or a young child.

Zoltay asked if this includes non-stick pans and whether Locke would use one. Locke said he has one omelet plan he won't give up but that longer chain compounds were phased out of production in the United States since about 2006. It persists at some lower levels because there may be older products in use and the phase out in the US does not address consumer products made abroad. With the phase out of the longer chains, most switched to using the shorter chain that are presumably less toxic.

Fine added that most people want to know the risk and what to do or not to do but the science is evolving. Because these substances are ubiquitous, everyone worldwide has it in their blood with longer, more toxic chains declining because of the phase out.

Locke continued that there is a new study by FDA that found it in food at low levels which is believed to be from packaging. DEP is finding it in groundwater and some surface waters with the main source being aqueous film forming foam (AFFF) used for firefighting or preventing fires on an overturned gas truck, for example.

Cohen asked if there are examples where the problem was from touching such as clothing rather than eating and drinking it. Locke answered that drinking water is the highest concern because PFAS are water soluble. Sensitive groups are especially of concern - pregnant women, nursing mothers and infants via drinking and cooking with contaminated water in a residential setting. When DEP is talking about standards, they are driven by impacts to these vulnerable populations, otherwise the standards could be higher. By protecting the sensitive groups, all other groups are also protected. Of lesser concern are other uses such as sporadic use at restaurants or workplaces, bathing, and washing vegetables. If contamination is found in private wells, DEP requires (or immediately provides) bottled water and then a point-of-entry treatment system such as home filters. There are standard off the shelf treatment technologies such as activated carbon filters. National Science Foundation certifies filters for PFAS treatment but only down to the EPA standard.

Fine clarified that DEP is addressing drinking water partially because their regulatory jurisdiction is over drinking water. DEP does not have jurisdiction over other sources such as manufacturing or agricultural products Cambareri noted that cow milk was contaminated with PFAS in Maine and asked whether Massachusetts has looked at that source. Locke answered that the Maine and Vermont examples were known groundwater contamination. When contamination is found, DEP follows the contaminated water to see where it flows and if it's being used in agriculture or drinking water. That's how the milk contamination was found in Maine and Vermont.

Locke then discussed waste site cleanup related DEP activities; DEP's approach is to routinely look for it, have accountability for polluters and get it cleaned up. DEP has completed three main activities: i) DEP published a fact sheet for PFAS sampling in 2018 to provide direction to potentially responsible parties and licensed site professionals ii) DEP is bringing known releases into the MCP [Massachusetts Contingency Plan]. This includes source discovery, sending requests for information to private parties that may be a source, sampling private wells, working with EPA and DOD, educating stakeholders about regulations and processes for waste site cleanup. If there is a detection at a public water supply DEP will start the source discovery process and look for the responsible party. DEP requires the responsible party to provide bottled water (or DEP does itself), proceed with the above process and then try to hold accountable the responsible party to obtain reimbursement. But DEP will not wait until the responsible party pays in order to start the discovery and treatment.

Carroll asked how these activities are paid for. Locke answered that the waste site cleanup program has a fund that is specifically for the assessment and cleanup of sites. It also funds emergency response work and sites without a responsible party. Rao asked whether DEP continues to provide water where contamination is found. Locke answered that DEP provided bottled water at first but now they have treatment systems for about a dozen homes at one site. Rao also asked what weight it carries when DEP issues a request for information to potentially responsible parties. Locke answered that there are regulatory requirements and the threat that DEP will start sampling their property and potentially charge them for it at triple the cost. Pederson asked questions about identification of sites, and initiation of an investigation if a manufacturing company uses PFAS. This information is not available but if it was known, DEP might start by sampling existing wells in the area. Pederson asked about any regulation on air knowing that air deposition is a factor. Fine answered that he is not aware of any regulations on PFAS in the air at federal or state level. Air emissions are behind the work being done in drinking water which have air contamination coming from states to the west. In Massachusetts AFFF is the primary source. Pederson asked about recreational fields where fire foam used to be sprayed for Foam Days. Locke answered that recreational fields are a lower concern because lower exposure and substances used in Foam Days range from dish cleaning foam to cheaper foams that do not include PFAS. AFFF is military grade and expensive so is not likely to have been used. DEP must prioritize its resources and is focusing on impacted water supplies.

Locke discussed the third completed activity by DEP - promulgating MCP Method 1 Standards for soil and groundwater and reportable concentrations for soil and groundwater. The package for MCP revisions is out for public comment through July 19. This includes proposed standard for protecting areas of drinking water for current or future use. The proposed standard is 20 ng/L for GW-1 standard and RCGW1 for the sum of 6 PFAS. Multiple programs are cooperating to have consistency in the standards including Waste Site Cleanup Program starting with the proposed 20 ng/L, Office of Research and Standards that is looking to revise their drinking water guidelines which is at 70 ng/L for five compounds, and Drinking Water Program for developing a MCL [Maximum Contaminant Level]. Locke expects that by the end of next year there will be consistent MCP and MCL numbers.

Weiskel asked if the Waste Site Cleanup regulates private wells or if it falls to the towns. Locke answered that it is the local board of health that regulates private wells, but DEP regulates any release of oil and hazardous material to the environment.

Locke described DEP activities for future site prevention including working with Public Safety and the state Fire Marshall to implement a voluntary take back program of pre-2003 AFFF. The program launched in May 2008 with more than 50 fire chiefs who have requested assistance and MassDOT resulting in more than 7,000 gallons collected.

Locke transitioned the presentation to Finn on PFAS in public water supplies. Finn started by reviewing current drinking water guidelines. She recalled that EPA issued a Health Advisory for drinking water in 2018 at 70 parts per trillion (ppt) for the sum of PFOA and PFOS. In 2018 MassDEP extended the 70 ppt to include additional long chain compounds [PFOS, PFOA, PFNA, PFHxS and PFHpA]. Most states follow EPA's 70 ug/L guideline, but a handful have their own standards. Finn reviewed the table of current standards across the nation with a wide range of values [slide titled "Other States: Drinking Water Values"]. There are only 18 compounds that can be currently tested for even though there are thousands of them.

Finn explained that there was testing conducted for large public water suppliers (PWSs) during 2013-2015 period. Large systems serve more than 10,000 people. Of these 6 were over the standard, 4 between the current 70 ppt and the proposed 20 ppt, and 5 were below 20. All systems over 20 ppt have taken action to treat the water or switch sources. Firefighting foam seems to be the primary source of contamination with one potential manufacturing source and one unknown source. All testing and their results are on the MassDEP website or the EPA Water Quality Portal. There were detections in more than 120 private wells in 7 communities that were from site cleanup testing so these may not necessarily overlap with PWS communities.

DEP is evaluating the potential revision of the Office of Research and Standards Guidelines and is committed to establishing a drinking water standard called MCL. DEP has started a pre-rule stakeholder engagement process and will follow the regular, mandated regulatory development process. If the drinking water standard is established, then PWSs will be required to sample at a certain frequency but it is yet to be determined which compounds and at what levels. The end goal is to have alignment across programs so that it is the same value in groundwater and drinking water. Massachusetts is one of many states in the Northeast that got a petition from environmental groups requesting that the state establish a drinking water standard for the entire family of PFAS, which is more than 3,000 substances. In addition, they requested that a detection would trigger a requirement for a mandatory treatment technique that would result in zero or near zero levels in drinking water. DEP had a public meeting and then responded that due to the lack of toxicity being established for the entire family, treatment efficacy, scientific limits on standard sampling and testing methods, DEP will move forward only with those for which there are laboratory techniques and scientific information.

Rao asked how the EU [European Union] is dealing with PFAS. Locke answered that they tend to be more precautionary, but no one at the meeting knew specifics.

Fine continued that DEP actions in drinking water to date included urging PWSs with greater than proposed levels to take action and providing support to those PWSs; supporting PWSs in seeking

compensation from potentially responsible parties; requiring testing as part of the new source approval process; publishing sampling guidelines; publishing guidance for selecting laboratories for testing; providing "high priority" in applying for Drinking Water State Revolving Funds for PWSs seeking treatment for PFAS; working with Department of Public Health (DPH) and requesting water bottlers to sample and send to DEP; requiring testing of residuals for land application for new requests or renewals; sending letters to all PWSs to voluntarily sample; previously tested PWSs were sent letters to encourage them to contact their lab to see if tests were run at lower detection level than reported and if so to get that level because the new proposed standard is lower. Treatment costs can be $5 to 10 million or more. Some smaller systems have chosen to connect to another system instead. DEP has created a website for PFAS and all related information.

Carroll asked whether water bottlers are required to test for PFAS. Finn answered that DPU regulates bottled water and no requirements exist. Locke said that DEP tests before giving bottled water to homeowners and none had PFAS so far. Once the MCL exists then Locke believed the bottlers would automatically have to start testing. Pederson asked about the point-of-entry treatment systems provided to homeowners and whether those were approved for the 70 ug/L standard. Locke answered that DEP provides a double canister carbon activated system that is certified and DEP tests to make sure it comes out under 20 ug/L. He believes the results have been non-detect.

Cohen asked about the MWRA system. Finn answered that MWRA was tested during the 2013-2015 period and they came back non-detect. Rao added that there are discussions at MWRA about potential sources in the watershed from old manufacturing plants or others, so it continues to be a topic. LeVangie asked how PFAS behaves in surface waters. Locke said that it persists in surface water and does not break down with sunlight like other chemicals. Weiskel added that the USGS published a study on this exact topic with kettle ponds and the contamination entering from groundwater to the kettle pond and then returning to groundwater from the kettle pond downgradient. Fine added that shortly after a drinking water standard is established then all systems will be required to sample including MWRA.

Fine mentioned that several state Attorney General offices are suing manufacturers and users of these substances in class action lawsuits to get funding to pay for remediation. Locke added that a Minnesota settlement included natural resource damages of almost $1 billion for the development of new water supplies. The Massachusetts Attorney General is also considering the matter.

Cambareri commended DEP for all that they have achieved in creating a program in just 6 years including regulatory standards, support to PWSs, source identification, clean up as well as prevention. He stated that these accomplishments were very admirable and very useful. Rao agreed and added that DEP is wise to address the exposure of drinking water first especially until the science is better, rather than trying to regulate the entire class of PFAS and especially given limited staff and resources.

Agenda Item #4: Vote: WRC FY20 Work Plan

Rao reminded the Commission that WRC FY20 workplan was reviewed and discussed at the last meeting. Carroll noted that the language requested by Weismental regarding the tracking of water conservation metrics and progress was added as a last bullet in that section.

The vote on the WRC FY20 Work Plan passed unanimously of all those present.

Agenda Item #5: Update: Water Needs Forecasting Program

Presenter Michele Drury was ill and unavailable to make the presentation. This agenda item was postponed to a future meeting.

Cambareri moved to adjourn the meeting. Ragucci seconded.

Meeting adjourned at 2:38pm.

Documents and Exhibits Used at Meeting:

1. WRC FY20 Work Plan (amended)
2. MEPA Comments:
    a. Shrewsbury's Route 20 Corridor Sewer Upgrades
    b. Sharon's Emergency Interconnection to the MWRA
3. Interbasin Transfer Act project status report: 30 May 2019

Compiled by: VZ
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.*