THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for February 13, 2020

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

Minutes approved April 16, 2020

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)
Kathy Baskin	Designee, Department of Environmental Protection (MassDEP)
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Michelle Craddock	Designee, Department of Fish and Game (DFG)
Vincent Ragucci	Public Member
Kenneth Weismantel	Public Member
Samantha Woods	Public Member

Members Absent

Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Marcela Molina	Public Member
Thomas Cambareri	Public Member

Others in Attendance:

Duane LeVangie	MassDEP
Jen Pederson	Massachusetts Water Works Association
Erin Graham	DCR
Damon Guterman	MassDEP
Gabby Queenan	Mass Rivers Alliance
John Scannell	DCR
Kate Bentsen	DFG/Division of Ecological Restoration
Andrea Downs	Wastewater Advisory Committee
Katie Ronan	Massachusetts Water Resources Authority
Grace Ranca	Northeastern University
Beth Lambert	Division of Ecological Restoration
Marilyn McCrory	DCR
Vanessa Curran	DCR
Sara Cohen	DCR
Julie Butler	MassDEP
Molly Norton	North South Rivers Watershed Association

Rao called the meeting to order at 1:05 p.m. Rao asked the Commissioners and audience to introduce themselves. She reminded meeting attendees that they should introduce themselves before speaking so that the minutes may attribute questions, comments, and concerns the proper person. Also, the meetings are recorded for the purpose of accurately representing the minutes.

Agenda Item #1: Executive Director's Report

Rao gave an update on the water conservation toolkit website project. Staff has been working with a marketing firm and MassIT to develop a toolkit and webpage for various audiences such as residential, municipal, businesses, educators, and agriculture. Let Rao know if there is something you would like added to the website material.

There was a suggestion to have Water Resources Commission (WRC) meetings in locations outside of Boston. Craddock suggested the Fish & Game office in Westborough. Baskin said that in the past, a WRC meeting was held at the Cranberry Experimental Station that included a field trip to a bog. Scannell said the Quabbin or Wachusett facilities are a possibility. Woods suggested a location on the South Shore. Rao suggested having one meeting in the fall and one in the spring outside Boston.

Agenda Item #2: January Hydrologic Conditions Report

Graham reported that monthly temperatures were above average for January. It was the third warmest on record for Boston. Precipitation as snow and rain were significantly lower than median values. The snow cover was limited to traces in the western portion of the state. Overall New England was warm and dry for January. The index severity levels tripped for all the regions for the 1-month SPI index (precipitation) and ranged from level 1 to level 3. Streamflow and groundwater were greater than the 30th percentile values and index severity levels remained at 0. Five wells were below the 30th percentile due to the dry conditions, but no index severity levels were tripped. Drought conditions are not forecast. The short-term and long-term forecast from NOAA is for above normal temperatures and equal chances for below-normal, normal, or above-normal precipitation.

Agenda Item #3: Vote on the Minutes of January 2020

Rao invited a motion to approve the meeting minutes for January 9, 2020.

VOTE	A motion was made by Ken Weismantel with a second by Vincent Ragucci to approve the meeting minutes for January 9, 2020. The vote to approve was unanimous of those present, with Balzotti abstaining.

Agenda Item #4: Presentation: The MA Division of Ecological Restoration: Restoring and Protecting Rivers, Wetlands, and Watersheds for the Benefit of People and the Environment

Beth Lambert from the Division of Ecological Restoration (DER) presented. DER has been in existence for 10 years since the merging of the Riverways at the Division of Fish and Game and the Coastal Wetlands Restoration Programs at the Massachusetts Coastal Zone Management Office. The mission of DER is to restore and protect rivers, wetlands, and watersheds for the benefit of people and the environment. There are three program areas: streamflow restoration; riverways and water quality; and physical habitat restoration. All program areas fall under the fourth stressor- climate change. All of DER's work has climate adaption benefits: water conservation, streamflow restoration via dam management and other methods, dam removal, culvert upgrades, salt marsh restoration, cranberry bog restoration, water quality restoration, urban river revitalization, and public safety.

DER has been and is currently hiring. Four new staff were hired last year, and there are four openings now. All DER projects take place by working in partnership with federal, state, local communities, watershed groups, and others. A model of teamwork and flexibility is used to assemble project teams across all levels of government and organizations. Over the past ten years DER and its partners have removed 50 dams, opening up over 300 miles of river. In addition, over 2000 acres of coastal wetlands have been restored and stream continuity improved through the municipal culvert replacement program. The streamflow restoration program is dedicated to developing and testing potential approaches to restoring natural flow to rivers. The program collects streamflow data, contributes to policy and other actions to protect or restore streamflow, and to apply innovative approaches to how water is used, such as community-based social marketing.

On average DER works in over 200 communities with technical assistance, grants, site visits, engineering assessments, training, presentations, and other services. In the first nine years of DER's existence, $85 million was leveraged bringing in outside resources to restoration projects in the state. The need in Massachusetts is real. Towns and agencies lack knowledge and skill, the capacity to plan and carry out restoration and adaptation projects. Meanwhile, state and local planning for adaption is underway. Sustained technical and financial assistance is needed to bridge the gap. DER is proposing to expand this work across the state- to make dam removal, culvert upgrades, water conservation, and other adaptation and restoration actions a regular part of doing business. Towns need help to identify, vet, plan, and complete on-the-ground projects that provide habitat, and resilience benefits. Projects need to be set up to be successful through the Municipal Vulnerability Preparedness (MVP) program, Dam/Seawall Grant Program, and federal programs. DER is in the process of expanding the projects it manages. The number of restoration projects is expanding with the introduction of additional staff. Dam removal work is increasing in addition to increasing resilience to coastal salt marshes. Freshwater restoration work is also increasing, including DER's new cranberry bog restoration program. The municipal culvert grant program, which has already received applications from over one third of the state municipalities, seeks to expand as well.

DER also is documenting and sharing best practices, tools, and approaches. Over the past 10 ten years DER has accumulated a significant body of knowledge regarding restoration best practices. In order to disseminate this information to watershed groups and other stakeholders, DER will be developing tools, training, manuals, and increasing technical assistance. Building on that, DER will be partnering with the MVP Program to help achieve the program's goal of integrating restoration and nature-based solutions into municipal approaches to climate change.

Finally, DER is working to add capacity at the local level. This year DER will develop the framework for and then pilot a new program that will build capacity of watershed associations.

Comments, questions, and responses: Rao asked if there a formal way for communities and project proponents to reach out to DER? Lambert responded: There are a variety of ways, through the DER website, through a formal call for restoration projects as part of a RFR where

proponents can propose a project to DER, and through watershed associations, conservation commissions, or another state agency.

Baskin asked about the amount of money leveraged through federal grants and other sources? Lambert responded- On average for every state dollar spent, $6-12 additional dollars are added through federal agencies or non-profits. It varies from year to year.

Baskin asked how are staff paid? Lambert responded that all are paid through the operating budget. The legislature has increased the budget responding to feedback they have received through municipalities. Everyone faces challenges with water resources management. In addition, the projects have strong economic impact on the locality, similar to other infrastructure projects.

McCrory asked about the 50 dams removed- to what can they attribute the success of so many dams being removed? Lambert responded that it is still difficult to remove dams, but there is more momentum and it less politically challenging than it used to be. The limiting factor now is technical - there is a need for more project management assistance. Rao talked about the regulatory changes and the Dam Removal Guidance document that were developed over 10 years ago at EEA to help clarify and streamline the process. Baskin suggested that we think about how the document can be changed now with more recent experiences in dam removal.

Woods said the biggest challenge is the cost of planning and permitting. That there is a real cost to contract with consulting agencies to do this work; the planning takes longer than the construction.

Wijnja asked about cranberry bog restorations. Lambert responded that the cranberry restoration program with DER is staffed by 2 and over the last 10 years they have done 4 projects totaling 500 acres. The biggest project now has walking trails. There is a large 1,000 acres restoration project in the pipeline. Many growers are wanting to leave the industry, and this program lets them do it in a green way with less of an economic impact.

Agenda Item #5: Presentation and Discussion: Proposed Drinking Water Maximum Contaminant Level for PFAS

Baskin gave a broad overview of the PFAS work going on at MassDEP. The cleanup standards through 21E were just promulgated, and now there are proposed drinking water standards. MassDEP is also considering other options for other media that contain PFAS- wastewater, both the influent and effluent, residuals, landfills, and they are looking at precipitation. They are also considering establishing surface water quality standards. Baskin introduced Guterman, who is a senior analyst in the Safe Drinking Water Act (SDWA) program at MassDEP.

Guterman presented information about the new standard that MassDEP is proposing. Regulations establishing a new Maximum Contaminant Level (MCL) for the sum of six per- and polyfluoroalkyl substances (PFAS) are being developed. Currently MassDEP is in the public comment period for new regulations under the Safe Drinking Water Act. They are proposing a numeric standard for PFAS. It is the same limit as in the groundwater cleanup standards that were recently promulgated. There are thousands of these chemicals, the legacy compounds

being PFOS and PFOA. A subclass of the chemicals is the six that the regulations are proposing to limit. There is toxicology information available for the six compounds.

The proposed PFAS Maximum Contaminant Level (MCL) is 20 parts per trillion (ppt) for the sum of six specific PFAS: PFOS, PFOA, PFHxS, PFNA, PFHpA, and PFDA. The proposed standard is based on MassDEP's Office of Research and Standards assessment and toxicological information. The MCL would apply to Community Water Systems (year-round residential customers) and Non-transient, Non-Community Water Systems (NTNCs), which include schools, daycares, and larger business- entities that have more than 25 people repeatedly returning. The MCL would not apply to Transient, Non-Community Water Systems (TNCs) (for example recreational areas, campgrounds, hotel/motels, and small business) and Consecutive Systems (those that purchase all their water from another entity) although TNCs would be required to collect one sample at each entry point in their systems and analyze samples for PFAS.

Community Water Systems and Non-Transient, Non-Community Water Systems would be subject to the full rule. The proposed regulation includes PFAS monitoring schedules along with monitoring waivers with other options to reduce monitoring burden. The regulations are proposed to be implemented based on a schedule that considers population served with Community Water Systems, which generally serve the most people, needing to initiate monitoring earliest. The proposed regulations include analysis and electronic reporting requirements. Consumer Notification requirements are triggered by a confirmed result greater than the MCL. The Public Water Supply might not be in violation when elevated concentrations of PFAS are initially detected, but sensitive consumers need to know if they should avoid consumption and will be notified. The MCL will be considered violated when three months of sampling results exceed the 20 ppt level or if PFAS levels from one or two months are high enough to identify a violation regardless of subsequent monthly results. The Compliance Calculation will be based on a Running Quarterly Average of monthly compliance monitoring results from each of the previous three calendar months. Samples with results below the Minimum Reporting Levels (MRLs), which are minimum concentrations that can be quantified in a sample, but above one-third of the MRL do contain PFAS. The draft regulations propose that if an analytical result is equal to or greater than one-third of the MRL, but less than the MRL, then one-half the MRL will be used in the Running Quarterly Average calculation. MassDEP is seeking comments through February 28, 2020, and feedback in particular on this aspect of the regulation. More information is available on MassDEP's website.
https://www.mass.gov/regulations/310-CMR-22-the-massachusetts-drinking-water-regulations#proposed-amendments-public-comment

Comments, questions and responses:
Comments and questions included those about treatment, expenses, exposure, and contamination in Massachusetts.
Rao asked what percentage of all PFAS compounds do these six compounds constitute? Guterman responded that the methods available to test for the chemicals are limited; currently we have the means to test for only 25 compounds. The science is very new. Butler asked how far back do the long-term studies go? Guterman responded that there are studies about PFOS and PFOA going back about one decade. The chemicals were first introduced after WWII.

Queenan asked how many water systems are at 20 ppt? Guterman responded that work on that is just starting. MassDEP targeted places they knew that were potentially contaminated with fire-fighting foam. In 2013, EPA did some screening, but methods to test weren't as sensitive. A state-wide program is starting to sample and determine the extent of contamination. Around 20-40 communities have data from sampling showing PFAS.

Carroll asked if there is any sampling for surface water? Guterman responded that some communities have sampled surface water. There is not a surface water regulation yet, and it has been found in one drinking reservoir shared by Braintree, Randolph, and Holbrook. There has been sampling in the Merrimack River and levels were low. Baskin said she saw an article about precipitation in the same range, 3-5 ppt so MassDEP is not sure what concentrations are being seen in the Merrimack- is it ambient or the dilution effect of the Merrimack.

Rao asked if there was enough laboratory capacity to carry out this increased volume of tests. Guterman responded that laboratories need to be certified by MassDEP under state regulations. Most laboratories that do this type of work are located in other parts the country. He anticipates that there won't be a capacity problem in 8-9 months because labs are buying more equipment and ramping up since many states in the Northeast are going down this path.

There is a party of three that includes 3M, a biosolids company, and a public water supplier that is challenging the recently promulgated New Hampshire regulations. The challenge is on statutory requirements that weren't met in the promulgation.

Rao asked what are the monitoring points? Guterman answered the entry point of a system. If something is found, sampling will take place upstream to see where it is coming from. Could possibly tweak operations if certain wells are found to have contamination.

PFAS is a considered at the sub-chronic level, that is, short-term exposure over months. MassDEP has identified a population of concern, for example pregnant women and young children, which is why MassDEP is looking at trimesters and number of months in terms of exposure.

Queenan asked what treatment looks like and how much does it cost? Guterman and Baskin responded. Legacy PFAS are long chains, and easy to remove with granulated activated carbon (GAC). Reverse Osmosis (RO) and membrane technologies can work. Smaller water systems can look at membrane technologies because of the smaller waste stream as compared to large water systems.

GAC is not cheap; $5 million - $15 million are recent cost estimates for MA communities. Not only is it expensive, but it is also unexpected and systems have not budgeted for it. Pederson added that treatment technologies depends on the system's water chemistry. Iron and manganese can be problematic and also need to be treated. GAC is not contaminant specific and can have its capacity quickly exhausted, so treatment can be an engineering challenge. The design community is still on a learning curve.

Woods asked about the cost of monitoring. Guterman responded one test costs between $200-$400. Baskin added that that is just laboratory cost, but if the water supplier needs to hire a

consultant to take samples the cost can be much higher. Guterman spoke about the possibility of cross contamination concern so MassDEP has issued sampling guidance. Field blanks are also taken, and so far, have not shown cross contamination.

Ragucci asked about DNA testing. Guterman answered about an ongoing human exposure study in Westfield but this is focused on exposure, not health outcomes. And the Dark Waters movie's case in West Virginia is mostly industrial exposure, but the farmers had high incidental exposure as well. Ragucci asked if MassDEP can tell where the chemical actually came from? Guterman answered that MassDEP does site discovery to find potentially responsible parties. The Environmental Protection Agency also looks at this under the Comprehensive Environmental Response and Compensation Liability Act (CERCLA). There has been one manufacturer identified in Hudson, MA.

Woods asked what the health impacts are and if there were any other non-human studies. Guterman answered that there are issues around neurological development. There have been toxicological studies on animals.

Rao asked about the testing of bottled water. Guterman responded that bottled water doesn't come under MassDEP's jurisdiction. MassDEP has asked for voluntary testing by bottlers and has put the results on MassDEP's website. There are about 5 bottlers who have reported their voluntary testing. Also, if private wells are found to be contaminated the Bureau of Waste Site Cleanup will test the bottled water they provide to residents. In this way, MassDEP is trying to fill in the regulatory gap.

Baskin added that some bottled water companies have found PFAS. One MA company has shut down. It was discovered by NH Department of Environmental Services (DES) testing of bottled water.

Cohen asked about consecutive systems- is there any concern about the linings of pipes or the distribution system? Guterman responded that they haven't seen anything yet, although the pipe tape and dope that plumbers use contains Teflon.

Woods asked about the industry response. Guterman responded that PFOA and PFOS are the major contributors. They were voluntarily taken off the market in the U.S., but not in other countries. Baskin added that PFAS does not break down easily which is one of the reasons it is so problematic.

Rao asked if there has been any pressure on manufacturers. Guterman responded perhaps there was pressure under the Toxics Substances Control Act (TSCA), but they are not seeing pressure at the federal level. Voluntary withdrawal from the market was because of the Dark Waters case. GenX and shorter chain compounds are substitutes that have replaced the longer chain chemicals.

Carroll asked if there is now a higher standard of proof. Are the Attorneys General (AG) interested? Guterman said there is no change in process of approving the chemicals. AG's in several states have filed lawsuits, for example, Minnesota. Also, PFOS and PFOAs are still being made in other countries. There continues to be a demand.

Queenan asked about how MA compares to other states. Guterman answered that New Jersey and New Hampshire have independent numbers, and Vermont is similar to MA. MA could be considered more stringent since we added 6 compounds. However, not many states have promulgated standards. Michigan is in the process of doing something similar to MA.

Carroll asked about EPA's response. Guterman answered that EPA's response is only a health advisory. If EPA promulgates more stringent drinking water standards, then MA will need to meet those more stringent levels. (Subsequent to this WRC meeting, on February 20, 2020, EPA announced a proposed regulatory determination for PFOA and PFOS that has yet to be published in the Federal Register. This is the first step in what is usually a multiple-year process to regulate a new SDWA contaminant.)

Queenan asked about the process for getting surface water quality standards. Baskin explained the process, the needed studies, and what could be done for both aquatic life and human health.

Rao surmised that research universities will increase their research on PFAS.

Pederson said that PFAS is very challenging for water suppliers. Public perception and speed in which they need put things in place are challenging, and also expensive. Guterman added that Michigan has a good data set, very comprehensive and that 9% of the community water systems in Michigan have found PFAS.

Rao asked what the timeline to do something was. Guterman answered that if the MCL is violated, then something needs to be done. All options should need to be considered such as operational changes or treatment. However, it could take many months before the PFAS level is addressed as it may not always be possible to shut down a contaminated source due to the need to maintain water service for fire flow. The best solution for each system is determined on a case-by-case basis.

Pederson spoke about the ubiquitous nature of the chemicals. MWWA's concern is that the focus is on drinking water, but there are many other points of exposure that might be higher, like in food. Risk communication and putting it in perspective are important. It may not be serving a public health benefit that the focus is on drinking water.

Guterman responded in doing regulatory work of drinking water, the relative source contribution is considered. This is the percentage of total PFAS exposure that is assumed by MassDEP's Office of Research and Standards to be attributable to the ingestion of drinking water. In this case, an assumption that 20% of PFAS exposure is from drinking water was used, so the assumption is 80% of the exposure is coming from something else. However, MassDEP has jurisdiction and can regulate to protect the source contribution from drinking water.

Carroll asked if there anything else that state agencies can do. Guterman answered that it falls mostly to federal agencies- the FDA and EPA. There is exposure through carpeting, clothing, dryer lint, etc. At the state level we can regulate drinking water.

Butler asked about point-of-use filters. Guterman answered that they have worked in other states well such as MN and NH, but a small scale pilot in Ayer, MA, was not successful. Also, it is important to follow-up on correct installation and cartridges. It might work but needs to be done properly.

Rao asked why the onus is not on the manufacturers. Guterman answered that principle of precaution and studying chemicals before they are approved for use in Europe (known as REACH) is not practiced in and doesn't seem like it is coming to U.S. anytime soon.

Woods asked if MassDEP has staff available to talk to the public about this subject. Guterman responded that MassDEP has a team including Kathy Baskin, himself, the MassDEP toxicologist-Mark Smith, and Paul Locke from the Bureau of Waste Site Cleanup.

Woods said it is important to know about PFAS in drinking water, but it is also important to know about other exposures to see the regulatory failings in dealing with the problem. That will inform advocacy work.

Rao pointed Commissioners to information in their WRC packets, including Interbasin Transfer Act Correspondence.

Meeting adjourned, 2:55 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes: January 9, 2020
2. Summary of Follow-up Correspondence with Communities with Approved Interbasin Transfers
3. Correspondence dated January 10, 2020, from Water Resources Commission to MEPA Office regarding Draft Environmental Impact Report (DEIR) for the town of Burlington's proposed connection to the Massachusetts Water Resources Authority
4. Interbasin Transfer Act project status report, January 30, 2020
5. January 2020 Hydrologic Conditions in Massachusetts (available at https://www.mass.gov/water-data-tracking)

Compiled by: EG

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.*