THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for February 10, 2011

Minutes approved March 10, 2011

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
Ann Lowery	Designee, Department of Environmental Protection
Gerard Kennedy	Designee, Department of Agricultural Resources
Tim Purinton	Designee, Department of Fish and Game
Thomas Cambareri	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Robert McNeil	Dept. of Utilities and Facilities, Spencer
Jennifer Pederson	Mass. Water Works Assn.
Erin Graham	DCR
Michelle Moon	DCR
Michele Drury	DCR
Lexi Dewey	Water Supply Citizens Advisory Committee
Margaret van Deusen	Charles River Watershed Assn.
Scott Horsley	Horsley Witten Group
Sue Beede	Mass. Rivers Alliance
Pam Heidell	MWRA
Vandana Rao	EEA
Aaron Weieneth	AECOM
Margaret Callanan	EEA
Marilyn McCrory	DCR
Betsy Works	Watch2O
Russell Hobbs	Watch2O
Sara Cohen	DCR
Beth Lambert	DFG/DER

Agenda Item #1: Executive Director's Report

Hutchins provided an update on the hydrologic conditions for January 2011. Precipitation, groundwater, and streamflow were all about normal for the month. Reservoir levels have recovered to normal levels. There is no forecast for drought. The only concern is five to six inches of snowpack over most of the state. Rapid melting combined with a significant rain event could result in flooding problems, whereas gradual melting of the snowpack would be beneficial for recharge.

Baskin provided the Executive Director's update. She reported that those involved in the Sustainable Water Management Initiative (SWMI) continue to meet regularly. The various committees are working on developing streamflow criteria for each season for different types of streams. They are also discussing opportunities for offsets and mitigation. The committees recognize that more work needs to be done on impervious cover; they are looking into jurisdiction issues and are open to ideas. Baskin announced upcoming meetings of the Technical Subcommittee on March 8 and of the Advisory Committee on March 22, where pilots of streamflow criteria are expected to be described.

Agenda Item #2: Vote on the Minutes of January 2011

Baskin invited motions to approve the meeting minutes for January 13, 2011.

VOTE	A motion was made by Zimmerman with a second by Contreas to approve the meeting minutes for January 13, 2011. The vote to approve was unanimous of those present, with three abstentions (Lowery, Purinton, Cambareri).

Agenda Item #3: Vote on Calendar Year 2011 Work Plan

Baskin noted that the draft work plan for the Water Resources Commission for 2011 was discussed at the January commission meeting. Suggestions were incorporated into a revised plan.

Carroll highlighted the changes made. These include a new task on climate change. Kathy Baskin and Vandana Rao will take the lead on this task. Baskin added that the climate change adaptation report is an official product of the Climate Change Advisory Committee, a group external to the state agencies. The WRC work plan task will involve reviewing the report for water-related impacts and strategies for adaptation and report back to the commission. Carroll also noted a work plan task related to updating the Drought Management Plan, with a vote by the commission expected in mid-summer.

Commission members requested clarification on work plan items. Purinton asked what revision of the Interbasin Transfer regulations would entail. Drury explained that the existing regulations focus on river withdrawals. The intent of the regulation revision is to clarify how other types of transfers, including groundwater and reservoir withdrawals and wastewater transfers, are evaluated, based on experience over the past twenty years.

Pederson inquired about the status of appointing new public members. Baskin responded that the most recent list of recommendations had been sent to the appointing authorities for review.

Van Deusen asked what is envisioned in the pilot basin plans. Carroll explained that this item represents a placeholder, with the intent being to pull together the large quantity of new information and data being developed through the SWMI process and prior initiatives, such as the Massachusetts Water Indicators data and "Fish and Flow" categories.

Cambareri reported that the Cape Cod Commission is working with the Cape Cod water suppliers and MassDEP to examine the feasibility of using groundwater levels as a trigger for drought declarations or activation of outdoor water-use restrictions. He reported there appears to be agreement among interested parties to work with USGS and move forward with this approach.

Baskin invited a motion to accept the calendar year 2011 work plan for the commission.

V O T E	A motion was made by Purinton with a second by Cambareri to adopt the Water Resources Commission Work Plan for calendar year 2011. The vote to approve was unanimous of those present.

Zimmerman initiated a discussion of the need for state agencies to anticipate catastrophic failure of dams, given the large snow pack on the ground combined with the potential for a significant rain event. Yeo and Hutchins noted that the Office of Dam Safety tracks vulnerable dams, provides technical assistance during flood events, and is working to remediate the worst situations. Zimmerman requested a copy of the Office of Dam Safety's Emergency Response Plan. Purinton noted that the state auditor had raised concerns on the issue and that Senator Pacheco has filed legislation that would potentially provide funding for the repair or removal of dams. Yeo concurred that the big challenge is funding. Zimmerman argued for being prepared instead of waiting for a crisis to occur. (*Ed. note*: see link to state auditor's report in list of attachments at the end of these minutes.)

Baskin responded to an issue raised at the January commission meeting on levels of hexavalent chromium, a potential carcinogen, in metropolitan-area drinking water supplies. She explained that, in Boston, a single sample from a consumer's tap showed a concentration of 0.03 parts per billion, the lowest level detectable. In response to concerns raised at the January meeting, she explained that there are no EPA standards at this time for this chemical, though EPA is considering whether to establish a limit. Yeo added that hexavalent chromium is not a chemical in the water supply itself but can be leached in trace amounts from faucets.

Agenda Item #4: Presentation: Taunton River Watershed Management Plan: An Approach to Sustainable Water Resources Management using Low Impact Development (LID) Design and Local Code Reform

Baskin introduced Scott Horsley, noting that he was a highly valued member of the Water Resources Commission in the past and is currently participating in the Sustainable Water Management Initiative.

Horsley provided an overview of his firm's work over the past four years in developing a management plan for the Taunton River Watershed, working with Bridgewater State University and a steering committee consisting of state agencies, The Nature Conservancy, Southeastern Regional Planning and Economic Development District, and Old Colony Planning Council.

He reviewed several maps and graphs showing results of a water budget analysis of the Taunton River watershed. The analysis indicated ecological changes even at small changes in flow and impervious cover. He provided an overview of the project, which was completed in several phases. Phase one consisted of data collection, extensive public involvement, development of a water balance, ecological assessment, and a smart growth case study in Easton. He described the GIS-based water balance model, which analyzed 104 HUC-14 subbasins and accounted for water withdrawals under the Water Management Act; withdrawals from private wells; wastewater, including septic system, discharges; and effective impervious surfaces. The net impact of the water balance elements was a recharge deficit of 8 million gallons per year, compared to natural conditions. The deficit was reduced when surface water discharges and withdrawals are included. The results showed that the subwatersheds are out of balance to varying degrees and highlighted the need for policies and mechanisms to retain water within the watershed.

Among the issues identified by the public as top priorities was the need for training of volunteer member s of municipal boards.

Horsley described Phase two, which focused on demonstration projects and code reform. Demonstration projects were designed to restore the natural water balance using low-impact design techniques, wetland and habitat restoration, and alternative wastewater management approaches to recharge water locally. The code reform projects in Norton and Lakeville focused on wetlands protection bylaws and regulations, the zoning code, and subdivision rules and regulations. The zoning code reform project resulted in permit-ready recommendations to be taken to town meeting for enactment.

Horsley described the six demonstration projects, which were completed to the 70% design stage. Three of the six have been funded for construction to date. He also described a review of the adequacy of existing wetlands laws to address the impacts of climate change. The project included an analysis of the effects of sea level rise on wetlands in Taunton. The analysis showed a scenario where sea level rise would result in migration of the existing wetland beyond the current jurisdictional boundary.

One of the recommended strategies for the Taunton watershed is to capture stormwater from impervious surfaces in order to increase recharge as an offset for water withdrawals. A related strategy was to develop regulations that would allow this to occur. He described a water balance analysis for an irrigation well at the Pinehills golf course in Plymouth, where recharge of roof and parking lot runoff was used to offset water withdrawals. Purinton asked how the offset calculations are monitored or verified. Horsley responded that monitoring has not been done yet but is proposed for phase three. In response to questions and discussion of where such strategies are appropriate, Horsley clarified that the goal is to use this approach in areas where there is a water deficit, so that water levels can be restored to natural conditions.

Horsley outlined the recommendations from Phase two. Among these are education and training of local decision-makers, revision of codes and regulations, and implementation of strategies to restore the water balance in subwatersheds.

In response to questions about training and certification, Horsley highlighted a formal certification process required in Rhode Island for low-impact development designers working in certain areas. In response to a question from Yeo, Horsley confirmed that technical assistance to the town of Lakeville resulted in specific edits to the zoning code and subdivision regulations that make the nine state stormwater standards apply townwide.

Other questions and discussion addressed the choice of the HUC-14 scale for analysis, the process for selecting demonstration projects, the effect of the MS4 stormwater requirements on restoring the water balance, and the impact of roof runoff on water quality. Cohen, commenting as a member of the project steering committee, thanked the Horsley Witten Group for the enthusiasm and ideas their team brought to the projects.

Agenda Item #5: Presentation: Dam Removal in Massachusetts, 2010: A year in review and a preview of projects and river restoration initiatives to come

Purinton noted the discussion at recent meetings of the Water Resources Commission of the need to anticipate the consequences of compromised dams in Massachusetts. He acknowledged the Department of Conservation and Recreation's (DCR) Office of Dam Safety as a strong partner of

the Division of Ecological Restoration (DER) in working with dam owners when there is a dam removal option. He noted that Massachusetts was second in the nation in dam removal in 2010, with many projects in the pipeline.

Lambert acknowledged the efforts of many parties in increasing interest in dam removal. These include the update of regulations by the Office of Dam Safety and its enforcement of these regulations, and interest from watershed organizations and other state and federal agencies. She noted that the trend toward extreme precipitation events combined with the continued deterioration of dams and other infrastructure results in a public safety hazard that is best addressed by either dam removal or repair to modern safety standards.

Lambert highlighted three recent dam removal projects. The first was restoration of the headwaters of the Eel River in Plymouth, a comprehensive project involving removal of a highly deteriorated dam, culvert replacement, and wetlands restoration. In response to a question about jurisdiction, she explained that there are approximately 3,000 dams in Massachusetts that are known to regulators, but not all of them are regulated by the Office of Dam Safety, based on their height or the amount of water impounded.

She showed photos illustrating conditions of the river before and after removal of the dam. She described decisions that needed to be made during the design phase having to do with the location of pools and riffles and the need for boulders and woody debris. Monitoring of macroinvertebrates, ground and surface water hydrology, fish, vegetation, and water quality is being done to track ecological progress at the site.

Lambert described a project at Ox Pasture Brook in the Parker River watershed. The project involved removal of a highly deteriorated dam at the head of tide, which provided an important restoration opportunity. The design relied on natural processes for channel shaping and revegetation. She showed photos illustrating the progression from construction to natural revegetation over a period of six to nine months. Vegetation monitoring indicated plants characteristic of brackish wetlands or freshwater tidal wetlands with no invasive species present. Scientists are also monitoring fish, macroinvertebrates, and channel evolution.

Lambert described removal of a 15-foot-high jurisdictional dam on the North Branch of the Hoosic River. The cost of upgrading the dam to comply with modern safety standards was prohibitive to the private dam owner. A partnership to remove the dam benefitted the community by removing a public safety hazard, opening up 50 miles of high-quality habitat, and helping to maintain a local employer.

Lambert also described an emergency action by the Office of Dam Safety to breach the highly deteriorated Forge Pond dam on the Assonet River in Freetown. She then outlined several dam removal projects in 2011 and several more complicated projects to be done in 2012 and beyond.

Lambert concluded by describing other future plans, such as trainings for dam-removal project managers, development of guidance, and development of a restoration potential model, which is a database that can be used to estimate the ecological benefit of removing a particular dam. She also outlined the barriers to dam removal, including funding; technical challenges, such as utility pipes, bridges, and the presence of contaminated sediment; and the permitting process.

Questions and discussion addressed who is responsible for removal of contaminated sediment, funding sources, efforts to streamline the permitting process, and the impacts on upgradient water quality.

Purinton commented that the Division of Ecological Restoration plans to update its sediment management guide, and republish it in cooperation with MassDEP. He added that the 401 Water Quality program provides flexibility to deal with contaminated sediments where the contaminant levels are below certain federal standards.

Purinton announced plans for a conference on River Monitoring and Climate Change in Massachusetts on May 18 and 19, 2011. The conference will highlight dam removal as one strategy for adapting to climate change.

Yeo thanked the Division of Ecological Restoration, in particular, Beth Lambert and her team, for their technical assistance in helping DCR overcome hurdles associated with removing dams. On barriers related to the permitting process, Baskin noted that MassDEP had issued clarification, under the Wetlands Protection Act, that a wetlands created by a dam is not necessarily as important a resource as a free-flowing river would be.

Pederson asked if DER considered the impacts on water supply upgradient of a dam in evaluating dam removal projects. Purinton confirmed that such considerations are part of its due diligence investigations. Lowery requested more information on DER's restoration potential tool. Lambert explained that this tool was developed by DER and accumulates data for each known dam in the state. She added that DER is also looking at EPA's watershed assessment tool and other tools useful in watershed-scale analyses.

In response to a question from Baskin, Purinton noted that, while the division's operational budget is $350,000, the program leverages more than $13 million in funding from outside sources, including private foundations whose focus is ecological restoration.

Hobbs encouraged stakeholders to look for opportunities, through the legislature, for both funding, through the Environmental Bond Bill, and potential statutory reforms to facilitate dam removal.

Meeting adjourned

Attachments distributed or presented at meeting:

- Current Water Conditions in Massachusetts, February 10, 2011
- Link to report for Auditor of the Commonwealth: Local Financial Impact Review: Massachusetts Dam Safety Law: http://www.mass.gov/sao/DLM%20Reports/DLMDamSafetyReport.pdf
- Taunton River Watershed Management Plan brochure