



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

Meeting Minutes for July 10, 2014

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

Minutes approved September 11, 2014

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)
Duane LeVangie	Designee, Department of Environmental Protection (MassDEP)
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

Members Absent

Mark Tisa	Designee, Department of Fish and Game (DFG)
John Lebeaux	Public Member
Paul Matthews	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Richard Verdi	U.S. Geological Survey
Peter Weiskel	U.S. Geological Survey
Richard Friend	MassDEP
Joe Cerutti	MassDEP
Linda Hutchins	DCR
Tyler Soleau	Committee on Climate Change
Andreae Downs	Wastewater Advisory Committee
John Gregoire	Massachusetts Water Resources Authority
Erin Graham	DCR
Jen Pederson	Massachusetts Water Works Association
Michele Drury	DCR
Vandana Rao	EEA
Sara Cohen	DCR
Varoujan Hagopian	GEI Consultants
Marilyn McCrory	DCR

Baskin called the meeting to order at 1:05 p.m.

Agenda Item #1: Executive Director's Report

Hutchins provided an update on the hydrologic conditions for June 2014. Average rainfall statewide in June was deficient, especially in eastern Massachusetts. The statewide average was 2.92 inches, or seventy-six percent of normal, with variation in the regions ranging from fifty-one percent of normal in the central region to one hundred thirty-three percent of normal in the western region. Rainfall totals in July, associated with Hurricane Arthur and other storms, should help mitigate the deficiency. Severe thunderstorms on July 7 produced a microburst near Bedford and reports of a funnel cloud near Medford and Malden. Agricultural conditions, groundwater levels, and streamflows were generally normal. Reservoir levels are starting to drop below normal levels in the central and eastern regions. These are triggering thresholds in the Drought Management Plan. However, because a majority of thresholds have not been triggered, there is no need to convene the Drought Management Task Force. The Drought Monitor shows parts of Massachusetts as abnormally dry. The Drought Outlook does not show drought conditions developing in the near term.

Baskin provided an update on the Water Infrastructure Finance bill. The bill has passed both the state house of representatives and senate and has gone to a conference committee. The bill would then be voted on by both bodies again and would then have to be signed by the governor.

Baskin provided an update on the Interbasin Transfer Act regulations. EEA counsel is reviewing draft regulations. It is hoped that a draft will be available for review by the Water Resources Commission within the next month, with a vote anticipated in September.

Baskin noted that comments were due today on the draft update of the Water Management Act regulations.

Pederson distributed a copy of a recent issue of the *Municipal Advocate*, a publication of the Massachusetts Municipal Association. The issue is devoted to water and water infrastructure.

Agenda Item #2: Vote on the Minutes of May 2014

Baskin invited motions to approve the meeting minutes for May 8, 2014.

V	A motion was made by Contreas with a second by deRonde to approve the meeting minutes for May 8, 2014.
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Agenda Item #3: Discussion: Draft WRC Work Plan, FY2015

Baskin announced that the Water Resources Commission work plan will now be done on a fiscal year, rather than calendar-year, basis.

Carroll reviewed the draft work plan and highlighted key tasks and their schedules. She and Drury also outlined ongoing projects. Baskin requested input on water conservation from the ongoing work with the Division of Capital Asset Management and Maintenance on the Accelerated Energy Program and offered to share this with the Leading by Example team at the Department of Energy Resources. Baskin invited questions and comments on the WRC work

plan and asked commission members to let her know if there are areas where staff should redirect attention. She added that a vote on the work plan will be requested at the commission's next meeting.

Agenda Item #4: Update: Schedule for Water Management Act Permitting and Water Needs Forecasting, South Coastal Basin

Baskin introduced Duane LeVangie of MassDEP to provide an update on the Water Management Act (WMA) permitting schedule and the revision of the WMA regulations.

LeVangie noted that MassDEP had received more than one hundred comments on the draft Water Management Act regulations so far. He distributed a proposed schedule for the renewal of WMA permits. He reviewed the schedule, highlighting groups of river basins and the timeline and topics for outreach meetings prior to permit renewal. He pointed out that WMA permits have already been renewed in four basins (Hudson, Blackstone, Charles, and North Coastal).

LeVangie noted that the first basin to follow the proposed permit renewal process is the South Coastal Basin. Drury added that in the South Coastal Basin, DCR will prepare water needs forecasts for the four water suppliers (Cohasset, Duxbury, Kingston, and Plymouth) who had received temporary allocations in 2010. She added that DCR had prepared forecasts for the other communities in the basin prior to the delay in permitting that resulted from the Permit Extension Act.

Pederson asked why new forecasts were not being done for these other communities. Carroll explained that, based on a review of the data, previous forecasts would be redone if two conditions were met: (1) a community's population count in the 2010 census had changed by five percent, plus or minus, compared to the population data used in the completed forecast; and (2) if the resulting change in the estimate of water needs was greater than 0.1 mgd. Based on a review of the data, Carroll explained that forecasts did not need to be redone for the other communities in the South Coastal Basin. LeVangie added that this same analysis would be applied to other basins where forecasts had been completed prior to the Permit Extension Act. Cohen added that she is working with the North Sagamore Water District to determine if their water use data meet the criteria for completing a forecast, and a temporary allocation will continue for Hanover until it can resolve data quality issues. In response to Pederson, Cohen outlined the issues that make it infeasible to develop a water needs forecast.

LeVangie noted that the proposed timeline includes a longer process with more planning and consultations with the communities, with interagency meetings starting fifteen to twenty months before the permit expiration date.

Callaghan asked if the expectation is that water suppliers will be seeking to increase withdrawals. LeVangie explained that, on the whole, water use has declined, even with increases in population. He added that the current statewide average for residential per capita water use is 59 gallons per person per day.

McCrary explained that, as previously requested by commission members, staff will continue to keep the commission and the public informed of the schedule for water needs forecasting in

each basin, allowing opportunity for public input on forecasts. Baskin added that staff will periodically update the commission on progress and trends.

LeVangie noted that MassDEP will update the commission in the fall on comments received on the draft Water Management Act regulations and any resulting changes to the regulations. Baskin added that the WMA regulations will likely come before the commission for a vote in the November time frame.

Agenda Item #5: Presentation: Update on the Status of the USGS Networks

Baskin introduced Richard Verdi of the U.S. Geological Survey (USGS).

Hutchins provided background on funding for the USGS Cooperative Program, noting that commission members had previously requested a status report on the budget. She explained that in recent years, state funding of the program has been held constant, while federal contributions have decreased. As a result, the budget has not included funds in recent years for interpretive studies. Hutchins reported that in May, the state had awarded \$35,000 to the program for FY2014, which will be used to purchase weather monitoring equipment to fill gaps that had been identified in the Northeast River Forecast Center's weather monitoring network. She added that the program's budget for FY2015 is \$800,000, and Baskin added that this represents an increase of \$110,000. Hutchins thanked the commission for its support of the program.

Verdi discussed plans for additions to the precipitation monitoring network and stream gage network and upgrading groundwater wells. He noted efforts to identify additional sources of funding for the stream gage network. Hutchins discussed agreements with other state agencies, the University of Massachusetts, and the Natural Resources Conservation Service to fill in gaps in monitoring groundwater levels, seepage and leakage downstream of dams, streamflows, and soil moisture. She and Verdi added that the U.S. Environmental Protection Agency has provided some funding for a pilot program to conduct groundwater sampling and analysis.

Verdi and Hutchins responded to questions about parameters for groundwater sampling, the number of bedrock wells being monitored, and the criteria for determining which stream gages will remain in the network. Weiskel added that USGS will look for opportunities to co-locate rain gages and continuous groundwater-level monitors, explaining how this would help in understanding groundwater recharge processes, soil moisture levels, and climate variability and change.

Agenda Item #6: Presentation: Sea-Level Rise and Massachusetts Coastal Aquifers: a Cape Cod Pilot Study

Baskin introduced Peter Weiskel of USGS to discuss preliminary findings of a study of effects of sea-level rise on the water resources and infrastructure of central and western Cape Cod, Massachusetts. He acknowledged the cooperation of the Cape Cod Commission and the Association to Preserve Cape Cod.

Weiskel explained the effects of global warming, the various causes and effects of sea level rise, including inundation of low-lying areas, alteration of coastal landforms, streamflows, groundwater inundation and effects on coastal aquifers, and adverse effects on infrastructure.

He reported on an earlier (2001 to 2002) USGS analysis of sea level rise effects on lower Cape Cod, which indicated that the change in altitude of groundwater parallels the rate of sea level rise.

Weiskel said the objectives of the current study are to evaluate the potential effects of sea level rise on the water resources of central and western Cape Cod, including saltwater intrusion, alteration of stream baseflows, water-table elevations and depth to water, and nonlinear responses. He described anticipated products, including a USGS report, electronic data layers, and models. He described the LiDAR data and models to be used in the study.

He outlined the analytical steps in the study. Noting the range of sea level rise predictions, Weiskel said the study will analyze the effects of three sea-level-rise scenarios. He added that sea level rise in the mid-Atlantic region and northeast U.S. is likely to be higher than the global average and that rates are accelerating. He outlined other processes at work, including ice sheet melting and ocean current disruptions.

Weiskel showed simulations illustrating the effects of sea level rise on coastal land area, freshwater/saltwater surface water boundaries, water table elevation, depth to water, and the position of the fresh water/salt water interface in the subsurface. He noted that a preliminary simulation showed a significant change in depth of the fresh water/salt water interface with a one-meter sea level rise. He pointed out that many septic systems are located in areas with high groundwater levels, adding that sea level rise may reduce the depth to water for many.

Weiskel outlined the project's status, next steps, and schedule, noting anticipated completion by summer 2015. He emphasized that the results will be a useful tool at the subregional level.

Comments and questions addressed assumptions about the rate of precipitation and recharge, potential for flooding, and effects of sea level rise on sewer and septic systems, the size of the freshwater lens, baseflow of streams, and the coastline. Weiskel noted that data from another study indicate the possibility of a longer low-flow season extending into September and October, with lower groundwater levels and base flows.

Cambareri described issues being addressed by the Cape Cod Commission in its update of its Section 208 Area Wide Water Quality Management Plan, with a focus on restoring water quality by reducing nitrogen levels. He outlined a number of questions having to do with the effects of sea level rise, noting that the USGS study will be useful.

Callaghan requested a USGS product that looks at inundation in a twenty-year planning horizon, noting that the availability of this information may influence land protection decisions. Weiskel responded that the two-foot sea level rise scenario in the current study roughly represents a time horizon of forty-years or less.

Weiskel noted that the freshwater/saltwater interface is more dynamic than water table elevations and can change quickly in response to increased outflow from streams or pumping from a production well.

Baskin asked about other uses of the models and what other studies would be useful. Weiskel outlined a number of potential topics, including studying long-term changes in recharge, collecting field data on the location of the saltwater/freshwater interface, and applying these methods to other low-lying areas of the Massachusetts coast.

Meeting adjourned, 3:02 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes for May 8, 2014
2. Draft WRC Work Plan, FY2015
3. Public Notice dated June 30, 2014: Schedule for Preparation of Water Needs Forecasts for Public Water Suppliers with Water Management Act Permits in the South Coastal Basin
4. Comments dated June 5, 2014, from Massachusetts Water Works Association on proposed revisions to the Interbasin Transfer Act regulations (313 CMR 4.00)
5. Interbasin Transfer Act project status report, June 25, 2014
6. Current Water Conditions in Massachusetts, July 10, 2014
7. Massachusetts Municipal Association. *Municipal Advocate*. Vol. 1, No. 28. Issue devoted to water infrastructure. (Copies provided by Massachusetts Water Works Association).
8. Draft Water Management Act Post-SWMI Permitting Schedule, June 18, 2014.

Agendas, minutes, and meeting documents are available on 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>.