



April 5, 2012

Ms. Kathleen Baskin
Director of Water Policy
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th floor
Boston, MA 02114

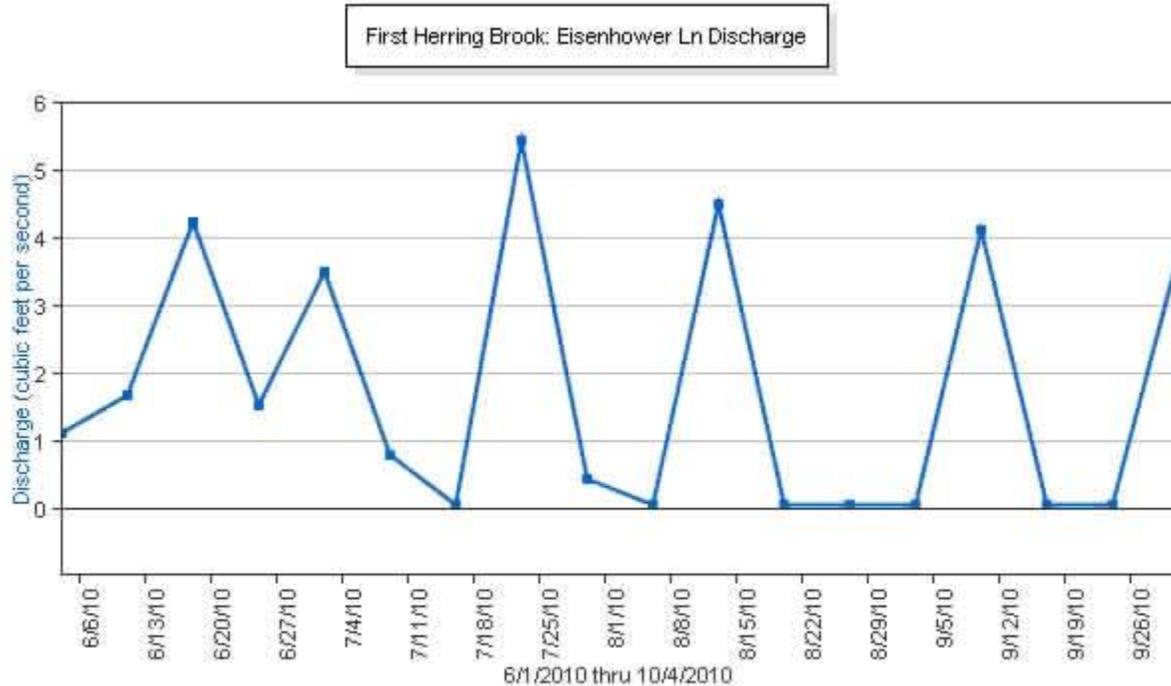
Dear Ms. Baskin,

RE: Comments on the SWMI Framework

Dear Ms. Baskin:

I am writing on behalf of the North and South Rivers Watershed Association (NSRWA) to offer comments and recommendations regarding the Commonwealth's draft Sustainable Water Management Initiative (SWMI). We have signed on to a group letter from the Massachusetts Rivers Alliance to which we belong. That letter goes into detail regarding our support for the science that has been developed as part of this process and the watershed communities concerns regarding how that science is (or in some cases is not) integrated into the proposed policy and regulations that have been recommended in the SWMI framework. We do not intend to repeat those comments in this letter but rather we will provide insight to what our local stream conditions are and how the new framework may impact our local streams and watershed.

We have two streams that we have been monitoring that have water withdrawal impacts- the Third Herring Brook in Norwell and Hanover and the First Herring Brook in Scituate. Stream gage data for both is available through the Division of Ecological Restoration RIFLS program. We have documented evidence at both streams that water withdrawals have their streamflows altered, such that there are dry streambeds with no flows at times during low flow periods (summertime, see First Herring Brook discharge chart below)



River Instream Flow Stewards (RIFLS) Chart
www.rifls.org, MA Riverways Program, www.massriverways.org

By far the most effective work we have been doing, in terms of restoring streamflows impacted by water withdrawals, has been in the town of Scituate. In Scituate we have worked extensively with the town to develop technical information to guide the community to restoring more natural streamflows and hopefully restore the now locally extinct herring run. The herring run extirpation in the First Herring Brook is a direct result of not having a water withdrawal permitting system in place that is protective of streamflows needed to maintain ecological health.

This restoration effort was a result of the town being a willing and cooperative partner and the DEP conditioning the town's water withdrawal permit in 2007 to "assess the feasibility of restoring the herring run to the First Herring Brook." Since that condition was placed in the permit the town has been fortunate to have the technical support of government agencies, the NSRWA, and other nonprofits such as The Nature Conservancy to model the water system and the streamflows and identify the "water deficit" needed to be overcome in order to meet more natural streamflows in the system. With this information in hand, the town of Scituate and the NSRWA were able to institute a proactive outdoor watering restriction on automatic irrigation systems in the summer of 2011 that has resulted in a savings of an estimated 300,000 gallons per day in the summer time.



We have also developed an interim operational plan with support from Division of Ecological Restoration and the town which allows for water releases from the town's two in-stream reservoirs to maintain BioQ90 flows and for fish in migration at one of the fish ladders. This is a huge step forward but there is more work to be done and it will no doubt become more difficult as we seek to find more water conservation savings and fix or upgrade the failed fish ladders.

How will the new proposed SWMI Framework affect this project that is already in process to restore streamflow in a stream impacted by water withdrawals? The town is not seeking additional water resources at this point so they would be required to meet the "minimization of impacts requirement." We believe this is an excellent requirement and is to some extent is what is being done in Scituate, incorporating it into the permit will only strengthen the imperative to continue. Also significant to the work being done in Scituate is the Standard Condition 6 which addresses water use restrictions. The proposed SWMI approach uses the 65 gppd annual average as a trigger for one of two outdoor watering restrictions – Calendar water use restrictions that limit outdoor watering between 9 am – 5 pm but allow watering 7 days a week or a Low Streamflow triggers which limits outdoor watering to 1 day per week and not between 9 am – 5 pm. If the town is above the 65 gppd annual average threshold then they will be required to restrict watering starting May 1 to two days a week or a low flow trigger to 1 day per week and not between 9 am – 5 pm.

We believe that neither trigger is appropriate to restore or protect streamflows in impacted streams. The 65 gppd threshold is an annual average and has no bearing whatsoever on whether a stream is being impacted. The town of Scituate meets the 65 gppd threshold on average and it clearly impacts streamflows through water withdrawals. A more appropriate threshold would be to set a standard or a goal for the winter to summer water use ratio. Water conservation studies (Vickers, 2001) show that a water conserving household uses 20% more water in the summer. In most of our communities the demand doubles in the summer and in many cases is the cause of stream impacts. Some reasonable allowance for summertime use (such as 20% over winter baseline) should be made and capped there. If the permittee cannot meet those standards then outdoor watering should be pro-actively required to meet the 1.2 over baseline winter to summer ratio standard.

The streamflow trigger, while certainly more directly linked to maintaining streamflow than the 65 gppd as a trigger has flaws. For example, if we waited to institute watering restrictions in Scituate until the flows were at the 7-day low flow it would be too late. We would not be able to have enough water in the watershed to meet fall BioQ90 streamflows nor would there be enough water in the stream to allow for herring outmigration.

The restriction of 9 am – 5 pm, while a good best management practice that we think should be implemented, may avoid the wasting of water from evaporation but we are unaware of any studies or examples that show this will result in significantly less water being used. Through our



NSRWA

work with the town of Scituate we have reviewed their customer water use data and found that the majority of the use in the summertime is in small percentage of the population – we believe in this case attributable to those who have automatic irrigation systems (See Table 1).

Table 1. Scituate Water Customer Annual Water Use Analysis

	With businesses		Without businesses	
	% total use	MGD	% total use	MGD
Top 5%	21.7	0.332	19.2	0.282
Top 10%	32.1	0.489	29.8	0.436
Top 25%	53.5	0.817	51.9	0.760
Top 50%	77.2	1.179	76.5	1.119
Bottom 50%	22.8	0.348	23.5	0.345

Scituate Summer Water Use Analysis

- Average and median households increase ~0% in summer
- Top 25% increase ~2%
- Top 10% increase ~7%
- Top 5% increase ~25%

Thus we focused our watering restriction on that population and mandated that automatic irrigation systems be restricted to water one day per week from Memorial Day to Labor Day. Even with our recent conservation success of saving 300,000 gpd in the summer, the basin is still over allocated and thus we will likely need additional water resources either through additional water conservation efforts or through new sources. The modeling scenarios that provided adequate streamflows and met the town’s water demands required that we reduce summer demands by 50%.

The new proposed outdoor watering restrictions in the SWMI framework are not as stringent as the one’s adopted in the town of Scituate. It is likely that we will need even further outdoor watering restrictions to maximize the town’s ability to restore flows to restore native fish such as herring to this system. Having a permitting system that supports that effort is important if we are to continue to make progress in this particular system and others that have been similarly impacted.

The work that has been done in Scituate is a model that can be used elsewhere to understand how to restore flows to an already impacted system. The NSRWA and the town of Scituate have been committed to restoring streamflow and the herring run in this system but need a strong permit mandate for restoring streamflows and minimizing non-essential water use in order to effectively reach our goal of a healthier river.



In Norwell and Hanover, unlike Scituate there is no condition in the permit that requires examining the restoration of streamflows, thus there has been no effort or impetus as of yet to examine how to restore more natural streamflows. The leverage of a good permit allows the town to have a reason to pursue what might be locally unpopular regulations, such as outdoor watering restrictions.

Sincerely,

Samantha Woods