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

Meeting Minutes for November 10, 2016

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

Minutes approved January 12, 2017

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)
Douglas Fine	Designee, Department of Environmental Protection (MassDEP)
Todd Richards	Designee, Department of Fish and Game (DFG)
Catherine deRonde	Designee, Department of Agricultural Resources (DAR)
Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Thomas Cambareri	Public Member
Raymond Jack	Public Member
Kenneth Weismantel	Public Member
Bob Zimmerman	Public Member

Members Absent

Paul Matthews	Public Member

Others in Attendance:

Michele Drury	DCR
Jennifer Pederson	Mass. Water Works Association
Jennifer Sulla	EEA
Michelle Craddock	MA DER/DFG
Becky Weidman	MassDEP
Sara Cohen	DCR
Erin Graham	DCR
Marilyn McCrory	DCR
Gabby Queenan	Mass Rivers Alliance
Viki Zoltzy	DCR
Vanessa Curran	DCR
Steve Long	TNC
Hotze Winja	DAR
Nick Wildman	DFG/DER
Patricia Vinchesi	Town of Scituate
Duane LeVangie	MassDEP
Michael Green	Climate Action Business Alliance

Rao called the meeting to order at 1:06 PM.

Agenda Item #1: Executive Director's Report

- The Drought Management Task Force (DMTF) has been meeting every month since July. Massachusetts is still in the thick of a drought, even though there was normal or fairly normal precipitation in October. The drought warning status has been extended to the western region.

The State has experienced a lot more impacts to groundwater and streamflow this month and last month. All regions except the Cape and Islands are in a warning status. About 80% of the state is in a Level 4 or warning condition. The watering season has tapered off and agricultural use is down. This is the time recharge occurs, so conditions will be closely monitored going forward. The Drought Management Plan will be updated. The plan outlines which agencies are responsible for coordination and actions. The indices and thresholds used< as well as actions, will be reviewed. It is expected that this effort will take 8-10 months to be completed. Rao asked the commission to look at the existing plan and send her thoughts and suggestions.

- The Interbasin Transfer Act regulation revisions have been released for public comment. Two public hearings are scheduled: one on Tuesday December 6th at the DCR Blue Meadow Conference Center in Belchertown and the other on December 8th, the morning of the next WRC meeting, at 100 Cambridge Street, in Boston.
- De Ronde is back from maternity leave and will be representing Commissioner LeBeaux in the future.

Agenda Item: #2 Introduction to the Blue Carbon Calculator, a Simple Methodology for Determining the Greenhouse Gas (GHG) Emission Impacts of Aquatic Ecological Restoration Projects

Purinton referred to the intersection between water policy and energy policy. This is an example of where they come together. He introduced Wildman, of DER, who is also working on this program, and Long of the Nature Conservancy, which has also been pursuing the idea of natural infrastructure and the benefits for climate change adaptation and mitigation. He acknowledged EEA's role in funding the program through the Climate Action Tool under the Global Warming Solutions Act.

The Blue Carbon Calculator is part of climate action planning, which has a goal to reduce carbon 25% by 2020. DER has 60 active restoration projects across the state, with a heavy emphasis on coastal wetlands and salt marsh restoration. Most of these projects include remediating/improving tidal flow. Benefits: adaptation and mitigation can help meet greenhouse gas reduction targets and salt marsh restoration provides many other benefits including flood attenuation, water quality, etc. In 2011 these projects were recognized as important adaptation strategies. In the 2020 Clean Energy and Climate Action Plan report they are identified as part of the strategy for helping the state reach its goals.

Blue Carbon is the carbon stored/sequestered in coastal marine ecosystems. In Massachusetts this comes primarily from eelgrass and salt marshes. (Globally, mangroves are a large source of blue carbon.) Methane reduction is a big benefit of coastal wetland restoration. Methane is an important contributor to greenhouse gases, even more potent that carbon dioxide. There is a simple spreadsheet tool to account for the emission reductions and positive benefits from changes brought about by these restoration projects. This can be quantified in terms of greenhouse gas budget.

Purinton highlighted a restoration project in Hingham (Damde Meadows) and how the tool calculates greenhouse gas reduction. Over a 50 year time interval, there will be significant greenhouse gas reduction on this 20 acre site. This will be achieved through reduction of onsite *phragmites australis* (associated with high methane emissions). This is the equivalent of reducing emissions from 100,000 gallons of gas over this time. This tool only looks at emissions not sequestration values.

Rao asked how emission reductions were calculated. Wildman said it was a linear relationship involving cover type and number of acres restored. Rao asked why this was different from sequestered amounts. Purinton said most carbon was in the top layer of soil and these rates can vary enormously from site to site.

De Ronde asked how the costs savings were estimated. These are calculated on a 50 year time period and look at social costs and health impacts. Zoltay asked why a 50 year time period was used. Purinton said that this was a cut off for putting these types of projects into the international carbon markets. Sites will transition over a longer time period.

Purinton discussed implications on the regulatory side – can this be applied in the Wetlands Protection Act or Clean Water Act? Blue Carbon could also have policy implications. A multitude of different approaches are needed to address greenhouse gas emissions. This is one part of the puzzle. Blue Carbon could be used as an offset as well.

Question about the regulatory side: Has this been discussed with MEPA with regards to the greenhouse gas policy? The Secretary has discretionary authority to require this. Case specific reductions can be sought as well. Blue Carbon also has a lot of other benefits (fisheries, wildlife water quality).

There is a voluntary carbon market. Can Blue Carbon be used here? Projects can be bundled to achieve cumulative benefits.

DER is also working with USGS to look at site specific emission data, particularly on Cape Cod. This will help to refine data and prioritize projects. Purinton discussed the Herring River project: In the early 1900's, a small dike was constructed at mouth of the river that blocked tidal flow. The project reintroduced a more natural tidal flow to change the mix of vegetation and animal life. Conditions become more beneficial to native species. Cambareri said that turning altered freshwater marshes like this back to salt marshes will help with sea level rise. Another benefit of this project could be selling and trading the benefits. This is a new way to think about financing restoration. There are guidelines for doing this. Purinton introduced Green, from the Climate Action Business Alliance, which is working with DER on private investment in wetland restoration opportunities for accruing greenhouse gas reduction benefits.

Zimmerman asked about bundling other types of benefits, such as nitrate reduction. Purinton said this could be done and it would be very beneficial on Cape Cod. This will be important going forward. It does help if there are some regulatory pressures for this.

Question: What is time frame to see benefits? Water quality quickly improves. Vegetation changes take more time. Some areas will experience die–off of woody vegetation, but these areas will transition and change (10-30 years before vegetation is changed). This makes trading benefits a bit more complicated.

Agenda Item #3 & 4: Vote on the Proposed Amendments to MassDEP Regulations: 314 CMR 5.00: Ground Water Discharge Permit Program and 314 CMR 8.00: Supplemental Requirements for Hazardous Waste Management Facilities

Fine reminded the WRC that these had been previously presented. He introduced Chubb, who gave a short review. The only changes made to 314 CMR 8.00 were to update agency names and terminology. No substantive changes were made. Changes to 314 CMR 5.00 included a number of exemptions added for actions that are regulated by another program or agency, such as ground source heat pump wells, etc. There was also some streamlining of permit processing and an electronic reporting requirement was added.

V O T E	Motion was made by Richards, with a second by Balzotti, to approve the proposed amendments to MassDEP Regulations: 314 CMR 5.00: Ground Water Discharge Permit Program The vote to approve was unanimous of those present.

V O T E	Motion was made by Balzotti, with a second by Richards, to approve the proposed amendments to MassDEP Regulations: 314 CMR 8.00: Supplemental Requirements for Hazardous Waste Management Facilities The vote to approve was unanimous of those present.

Agenda Item #5: Hydrologic Conditions Report

Zoltay gave the hydrologic conditions report:

- October precipitation ranged from above normal in the East to below normal westward. The state is still in a precipitation deficit.
- October streamflows continued to be below normal and have been for 6 to 8 months. Some are less than the 10th percentile level. Overall, streams are briefly recovering with some rain events but without a recovery in groundwater, they recess below normal again. A few gages in the east showed some sustained recovery. There has been no improvement in streamflow in the western part of the state.
- October groundwater levels were significantly below normal except, on Cape Cod and the Islands. These conditions have persisted for 6 to 8 months. Although water levels have generally stopped declining, the percentiles compared to previous Octobers are mostly the same or worse even when compared to September; October is usually a wet month and groundwater is expected to begin recovering from the summer.
- October reservoir levels ranged from normal to two standard deviations below normal.
- Drought levels are triggered in all regions. The state is in a drought warning, except for the Connecticut Valley. The outlook for the next three months indicate that not much recovery is expected.

Richards and Cambareri asked about how the data was displayed. Zoltay stated that the values were not cumulative and show months below normal. Suggestions were made for making the report easier to interpret.

Agenda Item #6: Statewide Water-Use Restrictions and Implementation During the Drought

LeVangie mentioned that Sudbury was invited to present under this agenda item, but that the superintendent was ill, so he would try to fill in. Outdoor water use should be stopping soon, and the Water Management Act (WMA) outdoor watering permit conditions only last from May through September, so, he explained, the map presented here was the most recent map and would not be updated until next year. Over 184 water supply systems imposed water use restrictions this year; of these about 110 had WMA permit conditions requiring water use restrictions. Therefore it appears that many systems, that weren't required by DEP to impose water use restrictions, imposed them on their own. Over 90 systems allowed outdoor water use only one day or less per week. The first Drought Management Task Force meeting was July 8th. At that time, 120 systems had imposed mandatory water use restrictions, although some towns requested voluntary restrictions. As the drought worsened more systems went to mandatory water use restrictions (184 total). Callaghan asked why mandatory restrictions declined between July and August. LeVangie responded that some towns that were in the mandatory category were now be counted in the one day or less restriction category on outdoor watering.

LeVangie explained that sometimes public water supply systems have difficulty meeting demand through water use restrictions alone, so an Emergency Declaration is requested from DEP. Six systems formally requested Emergencies this year, related to the drought. The reasons included: reservoir levels dropping, environmental shut off triggers, or specific operational issues exacerbated by the drought. Most of these six are no longer on an Emergency Declaration. Ipswich is still under a Declaration because their reservoir is still low. Callaghan asked how long an Emergency Declaration can exist. Declarations can't be more

than six consecutive months. A public water supplier must justify why it is needed and it has to be at the public water supplier's request. Sometimes a Declaration can be lifted before the six months have elapsed, depending on conditions. Zoltay asked about limiting use of private wells. LeVangie said that this was to the extent legally practicable, so the requirements are mainly for outreach and education.

Sudbury is a residential community, with a lot of lawn watering. RGPCD is frequently above the 65 standard. Water use has been below the permitted amount. Sudbury is in a groundwater category 5 subbasin. Historically, the Town has not allowed residential irrigation systems to connect to the public water supply system. The Town allows watering two days per week (this is in the permit). Restrictions are based on streamflows in the Concord River. These were tripped on May 14th this year. At this point, the Water Department was pumping 2.8 mgd. Last year, the annual average pumpage was 1.8 mgd. Water use stayed the same in July, even with a one day per week restriction, but one would normally expect an increase at this time of year. In August, a total ban on outdoor water use was implemented and demand fell to 1.8 mgd. Sudbury has used Facebook and other social media to get the water conservation message out. They also have used more "old school" methods such as sandwich boards to convince people that there was a drought. However, the town cautions against sounding the alarm too soon. Peer pressure helped to enforce water use restrictions.

Queenan asked if there was a spike in private irrigation wells being installed when irrigations systems were banned from the public water supply system. LeVangie was not sure and Pederson speculated that this may have been handled through the Board of Health, so the water superintendent might not have that information.

LeVangie said that Scituate had SWMI grants to try to restore streamflow in First Herring Brook. He then introduced Vinchesi to discuss Scituate's program.

Vinchesi said that the drought highlighted the need for a source of educational materials to inform the public about water use restrictions. She then discussed the management of water use reductions. Scituate experiences population surges in the summer. There has been no rain since July 9th. As a result, the Town's average use was about 1.5 - 1.6 mgd. After instituting water use restrictions, that had dropped to about 1.2 mgd. The average rgpcd dropped from 65 to 61. LeVangie stated that most of Scituate's sources (a reservoir and wells) are in a groundwater and biologic category 5 subbasin. The Town was trying to release water from their reservoir to restore First Herring Brook. They were able to do this until early August, when they had to cease because of water supply issues with both the reservoir and wells. Vinchesi said Scituate instituted restrictions to one day per week outside watering based on voting precinct. When the reservoir fell to only 28% full, a ban on lawn irrigation was instituted. There were some complaints, but not many. One day per week watering has been in place since 2015. Scituate has an active Local Water Resources Committee. But there has been an increase in requests to install private wells. Scituate does not have a bylaw to regulate private well use, but the Town has been encouraging its citizens to voluntarily practice water conservation.

The reservoir was 100% full at the beginning of season, however, it declined and reached its lowest point from September 16th to 18th, when it dropped to under 21% full. The reservoir is in the middle of town and is very visible, so this was a good advertisement for the need to conserve water. The downside of this was that the Town had to remind people that it was a public water supply to keep them from trespassing. Carroll asked if drought was factored into the reservoir release plan. LeVangie said, yes, releases are to cease when the level reaches 28%, but this may be reevaluated based on the current drought.

Vinchesi said that Scituate was relying on its wells because of the low reservoir levels. Yesterday, (November 9th) the level was at 39.6% full (30% lower than normal for this time of year). The Town is continuing with conservation efforts. In September, when the reservoir was at lowest point, there was a

concern that the Town could run out of water. Scituate checked with neighboring communities, and found that many were in the same situation. In addition, the mechanics of getting a reliable source of water were questionable because of wheeling, unused gates that would need upgrading and insufficient distribution capacity. So they negotiated with the Town of Cohasset that when Scituate's reservoir reaches 10% full, Cohasset would provide water, in return for upgrading a gate and meter. The agreement is reciprocal – if Cohasset needs water, Scituate will provide it.

LeVangie spoke about peak day demand. Once Scituate instituted the ban, peak day demand dropped to levels usually seen in the winter. Carroll asked if there was a noticeable drop between the hand-held requirement and the total ban. Vinchesi said the big change was when the Town went from hose watering to can watering only. This also meant no boat washing or power washing. Scituate had to buy water for town building construction and hydro seeding. They did this to set an example, even though it cost the Town a lot of money.

Violations were mailed, to avoid angry confrontations. Outreach included education about lawn dormancy. Zoltay asked if the private wells were for irrigation only. Yes. Could the Board of Health deny the application? Not without a bylaw. Public education included outreach to private well owners. There was some backlash, but the bottom line was that the Town asked everyone to do their part.

Scituate has a new Water Superintendent. In order to assist, a drought crisis management team from all town departments was formed to help with drought outreach and enforcement. The team has met every week and is still meeting. They publish a Water Update every other day. On the day after the team meeting, they publish a detailed system update. In order to get the message out, Scituate uses the town website and social media, as well as local access cable. They found that most people get information from Facebook. The Town also created a special email address and asked people to send conservation tips. These were published. In addition, Scituate created Public Service Announcement videos. Scituate has been trying to lead by example (for instance, they stopped flushing pipes, as this uses a lot of water). They wanted to make water conservation fun and "congratulate" residents.

Questions:

- Was there a lot of repeat enforcement? No. Fines are issued: $50 for the first offence; $100 for the next.
- Were there any concerns about downstream releases? No, Scituate worked closely with North and South Rivers Watershed Association.
- Did a drop in water use cause revenue impacts? Vinchesi said they still don't know. It is hard to tell because rates have increased due to other improvements.
- Massachusetts is trying to have water conservation materials available. Did you find any? Yes, PSA videos were pretty standard, but different levels of education for different types of customers is needed. Municipalities would like "hints" rather than the broader information. It would be good to see what other communities are using.
- Is there an environmental benefit from total ban? It is hard to correlate because of lag time, although there might be a decrease in the rate of dropping streamflow and reservoir levels. Richards added that increases in herring in the river is a quantifiable benefit.

Meeting adjourned @ 3:15

Documents or Exhibits Used at Meeting:

1. Presentation handouts: Blue Carbon Calculator, Quantifying an Ecosystem Service (Tim Purinton)
2. Summary of Proposed Final Regulations 314 CMR 5.00: Ground Water Discharge Permit Program - For Vote by the Water Resource Commission on November 10, 2016 – For Vote by the Water Resource Commission on November 10, 2016

3. Summary of Proposed Final Regulations 314 CMR 8.00: Supplemental Requirements for Hazardous Waste Management Facilities – For Vote by the Water Resource Commission on November 10, 2016
4. October Hydrologic Conditions in Massachusetts (available at http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/monthly-water-conditions.html)
5. Presentation handouts: Statewide Water-Use Restrictions and Implementation during the Drought (Duane LeVangie, Patricia Vinchesi, and Rebecca McEnroe)
6. Interbasin Transfer Act Regulations (313 CMR 4.00): Notice of Public Hearings and Comment
7. Interbasin Transfer Act project status report, October 26, 2016

Compiled by: MHD

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.