



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

Meeting Minutes for February 12, 2015

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

Minutes approved March 12, 2015

Members in Attendance:

Kathleen Baskin	Designee, Executive Office of Energy and Environmental Affairs (EEA)
Jonathan Yeo	Designee, Department of Conservation and Recreation (DCR)
Bethany Card	Designee, Department of Environmental Protection (MassDEP)
Catherine deRonde	Designee, Department of Agricultural Resources (DAR)
Tim Purinton	Designee, Department of Fish and Game (DFG)
Thomas Cambareri	Public Member
Paul Matthews	Public Member

Members Absent

Marilyn Contreas	Designee, Department of Housing and Community Development (DHCD)
Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Raymond Jack	Public Member
John Lebeaux	Public Member
Bob Zimmerman	Public Member

Others in Attendance:

Matthew Beaton	EEA
Bruce Hansen	DCR
Jeff Barbaro	U.S. Geological Survey (USGS)
Peter Weiskel	USGS
Richard Verdi	USGS
Michele Drury	DCR
Erin Graham	DCR
William Shaughnessy	Wellesley DPW
Anne Carroll	DCR
Duane LeVangie	MassDEP
Vandana Rao	EEA
Julia Blatt	Massachusetts Rivers Alliance
Karen Pelto	MassDEP
Lisa Rhodes	MassDEP
Lealdon Langley	MassDEP
Sara Cohen	DCR
Pam Heidell	Massachusetts Water Resources Authority
Matthew Mostoller	Acton Water District/Massachusetts Water Works Assn.
Thomas Maguire	MassDEP
Marilyn McCrory	DCR
Linda Hutchins	DCR

Agenda Item #1: Chairman's Report

There was no report from the Chairman.

Agenda Item #2: Executive Director's Report

Baskin acknowledged the visit by Secretary Beaton who visited with Commissioners, staff and guests prior to the meeting. Baskin announced that long-time Commission member, Marilyn Contreas, of the Department of Housing and Community Development, will be retiring in March. She also announced that Commission public member John Lebeaux will be assuming a new role as Commissioner of the Department of Agricultural Resources.

Baskin surveyed those in attendance to request tabling the presentation on the Water Conservation Standards until the March 12 meeting, in recognition of weather-related travel difficulties for those hoping to participate in today's discussion. There were no objections to tabling the discussion.

Hansen provided an update on the hydrologic conditions for January 2014. Groundwater levels and streamflows were normal. All drought indicators show no drought likely to develop through the end of April. Precipitation for January was above normal in all regions of the state. January highlights include a record-setting blizzard at the end of the month, with the largest snowfall from a single storm recorded in Worcester. Baskin announced a webinar on February 17 to be hosted by the National Oceanic and Atmospheric Administration on "Snow-Packed New England: How and Why."

Agenda Item #3: Vote on the Minutes of December 2014

Baskin invited motions to approve the meeting minutes for December 11, 2014.

V	A motion was made by Purinton with a second by Card to approve the meeting minutes for December 11, 2014.
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Matthews arrives.

Agenda Item #4: Presentation: USGS-DEP Culvert and Stream Crossing Study

Baskin introduced Tom Maguire of MassDEP's Wetlands program and Jeff Barbaro of the U.S. Geological Survey, who cooperated on a project involving the hydraulic assessment of existing and alternative stream crossings designed for fish and wildlife passage.

Maguire explained that MassDEP engaged USGS to conduct a survey and modeling to determine whether culverts are sized properly to allow water to pass through unimpeded. He noted that river peak flows have been trending upward, while culverts installed decades ago remain static. He noted concern with climate change and its effects on interests protected by the Wetlands Protection Act.

Barbaro noted that stream-crossing infrastructure is often inhospitable to fish and wildlife passage and creates a significant problem for stream connectivity. The study's objective was to compare hydraulic effects of existing stream crossings with alternative crossings that meet aquatic organism passage (AOP) design standards developed by DFG's Division of Ecological Restoration. He outlined the AOP standards, which are designed to improve crossings through the whole spectrum of flows, from low to high. He described the study methods, site selection, hydrologic analyses, and hydraulic modeling. He described model results for both existing

structures and alternative stream-crossing structures, which are substantially larger and more open. The results of the simulations indicate that alternative structures are able to better convey flows, would be more resilient to large floods, and provide a greater buffer to uncertainties of flood flows and potential changes in flood flows as a result of climate change. Maguire added that the alternative structures also reduce velocity, which reduces damage caused by erosion.

Barbaro underscored the need for updating the regional flood flow equations for Massachusetts. Weiskel thanked the Climate Change Adaptation Committee for highlighting this need and noted that these equations are now updated and will take into account climate change that has taken place over the last forty years.

Comments, questions, and responses:

- Matthews: Is the Massachusetts Department of Transportation aware of the study's findings? Maguire responded that MassDOT has standards for new culverts, was consulted on design standards for new structures, and is working with the University of Massachusetts to develop a rapid assessment method to survey culverts vulnerable to failure. Purinton added that MassDOT has consulted with the Division of Ecological Restoration on projects and has been a great partner.
- Yeo commented that alternative structures, which may require extensive roadway modifications, are not feasible in many locations. He emphasized the need for funding, as thousands of inadequate culverts exist. Barbaro acknowledged that crossings meeting the AOP standards could be more costly. Maguire responded that structures designed for aquatic organism passage also provide resiliency for future climate change. Purinton noted results of a DFG-commissioned cost-benefit analysis, which concluded that though up-front costs of alternative structures may be higher, in the long-term, structures meeting the AOP design standards reduce costs associated with infrastructure damage due to flooding.
- Card noted ongoing work with the Federal Emergency Management Agency to encourage replacement of culverts with appropriately sized structures rather than replacing existing inadequate structures in kind.
- Baskin asked about outreach, and Blatt suggested a series of workshops for municipalities statewide.
- Cambareri commented on the importance, going forward, of hydraulic modeling to determine the optimum culvert opening.

Purinton leaves.

Agenda Item #5: Update: USGS-Massachusetts Cooperative Data Networks

Baskin introduced Linda Hutchins of DCR and Richard Verdi of USGS to provide an update on the status of the USGS/Massachusetts cooperative hydrologic monitoring network.

Hutchins noted an earlier request from the commission for annual updates on the status of the USGS Cooperative program and budget. She added that additional funding last year enabled the program to buy additional equipment, stabilize and expand the monitoring network, and initiate new monitoring efforts. She noted that state staff have assumed responsibility for

manual monthly readings at some sites in order to conserve the program's budget and free up USGS staff for other efforts.

Verdi provided an overview of the USGS stream gage network and groundwater monitoring network. He outlined the uses that rely on data from these networks, including emergency management and flood forecasting, engineering design, landslide forecasting, and environmental monitoring.

Verdi and Hutchins outlined newly funded sites for fiscal year 2015, including stream gages; real-time groundwater wells; new precipitation and weather stations that, if implemented, will aid in flood warnings and modeling; and tide gages, which help in both predicting future coastal floods and documenting damage for FEMA reimbursement. Hutchins added that additional snow surveys will be conducted in coordination with routine field trips to fill in data gaps. New equipment for a landslide warning system helped in predicting a 2014 event in Topsfield.

Verdi outlined the Cooperative Program budget for fiscal year 2015. He also outlined the expected budget and program plans being discussed for fiscal year 2016.

Yeo enumerated related efforts, such as reservoir and pond monitoring to assess drought conditions and gages funded through other means, such as DCR's gages in the Quabbin watershed. In addition to the gage network, he noted that the Cooperative Program funds important scientific studies done in cooperation with DCR, DEP, and DOT. Cambareri commented on the value of having long-term monitoring data.

Agenda Item #6: Update on the Revision of the Water Conservation Standards: Chapter 2 (Water Loss Control) and Chapter 3 (Metering)

Baskin invited a motion to table discussion of this agenda item until the March 12 meeting, in consideration of weather-related travel difficulties for those wishing to participate in this discussion.

V O T E	A motion was made by Yeo with a second by Cambareri to postpone discussion of this agenda item until the March 12 meeting. The vote to approve was unanimous of those present.
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Baskin noted that the comment period on the documents associated with this agenda item is therefore extended.

Meeting adjourned, 3:01 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes for December 11, 2014
2. Link to USGS report: Zarriello, P.J., and Barbaro, J.R., 2014, Hydraulic assessment of existing and alternative stream crossings providing fish and wildlife passage at seven sites in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2014–5146, 36 p.: <http://pubs.usgs.gov/sir/2014/5146/>.

3. Draft revisions, Massachusetts Water Conservation Standards:
 - Chapter 2, Water Loss Control
 - Chapter 3, Metering
4. Public Notice dated January 26, 2015: Schedule for Preparation of Water Needs Forecasts for Public Water Suppliers with Water Management Act Permits in the Buzzards Bay Basin
5. Correspondence with approved Interbasin Transfer Act parties, December 2014:
 - Brockton Water Commission
 - Canton
 - Dedham-Westwood Water District
 - Foxborough
 - Hopkinton, Alprilla Farm wells
 - Mansfield
 - Natick, Elm Bank Water Supply Development
 - Plainville
 - Shrewsbury
 - Wilmington
6. Current Water Conditions in Massachusetts, February 12, 2015
7. Presentation by Jeff Barbaro (USGS) and Tom Maguire (MassDEP): Hydraulic Assessment of Existing and Alternative Stream Crossings Designed for Fish and Wildlife Passage, in cooperation with MassDEP Wetland Program.
8. Presentation by Richard Verdi (USGS) and Linda Hutchins (DCR): Update and status of the USGS/MA Cooperative Hydrologic Monitoring Network

Agendas, minutes, and meeting documents are available on the web site of the Water Resources Commission at www.mass.gov/eea/wrc under "MA Water Resources Commission Meetings."