



## Charles River Watershed Association

Via Email and Mail

April 9, 2012

Kathleen Baskin, Director of Water Policy  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, 9<sup>th</sup> Floor  
Boston, MA 02114

***Re: Sustainable Water Resources Initiative Framework Comments***

Dear Ms. Baskin:

Charles River Watershed Association (CRWA), a member of both the Sustainable Water Resources Initiative (SWMI) Advisory Committee and Technical subcommittee, submits the following comments on the draft framework, dated February 3, 2012, as presented to the Advisory Committee. We thank EEA and its agencies for their commitment to this effort, and the dedication and hard work their staffs have brought to the process. In addition to discussing the individual components -- safe yield, streamflow criteria and tiered permitting, we have tried to step back and evaluate the efficacy of the framework as a whole. CRWA recognizes that this is an important point in time, one that may not come again soon for river protection, and we are very appreciative of the work that EEA, MassDEP, MA DFG and DCR have put into this.

We believe the work of the U.S. Geological Survey and Department of Fish and Game, in cooperation with MassDEP and DCR, *Factors Influencing Riverine Fish Assemblages in Massachusetts* (2011) (USGS report) and the categorization of sub-basins based on relative abundance of fluvial fish and streamflow alteration is "best-in-the nation" science that will guide future water resource management decisions.<sup>1</sup> The Sustainable Yield Estimator (SYE) and the 2008 Index Streamflows for Massachusetts are also important tools informing both water allocation and resource management decisions in the Commonwealth. Although SWMI focused

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<sup>1</sup> The categorization approach (biological and flow-altered categories 1-5) was discussed extensively and adopted by the SWMI technical subcommittee. While we understand that the agencies have decided to have the critique of the USGS report prepared by Charles Cooper of TRC for the Massachusetts Water Works Association peer-reviewed, we hope this will be done with dispatch.

To our knowledge, Mr. Cooper has never agreed with the basic premise of the state's fluvial target fish community work and we point out that in his adjudicatory hearing testimony in the appeal of the Town of North Reading's 2003 WMA permit, Dkt. No. 2003-063, he testified that rather than imposing the new permit water conservation conditions, the Ipswich River could instead be structurally modified: these options ranged from reconfiguring riffles to using gravel pits as storage reservoirs, piping water from the Merrimack to the Ipswich, digging the river channel deeper and re-grading, and creating artificial islands to increase the flow. (Tr. IV/74-76, 78, 85, 88-89, 188). Todd Richards dispelled the notion that any of these could be considered restoration. (Tr. (Tr. V/161).

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primarily on application to Water Management Act (WMA) permitting decisions, our hope and expectations are that this science and the tools developed will have far broader application.

Looking at the proposed scheme as a whole, CRWA believes changes should be made to achieve the ecological goals of SWMI, namely, restoring ecological integrity (natural flow regimes, aquatic habitat, where possible, biological diversity), preventing degradation, and fostering resilient ecosystems, particularly in the face of climate change. *See*, SWMI Goals –Revised, June 22, 2010. We fully support the April 5<sup>th</sup> comments by the Massachusetts Rivers Alliance and 25 signatory organizations. CRWA supports moving forward with the streamflow criteria, but hopes that the state will make the changes to the SWMI Framework discussed below to ensure that Massachusetts’ water resources are protected and sustainable in the years to come.

### **Safe Yield**

As you know, CRWA has commented extensively, often with other environmental organizations, on the SWMI framework –and particularly on MassDEP’s proposed safe yield methodology (see, e.g., November 4, 2012 letter to David Cash). CRWA and others have put forth technical and environmentally-sound approaches to determining safe yield both since the *Hamilton* decision and during the SWMI process—all of which have been rejected. The Commonwealth’s reluctance to adopting a scientifically sound methodology that would result in current allocations exceeding safe yield in a number of watersheds, has been obvious. However, the state’s proposed approach, as analyzed by Kerry Mackin in her thoughtful SWMI comments of last week, would result in almost all rivers being pumped dry for 3-5 months during a drought year and the majority for approximately 1-3 months even in normal years.

We request that the state seek peer review of its methodology based on Ms. Mackin’s analyses. Given the scant involvement of the technical subcommittee in reviewing the state’s currently proposed safe yield, this is certainly warranted and seems only fair in light of the state’s decision to review Mr. Cooper’s critique of the USGS/MA DFG report.

MassDEP’s new methodology for determining safe yield, according to the proposed regulatory preamble language, is not intended to be a water allocation scheme. However, the disclaimer that MassDEP does not expect to allocate this volume provides little comfort to river advocates in the years to come<sup>2</sup> since safe yield is the point at which MassDEP has no discretion and must deny a permit. G.L. c. 21G, § 11.

“The concept of safe yield is fundamental to proper management of a water source, taking into account natural variability of streamflow, and serves as the principal regulatory basis for determining the scope of permitted water withdrawals in a water source.” *Hamilton v. DEP et al*, Essex Superior Court Dkt. Nos. 06-745 and 1080 (consolidated) (Fahey, J.) *Decision on Motions for Judgment on the Pleadings* at. p. 4 (July 13, 2007) (emphasis added). Since that ruling, and in accordance with MassDEP’s long-standing interpretation of safe yield in relation

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<sup>2</sup> Language should certainly be inserted in the regulations themselves to make it clear that MassDEP will not allocate the full proposed safe yields; however, it should also be in the regulations themselves. We agree that maps showing flow-depleted subbasins should be included in the regulations, as should language that in “Flow Level 4 and 5 subbasins conditions to minimize and mitigate flow depletion to the greatest extent feasible shall be implemented.” See SWMI Framework Summary at p. 4.

to streamflow protection, the agency clarified in November, 2010 that safe yield includes environmental protection factors, including ecological protection of river systems . . .”  
MassDEP Statement of Clarification of Safe Yield (2009).

Yet the proposed safe yields – in most cases well above current allocations and new 20-year water demand projections, will make it irrelevant and effectively write this fundamental, core requirement of the WMA out of existence. The result: even more dry river and stream segments and environmental degradation should these additional withdrawal volumes in fact be allocated. Insisting on rolling up 55 percent of monthly Q90s into an annualized number and applying it to an entire basin<sup>3</sup> results in safe yield numbers that will exceed streamflow in most watersheds during summer months. It also eliminates for all practical purposes, the “natural variability of streamflow” in contravention of the *Hamilton* decision. This approach neither comports with the WMA, nor MassDEP’s commitment to include environmental protection factors in safe yield.

The Charles River today is at a record-setting low flow for this time of year at the Dover gage. Significantly, MassDEP’s original safe yield methodology developed in the early 1990’s, and ultimately abandoned because it led to over-allocation and ecological damage in the Ipswich, Charles and other watersheds, allowed far less water to be withdrawn than under the new methodology. Even the interim safe yield for the Charles set in 2010 (47.8 mgd) is 17 mgd less than the safe yield now being proposed (64.8 mgd). This is more than *double* the volume of existing withdrawals, which are now stressing the upper and middle Charles watershed. Only the Ipswich and Ten Mile watershed would exceed their safe yields under the new methodology. Statewide, safe yield would total 5,013 mgd in contrast to current authorized withdrawals of 1,320 mgd and 2008 reported use of 991.8 mgd. There is a complete mismatch between the SWMI science on streamflow alteration and fisheries health, and the state’s approach to safe yield.

Adding reservoir storage volumes to these proposed high safe yields, given the downstream impacts and firm yields established for those reservoirs, is unnecessary and unwarranted. The state needs to develop a reservoir release policy in the coming year. Including these storage volumes is not required by the WMA and they were not included in the original safe yields. While we don’t know whether any of the storage volumes MassDEP is now proposing to use in determining safe yield exceed their firm yields, these should certainly not be included.

### **Streamflow Criteria**

The state has continuously asserted that streamflow criteria, not safe yield, will be the mechanism for protecting rivers and streams. As we try to step back and look at the SWMI framework as a whole, central questions for CRWA are whether the framework will actually improve degraded subbasins over time and whether it will allow conditions to worsen and backsliding to occur.

While the seasonal numeric streamflow criteria for Categories 1-3 are quite good and will help protect quality habitats and healthy streams, we remain concerned that flow depleted 4s and 5s (292 subbasins), which in our opinion fail to meet water quality standards, lack narrative criteria that can applied predictably and result in real improvement.

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<sup>3</sup> With the exception of the Boston Harbor and South Coastal basins.

At an absolute minimum, “improvement” should be a clearly stated goal and requirement for flow depleted 4s and 5s in Tier 1 of the Tiers Table. Although Table 3 on p. 8 of the SWMI Framework lists “feasible mitigation and improvement” for Flow Levels 4 and 5, this is not included in the Permitting Tiers Table Principles on p. 9, which state only that “FL 4 and 5 basins “minimize existing water withdrawal impacts to the greatest extent feasible.” (Emphasis in the original). While Table 5 on p. 13 is captioned “Feasible Mitigation and Improvement,” the Tier 1 Special Conditions for Flow Levels 4 and 5 states that the “overall concept” is “[m]inimize existing impacts to the greatest extent feasible.” It is critical that the goal of improvement be explicit in the regulations to set both the framework and expectations for Tier 1 “minimization” and permitting in the years to come.<sup>4</sup> CRWA asks that the language in the Tiers Table for Tier 1 be changed to “minimize existing impacts to the greatest extent feasible **and improve.**”

It is not ascertainable today how the provision to “minimize existing impacts to the greatest extent feasible” will play out in practice. There has been almost no discussion of how cost, level of improvement, the authority of the permittee and adaptive management will be considered in determining “greatest extent feasible.” The state is quite frankly asking environmentalists to take a leap of faith that it will hold permittees to real minimization and “other measures that return water to the sub-basin intended to improve flow.” While the pilots may help to flesh out the application of “greatest extent feasible,” the regulations should squarely place the burden on the permittee to prove why any minimization measure is not “feasible.” Cost should definitely take into consideration the cost of the environmental impacts/damage from withdrawals.

There should be clear expectations and rules established on what is truly feasible. Otherwise our fear is that permittees will too easily conclude that the status quo is all that is feasible. This would result practically in the grandfathering of existing permitted withdrawals. Given the central importance of conditions 1-8 for Flow Levels 4 and 5, we view the pilots as an opportunity to set the bar high and establish guidance that all permittees can follow.

Tier 1 Flow Level 4 and 5 permittees should also be required to limit nonessential outdoor use by tying reduced watering to Aquatic Base Flow (ABF) streamflow triggers as determined by the SYE. One day a week watering only should be allowed at the ABF trigger.

Conditions 1-8 for Tier 1 Flow Level 4 and 5 are primarily geared toward public water supply. Other types of WMA permittees are not excluded from tiered review and should also be required to minimize their impacts. Inclusion of language for evaluation of technologies to minimize use and a broader range of BMPs would help to address this omission.

- **Baseline**

The concept of baseline -- neither safe yield nor streamflow criteria, is a phantom. Yet it establishes how much water is available for withdrawal without required mitigation under the Tiers Table. MassDEP first adopted baselines several years ago; however, only a few

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<sup>4</sup> CRWA has always believed that “restoration” to FL 3 is in fact the appropriate goal; however, in the face of water suppliers’ and the state’s opposition to this, we have been willing to compromise on “improvement.” The requirement of development of a plan “based on improvement and feasibility” in Tier 1 through the eight evaluation measures is good, but is not a substitute for the affirmative goal of improvement. We note that earlier drafts of the framework discussed “improvement” for Tier 1 Flow Levels 4 and 5.

watersheds, the Charles among them, have baselines in their WMA permits. The original intent of baselines was to deter a permittee's withdrawals from increasing above that baseline, or an offset feasibility study would be required. Environmentalists believed those baselines were too high and that there was no *environmental* basis for tying them to the average 2003-2005 use.<sup>5</sup>

Water suppliers have argued for even higher baselines, claiming that water conservation measures were already being implemented in a number of communities in the 2003-2005 period. It is also important to recognize that MassDEP's new water conservation requirements were not even in effect during this time period in the Ipswich watershed, the first subject to them, due to ongoing administrative appeals. The state's revised Water Conservation Standards, still being incorporated into the new round of WMA permits, were issued in 2006. Ironically, baselines actually operate to reward those communities that did the least to conserve water because their baselines are higher.

Mitigation in Tiers 2-4, as currently proposed, would only be required if the baseline is tripped. CRWA strongly disagrees with the proposal to add an additional 5 percent -- and up to 8 percent if it does not result in a drop in Flow Level -- to the baseline for triggering mitigation commensurate with impact. Raising the baseline undercuts river protection and reinforces the status quo. We estimate that 40 percent of public water suppliers in the Charles watershed will not exceed their current baselines in the next 20 years, or the life of the renewed permits. The use of baselines + a percentage will allow conditions to worsen.

We agree with the Tier classification approach recommended by the Massachusetts River Alliance in its letter at p. 7. At most, MassDEP should use only the 2003-2005 average water use for baseline. Because the mitigation required if the baseline will be exceeded does not reduce registered withdrawal volumes in any way, baseline should not be determined based on registered volume.

The decision to adopt individual watershed baselines, as opposed to system-wide baselines, for withdrawals in multiple basins by a single permittee reflects the sound logic that mitigation should be tied to the watershed in which the impacts are occurring.

- **Anti-degradation**

There is agreement among many stakeholders, including at times, a number of water suppliers, that conditions should not get worse. The regulations should contain an unequivocal statement that only in rare circumstances will a withdrawal be allowed to drop a flow or biological category, and then only through a process similar to the use attainability analysis required under the MA surface water quality standards. Tier 4 explicitly allows for backsliding yet is also conditioned on exceeding baseline. Eliminating baseline from Tier 4 would ensure that any flow or biological category slippage would require Tier 4 review.

Presumably, the bar for "mitigation commensurate with impacts" will be high for withdrawals that would result in backsliding and appropriate mitigation should result in maintaining existing flow and biological categories. The regulations should clearly state this and should require the permittee affirmatively to prove no alternative source and true need (public health and safety) for additional water. Regardless of whether a community is meeting the 65 rgpcd performance

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<sup>5</sup> Or the highest of: registered volume or the highest water use year between 2003-2005. Rainfall was above normal in 2003 and 2004, and below normal in 2005.

standard, non-essential lawn watering should not be a consideration in determining need for additional water.

Since many withdrawals are not for public water supply, but rather for golf course and agricultural irrigation, power plants, and industrial use, “the “no alternative source” for Tier 4 is less applicable; instead, “no alternative technology” should be included for these permittees.

- **Offsets**

We understand mitigation commensurate with impacts as used throughout the tiered permitting scheme to be the same as “offsets.” Quantification with an accurate accounting method for offset measures is necessary to ensure that environmental conditions do not get worse, and secondly, to avoid (or at least to reduce) disputes over whether mitigation measures are in fact commensurate. CRWA continues to believe that measurable credits (determined on a volumetric basis) that put water back into the subwatershed in which the withdrawal occurs, or above it, is the only credible approach to ensuring there is actual mitigation commensurate with impact. The regulations should affirmatively state that the goal of commensurate mitigation is to offset fully the impacts of increased withdrawals.

Commensurate mitigation goes to the heart of the SWMI Framework and Tiers Table. We think the offset principles, matrix and multipliers proposed by environmentalists in the Water Resources Management Advisory Committee is a reasonable place to start.<sup>6</sup> Because it is important to incentivize restoration measures, which are difficult to quantify, we believe an 80-20 split of hard (measurable) credits and softer credits is appropriate. Measures that reduce water consumption (i.e., protective streamflow triggers for nonessential watering) might be appropriate for soft credits, but are not true offsets and in any case will help keep withdrawals below baseline thus obviating the need for heightened Tier review with commensurate mitigation. Compliance with a federal MS4 permit should not be eligible for credit, although stormwater recharge pursuant to the permit should be. Establishment of enterprise funds is not a mitigation measure. We support the establishment of water banking programs at at least a 2:1 ratio.

We strongly oppose retroactive offset credits. This would wipe out the requirement of mitigation commensurate with impact in many cases, and appears to be premised on the false assumption that future increased withdrawals can be offset by past measures. This would guarantee that environmental conditions will get worse and render the requirement of mitigation commensurate with impact, meaningless. Given the water quality impacts of surface water wastewater effluent discharges, it is inappropriate to credit them as mitigation for increased withdrawals.

- **“Redundant” Wells**

MassDEP should avoid extending the reach of registrations. A WMA permit is required to add a new withdrawal point, even if no additional withdrawal volume is sought. From a policy perspective this has resulted in permit conditions being operative on the entire withdrawal volume. Several years ago, MassDEP recognized the need for reasonable water conservation conditions on registered volumes. In *Town of Fairhaven et al v. Department of Environmental*

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<sup>6</sup> A somewhat similar approach was put forth by the state in the SWMI Tools Implementation subcommittee. Despite the available talent in Massachusetts to develop offsets, the state is now proposing that a consultant, in conjunction with the piloting, develop an offset scheme for the state’s consideration. We think this is ill-advised.

*Protection*, counsel for MassDEP wrote “The record is very clear, however, that the Department deemed the [water conservation] conditions it imposed to be necessary to reduce waste and unnecessary use.” Department of Environmental Protection Reply Brief at p. 9. Indeed MassDEP characterized the result of not conditioning registrations as “a lobotomized statute under which most water flowing out the spigot flows unconstrained and unregulated under the comprehensive management system called for by § 3. Brief for the Department of Environmental Protection at p. 19. The Supreme Judicial Court ruled that MassDEP had the authority to condition registrations provided it did so by regulation. The MassDEP Commissioner informed the agency’s Water Resource Management Advisory Committee that she would move forward with regulations and it is CRWA’s understanding that those regulations were in fact drafted, yet never put out for comment.

Now DEP seeks to issue a permit in name only for a redundant well by issuing a streamlined permit that does not include permit conditions.<sup>7</sup> It reasons that this will incentivize well optimization to reduce the impacts of near stream withdrawals. However, it also proposes issuing “non-permit” permits for redundant wells to address public health and safety concerns. Because a redundant well will still need to go through the new source approval process, there is no reason except avoiding permit requirements to issue such a non-permit, perpetuating and effectively further expanding the registration scheme. The Framework does not define public health and safety “concerns.” This is an exception that one could drive a truck through. MassDEP has long recognized the importance to the proper implementation of the WMA scheme of conditioning registrations with reasonable water conservation conditions. It should not reverse course now. It should also issue the new conservation registration regulations as part of the SWMI package.

- **Outdoor Lawn Watering**

The impacted 7-day low flow is far lower than the August median and ABF as determined by the SYE. CRWA continues to believe that protective streamflow triggers are the most effective and logical method for limiting nonessential outdoor water use. Tying reduced use to low flows enables the public to understand why they are being asked to limit outdoor use. Basing restrictions on whether a community achieved 65 rgpcd the previous year is completely divorced from real time conditions. While we appreciate the state’s recognition that restrictions based on a declared Drought Advisory come far too late, increasing the number of days (to two days) under the ABF streamflow trigger option for communities exceeding 65 rgpcd the previous year does not make sense. No community is likely to elect this since the calendar option is now exactly the same.

Realistically, no suburban community that allows watering seven days a weeks is likely to be achieving 65 rgpcd as Franklin’s experience proves. Franklin comes in just under 65 rgpcd despite restricting watering to one day per week in the summer months.

- **Climate Change**

There has been scant discussion of climate change and how it will alter water resources. Since the framework is based on current conditions—conditions that are likely to change dramatically over the next 10+ years, we think it is very important for the streamflow standards and tiered permitting to include flexibility and the ability to respond to climate change impacts—more

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<sup>7</sup> MassDEP is also considering expanding the distance for replacement wells.

droughts, hotter temperatures, earlier leaf out, and less snowpack and more intense rain events. It is important that there be an iterative process for the streamflow criteria.

Thank you in advance for your consideration of CRWA's comments. They are not intended to be exhaustive, particularly given our extensive past comments and participation in the Advisory and Technical Committees, but rather to discuss some key aspects of the SWMI framework that require further work to ensure that aquatic habitat and riverine health are protected and our water resources sustainable.

Sincerely,

A handwritten signature in blue ink that reads "Margaret Van Deusen".

Margaret Van Deusen  
Deputy Director

cc: (via email)  
Phil Griffiths  
Ken Kimmell  
Mary Griffin  
Edward Lambert  
Jack Buckley  
Beth Card  
Duane LeVangie