



**Charles River Watershed Association**



BY FAX AND MAIL

March 1, 2006

Marcia Sherman  
Yvonne Unger  
Department of Environmental Protection  
One Winter Street  
Boston, MA 02108

***Re: Proposed Revisions to the Massachusetts Surface Water Quality Standards, 314 CMR 4.00 and the Dredge and Fill Regulations, 314 CMR 9.00***

Dear Mss. Sherman and Unger:

The Charles River Watershed Association (CWRA) and the Conservation Law Foundation (CLF) have reviewed the proposed changes to the Massachusetts Surface Water Quality Standards (“WQSs,” or “standards”) and the Dredge and Fill regulations, 314 CMR 9.00, and offer the following comments. In many ways the proposed revisions are an improvement to the existing WQSs and dredging regulations. However, in others, they fall short of meeting the requirements of the federal Clean Water Act (CWA). As discussed below, we are concerned that the revisions ignore the impacts of low flow and activities other than “discharges” on water quality and designated uses, and also seriously weaken the bacteria standard. Certain critical determinations, such as the determination of natural background conditions, are simply left to the Department’s discretion with no criteria provided to guide its exercise of discretion.

CRWA is the nation’s leading research and advocacy watershed organization, using science, law, and advocacy to protect and restore the Charles River and its watershed. CRWA tracks pollution to the river and has been involved in every major issue affecting its water quality. CRWA is working to ensure adequate streamflow for ecological health both in the Charles and in watersheds across the state. Founded in 1966, CLF works to solve the problems threatening our natural resources and communities in Massachusetts and throughout New England. CLF works to promote effective regulations and strategies to reduce and minimize the significant impacts of water pollution, ensure adequate streamflow, and to ensure that the goals of the CWA are being fully met.

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**Water Quantity and Streamflow**

The failure to include narrative streamflow criteria in this triennial review is a glaring omission and a lost opportunity. Although the proposed revision to 314 CMR 4.03(3)(b) directs that “flows shall be maintained or restored to protect existing and designated uses,” in the context of FERC licensing, the revised standards fail to address the critical issue of flow in any other context. While we support the language proposed in 4.03(3)(b), it does not make sense to single out hydropower dams to the exclusion of other activities that modify flow.

The absence of standards to protect water quantity is inconsistent with the CWA’s goal to restore and maintain the chemical, physical and biological integrity of our waters. The CWA, regulations and caselaw all support the inclusion of flow standards in the state’s WQSs. Section 303 (c)(2)(A) of the CWA, which governs WQSs, states that standards “shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, agricultural, industrial and other purposes, and also taking into account their use and value for navigation.” The regulations at 40 CFR 131.2 provide that WQSs should serve the purposes of the CWA; this

means that water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation.

The Court in *PUD No. 1 of Jefferson County v. Washington Dep’t. of Ecology*, 511 U.S. 700 (1994), dismissed the argument that the CWA is concerned only with water “quality” and does not allow regulation of water “quantity,” finding this an “artificial distinction” because lowering water quantity could destroy all designated uses:

In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery.

*Id.* at 519. This is precisely the case in the Ipswich where existing uses -- fisheries and recreation -- have been impaired and eliminated by the extreme low and no flow events.<sup>1</sup>

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<sup>1</sup> While the Department has identified the Water Management Act (WMA) as the primary tool for streamflow protection, this statute has been an abysmal failure to date in protecting flow and habitat, as attested to by conditions in the Ipswich River. WMA staff recently testified at adjudicatory hearings on the modified WMA permits for Ipswich basin communities that the balance among competing uses required under the WMA had swung quite far to the water supply side to the detriment of instream uses. Questioning by CRWA’s attorney at these administrative hearings made it clear that WMA staff (and its counsel) are not well-informed about the WQSs, or the applicability of the state’s antidegradation policy in the WQSs to WMA permitting decisions.

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Adequate flow is critical to addressing these requirements and to protecting existing and designated uses.

The effects of flow alterations include: blockage of fish passage, reduction and loss of spawning and rearing habitat, reduction of protective cover from predation, changes in water temperature or dissolved oxygen that are lethal to aquatic life, increases in suspended solids, and alteration or increase in nutrients. In addition, diminishment or elimination of streamflow has dire impacts on recreational uses and recreational fisheries.

We continue to believe that the inclusion of narrative flow language in the WQSs is necessary to protect existing and designated uses and that the WQSs are the only logical way to deal with the problem of diminishing water quantity. A new section (a) should be added (and the other subsections relettered) to 4.03(3) Hydrologic Conditions that reads:

- (a) Flows. Water quantity shall be maintained or restored to protect existing and designated uses unless reduction in water quantity is due to solely natural conditions.

### **Applicability of Standards**

Other New England in addressing protection of beneficial uses and streamflow, have included flow protection in their WQSs and/or broadened the applicability of state WQSs. In this regard, Massachusetts continues to lag far behind.<sup>2</sup> While we support the language

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<sup>2</sup> The New Hampshire WQSs apply to “any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters.” Under Water Use Classifications, NH WQSs provide “[u]nless the flows are caused by naturally occurring conditions, surface water quantity shall be maintained at levels adequate to protect existing and designated uses.” Antidegradation applies to among other things, “an increase in flow alteration over an existing alteration; and all hydrologic modifications, such as dam construction and water withdrawals.”

Rhode Island’s WQSs include language that WQSs, “should, whenever attainable, provide water quality, *including quantity*, for the protection and propagation of fish,” etc. (emphasis added). RI WQSs apply “under the most adverse conditions . . .” “Flow alteration” is defined as the withdrawal of water from a surface water, either directly or indirectly, or the alteration of the normal flow patterns of a surface water due to a project which diverts or holds the surface water.”

Vermont’s hydrology policy states that the proper management of water resources requires “careful consideration of the interruption of the natural flow regime and the fluctuations of water levels resulting from the construction of new, and the operation of existing dams, diversions, and other control structures.” The standards provide a means for determining conditions that preserve the natural flow regime of waters. Where multiple activities affect flow in a basin, the determination of compliance with VT’s hydrology criteria includes consideration of the cumulative effects of these activities. The hydrology criteria contain criteria for streamflow protection, flow study requirements, water level fluctuations, high flow regime and the establishment of numeric biological indices.

The Maine WQSs provide that “for the purpose of computing whether a discharge will violate the classification of any river or stream, the assimilative capacity of the river or stream must be computed using the minimum 7-day low flow which can be expected to occur with a frequency of once in 10 years. The department may use a different flow rate only for those toxic substances regulated under section 420. To use a different flow rate, the department must find that the flow rate is consistent with the risk being addressed.” Maine state regulation also provides “For regulated rivers and streams, the Department may establish a minimum flow necessary to (footnote continued on subsequent page)

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proposed in 4.03(3)(b) on flows, it does not make sense to single out hydropower dams to the exclusion of other activities that alter flow. Nothing in state or federal law requires such a narrow application of the standards.

A new subsection on applicability should be inserted in 314 CMR 4.01 to broaden the applicability of the WQSs, which should read:

These water quality standards shall apply to all surface waters of the Commonwealth, and to all activities which:

- (a) require a state or federal permit; and
- (b) may adversely affect water quality and the suitability of waterbodies to fully support designated uses.

The language in Section 4.03(1)(b) on compliance schedules is problematic, standardless, and conflicts with the variance provisions. Under this subsection, the Department at permit reissuance or modification may include a compliance schedule “where the permittee either cannot comply . . . or there is insufficient information available to determine whether the permittee can comply with such permit requirements or limitations.” This unprecedented language should be eliminated since the preceding sentence already authorizes the Department to afford a permittee adequate time to comply with permit requirements based on “newly interpreted<sup>3</sup> or revised water quality standards.” If this sentence remains, then at a minimum the following sentence requiring compliance “at the earliest practicable time as determined by the Department” should be modified to require the Department to issue written findings detailing the bases for its “earliest practicable time” determination.

### **Antidegradation and Enforceability**

While the state’s anti-degradation policy is not and cannot be limited to only discharges requiring a federal permit, the Department has in practice limited its applicability to just that.<sup>4</sup> Indeed, we note that the Department’s Antidegradation Review Procedure, the state’s implementation policy, addresses only “discharges requiring a permit under 314 CMR 3.03.” We understand that the anti-degradation implementation policy is slated to be revised and we recommend that you clarify that the policy covers water withdrawals or diversions, stormwater discharges and probably a number of other activities that have the potential to eliminate existing uses. We also agree with Riverways’ suggestion to insert consistency language similar to that in Iowa’s antidegradation policy: “Consistency with water quality

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(footnote continued from previous page)  
maintain water quality standards. This flow will be based upon achieving the assigned classification, criteria and protection of the uses of the stream. The Department will cooperate with appropriate Federal, State and private interests in the development and maintenance of stream flow requirements.”

<sup>3</sup> The words “newly interpreted” should also be stricken from this subsection. This has the potential to be broadly interpreted by the regulated community to encompass all new pronouncements on the WQSs going forward

<sup>4</sup> As noted above, New Hampshire applies antidegradation to increase in flow alteration and al hydrological modifications. See footnote 2, *supra*.

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standards requires that any proposed activity modifying the existing physical, biological, or chemical integrity of a water of the state shall not adversely impact these resource attributes.”

Full implementation of the anti-degradation policy is prevented by the lack of Department enforcement authority in the WQSs. Currently, the anomaly exists in which activities that result in impairment of existing uses in violation of anti-degradation may not be actionable in the absence of a discharge covered by a federal permit. The Department should fill this gap and suggest the language similar to that in the Vermont WQSs, which explicitly provides for state enforcement against any person who with prior notice fails to comply with the WQSs.<sup>5</sup> The Department clearly has the authority under G.L. c. 21, § 42 to require this.

### **Coldwater Fisheries**

We fully support the comments by MA Division of Fisheries and Wildlife, dated December 22, 2005 for strengthening protection of coldwater fisheries in the WQSs. The definition of Cold Water Fishery in 4.02 should not be solely dependent on temperature; instead, the definition should include “waters where ecological factors are favorable and are capable of or known to be supporting a reproducing population . . .” We also agree with the comments of Trout Unlimited that streamflow, in addition to habitat, should be included as an example of a favorable ecological factor because of its importance to the ecology of coldwater fisheries. When coldwater species exist, they should be listed as coldwater fisheries regardless of temperature. The language in 4.05(3)2. a. on temperature is an improvement; however, the language proposed by DFW is better and where a reproducing cold water fish community exists at a naturally occurring higher temperature, DFW’s language prohibits an increase in temperature above this. We also support the Department’s changes to 4.06(1)d. 7.on existing uses, but agree with DFW that the phrase “and the water quality necessary to protect those uses” in the last sentence before the words “as an existing use” should be inserted. Lastly, we support the DFW’s list of waters as coldwater fisheries attached to its letter and urge the Department to adopt and incorporate this listing.

### **Bacteria**

CRWA and CLF support the change from fecal coliform to E. coli as the bacterial indicator for waters other than water supply and in-season bathing beaches for all Inland Water Classes in the proposed revisions. However, the numeric criteria for E. coli proposed for these waters is too high. Of particular concern are the new bacterial standards set for Class A waters that are not “[a]t water supply intakes in unfiltered public water supplies” or “at bathing beaches,” and for water at bathing beaches during the non bathing season. In the

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<sup>5</sup> Pursuant to the Vermont WQSs at Chapter 1, Section 1-01:

A. Applicability

1. Pursuant to 10 V.S.A. Chapter 47, after the classification of any waters has been established, those waters shall be managed by the Secretary in order to obtain and maintain the classification. The Secretary may enforce a classification and these rules against any person affected thereby who, with notice of the classification, has failed to comply. (Emphasis added).

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proposed revisions, sections 4.05 (3)(a)4.b and c. create new subsets of Class A waters that have significantly lower bacterial standards than other Class A waters. This change will reduce water quality protection in waters that are currently classified as Class A waters.

We strenuously object to the numeric standards proposed for Class B waters under 4.05(3)(b)4.b “for other waters,” and for waters at bathing beaches “during the non bathing season.” The proposed numeric criteria for E.coli is actually higher than the current criteria for fecal coliform, despite the fact that E.coli is a subset of fecal coliform. The Department should adopt the US EPA Ambient Water Quality Criteria for Bacteria (1986) for bathing (full body contact) freshwater recreational waters of 126 colonies per 100 ml for all Class B waters to avoid lowering existing water quality standards and reducing protection of existing uses.

Similarly, we do not support the numeric standard proposed for Class C Waters under 4.05(3)(c)4. The proposed numeric standard of 1030 E. coli per 100 ml. is higher than current standards, and will not adequately protect public health or aquatic health and habitat values. Many existing uses, such as sculling, rowing and sailing, result in significant water contact, and the Class C, boating standard needs to be set at levels that the public expects will protect it. Raising the standard to 1030 will not do so. We recommend that the Class C standard be lowered to at least 630 E. coli per 100 ml., a five-fold increase of the US EPA E.coli standard for bathing. We note that this incremental increase is the same incremental increase for the current Class B to Class C waters.

The changes to the sample set size for all Classes of waters from a “representative set of samples,” which has been interpreted in some cases to include two or three samples in a single year, to a minimum of five samples within a six month period is an enormous change, especially given the Department’s own reduced capacity to perform regular water quality sampling, should not be made. This change is as significant as the proposed reductions in the numeric bacterial standard, and will further weaken public health and environmental protection. The revision also removes the current 10% rule, which is important in helping focus attention on irregular but significant water quality standards violations. If the 10% rule is eliminated, the Department should include a single sample criteria.

**Harmonic Mean Flow**

Use of the Harmonic Mean Flow, as defined at 4.02, to set hydrologic conditions for application of standards to protect human health is not well supported and should be omitted from the revisions in 4.03(3)(d). It is likely to cause confusion, uncertainty, and variability in the application of standards. In some cases, it will result in significantly less protection that would be provided using the 7Q10 flow condition. This is a step backward

**TSS and Nutrients**

The Department should have taken the opportunity in this triennial review to include numeric standards for Total Suspended Solids (TSS) and nutrients. Maintaining a narrative standard for TSS, and a nutrient limit based on a “TMDL or as otherwise established by the Department” will make it much more difficult to tackle some of Massachusetts’ most serious water quality problems. Given the complexity and duration of developing nutrient TMDLs,

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many receiving waters will be stuck with the *status quo* for many years to come. Yet both nutrients and TSS are pollutants that contribute enormously to non-attainment of uses, and are well suited to management approaches including water quality trading, point source load reductions, and bioremediation. Without numeric standards for these pollutants, it will be difficult to drive solutions to these difficult problems. EPA's suggested nutrient criteria should be adopted in the WQSs.

**Use Attainability Analysis**

In section 4.03(4)(f), the Department proposes to impermissibly weaken the federal regulatory provision providing that a downgrade in use classification may be permitted upon a showing that controls would "result in substantial and widespread economic and social impact." 40 CFR 131.10. We oppose the Department's proposal to incorporate consideration of "household income or other economic measures adjusted to reflect the cost of living or other circumstances particular to the affected area" because the operative standard should be whether there is substantial impact, rather than the relative cost of living in a particular area. The application of this proposed standard would allow greater environmental degradation in areas with lower household incomes, or a higher cost of living -- an outcome which is inconsistent with the CWA and its regulations, and which has troubling implications for environmental justice considerations.

**Outstanding Resource Waters and Special Resource Waters**

Outstanding resource waters (ORWs) receive the highest level of protection under the state's anti-degradation policy. In addition to public water supplies, this category should explicitly include waters of high ecological value as designated in 314 CMR 9.02 and 9.06(3) along with those under 314 CMR 4.06(3), rather than leaving "other waters" to the discretion of the Department for ORW designation. Conformance with the Safe Drinking Water Act should not trump ecological functions and the term "ORW" should be defined in the definitional section.

The requirement in section 4.04(3)(a) that existing discharges connect to a POTW does not take into account the importance of local recharge of treated discharges. Treatment and infiltration of wastewater locally, as modeled in the upper Ipswich basin by the United States Geological Survey, can greatly improve the water budget and improve streamflow. The WQSs should not categorically prohibit existing wastewater discharges when connection to a POTW is available. We suggest the following changes to section 4.04(3):

(3) Protection of Outstanding Resource Waters. Certain waters shall be designated for protection under this provision in 314 CMR 4.06(3) including waters of high ecological value as designated in 314 CMR 9.02 and 9.06(3); and Public Water Supplies (314 CMR 4.06(1)(d)1.). These waters constitute an outstanding resource as determined by their outstanding socio-economic, recreational, ecological and/or aesthetic values. The quality of these waters shall be protected and maintained.

(a) Any person having an existing discharge to these waters shall provide the highest and best practical method of waste treatment determined by the Department as necessary to protect and maintain the outstanding resource water.

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The export of wastewater from any hydrologically stressed sub-basin shall not reduce stream flows.

Special Resource Waters (SRW) are also designated at the discretion of the Department. However, none are proposed for designation in this review and it is unclear what waters are intended to be will be covered by this designation beyond the stated “national or state parks and wildlife refuges.” The requirement that these waters “be maintained and protected” should not be limited to “new or increased discharges” only.

**Classes and Criteria**

It is not clear whether the insertion of the word “include” in the first sentence of section 4.05(3)(a) was intended to expand Class A waters beyond those designated for water supply. Because Class A waters currently are restricted to those used for public water supplies, water bodies in the Commonwealth currently having a high enough quality worthy of a Class A designation, but not used as a source of public water supply, have not been placed in the Class A category. Merely designating such water bodies Class B increases the risk that water quality will be allowed to degrade in those water bodies below their current high level. This degradation in water quality is likely to result in a degradation of the water bodies’ ability to support “excellent habitat for fish, other aquatic life and wildlife” and lead to a loss of biological integrity. Massachusetts should follow the lead of New Jersey and Maine by broadening the definition of Class A waters <sup>6</sup> to explicitly include waters of high ecological value. We recommend the following revisions to 314 CMR 4.05:

(3) Inland Water Classes:

- (a) Class A - These waters are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and as a source of public water supply. These water shall be suitable for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters under 314 CMR 9.02 and 9.06(3) and 4.04(3).

We also suggest adding a new subsection 9 on “Water Quantity” for Class A and Class B to establish that quantity is integral to water quality:

For Class A add:

9. Water Quantity – These waters shall have sufficient water quantity to ensure the protection and propagation of fish, other aquatic life and wildlife, provide for recreation in and on the water and other human uses.

For Class B, add:

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<sup>6</sup> New Jersey’s WQSs for “Category One” waters include waters that are worthy of special protection for exceptional ecological and other values, rather than just for water supply. Similarly, Maine includes high ecological value as a criterion.

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9. Water Quantity - water quantity shall be adequate to ensure the protection and propagation of fish, shellfish and wildlife, provide for recreation in and on the water, and other human uses, such as public water supply, agriculture, industry, and navigation.

**Stressed Basins**

New Section 4.06(1)(d)13. provides that stormwater dischargers in high and medium stressed basins shall be required to minimize the loss of annual recharge to groundwater. . Given that the stressed basin list is incomplete, and the fact that Massachusetts rivers and streams are increasingly at risk due to low flows caused by increased water demand and development resulting in impervious surfaces that prevent recharge, the requirement to minimize recharge should be applicable to all basins.

The proposed language reflects the Department's Stormwater Management Policy (Stormwater Policy), which is currently being updated. If the proposed language remains, we recommend that language be added to clarify that if Standard 3 of the Stormwater Policy is changed, that dischargers will be required to comply with it to avoid the anomaly of a provision in the WQSs that is out of sync with a newly revised Stormwater Policy.

In sum, it is critical that the WQSs reflect current scientific knowledge on the impacts of decreased flow on the uses protected by the CWA, as well as the reality that it is not just permitted discharges, but other activities, such as withdrawals, that have major effects on water quality. Given that a wide range of activities other than permitted discharges impair water quality, WQSs cannot pretend to protect water quality without taking those activities into account. As noted throughout our comments, in many areas, Massachusetts' regulation of our water resources is significantly less protective than that of many other New England states, and we urge DEP, at the very least, to offer comparable protection to our waters.

Lastly, with respect to the dredging regulations' changes, we support the comments of the Water Supply Citizen's Advisory Committee those of the Riverways Program, with the exception of Riverways' comment # 16ii, which asks the Department to allow a waiver of 1:1 wetland replication and rare species provisions for certain projects whose express purpose is net, long-term ecological integrity of the waterway.

Sincerely,

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cc: Stephen Silva  
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