Massachusetts Drought Management Task Force – Meeting Summary
June 24, 2020, conducted remotely via Zoom

Attendees:

Vandana Rao, EEA, DMTF Co-Chair	Anne Carroll, DCR	Sara Zalieckas, MEMA, DMTF Co-Chair
Nicole Belk, NWS	Richard Verdi, USGS	Michelle Craddock, DFG/DER
Sara Cohen, DCR	Erin Graham, DCR	Jennifer Pederson, MWWA
Julia Blatt, Mass Rivers Alliance	Gardner Bent, USGS	John Scannell, DCR
Vincent Ragucci, WRC Commissioner	Cullen Roberts, MDAR	Duane LeVangie, DEP
Vanessa Curran, DCR	Marilyn McCrory, DCR	Viki Zoltay, DCR
Lisa Kumpf, Charles River Watershed Association	Lynn Gilleland, EPA Region 1	Marlene Ladderbush, Georgetown Water Dept
John Gregoire, MWRA	Hotze Wijnja, MDAR	Michael Botelho, MDAR
Sequoya Bua-Iam, DFG/DER	Kate Bentsen, DFG/DER	John Lebeaux, Commissioner, MDAR
Tim Stagnita, Rhode Island Water Resources Board	Matt Ely, USGS	Jonathan Ginsberg, Next Generation Strategies
Todd Melanson, Chelmsford Water District	Alex Belote, DCR	Tom Kellner, Millers River Watershed Council
Katie Ronan, MWRA	Caroline Higley, EEA	Gerald Clarke, Dover Board of Health
Gabby Queenan, Mass Rivers Alliance	Adam Kautza, DFW	Jeffrey Cloonan, Dighton Water
Valerie Moran, MWRA	Trevor Battle, MDAR	David Cowell, Hancock Associates
Dave Celino, DCR	Alicia Geilen, DEP	Samantha Woods, WRC/NSRWA
Jim Montgomery, Commissioner, DCR	Alisha Bouchard, MDAR	Wayne Castonguay, IRWA
Ron Horwood, NERFC	Lexi Dewey, WSCAC	Martin Pillsbury, MAPC
Greg Kahoun, Dover Water Resource Committee	Amy Rusiecki, Amherst Public Works	Maureen Callahan, Office of State Rep. Denise Garlick
Jamie Hellen, Franklin Town Administrator	Jeff Sutherland, Swansea Water District	Justine Kent-Uritam, Dover Water Resource Committee

Introductions & Announcements

Rao called the meeting to order at 1:34 PM and welcomed task force members and other attendees. Meeting attendees were asked to type their names and affiliations in the Zoom chat window to note their attendance. Zalieckas also made a few opening remarks.

Updates on Current Conditions and Impacts from Members of the Task Force

Current Hydrologic Conditions - DCR Office of Water Resources, Anne Carroll and Viki Zoltay

The Task Force looked at data from the period between May 15-June 22. Early in the year, above normal temperatures and near-normal precipitation caused dry conditions on and off until a wet

April. May precipitation dropped off significantly continuing into June. Streamflows also dropped off significantly in the latter half of May continuing into June. Groundwater is starting to follow a decreasing trend in the Western, CT River Valley, and Central Regions. Recent high temperatures have contributed to deteriorating conditions.

For the precipitation index, the 60-day SPI is at Level 3 for the CT River Valley and Central regions, at Level 2 for the Western and Northeast regions, and Level 1 for Cape Cod. For streamflow, the Western and Central Regions are at Level 3, and the CT River Valley and Northeast regions are at Level 2. For groundwater, the CT River Valley Region is at Level 2, and the Western and Central Regions are at Level 1. For the Keetch-Byram Drought Index (fire danger), the Central Region is at Level 2, and the Western, CT River Valley, Northeast, Southeast, and Cape Cod regions are at Level 1. The Crop Moisture Index is at Level 1 for the Western, CT River Valley, Central, and Northeast regions.

Drought Indicator	Western	CT River Valley	Central	Northeast	Southeast	Cape	Islands
Precipitation	Level 2	Level 3	Level 3	Level 2	Level 0	Level 1	Level 0
Streamflow	Level 3	Level 2	Level 3	Level 2	Level 0	N/A	N/A
Groundwater	Level 1	Level 2	Level 1	Level 0	Level 0	Level 0	Not Available
Lakes/ Impoundments	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	N/A
Crop Moisture Index	Level 1	Level 1	Level 1	Level 1	Level 0	Level 0	Level 0
KBDI - Fire danger	Level 1	Level 1	Level 2	Level 1	Level 1	Level 1	Level 0

<u>Streamflow and Groundwater Conditions in Massachusetts – USGS, Richard Verdi</u>

Verdi showed the streamflow conditions for April, May, and June. Conditions were generally near normal for the first two months then started dropping off in mid-June. He also showed that the 7-day average streamflows got significantly worse over the 1-week period from June 14th to June 21st. Currently, about 77% of the 79 streamflow sites are below normal. The Ipswich, Quaboag, and Housatonic Rivers are all well below normal. A map of the real-time groundwater wells as of June 22 indicated below and much below normal groundwater levels showing up in western, central, and northeast MA. The Webster well was converted to a real-time well in late January and is currently below the 0-10th percentile range. The Granville well is currently within the 0-10th percentile range and it would not be surprising if it dropped below the range by the end of the month. Data for the Newbury well as of 6/15/20 and as of 6/22/20 were shown and dropped from normal to below normal in a week. Similar data were shown for Petersham and Pittsfield.

Commissioner Lebeaux of DAR was acknowledged and noted that there is a lot of variability across the agricultural space. Conditions are nothing that haven't been seen before but there is a lot of crop watering taking place. Agency staff will provide more detail in MDAR's update.

Commissioner Montgomery of DCR was acknowledged and noted this is his first time participating in a DMTF meeting and he appreciates the opportunity.

Northeast River Forecast Center – Ron Horwood

Over the past month there has been a quick drawdown in streamflow and groundwater levels. Precipitation has been very scarce. The pattern going forward is not favorable for significant rainfall in eastern New England. With the lack of systems coming up the coast, there isn't any upcoming meaningful rain being forecast.

Weather - National Weather Service, Nicole Belk

Rainfall from June 1-22 was well below normal across most of Massachusetts. Many locations had only received around 1 inch or less than 1 inch of rainfall, which was 1.5 to over 2.5 inches below normal. Higher rainfall totals of 1 to 1.5 inches were noted on the Upper Cape, with the highest totals in southeast MA ranging from 1.5 to 3.5 inches. For Massachusetts, the dry period started after the very beginning of May 2020. Looking at some of the driest portions of the region, Worcester and Amherst had their driest May 4 to June 22 on record, while Lawrence had its second driest May 4 to June 22 on record. The rainfall in Boston and Middleboro for the same time frame did not rank in the top 10 driest. All of these sites have over 100 years of record.

The forecast through next Wednesday (July 1) calls for isolated to scattered showers or thunderstorms most days, mainly during each afternoon. While this precipitation may provide localized relief, a more widespread, soaking rainfall would be needed to alleviate the dry conditions that have emerged across much of the Commonwealth. Temperatures are expected to average several degrees above normal. The outlook for early to mid July from the NWS Climate Prediction Center, calls for temperatures to average above normal, and precipitation below normal. Looking at July, August and September, there is a likelihood of temperatures averaging above normal. However there is uncertainty on whether rainfall will average normal, above normal or below normal over the course of this 3 month timeframe.

Water Supply

Massachusetts Department of Environmental Protection, Water Management Act, Duane LeVangie

In terms of water use restrictions, there are currently 90 PWS with reported restrictions on 6/24 versus 42 PWS reporting restrictions on 5/1. There are 32 PWS with hand-held only restrictions, with only 4 PWS reporting such restrictions on 5/1. 29 PWS appear to be implementing restrictions without a WMA permit requiring them to do so. 11 PWSs were doing so on 5/1 without a requirement to do so. The reporting of restrictions is down a little at this point, possibly because of COVID staffing issues. 22 systems should be implementing restrictions that have yet to inform DEP they have done so.

In 2016 during the last week of June there were 112 PWS reporting implementing restrictions, which is what there would be this year if all 22 had reported when added to the 90 reporting. A map of the restrictions is available on the DEP website and changing weekly at this point. The big jump in water use restrictions more likely reflects those permittees choosing to implement restriction based on the streamflow trigger approach instead of those implementing restrictions seasonally (May-Sept). All streamgages have triggered their flow thresholds.

COVID has impacted water use at different PWSs differently. PWS that are heavily residential (80-90%) are seeing a spike in water use as people are home. Those PWS with more commercial/industrial use have seen declines as that water use sector has closed or had limited openings. We have also been approached by 2 PWS seeking emergency declarations. Between the increased demand and falling tanks they are having difficulty meetings demands. DEP expects to finalize Emergency Declarations in the next week or so.

Massachusetts Water Works Association, Jen Pederson
MWWA reported that COVID-19 is complicating things for water utilities, many are staggering staff to keep them separated to reduce the risk of spreading the virus. Water suppliers are concentrating on ensuring they can continue to supply essential services. Pederson reported that many utilities, especially those in the metro-west area who have more of a residential base are experiencing increased water demand as there are many more people at home who are using more water than they normally would. Some communities have already instituted water bans including Westford, Groton and Chelmsford Water District. Also, some water suppliers are experiencing significant revenue issues due to the closure of businesses, so a one-size approach on restrictions won't work, especially if water suppliers have adequate capacity and supply.

Massachusetts Water Resources Authority, John Gregoire
MWRA presented current conditions in the reservoirs serving the MWRA-served communities. Regarding pandemic-level demand in MWRA communities, over April and May, MWRA observed a decrease of ~12% - 15% in Boston and larger cities, whereas demand increased in some suburban communities. This is likely due to the relative concentration of commercial/industrial users who shut down over more residential areas where people were required to stay at home.

Given their massive storage volumes, MWRA reservoirs have a substantial buffer to drought which differs from other regions of the State. During the drought of 2016, Quabbin did not go into "below normal" stage until early January 2017 illustrating this lag. Quabbin Reservoir is presently at 99.4% full. 2020 started off good despite the lack of snowpack. The heavy spring rains caused the reservoir to fill. Spilling started on April 11 and continued for 73 days ending on June 22nd. Wachusett Reservoir is presently in normal conditions. It is maintained in a 1.5 ft. operating band through seasonal transfers from Quabbin Reservoir (May-Oct). These inputs also provide a buffer to drought conditions. The emergency Sudbury Reservoir and Foss Reservoir are also maintained in an operating

band and are presently in normal conditions but at the bottom of the band. However, there are no routine transfers to Sudbury Reservoir so this system's elevation condition reflects drought conditions of the region. During the 2016 drought, the elevations at both of these reservoirs dropped significantly.

Department of Public Utilities

There was no representative present.

Environmental

Massachusetts Department Environmental Protection, Wetlands Program, Duane LeVangie

LeVangie filled in for Tom Maguire; no update at this time.

DFG Division of Ecological Restoration, Michelle Craddock

DER staff have observed dry/low flow conditions, especially in the Connecticut River region (specifically Northampton, Shutesbury, Belchertown, and western CT watershed). Flows are very low and look like typical late August flows. On the South Shore flows are very low as well and again look like what is typically seen in late August. No impacts have been observed aside from reduced habitat. Division of Marine Fisheries did not report any fisheries impacts in coastal areas, with good flows in the spring. DMF has observed flows dropping quickly over the past month but it is too soon to tell if there will be impacts.

DFG Division of Fisheries and Wildlife, Adam Kautza

DFW staff have observed that small streams are exceptionally low, especially for this early in the summer. Some of the larger coldwater streams in the western part of the state (like the Hoosic River and the Deerfield River) are as low or lower than have been seen in a long time. The Deerfield, which is a regulated river, has been flowing below minimum flows downstream of Fife Brook Dam on certain days and scheduled work was postponed because power companies upstream were wary to release too much water down to Fife Brook because of extreme low rainfall and fear of continued drought conditions. DFW has not yet seen any fish kills in low water streams.

Massachusetts Rivers Alliance, Julia Blatt

In the Nashua River watershed, streams are very low and look like August flows. The Concord River is now at 50% (150 cfs) of its median flow (300 cfs) and predicted to be ~100 cfs by Thursday. In the Merrimack River 8 dead fish were observed. In the Millers River watershed, wells are going dry. The Millers is low. No black trumpet or oyster mushrooms or chanterelles in the usual moist places. The little hillside seeps and springs are drying up. The West Branch of the Westfield River is reporting a new record low for the date (6/24, not all time) for 84 years of record.

WSCAC, Lexi Dewey

Watering bans have been enacted in Hadley and Belchertown. Streams are going dry in Pelham.

Agricultural - Department of Agricultural Resources, Hotze Wijnja and Michael Botelho

According to the National Agricultural Statistics Service in New England, topsoil moisture supplies were 18 percent very short, 50 percent short, 32 percent adequate, and 0 percent surplus. Subsoil moisture supplies were 14 percent very short, 35 percent short, 51 percent adequate, and 0 percent surplus. Pasture conditions ranged from 2 percent very poor, 13 percent poor, 31 percent fair, 33 percent good, and 21 percent excellent. The situation is worse for a number of farmers in Massachusetts. Currently, the USDA Crop Progress & Condition reports only include a summary for New England. In the past, summaries for each state were also included and were more useful to assess the MA situation.

Fire Danger - DCR Fire, Dave Celino

To date there have been 706 wildfires in MA, with 441 acres burned. There have been 111 fires in the last 30 days, compared to 33 fires for the same time period in 2019. Last year's total number of fires has already been surpassed within the first six months of this year. Drought impacts on fire behavior include low fuel moisture and low relative humidity combined with high temperatures. The Keetch-Byram Drought Index is on a scale from 0-800, with 800 being extremely dry. Current values are similar to those in 2016 (during the 2016 drought). Some impacts of drought on fire management include: firefighter safety (use aviation as it's very hot on the ground); availability of water for fire suppression; adjustments to tactics and strategies; potential drain on resources; and financial strains on fire departments. Lastly, there are smoke impacts on communities near these fires. A fire in Southwick started on Saturday afternoon (6/20/20) driven by very low live fuel moistures. The fire is 24.7 acres and likely wouldn't get bigger than 60-65 acres due to surrounding wetlands; however, a stream to the west is currently dry. The fire is burning in live shrub layers which is very unusual. Celino has not previously seen this sort of fire activity in June when the foliage is leafed out.

DCR Engineering/Infrastructure, John Scannell

Neither DCR's acting Chief Engineer Rob Lowell or head of DCR Flood Control Bill Gode had any concerns about infrastructure due to current drought conditions.

Department of Public Health

There was no representative present.

Feedback from Members of the Public

Ipswich River Watershed Association, Wayne Castonguay

Conditions have plummeted over the last few weeks. The Ipswich River flow today is lower than it was on this date in 2016. Rainfall is badly needed.

Discussion of Drought Level Recommendations

Conditions have deteriorated rapidly and effects are being seen across various sectors. Discuss what the recommendations should be by region. Pederson asked about the condition of Lakes and Impoundments at the end of May – all regions were at Level 0. Zoltay suggested discounting the Crop Moisture Index as it typically reads less severe than what's being observed by the agricultural sector.

Blatt suggested asking the Governor to use his platform to ask people to conserve water. Rao noted that the Governor's office has been keeping a close eye on conditions and will be briefed on the outcome of this meeting. Pederson asked for more state involvement this time around (as compared to 2016). There are moratoriums on shutting water service off to customers due to COVID-19 so utilities do not have the enforcement power they might typically have.

The next opportunity to review conditions will be in 2-3 weeks. The DMTF will be getting back on a regular meeting schedule, which is usually the first or second week of the month when all the data from the prior month are available.

Western: staff recommendation is Level 2. DMTF members agreed on Level 2.

CT River Valley: staff recommendation is Level 2. There was discussion on raising to Level 3 but DMTF members ultimately agreed on Level 2.

Central: staff recommendation is Level 2. There was discussion on raising to Level 3 but DMTF members ultimately agreed on Level 2.

Northeast: staff recommendation is Level 2. DMTF members agreed on Level 2.

Southeast, Cape Cod, Islands: staff recommendation is Level 0. There was discussion on raising the Southeast to Level 1 but it was decided to wait and reassess conditions at the next meeting.

Recommendations for Drought Level Response Actions

Level 2 Significant Drought in the Western, Connecticut River Valley, Central, and Northeast Regions. Urge water conservation in the other regions, particularly the Southeast.

Next Steps

Rao will brief the Secretary and schedule the next DMTF meeting to take place in the next couple weeks.

The meeting was adjourned at 3:56 PM.