THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for October 10, 2013

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

Minutes approved November 14, 2013

Members in Attendance:

Kathleen Baskin	Designee, Executive Office of Energy and Environmental Affairs (EEA)
Marilyn Contreas	Designee, Department of Housing and Community Development (DHCD)
Anne Carroll	Designee, Department of Conservation and Recreation (DCR)
Bethany Card	Designee, Department of Environmental Protection (MassDEP)
Gerard Kennedy	Designee, Department of Agricultural Resources (DAR)
Laila Parker	Designee, Department of Fish and Game (DFG)
Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Raymond Jack	Public Member
John Lebeaux	Public Member

Members Absent

Thomas Cambareri	Public Member
Paul Matthews	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Bruce Hansen	DCR
Fabiola M. DeCarvalho	Town of Framingham
Marilyn McCrory	DCR
Kristen Hale	Mass. Water Resources Authority
Catherine DeRonde	DAR
Michele Drury	DCR
Linda Hutchins	DCR
Jennifer Pederson	Mass. Water Works Assn.
Andreae Downs	Wastewater Advisory Committee
Lexi Dewey	Water Supply Citizens Advisory Committee
Vandana Rao	EEA
Erin Graham	DCR
Sara Cohen	DCR
Elizabeth Hanson	EEA
Heidi Ricci	Mass. Audubon Society

Baskin called the meeting to order at 1:04 p.m.

Agenda Item #1: Executive Director's Report

Hansen provided an update on the hydrologic conditions for September 2013. He reported that average precipitation statewide was 3.1 inches, or 81 percent of the long-term average for September, with considerable variation in the eastern and western parts of the state. Groundwater

levels were normal statewide. Streamflows were in the normal range. Reservoirs monitored were generally at low levels, but percent-full values reported were in the normal range for this time of year. The Drought Monitor shows abnormally dry conditions in the eastern part of the state. Drought indicators show no drought forecast for October and normal conditions in the region through December.

Baskin announced that the 2013 Water Resources and Sustainability Symposium, organized by the New England Water Works Association, will take place on October 24 in Westford. She announced that, in response to a motion made at a previous commission meeting, WRC staff will coordinate with the U.S. Geological Survey to prepare information on the status of funding for USGS gages and research projects. She noted that one of the speakers scheduled for today's meeting would be unable to attend because of the government shutdown and will be rescheduled.

Card provided an update on the Sustainable Water Management Initiative (SWMI). Following completion of the SWMI pilot projects, the environmental agencies have been working on drafting regulations and a companion guidance document on SWMI. Drafts will be discussed with stakeholders and the SWMI advisory committee. Draft regulations are expected to be available for review and comment in early 2014. Incremental briefings will be provided to the Water Resources Commission. Baskin added that the commission will vote on the regulations. Card also announced that the request for responses has been published for the next round of SWMI grants, and responses are due October 25, 2013. Card offered to provide an overview of projects funded, and Baskin suggested inviting proponents to present their projects at future meetings.

Agenda Item #2: Vote on the Minutes of September 2013

Baskin invited motions to approve the meeting minutes for September 12, 2013.

VOTE	A motion was made by Parker with a second by Contreas to approve the meeting minutes for September 12, 2013. The vote to approve was unanimous of those present.

Agenda Item #3: Presentation: Updating Precipitation Intensity Data for New England: Status Report

Baskin introduced Linda Hutchins of the Department of Conservation and Recreation. Baskin noted that, with one historic precipitation data set and two recently updated date sets, there has been some confusion about which precipitation data set should be used and Hutchins's presentation should provide some clarification.

Hutchins noted that automated monitoring of stream gages by USGS continues, despite the government shutdown and furlough of federal employees.

Hutchins provided an update on the precipitation intensity data sets, including data sets that have historically been used in engineering design, recent updates to those data sets, and predictions, based on modeling, of future precipitation intensity.

Hutchins explained that precipitation intensity data indicate how much rain falls over a certain amount of time and how frequently that occurs. She explained that these numbers are used in runoff calculations and engineering design for dams, roads, culverts, and stormwater systems. She noted that use of outdated data can result in damage to infrastructure. She explained that

rainfall frequency is not equivalent to flood frequency, which is based on measurements of streamflow and water levels in rivers. She noted that USGS is recalculating flood recurrence intervals for Massachusetts.

She explained that the historical standard has been Technical Paper 40, Rainfall Frequency Atlas for the United States, published by the National Oceanographic and Atmospheric Administration (NOAA) in 1961, and based on previous rainfall data. She added that the analysis was very coarse. In response to a comment from Baskin, she clarified that five or seven inches of rainfall in twenty-four hours represented a 100-year storm for Massachusetts in TP-40.

She explained that NOAA has begun the process of updating TP-40 and is currently working on data for New England and New York. She added that this effort is being done in one region of the country at a time and requires state matching funds, with state Departments of Transportation generally funding these updates. She noted that NOAA's Precipitation-Frequency Atlas of the United States (NOAA Atlas 14) and other precipitation frequency data for those regions of the country that have been completed are now available online through the agency's Hydrometeorological Design Studies Center (at http://dipper.nws.noaa.gov/hdsc/pfds/).

Hutchins explained that, in the absence of an update of the 1961 TP-40 data, the Natural Resources Conservation Service contracted with the Northeast Regional Climate Center (NRCC) at Cornell University to update the precipitation data for New England. This work was published in 2010 and is available at http://precip.eas.cornell.edu/.

Hutchins explained that it is difficult to compare the two data sets, given the limited number of data stations included in TP-40. She also explained that the length of the period of data affects the results of a trends analysis of annual rainfall. She showed graphs illustrating the effect, on the long-term trend line, of including years when a significant precipitation event, such as the major hurricane in 1955, occurred. She added that many climate scientists are using three decades of data starting in 1980 as the new normal period.

She added that NRCC compared its method to the method in NOAA Atlas 14, using data from the mid-Atlantic region. The analysis indicated that the NRCC method underestimates smaller storms (two-year storm), while, with larger storms (100-year storm), the NRCC values are greater than the values from NOAA Atlas 14. In addition, it appears that neither method captures the effects of elevation and snowpack. However, NRCC concluded that both methods produce rainfall intensity results that are within NRCC's confidence intervals. Hutchins further explained the differences between the two methodologies, which use different data sets, as well as different statistical methods, to calculate recurrence intervals. She added that NRCC also did an analysis for New York State to estimate future changes in precipitation intensity and frequency. The results indicated increases in intensity and frequency of both small and large storms in the future.

Hutchins noted the methods used by various Massachusetts state agencies. MassDOT uses TP-40, as required for federally funded highway projects; FEMA uses TP-40 for restoration projects; MassDEP uses TP-40 for stormwater projects; and DCR uses the NRCC method for dam safety projects. Discussion followed about which method is being used in other parts of the country and whether funding sources would allow analyses using both methods. Hutchins replied that if an analysis using an alternative method showed that costs would be higher, the additional costs, above those indicated by using TP-40, would not be covered by the federal government. She noted that prudent engineering design often considers NRCC values and builds in safety factors.

She added that the NRCC values could increase construction costs for pipes and structures, and there is concern that increased costs could affect economic development.

In response to questions, Hutchins noted that Massachusetts has 100 sites – located at airports, fire stations, water departments, and other locations – where volunteers collect data for DCR's rainfall monitoring program. Hutchins noted that this network was established by the Water Resources Commission in 1955 in response to a drought and has proved to be a valuable asset.

Jack commented on the dilemma facing municipalities in wanting to balance prudent engineering design for future conditions with the reality of a reimbursement formula that requires replacement of structures in kind. Questions and discussion followed on whether the numbers are retrospective or prospective, the importance of having data on storm intensity, and whether NOAA Atlas 14 will be available by its projected 2015 completion date. Hutchins offered to return when NOAA finalizes its work.

Agenda Item #4: Discussion: Educating Decision Makers – refining ideas from the September WRC meeting

Baskin introduced Sara Cohen of DCR to continue facilitating a discussion on the commission's education and outreach efforts. Cohen summarized discussions from previous meetings and distributed a handout. She noted consensus that was reached on the idea of producing an annual report with an educational component, as a first effort. She outlined decisions to be made about the audience, objective, substance, and format of the piece. She suggested that the educational material could fill a gap, providing information for the readers from the WRC's unique perspective.

Card suggested deciding on what message the commission is trying to convey and then deciding on who the audience is. She added that the commission should not pick a topic that is adequately covered by other entities and should coordinate its efforts with initiatives by other entities. Pederson commented that an annual report should be more general, informing the legislature and municipal officials about the commission and its mandate. Jack agreed. Kennedy agreed that an annual report would be a good start, since the commission is not well known outside the water community. He added that the Department of Agricultural Resources produces an annual report, and has found this to be a valuable tool to communicate with legislators and others. Parker commented that it would be valuable to describe who the commission is, what its role is, and its responsibilities, particularly details on the Interbasin Transfer Act. Baskin noted that one of the format options is a traditional annual report accompanied by a stand-alone, topic-specific educational section.

Rao reminded commission members of the genesis of the discussion at the commission's retreat, which was a recognition of the need to help educate decision-makers broadly on water resources topics so that they would be better informed about proposals before them. She added that an annual report addresses part of that need, but would need to be expanded beyond a traditional report to achieve the larger need expressed. Ray agreed with this characterization of the retreat discussion, but noted that, after discussions over several months, commission members have agreed that an annual report represents a good starting point. Dewey commented that the Water Supply Citizens Advisory Committee uses newsletters from various organizations as resources on topics of interest to its members, resulting in wide dissemination of such information. She added that the Water Resources Commission is virtually unknown in the western part of the state, while the issues the commission deals with are incredibly important and of interest statewide. Parker suggested including summaries of presentations made to the commission.

Cohen suggested a format that would describe who the commission is and what it does in the context of key values the commission is trying to promote, such as protecting streamflows and sustaining water supplies. She suggested this might do more to educate readers on the issues than just describing the commission's programs.

Baskin commented that the piece does not have to take a position on various topics, but can explain the issues and allow the public to generate their own conclusions. Contreas commented that the piece is an opportunity to show the connections between water resources and other decisions that stakeholders must make on issues such as transportation policy or climate change adaptation.

Pederson expressed discomfort with the word "values," and discussion followed on whether principles, concepts, or priorities were better words. Baskin agreed that explanation of policy documents that the commission adopts would be appropriate subject matter. Cohen explained that helping people understand why programs or policies exist would be educational. Baskin suggested the message should be very broad on why water is so important. She added that the piece could acknowledge the tensions that exist around certain issues and raise people's awareness about the issues. Others suggested the discussion could highlight tradeoffs or explain points of agreement. Carroll suggested the piece focus on policies or documents on which the commission has already voted.

Cohen summarized the discussion, noting that there seemed to be agreement on producing an annual report, and that an educational piece would be integrated into the description of who the commission is and what it does. She noted that this piece would not take a position on issues, but would provide information on the "why," or the important principles that underlie the commission's actions.

Baskin asked if there was general consensus. Jack suggested staff make a start. It was also suggested that the piece be no more than four pages and include pictures. Baskin commented that the next step would be for staff to bring a draft or an outline to the commission for consideration.

Meeting adjourned, 2:30 p.m.

Documents or Exhibits Used at Meeting:

- WRC Meeting Minutes for September 12, 2013
- Interbasin Transfer Act project status report, September 25, 2013
- 2014 Meeting Schedule, Water Resources Commission
- Current Water Conditions in Massachusetts, October 10, 2013
- Presentation by Linda Hutchins. Updating Precipitation Intensity Data for New England: Status Report.
- Link to NOAA's Hydrometeorological Design Studies Center: http://dipper.nws.noaa.gov/hdsc/pfds/
- Summary of September 12th WRC discussion on education/outreach efforts.

Agendas, minutes, and meeting documents are available of the web site of the Water Resources Commission at http://www.mass.gov/eea/air-water-climate-change/preserving-water-resources/partners-and-agencies/water-resources-commission/ma-water-resources-commission-meetings.html.