THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for April 11, 2013

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

Minutes approved May 9, 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)
Mark Tisa	Designee, Department of Fish and Game (DFG)
Thomas Cambareri	Public Member
Raymond Jack	Public Member
John Lebeaux	Public Member
Bob Zimmerman	Public Member

Members Absent

Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Paul Matthews	Public Member

Others in Attendance:

John Sullivan	Boston Water & Sewer Commission
Jennifer Pederson	Mass. Water Works Assn.
Bruce Hansen	DCR
Frank Cavaleri	Woodard & Curran
Mark Cleary	Woodard & Curran
Andreae Downs	Wastewater Advisory Committee
Tim Simmons	DFW/Natural Heritage & Endangered Species Program
Linda Hutchins	DCR
Michele Drury	DCR
Richard Friend	MassDEP
Duane LeVangie	MassDEP
Rebecca Weidman	MassDEP
John McLaughlin	Mass. Water Works Authority
Kristen Hau	Mass. Water Works Authority
Brent Courchene	Stantec
Erin Graham	DCR
Laila Parker	DFG/Div. of Ecological Restoration
Peter Weiskel	U.S. Geological Survey
Tom Tilas	AECOM
John Reinhardt	MassDEP
Anne Carroll	DCR
Marilyn McCrory	DCR
Sara Cohen	DCR

Baskin called the meeting to order at 1:03 p.m.

Agenda Item #1: Executive Director's Report

Hansen provided an update on the hydrologic conditions for March 2013. He reported that rainfall in March was below normal statewide, ranging from 33 percent of the long-term average in the western region of the state to 119 percent of the average in the Cape Cod and Islands region. Groundwater levels were mostly normal, with the exception of two areas in the western region and one in the north-central region that were below normal. Streamflow levels varied across the state, with below-normal conditions in the west, above-normal conditions in the southeast, and normal conditions in the rest of the state. Reservoir levels are normal for this time of year. Fire danger is elevated, with one red-flag day recorded. The Connecticut River Valley is abnormally dry in New Hampshire and Vermont. The Massachusetts Standardized Precipitation Index shows that the central drought region in Massachusetts is at the advisory level, and the western region is at the watch level. Hansen noted that precipitation is one of several indices monitored for drought conditions and considered in making a drought declaration.

Zimmerman and Card arrive.

Yeo noted that, while conditions are dry, there are simultaneously flood warnings for parts of the Berkshire County. Hansen responded that high elevations still have snow, and an inch of rain in a short time can create flooding problems in small streams.

Agenda Item #2: Vote on the Minutes of February and March 2013

Baskin invited motions to approve the meeting minutes for February and March 2013.

VOTE	A motion was made by Contreas with a second by Lebeaux to approve the meeting minutes for February 14, 2013. The vote to approve was unanimous of those present, with two abstentions (Tisa and Cambareri).

VOTE	A motion was made by Lebeaux with a second by Kennedy to approve the meeting minutes for March 14, 2013. The vote to approve was unanimous of those present, with one abstention (Cambareri).

Agenda Item #3: Presentation: Boston Water and Sewer Commission: Long-Range Planning and System Improvements at BWSC

Baskin introduced John Sullivan, Chief Engineer at the Boston Water and Sewer Commission.

Sullivan noted that, though the Boston Water and Sewer Commission (BWSC) provides both water and sewer services, his presentation would focus on the commission's water distribution system. He offered to return to discuss management of the sewage collection and storm drainage systems.

He provided background on the Boston water system, noting that much of the present land area of Boston is fill, with very corrosive soils and low elevations that make the area vulnerable to flood inundation. He provided a history of the water supply system, starting in 1795 and continuing through several expansions to the west that eventually incorporated water supply

sources in several watersheds extending out to the Quabbin Reservoir. He commented that the toughest problem in the early days of the system was public health related to water and sewage, and the best minds were applied to the design of the water and sewerage system that is still in place today.

Sullivan discussed construction of water mains and pipe materials and explained that a pipe will remain in good condition for centuries if it is thick enough and bedded properly during construction. He noted that pipes under Boston Common today were laid in 1848. He described the distribution system and noted that the materials used in the majority of water pipes in BWSC's system are cast iron and ductile iron, with eighty-seven percent of the pipes cement-lined.

He described several water distribution studies, which recommended lining or replacement of seventeen miles of pipe per year. He noted that all data is now electronic, including data in geographic information systems. He added that BWSC's Board of Directors is supportive of rates that provide adequate revenue for capital improvements. He commented that having adequate revenue allows the system to address any complaints that arise and stay ahead of problems.

He reviewed the history of pipe design and corrosion, noting that pipe walls have become thinner through the years. BWSC favors Class 56 pipe, the thickest pipe currently available, as the most cost-effective option in the long run. BWSC regularly samples pipes in its system and sends them to a laboratory for analysis that helps in projecting a pipe's service life. He noted that the number of water main breaks in the BWSC system is well below national averages. BWSC also has long-term records of pipe breaks and the reasons for breaks.

To help in annual rehabilitation planning, BWSC developed a model that analyzes pipe breaks, soils, critical users, and other factors. The model projects a pipe's lifespan and identifies the highest priorities for pipe replacement or repair. Sullivan noted that because of these proactive efforts, BWSC does not anticipate the crisis facing some other systems with aging water mains.

Sullivan describes BWSC's leak detection efforts. Six full-time personnel are assigned to leak detection, and others are assigned as needed, with a goal of identifying leaks before they become breaks. BWSC surveys about 700 of its 1,100 miles of water mains each year. He discussed older and newer leak detection methods, including permaloggers that listen for leaks continuously and Zcorr systems and correlators that can pinpoint where a leak is located. Permanent stations are installed in critical areas of the downtown. As a result of these efforts, unaccounted-for water has dropped from fifty percent in 1977 to about eight percent today.

He also described efforts to improve metering. BWSC has used an automated meter reading system (AMR) for ten years. He noted that such systems are costly but provide many benefits, including better cash flow through monthly billing, reductions in customer service calls, and the ability to detect water theft. Online account information allows customers to monitor and control their own consumption. Daily data readings allow BWSC to identify failing meters, proactively address leaks, and identify other sources of lost revenue. He also described a two-phase strategy to upgrade the AMR system and retrofit or replace all 90,000 meters over a five-year period.

Sullivan described future directions and challenges for the system, including changes in governance, workforce retention, decaying infrastructure, declining revenues, and competing

demands for revenue for wastewater and stormwater infrastructure. He also described potential impacts of climate change.

Zimmerman leaves.

Downs asked about the impact of the combined sewer overflow project on sewer rates. Sullivan noted that debt service is currently built into the rates of the Massachusetts Water Resources Authority, which has a controlled rise in rates of about five percent per year.

Carroll asked Sullivan to identify the most important approach that resulted in reductions in unaccounted-for water. Sullivan pointed to listening for leaks, district measurements, and accurate metering as key factors. Yeo asked how BWSC works with private property owners to fix service-line leaks. Sullivan outlined a number of steps, which can include shutting off service, providing rebates for lead removal, and placing liens on property where BWSC makes repairs. He added that BWSC actively listens for service-line leaks.

Other questions related to privacy and health concerns associated with the AMR system, whether second meters are allowed, wastewater challenges, and methods to improve staff retention. Sullivan also discussed approaches to handling increased volumes of stormwater related to climate change and sea level rise.

Baskin thanked Sullivan and called for a brief recess.

Agenda Item #4: Update: Interbasin Transfer for Witch Pond, Foxborough, Massachusetts

Drury summarized the discussion at the March 14, 2013, commission meeting of the issues related to monitoring results from Foxborough's Witch Pond wells, which were approved in 2001 under the Interbasin Transfer Act (*Ed. note*: see March 2013 meeting minutes at http://www.mass.gov/eea/docs/eea/wrc/2013-03-wrc-minutes.pdf). She reported that EEA agency staff and town staff conducted a site visit on March 26, 2013. Following the meeting, Foxborough submitted its requested changes to the monitoring protocol. Agency staff are reviewing the requested changes and will prepare a recommendation for discussion by the commission.

Drury reported on observations from the site visit. She noted that the Atlantic White Cedar swamp ecosystem is nationally very rare and extremely rare in Massachusetts. She reported that staff observed the presence of water in the wetlands, but did not receive any evidence that would alter concerns about monitoring results, which show declines in water levels in the deep peat. Staff also remain concerned about a gradual change in vegetation that has occurred following initial use of the wells. The cumulative effect of such changes, which may lead to irreparable damage, is a key concern.

She reviewed concerns about the town's capacity to meet its demand, should the Witch Pond wells need to be shut down. Drury noted that, though staff are sympathetic to the town's concern about capacity, the purpose of the Interbasin Transfer Act is to protect the donor basin resource. Hutchins added that a wetlands replication area is not behaving like a wetland. The town has requested changes to the monitoring location for the replication area, and MassDEP will comment on the value of that area. Simmons added that the Natural Heritage and Endangered Species program is primarily concerned about trends and cumulative changes, and he commented that the monitoring cannot detect long-term changes until the damage has been done.

Baskin commented that more detail will be requested from the town on proposed transects and on water-level monitoring. She summarized information requested of the town, including survey data on wells to confirm well elevations and data on summer water use for 2012 and projected for 2013.

In response to a request for clarification from Tisa, Baskin outlined the town's position that a monitoring well located at the edge of the wetland monitors a thin peat layer and reflects a naturally occurring decline in water level at the edge. The town proposes to move the well, which is used to determine when pumping must be shut off, further in. She added that all the agencies need to review this proposal and evaluate the effects of pumping on the wetland.

There was some discussion of when a staff recommendation could be completed for commission review. Yeo noted that two issues must be addressed, the monitoring location and concerns about the deep peat, and that the monitoring discussion may require more time. He expressed concern that the town moved one of the monitoring wells without notifying agency staff. He noted that the commission and its various agencies have various responsibilities, and MassDEP will have to continue working with the town to make sure the town has enough water to meet its demands.

In response to a question from Tisa about extending monitoring until July, Simmons commented that wetlands monitoring is not currently providing any useful results. Baskin suggested comments on a piece of the proposed changes, such as the proposed transects, could be completed and implemented in the near term. Baskin added that the agencies will have to consider the issues holistically. She added that there is no doubt that the wetland must be protected; at the same time, approaches that the town can accomplish realistically will have to be assessed.

Tisa requested that a staff recommendation on deep peat monitoring be made available for the May commission meeting. Yeo requested a full update on the monitoring evaluation. Baskin requested information on alternative methods of reducing consumption in summer 2013 and feasible time frames. Card agreed and explained that MassDEP must review the data on the capacities of wells available to the town this summer and assess the need for an emergency declaration or other MassDEP action.

Agenda Item #5: Vote to Approve a Change to Aquaria's 2013 Monitoring Protocol under the Interbasin Transfer Act for the Taunton River Desalination Plant, Dighton, Massachusetts

Drury acknowledged Brent Courchene of Stantec, consultant to Aquaria. Drury briefly reviewed the history of the project, noting that, in April 2012, the commission approved a scaled-back monitoring schedule, with three tiers related to the quantity of water withdrawals (*Ed. note*: see WRC meeting minutes of April 2012 and June 2011). She explained that, during the 2012 sampling period, Aquaria noted no differences in entrainment from the two weekly samples taken at the raw water pump station. Aquaria is therefore requesting that sampling be reduced to one sample per week. Drury noted that agency staff recommend that the commission approve this change, since staff agree with Aquaria that twice-per-week sampling does not add value. Drury enumerated other modifications that Aquaria is requesting and explained these are still being discussed. Therefore, all other requirements of the commission's 2012 approval remain in effect until agency staff can review additional information and make a recommendation to the WRC.

VOTE	A motion was made by Tisa with a second by Card to approve the request by Aquaria to reduce raw water pump station entrainment monitoring during maintenance flushing to one sample collected during the middle of the single weekly withdrawal period (one sample per week total). All other monitoring requirements approved by the Water Resources Commission in April 2012 remain in effect. The vote to approve was unanimous of those present (Matthews and Zimmerman absent).

Baskin noted that the other issues being proposed by Aquaria will likely be considered at a future commission meeting.

Other Discussion Items

Cambareri requested an update on the status of the Drought Management Plan. Baskin responded that the appendix requested by Cambareri had been added. This appendix reviews historical rainfall and circumstances that would have triggered the state's definition of a drought over a longer period of time. She noted that the Department of Fish and Game proposed edits at the March commission meeting to another section of the plan. These edits are being reviewed, and Baskin indicated that the final plan should be ready for discussion and a vote at a commission meeting in the next month or two.

Baskin invited Cambareri to inform commission members about a major wastewater study being undertaken on Cape Cod. Cambareri reported that the Cape Cod Commission and partners received $3.35 million in funding from the Water Pollution Abatement Trust to prepare an areawide water quality management plan for Cape Cod. The plan will address coastal water quality issues not included in previous plans. He described the plan as a watershed-based wastewater management plan that will study the fifty-seven watersheds on Cape Cod. Cambareri described the scope of the project, noting that it will be a multiyear effort involving assembling baseline information, applying Total Maximum Daily Loads (TMDLs), and developing new GIS-based planning tools that calculate nitrogen loads and integrate TMDLs, water use, cost factors for a variety of treatment systems, and the location of wastewater discharges. He added that the project will include a significant stakeholder outreach component. He offered to provide a presentation to the commission at a future meeting.

Baskin reminded commission members about the commission retreat scheduled for the morning of May 9, 2013. The retreat agenda will include some training as well as brainstorming on long-term policy initiatives that members would like staff to work on and bring to the commission over time. The retreat will be followed by the regularly scheduled commission meeting at 1:00 p.m.

Meeting adjourned 3:00 p.m.

Documents or Exhibits Used at Meeting:

- Meeting Minutes for February 14 and March 14, 2013
- Interbasin Transfer Act project status report, 27 March 2013
- Current Water Conditions in Massachusetts, April 11, 2013
- Presentation by John Sullivan, Boston Water and Sewer Commission: Long-Range Planning and System Improvements at BWSC (available at http://www.mass.gov/eea/docs/eea/wrc/2013-04-11-bwsc-water-system-planning-mgmt-wrc.pdf)