THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for November 14, 2013

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

Minutes approved December 12, 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)
Jonathan Yeo	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)
Thomas Cambareri	Public Member
Raymond Jack	Public Member
Paul Matthews	Public Member
Bob Zimmerman	Public Member

Members Absent

Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
John Lebeaux	Public Member

Others in Attendance:

Sarah Whateley	University of Massachusetts, Amherst
Anne Carroll	DCR
Michele Drury	DCR
Bruce Hansen	DCR
Ann Lowery	MassDEP
John Felix	MassDEP
Fabiola deCarvalho	Town of Framingham
Erin Graham	DCR
Sara Cohen	DCR
Pam Heidell	Mass. Water Resources Authority
Jennifer Pederson	Mass. Water Works Assn.
Kate Barrett	MA Coalition for Water Resources Stewardship
Ken Krause	MA Coalition for Water Resources Stewardship
Julia Blatt	Mass. Rivers Alliance
Ralph Abele	U.S. Environmental Protection Agency
Robert Adler	U.S. Environmental Protection Agency
Casey Brown	Univ. of Massachusetts, Amherst
Jeri Weiss	U.S. Environmental Protection Agency
Gillian Davies	BSC Group and Association of Massachusetts Wetland Scientists
David Ferris	MassDEP
Marilyn McCrory	DCR
Vandana Rao	EEA

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

Agenda Item #1: Executive Director's Report

Hansen provided an update on the hydrologic conditions for October 2013. Rainfall in October was below normal in all regions of the state. On average, rainfall totaled one and one-half inches or thirty-six percent of normal, with the lowest amounts (twenty-two percent of normal) in the Cape Cod and Islands region. Dry conditions persist and are expected to continue. Fire danger is elevated. Evapotranspiration has ceased. However, if dry conditions continue, intermittent streams may start to dry up, and impacts on fisheries could result. Groundwater levels varied across the state, with below-normal levels in eastern areas, above-normal levels on Cape Cod and the Islands, and levels in the normal range in the remainder of the state. Streamflows were generally below normal in the eastern half of the state and generally normal in the western half. Streamflows are generally downward trending into November. Reservoir percent-full values were in the normal range for this time of year, with a few reporting below-normal conditions. The Drought Monitor shows the eastern half of the state in a moderate drought, with the remainder of the state abnormally dry. The Drought Outlook forecasts persistent drought in eastern Massachusetts, possibly worsening.

Kennedy arrives.

Jack requested clarification on the significance of the cessation of evapotranspiration. Hansen explained that any rain that falls is no longer taken up by trees and other plants and is available to replenish groundwater. Even without precipitation, groundwater can resaturate streams as a result.

Zimmerman arrives.

Hutchins noted that there may be a need to convene the Drought Management Task Force, and the Water Resources Commission will be notified if this is necessary.

Baskin reported on discussions among the environmental agencies of provisions in proposed legislation (S1880) related to water infrastructure financing and other matters. Baskin noted that two sections of the bill proposed changes to the Interbasin Transfer Act (ITA), whose regulations were first promulgated in 1986. She added that the agencies believe the issues in the legislation can be addressed by updating the ITA regulations, which EEA will be initiating. This update could address a number of issues, including wastewater transfers. She invited commission members to participate in a working group. She described the process of drafting, review, public comment, and promulgation. She added that any major policy discussions would come before the commission.

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

Baskin invited motions to approve the meeting minutes for October 10, 2013. Parker amended the minutes to correct the list of members in attendance (Parker, not Tisa, present at meeting).

VOTE	A motion was made by Yeo with a second by Contreas to approve the meeting minutes for October 10, 2013, as amended. The vote to approve was unanimous of those present.

Agenda Item #3: Presentation: Ready for Climate Change: Water Utilities, Risk and Knowledge

Baskin introduced Dr. Casey Brown of the University of Massachusetts, Amherst, and Sarah Whateley, a UMass graduate student.

Brown provided background on the Hydrosystems Research Group at UMass Amherst and introduced a tool, Vulnerability and Risk Assessment Tool for Water Utilities (ViRTUE), being developed by his research team. The tool is designed to help small surface water utilities assess the risks of climate change for their individual systems. He explained that the ViRTUE model is a screening and planning tool that allows small water utilities to understand whether their system is vulnerable and what the vulnerabilities are. He described the tool's components – including a weather generator, hydrology model, and systems model. He reviewed inputs provided by the user, including reservoir storage volume, inflows or inflow location, water demand, minimum release requirements, and drainage area of the reservoir. Results produced by the tool include the performance of the water supply system in response to various climate-change scenarios, risks to the water supply under climate-change projections, and sensitivity analysis to changes in water demand and minimum flow requirements.

Whateley provided a demonstration of the model, including user inputs and how the user can vary inputs or conduct a climate "stress test" in order to evaluate a system's reliability. She demonstrated inputs the user can change to explore future scenarios, including changes in precipitation, temperature, water demand, and minimum flow releases.

In response to a question from Baskin, Brown explained that the tool is set up for surface water supplies with a single reservoir system. There is no limitation on storage capacity. Other questions concerned reservoir spills and releases and how to account for them.

Brown requested feedback on the tool. Zimmerman commented on the value of determining releases needed for protection of habitat during a drought or when streamflows are at their lowest point. Brown explained that climate change represents a shift in the mean, and the tool is intended as a screening tool to help the user assess whether the water system will be reliable over the long term. Zimmerman commented that it would be useful to be able to look at the probability of extended periods of drought. Yeo commented that catastrophic impacts of climate change on forests and vegetation is a serious concern for reservoir systems.

Pederson commented that the primary concern of surface water suppliers is storage of water to supply future needs and expressed concern about requirements to release water. Baskin commented that this is where science and policy intersect.

Rao commented that the value of the tool is in assessing the general vulnerabilities of systems, regardless of climate change. She added that land-use changes will have more immediate and far-ranging impacts. Abele asked about the relationship of Brown's work to the Connecticut River modeling effort being undertaken by The Nature Conservancy (TNC) and Army Corps of Engineers. Brown explained that the TNC effort involved modeling of the entire basin, while the UMass team wanted to develop a tool that was easily scalable and adaptable.

Cohen asked about assumptions related to temperature and forest cover. Whateley and Brown explained that the model does not account for evaporation from reservoirs, and that there is a high correlation between the drainage area of the basin and streamflows.

Brown indicated that his team will be working with utilities to test the tool over the next year and is seeking case studies and support.

Agenda Item #4: Presentation: Cape Cod 208 Plan Update for Wastewater Management

Baskin introduced Tom Cambareri, a water resources manager with the Cape Cod Commission, and a public member of the Water Resources Commission. She invited Beth Card of MassDEP to describe MassDEP's involvement in the project. Card noted that the commonwealth made a $3.35 million investment to update the areawide wastewater management plan for Cape Cod. She noted that MassDEP and U.S. Environmental Protection Agency Region I are working with the Cape Cod Commission to examine alternatives and options for solutions. She noted the robust public participation process and commended the Cape Cod Commission for its accomplishments to date on this challenging undertaking.

Cambareri provided background on the unique hydrology of Cape Cod, noting its drinking water supply is a sole source aquifer with six separate lenses that are replenished by precipitation and that its watersheds are defined by groundwater flow. He also provided background on Section 208, the planning element of the Clean Water Act of 1972. He summarized the findings of the 1978 208 Plan for Cape Cod, which addressed public health threats to groundwater quality from both point and nonpoint sources of pollution. He outlined key recommendations, which included limited sewering and aggressive on-site management and land-use controls. He outlined ways in which the 208 Plan was implemented through the 1980s.

Cambareri outlined the scope of the problems being addressed, including a significant increase in population from 1970 to 2000, changes in land use, and a large percentage (eighty-five percent) of residential parcels served by septic systems. He described water supply sources and use, noting that average residential use was 169 gallons per day. He discussed annual nitrogen concentration averages in wellhead protection areas and zones of contribution, noting that septic systems affect water quality throughout the region.

He also discussed findings of various scientific studies of nitrogen sources in Cape Cod watersheds and nitrogen concentrations in coastal waters. He noted the relationship of nitrogen loads to development, with eighty percent of the load related to wastewater. He added that fifty-seven embayment watersheds have been delineated, all have excess nitrogen loads, and some need a significant percentage of nitrogen removal to meet the Total Maximum Daily Loads (TMDLs) calculated for those watersheds.

Cambareri reviewed the development of TMDLs and their adoption as the management goal for Comprehensive Wastewater Management Plans (CWMPs) being developed for fifteen Cape Cod communities, starting in 2009. He noted that communities have reacted strongly to the cost associated with a proposed sewering approach. Since nearly all watersheds cross town boundaries, the need for a regional approach was recognized, and the Cape Cod Commission was directed to update the 1978 areawide water quality management plan.

He described the approach to the update, which was a watershed-based approach with a significant stakeholder engagement effort (equivalent to the technical effort). He noted that the update focuses on twenty-first century problems, including nitrogen in saline waters, phosphorus in fresh waters, growth, and Title 5 (septic system) limitations. The goal is to develop a series of approaches in each watershed that will meet water quality goals.

He outlined the 208 planning process and timeline. He described technologies being evaluated, ranging from "gray" to "green" infrastructure. He described an interactive, web-based tool, the Watershed Multi-Variant Planner (Watershed MVP), being developed to help users understand the costs associated with and percentage nitrogen removal achieved by each technological solution. He outlined the approach to selecting wastewater management solutions. By looking at subwatersheds using the MVP tool, it is possible to target areas where a centralized wastewater management solution will meet TMDLs at least cost. He outlined the next steps, which include determining how to implement the plan and where to conduct pilot projects.

Questions from Yeo, Zimmerman, Adler, and Rao concerned equitable distribution of costs for the targeted solutions and stakeholder buy-in. Cambareri responded that construction of collection systems represents seventy-five percent of the costs, and a finance subcommittee is working on approaches to distributing costs and responsibilities. He added that a range of solutions will be developed for each watershed. Questions from Zimmerman and Cohen addressed centralized treatment and alternatives. Cambareri explained that the technology matrix will help stakeholders evaluate alternatives, and decision-makers will be considering wastewater reuse as well as the effects of climate change. He added that finding appropriate wastewater disposal sites is a challenge, and all disposal options are being considered, including an ocean outfall. In response to a question from Pederson, Cambareri responded that water use for irrigation is being considered.

Baskin requested a link to the Watershed MVP tool, and Cambareri noted that the Cape Cod Commission web page provides reports, data, and a detailed description of the 208 program (http://watersheds.capecodcommission.org/). He thanked MassDEP for its financial support of the program.

Agenda Item #5: Update and VOTE: Wastewater Regulatory Reforms

Baskin introduced Ann Lowery and David Ferris of MassDEP.

Lowery provided background on the three packages of revised regulations to be considered for a vote at today's meeting: Land application of wastewater residuals (310 CMR 32.00), surface water quality standards (314 CMR 4.00), and certified operator regulations (257 CMR 2.00). She noted that these have been through the public comment and public hearing process, and have been approved by the governor's office. She reviewed the purpose of MassDEP's regulatory reform effort and outlined themes in these reforms.

Ferris summarized the changes made to the three regulations that require a vote. To the land application regulations, MassDEP added a presumptive renewal provision for the highest quality residuals and extended the maximum term of the permit from three years to five years. Changes to the surface water quality standards include the addition of site-specific water quality criteria for copper and zinc in twelve stream segments and new criteria based on local conditions and water quality (rather than the default national standards). Changes to the certified operator regulations include adding an exemption for the requirement of having a certified operator where neutralization is the only treatment and eliminating the requirement that neutralization take place in batches of two liters or less. Ferris noted that no significant public comments had been received on these three regulations, and no significant changes were made as a result of public comment.

Ferris also provided an update on two regulations that are still under review at the Executive Office of Energy and Environmental Affairs. Changes to Title 5 (septic systems) regulations

include eliminating duplicative approvals, allowing a third party to evaluate alternative on-site technologies, and allowing publicly owned seasonal tight tanks. Changes to permitting procedures for surface water, groundwater, sewer, and reclaimed water permits include several changes to the methods of public notice of permits. He outlined the timeline for promulgation.

Ferris noted that three additional regulations will come before the Water Resources Commission for approval in the near future: Sewer connection and extension permitting (314 CMR 7); operation and maintenance and pretreatment standards for wastewater treatment works and indirect dischargers (314 CMR 12); and water quality certification (314 CMR 9). He noted that the sewer and O&M regulations had received the most public comment, and additional revisions are being made in response to comments.

Lowery noted that Chapter 91 and wetlands regulations are also being revised but do not require approval by the Water Resources Commission. She added that numerous comments had been received on both of these regulations, particularly the wetlands regulations. Card added that MassDEP is making changes in response to these comments and is tabling some proposed changes.

Pederson asked if additional public comment would be sought when substantive changes are made to regulations. Lowery responded that because the changes being made are related to the proposed changes and public comment received, it is not necessary to restart the public comment process. She added that all changes to the regulations are highlighted. Cambareri asked how "seasonal" is defined in the change to Title 5 regulations that allows tight tanks in a seasonal-use facility. Ferris responded that seasonal use means a residence that is used for six months or less. Matthews requested insight on the proposed changes to the regulations for sewer connection and extension permitting. Card explained that the proposed changes will not be extensive and will maintain MassDEP's authority over a small universe of permits in the industrial category.

VOTE	A motion was made by Yeo with a second by Contreas to approve the final regulations at 314 CMR 4.00, Surface Water Quality Standards. The vote to approve was unanimous of those present.

VOTE	A motion was made by Cambareri with a second by Kennedy to approve the final regulations at 257 CMR 2.00, Board of Registration of Operators of Wastewater Treatment Facilities. The vote to approve was unanimous of those present.

VOTE	A motion was made by Contreas with a second by Yeo to approve the final regulations at 310 CMR 32.00, Land Application of Sludge and Septage. The vote to approve was unanimous of those present.

Baskin acknowledged the hard work of MassDEP on the regulatory reform effort.

Meeting adjourned, 3:30 p.m.

Documents or Exhibits Used at Meeting:

- WRC Meeting Minutes for October 10, 2013
- Wastewater Regulatory Reforms
  - Water Resources Commission: Update on Wastewater Regulatory Reform, November 14, 2013
  - EOEEA Regulation Summary: 257 CMR 2.00: Board of Registration of Operators of Wastewater Treatment Facilities
  - 257 CMR 2.00: Board of Registration of Operators of Wastewater Treatment Facilities (redline version)
  - 257 CMR 2.00: Board of Registration of Operators of Wastewater Treatment Facilities (revised version)
  - EOEEA Regulation Summary: 310 CMR 32.00, Land Application of Sludge and Septage
  - 310 CMR 32.00: Land Application of Sludge and Septage (redline version)
  - 310 CMR 32.00: Land Application of Sludge and Septage (revised version)
  - Regulation Summary: 314 CMR 4.00 – Surface Water Quality Standards – Table 28
  - Table 28, Site Specific Criteria (redline version)
  - Table 28, Site Specific Criteria (revised version)
- Link to the Cape Cod Commission website on the Cape Cod 208 Plan Update: http://watersheds.capecodcommission.org/
- Interbasin Transfer Act project status report, October 29, 2013
- Current Water Conditions in Massachusetts, November 14, 2013
- Presentation by Dr. Casey Brown and Sarah Whateley, UMass Hydrosystems Research Group. Vulnerability and Risk Assessment Tool for Water Utilities (ViRTUE). Link to online tool: http://spark.rstudio.com/climatetool/myapp/
- Presentation by Tom Cambareri, Cape Cod Commission: Cape Cod 208 Plan Update for Wastewater Management
- Presentation by Ann Lowery, MassDEP: Regulatory Reform at MassDEP: Approving Final Regulations

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.