THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for September 11, 2008

Minutes approved May 14, 2009

Members in Attendance:

Kathleen Baskin	Designee, Executive Office of Energy and Environmental Affairs
Marilyn Contreas	Designee, Department of Housing and Community Development
Jonathan Yeo	Designee, Department of Conservation and Recreation
Duane LeVangie	Designee, Department of Environmental Protection
Gerard Kennedy	Designee, Department of Agricultural Resources
Mark Tisa	Designee, Department of Fish and Game
Joseph E. Pelczarski	Designee, Massachusetts Office of Coastal Zone Management
David Rich	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Michele Drury	DCR	Steve McCurdy	MassDEP
Linda Hutchins	DCR	Peter Weiskel	USGS
Bruce Hansen	DCR	Ralph Abele	U.S. EPA
Sara Cohen	DCR	Eric Hooper	Town of Sharon
Erin Graham	DCR	Mary Booth	WSCAC
Marilyn McCrory	DCR	Tracy Adamski	Tighe & Bond
Anne Monnelly	DCR	Matthew Palmer	Pioneer Valley Energy Center
Frank Hartig	DCR	Mark Kalpin	Wilmer Hale
Margaret Callanan	EEA	Stephen Kaiser	Cambridge citizen
Vandana Rao	EEA	Margaret Van Deusen	Charles River Watershed Assn.
Dave Cash	EEA	Jennifer Pederson	Massachusetts Water Works Assn.
Joanna Carey	DFG/Riverways	Kerry Mackin	Ipswich River Watershed Assn.
Margaret Kearns	DFG/Riverways	Paul Lauenstein	WSCAC/Neponset River Watershed Assn.

Agenda Item #1: Presentation: Overview of Charles River Basin Water Needs Forecasts

McCrory presented an overview of water needs forecasts for the Charles River Basin, as requested previously by Commissioner Zimmerman. She provided background on the water needs forecasting policy and methodology used by the DCR Office of Water Resources to prepare forecasts for public water suppliers with Water Management Act permits. She reviewed the data used and the sources of data, including data on water use from the annual statistical

reports submitted by public water suppliers to MassDEP; information on current and future population; and information on current and future employment. She reviewed the key assumptions of the methodology and provided an example showing how the state water conservation standards are incorporated into the water needs forecasts.

McCrory then provided a summary of the forecasts done for the Charles basin. Staff reviewed and analyzed data for 16 public water suppliers with Water Management Act permits and/or registrations in the Charles River Basin. Three water suppliers are not receiving forecasts at this time because their average use was within their registered volumes, so they do not require permits for additional withdrawals. Another four water suppliers will receive interim allocations, because data for these water systems, in most cases, showed high unaccounted-for water, making it difficult to complete a forecast that would reflect the needs of all users of the system. DCR staff will work with MassDEP to recommend limit(s) that can be used temporarily in permits for these four water suppliers that will receive interim allocations while questions about the data are being resolved.

Zimmerman asked how long the water suppliers who are receiving interim allocations had been aware of problems in their data. LeVangie cautioned against making negative judgments about the data. He noted that the process of applying for permit renewals is making water suppliers aware of the value of the annual statistical reports. Rich asked what volumes MassDEP would use in the Water Management Act permits in the first year of the permit. LeVangie explained how volumes are allocated in five-year periods through the 20-year life of the permit, and said the forecast for the period 2009 to 2013 would be the first compliance number in the permit.

McCrory then summarized the water-use data and the draft forecasts for eight water suppliers in the Charles basin, adding that the forecast for a ninth supplier was in progress. Residential consumption for these eight water suppliers ranged from 62 to 91 gallons per capita per day, while unaccounted-for water ranged from 1.7% to 16.5%.

Mackin asked why current use in some towns is significantly less than the volumes authorized in permits. Drury responded that the volumes in the expiring permits were based on a methodology dating from the 1980s that assumed the consumption rate would continue to increase. She added that water-use patterns have changed greatly in 20 years, communities have implemented water conservation measures, and changes in the plumbing code have helped to lower consumption. Citing the projection for Bellingham, Hooper expressed concern that water suppliers who are meeting the conservation standards will not have the choice of renewing their permits at their former authorized volumes. He added that this may be a disincentive for conservation by the water supplier. Cohen explained that one of the reasons Bellingham's water use is projected to decline is that the current unaccounted-for water rate is 14%, and the system is expected to meet the standard of 10% in the planning period. She also noted the assumption that nonresidential water use will be reduced by 10% over ten years, adding that the data on current and future employment are still under review and discussion. Yeo added that the assumption on reductions in nonresidential water use is rebuttable, and the intent is for a dialog to occur between the town and DCR staff preparing the forecast.

Mackin objected to institutionalizing the residential consumption standard of 65 gpcd for 20 years, since improvements in technology will likely result in reduced consumption rates over a shorter time frame, and that trends in water use nationwide and in Massachusetts are downward. Baskin responded that public meetings were held in the Charles and Blackstone basins to review the permitting process and forecasting methodology. At these meetings, she said, LeVangie acknowledged that forecasts are generally more accurate in the near term and more tenuous the farther out in time they go.

Booth noted that generally, the percentages for unaccounted-for water are considerably higher than the conservation standard of 10%, and that reducing these rates to 10% in five years represents a substantial challenge unless real support is offered. Baskin responded that the Water Conservation Standards established a standard of 10% for unaccounted-for water, while acknowledging that it would take time to reach this standard, and that it may be impracticable for some older systems to reach that standard. She added that the Water Management Act Advisory Committee is considering recognition of a "functional equivalent" of the standards where all reasonable efforts have been made to comply with the standards.

Zimmerman stated that the method of determining the percent of population served should be standardized, because the methods used by different water suppliers seem to vary. LeVangie responded that the ASR specifies acceptable methods for determining population served. McCrory explained that DCR staff verifies population served through information obtained from the water supplier, town clerk, and census information, and that staff documents any assumptions made. Cohen added that some individual cases may warrant an alternative method of determining population served; as an example, she cited a labor-intensive method used by Bellingham, which involves overlaying service connections on census block data. McCrory added that some flexibility in methods used is needed, as long as an alternative method is acceptable to MassDEP and staff is able to verify the information.

Zimmerman continued to express concern that the method of calculating population served must be standardized. Yeo suggested that anyone who wishes to review and/or challenge the data reported by the water supplier should contact MassDEP. LeVangie noted that the Annual Statistical Reports themselves have evolved over time and require more disaggregation of the water-use data. He added that there is now more incentive for water suppliers to report accurately. Drury added that staff note any anomalies in the data reported, such as a sudden unexplained increase in population from one year to the next. Zimmerman questioned reports by some water suppliers of large reductions in residential consumption. LeVangie responded that when water suppliers implement outdoor watering restrictions, as many have in recent years, the results show up in the data.

Zimmerman responded that all the basins in eastern Massachusetts are already stressed, and he expressed concerns that if water withdrawals continue to increase, the basins will run out of water. The alternative scenario, he added is to adopt conservation principles that will at least ensure that conditions will not get any worse than they are now, buying time to fix the infrastructure that has resulted in the deficits.

Van Deusen requested an update on the water needs forecasts for the Charles Basin at the October meeting of the Water Resources Commission.

In response to a question about interim allocations, LeVangie explained that interim allocations can be valid for periods ranging from one to five years. During this period, DEP applies the performance standards of 65 gpcd for residential consumption and 10% unaccounted-for water and requires a program of restrictions on nonessential outdoor watering.

Agenda Item #2: Executive Director's Report

Baskin suggested deferring the Hydrologic Conditions report until the end of the meeting. She invited MassDEP to make a presentation at a future WRC meeting on the Water Management Act permit renewal process. She reminded the commission that its October 16 meeting would take place at the Cranberry Experiment Station in West Wareham. Baskin also noted that staff is developing a list of possible adjustments to the water needs forecasting methodology, to be presented at a future WRC meeting.

Agenda Item #3: Vote on Pioneer Valley Energy Center, Request for Determination of Applicability

Drury reminded the Commission that this request had been discussed last month and that the issue before them was a narrow question of whether the Interbasin Transfer Act (ITA) applies to this project. She noted comments received on this request, but stated that, although good points were raised, they did not change the Staff Recommendation presented last month, which she then summarized. The staff recommendation (Attachment 1 to the meeting agenda) is that the ITA does not apply if certain conditions are met: that the proponent is able to acquire the land needed; the proponent is able to obtain permission from Westfield and Holyoke; and that the project remains as proposed.

Rich requested an opinion from legal counsel. Callahan concurred with the staff recommendation, saying it is on firm legal ground. Rich requested a written opinion explaining the basis of the precedent being cited. In response, Baskin noted that staff and legal counsel had looked at the issues in a number of different ways, and legal counsel approved the final draft of the staff recommendation. Drury distributed a handout addressing precedents that support the staff recommendation. Tisa requested clarification on the difference between land ownership and an easement, as it applies in this case. Drury explained that Chapter 482 of the Special Acts of 1898 allows the city of Holyoke to supply water to "persons and corporations owning or occupying lands in the town of Westfield within twelve hundred feet of the pipeline." She explained that the proponent plans to buy a 100-foot-wide strip of land along the Holyoke pipeline route so that it will both own and occupy the land with the pipeline. She added that the applicant must demonstrate that it has obtained the land before it can obtain water. Baskin explained that the Special Acts of 1898 is a special act for the city of Holyoke, and that the WRC's decision on applicability of the ITA would be contingent on the Holyoke Water Commission's determination that the project meets its requirements.

Tisa asked for confirmation that the water purchased by PVEC cannot be sold to another entity. Drury confirmed that this is a condition of the commission's determination of applicability. If

there are any changes to the project, the proponent must return to the commission for a review of implications under the ITA.

Zimmerman questioned whether the commission needs to be held to precedent in this case. Callahan responded that it is important for the commission to be consistent and fair in its decisions. Precedent is guidance, she added, but the commission should make decisions based on the facts in each case. Booth noted that the proposed project is an expansion of the system, not an expansion within the existing system. Drury responded that staff considered this and concluded that the Special Acts of 1898 allowed for this expansion in this area; thus this does not represent a change of operating rules.

Zimmerman commented that precedent is not applicable if it leads to a decision to approve a transfer of two million gallons of water per day to the atmosphere. He urged the commission to conduct a full review of the implications of the project under the Interbasin Transfer Act. Yeo responded that the commission is not passing judgment on the worth of the project. Baskin added that she plans to outline the commission's concerns in a letter to the MEPA office. She acknowledged that there are broader questions to be addressed, but pointed out that the question before the commission is a narrow one.

Other discussion ensued about the applicability of precedents and whether the PVEC project represents an interbasin transfer.

Palmer commented that the proponent originally had proposed an air-cooled project, and that the MEPA office asked the proponent to consider water cooling. He said the proponent then found a large reservoir with unused capacity. He described ancillary benefits of the project, and said that MEPA was the appropriate forum for discussion of the issues. Zimmerman objected to Palmer's description of the plant as one that reduces a carbon footprint, adding that the plant will increase, not reduce, carbon emissions.

VOTE	A motion was made by Yeo with a second by Rich to determine that the Interbasin Transfer Act does not apply to the Pioneer Valley Energy Center, given the conditions outlined in the Staff Recommendation dated September 11, 2008. The vote to approve was seven in favor and one (Zimmerman) opposed.

Baskin invited comments on conditions of the approval.

Zimmerman described an offset program agreed to by another large power plant in Bellingham and Blackstone and suggested that a similar program be done here. Zimmerman and Palmer continued to discuss the proposed plant's environmental impacts. Yeo suggested that the letter to MEPA from the commission be focused on issues related to water. Drury noted that staff is reviewing the draft environmental impact report for the project, focusing on water-related issues.

Agenda Item #4: Presentation: Overview of Streamflow Standards in the Northeast

Abele summarized efforts by the New England states to develop statewide streamflow standards. He reviewed the evolution of these efforts, starting with the work of the U.S. Fish and Wildlife Service on Aquatic Base Flow. He explained that this study from the 1980s was done in response to an increasing number of hydroelectric projects and was based on unimpacted stream gages throughout New England. The study concluded that to protect aquatic resources, the natural summer flow (0.5 cubic feet per square mile) should be protected. He then cited an important paper published in 1997 on the natural flow paradigm. He reviewed the efforts other New England states are taking to protect and regulate instream flows. He pointed to studies that formed the underpinning for state policies developed in subsequent years. These studies include the target fish communities study, which identified aquatic resources that should be restored or protected. He described the natural flow paradigm as one which maintains aquatic biodiversity by considering not only the magnitude of flow but also the frequency, timing, and duration of flow. He pointed out that every New England state now incorporates the natural flow language in statute, regulation, or policy. He described the current challenge as defining what the natural flow is and determining how far from this natural condition existing conditions are.

Abele reviewed the approaches that individual New England states are taking to developing statewide streamflow standards. He described the draft proposal for Connecticut in some detail. The first step in Connecticut's approach is to classify the river based on hydrologic alteration and set up criteria for different classes, as well as different withdrawal standards for reservoirs and wells. Three classes have been identified. The classification considers withdrawals, presence or absence of dams, return flows, and land use. For withdrawals, the standards would be based on six bioperiods. Connecticut would set withdrawal limits that would make sense biologically for the summer rearing and growth period first. The limits for the other periods would be scaled up based on how much the flow differs from the summer period. A desktop application is being developed to calculate allowable withdrawals in each class. He described some of the technical challenges, including factoring in the lag time to wells. He also explained the proposed rules for reservoir releases.

Abele described the concept of the ecological limits of hydrologic alteration (ELOHA), which describes changes in biological condition in six categories. He outlined the steps in the ELOHA process, starting with building a hydrology foundation to figuring out the ecological response to flow alteration. Yeo noted the importance of continued funding and maintenance of the stream gage network to building a solid foundation of hydrology. Abele also outlined the approach taken by Michigan, which sets withdrawal thresholds based on changes in fish assemblages. In Michigan, rivers are classified based upon temperature and size. Fish assemblages are classified as "characteristic" and "thriving."

Abele mentioned that Massachusetts is very far advanced with respect to scientific research in this field, and that other New England states have been looking at the research being done in Massachusetts.

Yeo commended Abele for his presentation, noting that it focused on the science, not policy. He requested that when scientists talk about impacts, the focus should not be on water supply

withdrawals alone. He pointed out that withdrawals are only one of many causes of hydrologic alteration, and other causes include water quality, dams, stormwater, development, and hydropower.

Baskin noted that several years ago the commission had asked staff to look at developing a streamflow policy and standards.

Agenda Item #5: Presentation: Revisions to State Revolving Fund Regulations

Baskin noted that the revisions to the State Revolving Fund regulations had been presented to the commission previously (ed. note: see minutes of the April 12, 2007, WRC meeting), and the changes to be made were relatively minor. McCurdy reviewed the history of the regulations and distributed a briefing package to the commission. He described the proposed changes and the reason for making them. He noted the public comment period ends September 17, and said that MassDEP expects to request formal approval by the commission at its October meeting. Contreas commented that the proposed revisions complement the goals of Chapter 40R, the statute that encourages communities to designate of overlay zoning districts to promote housing production that is consistent with Smart Growth principles.

Agenda Item #6: Hydrologic Conditions Report

Hansen provided an update on the hydrologic conditions for August 2008. He noted that statewide precipitation in August was about 110% of normal. He reported that groundwater levels were generally above normal for August from northeastern to western Massachusetts, while groundwater levels were in the normal range for southeastern Massachusetts and Cape Cod and the Islands. Reservoir levels were generally well above normal for this time of year, especially in the western part of the state. He warned of potential flooding associated with tropical storms.

Baskin announced the Ocean Science Literacy summit, hosted by the New England Ocean Science Education Collaborative at Boston University on November 7.

Meeting adjourned

Attachments distributed:

- Current Water Conditions in Massachusetts, September 21, 2008
- Written communication from Bob Zimmerman to Kathy Baskin, et al., dated August 22, 2008. Subject: Pioneer Valley Energy Center – Additional Information.
- Written communication from Eileen Simonson to Kathy Baskin, et al., dated August 24, 2008. Subject: Pioneer Valley Energy Center – Additional Information.
- Previous decisions by the Water Resources Commission on Requests for Determination of Applicability under the Interbasin Transfer Act.
- Presentation handouts: “Water Needs Forecasts for the Charles River Basin. Water Resources Commission, September 11, 2009.”
- Presentation handouts: “Natural Flow Regime and Aquatic Resource Approaches.” Ralph Abele, U.S. Environmental Protection Agency, Region I.