

By Fax and Mail

November 3 2005

Vandana Rao  
Executive Office of Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

***Re: Draft State Water Conservation Standards***

Dear Ms. Rao:

The Massachusetts Water Conservation Standards (the Standards) have not been updated in more than a decade, during which time the stresses on the Commonwealth's water resources have become quite evident. At the same time, the science on the natural flow regime and water withdrawal impacts has grown exponentially, as have the body of knowledge on water conservation and the range of water-saving products available. Promotion of the efficient, wise use of water, or preventing waste of precious water resources, has an important role to play in ensuring the long-term sustainability of our water resources.

The draft Standards reflect the hard work of EOEA and DCR staff and Charles River Watershed Association (CRWA) and Conservation Law Foundation (CLF) commend the staff on its updating and revision and of the Standards, to reflect this new information, and the importance of conservation to adequate streamflows and ecological integrity. The Standards are a key component of efforts to ensure the long-term health and sustainability of our water resources for all of their uses, both in-stream and out-of-stream. We urge the adoption of the Standards and offer the following comments only to improve their effectiveness. Both CRWA and CLF were members of the statewide Water Policy Task Force and we are delighted to see its recommendation to update the standards now being implemented and we urge EOEA to finalize the draft Standards as soon as possible.

**The Introduction**

The Introduction is a critical part of the Standards because it informs state and local officials and the public about why updated Standards are necessary. Obviously, conservation is most successful when people understand the need for it and the benefits that will result from their changing behavior.

We believe that the Introduction, while acknowledging gains that the state has made in conservation, should make a stronger case for the necessity of improved Standards by

making a stronger connection between water supply and diminished streamflows. It is important to acknowledge right up front the large and direct impact of water withdrawals on streamflows compared to other impacts (*i.e.*, stormwater and wastewater losses, which are more diffuse impacts) to support the case for strong water conservation measures. Briefly explaining how wells reduce streamflow by intercepting baseflow and through induced infiltration might be helpful here.

While it *may be* that Massachusetts has one of the lowest per capita residential demands, we note that per capita use varies widely from community to community, in addition to the fact that it is widely acknowledged that reporting on this to date by the water suppliers in their Annual Statistical Report has been fairly inaccurate. The Department of Environmental Protection is actively working to solve this problem by formulating guidance on how to compute per capita use. More importantly, it should be pointed out in the Introduction that even at 65 gallons per person per day, Massachusetts is densely populated state and it is the number of gallons per day that is important. Additionally, it should be mentioned that seasonal water use increased greatly in the 1990's due to the proliferation of automated irrigation systems.

In the Introduction, we think it would be useful to state that water suppliers are finding it hard to meet nonessential uses of water such as lawn watering on top of essential uses; shortages occur in the summer when demand is high and flows are already low. With regard to "plentiful rainfall" in paragraph 2, it is important to point out that it is not just the seasonality of recharge, but also the fact that only less than half of this rainfall is actually recharged. The Introduction should also discuss the fact that water conservation is the most cost-effective means of improving streamflows -- recharge of stormwater and wastewater are much more expensive. It should also emphasize the elective nature of lawn irrigation and that in the hierarchy of competing uses, lawn watering is last.

The Introduction should be clear that the state endorses strong water conservation before, and as a prerequisite to, communities seeking alternative sources of water. It should also reference ongoing efforts to refine the stressed basins' methodology, to development streamflow standards, to develop community water budgets, and to issue guidance on DEP's 2004 Water Management Act (WMA) Policy. Since we expect that the Standards will be incorporated into WMA permitting decisions, Interbasin Transfer Act approvals, MEPA reviews and SRF decisions, it would be useful for this to be explicitly acknowledged in the Intent and Purpose section of the Introduction.

### **1.0 Comprehensive Planning**

We disagree that water suppliers complying with their WMA permits will meet the standard to develop a written program to comply with the Water Conservation Standards. Perhaps the intent here was to tie compliance with WMA permits just to the recommendations in the operation and management of the water supply systems; however, as written it is not clear. In any case, WMA permits should not supplant a written plan for meeting the Standards because all communities would benefit from such a plan, which should be distinguished from the regulatory requirements and basic performance standards in the new WMA permits.

We would like to see comprehensive planning included as a standard for medium and high stressed basins. The definition of inflow should be changed: it is not just the result of illegal connections but rather stormwater entering the sewer pipes.

We fully support water banking as a tool for both for saving water and keeping it within basin. Although these standards are about water conservation, it would be helpful here to mention other banking measures for keeping water local and the goal of beginning to balance a community's water budget.

## **2.0 Water Audits and Leak Detection**

We strongly disagree with dropping the requirement of leak detection every two years. Many water suppliers currently perform annual leak detection and agree that it is cost-effective. The requirement of a field survey every four years is a step backward and is fairly confusing. The Standard should also state that all leaks should be repaired immediately, or as soon as possible. We note that leaks of 3 gallons a minute are significant and the standards should not prescribe a timeframe of three months for fixing them. One can also infer that fixing leaks less than 3 gallons a minute "in a timely manner" means more than three months. The better course is not to differentiate between rates of leaks.

A minimum pressure of 20 psi seems low and should be checked against the DEP's pressure requirements for public water suppliers.

We strongly support the recommendation that communities adopt ordinances or by-laws prohibiting non-riparian owners from taking water from a surface water source since we agree that this is a growing problem in some areas. Riparian owners are constrained to some degree by the doctrine of reasonable use in their own withdrawals.

## **3.0 Metering**

Accurate metering is key to effective water conservation. We strongly support the metering of all public buildings, schools and playing fields as a Standard. Because surveys have shown that consumer feedback on water saved is one of the most effective conservation measures, rather than converting meters to gallons given as an example in the recommendations, we think it should be made a Standard in the Pricing-billing section to require water bills to include a conversion table from cubic feet to gallons, explain how to determine per capita use, and provide data on past household use.

A meter replacement program should be included in full-cost water pricing and should be a Standard, rather than a recommendation.

## **4.0 Pricing**

Since pricing can be an effective conservation measure, conservation-oriented rate structures should be a Standard rather than a recommendation. It would be useful in the full-cost pricing standard to include mitigation measures for reducing environmental impacts as costs that can be included in full-cost pricing. In the recommendation to avoid decreasing rate structures the sentence that reads "These types of structures are generally

not as effective in encouraging conservation,” should be changed to the simple declarative that “These types of structures are not effective in encouraging conservation.” Since private water companies are using a public resource, a recommendation should be to eliminate the option of decreasing block rates for private water companies, through legislation if necessary. An explanation of the importance of enterprise accounts to conservation would be helpful here.

No mention is made of residential irrigation meters, which frequently result in lower cost water for nonessential use. Even though the rationale for residential irrigation meters it is unfair to charge users for both water and sewer when they are irrigating, use of irrigation meters creates a de facto decreasing block rate structure

### **5.0 Residential Water Use**

We strongly support 65 residential gallons per capita day (rgpcd) as a Standard and think the explanation in Appendix C is quite helpful. However, we believe that this should be the ceiling not the floor and that communities can over time do much better than this, particularly as low water use washing machines, dishwashers and plumbing fixtures replace older models and residents begin to capture roof runoff and use it for irrigation. It might be useful to say in the Background section that the expectation is that savings greater than the 65 rgpcd are anticipated in the longer term. The last sentence of Standard 2 on keeping use below 65 rgpcd is important because communities already meeting this standard should be encouraged to do more and in no event to increase their rgpcd.

### **6.0 Public Sector Water Use**

Building and retrofitting (at least during rehab or redevelopment) public buildings with equipment to reduce water use should be a Standard rather than a recommendation. We also think Standard 3 should specifically call for prohibiting the installation of inground sprinklers around new public buildings and eliminating or at least minimizing their use around existing public buildings. Where they are used, the systems should be required to have state-of-the art technology installed to eliminate unnecessary watering.

### **7.0 Industrial, Commercial and Institutional (ICI) Water Use**

The Background section should emphasize the importance of reducing ICI use in the overall water conservation scheme. A combination of water audits, education and incentives would seem to be the most effective way to reduce ICI use. Similar to our public building recommendations above, building and retrofitting (at least during rehab or redevelopment) ICI facilities with equipment to reduce water use should be a Standard rather than a recommendation. Reducing the amount of landscaping requiring watering should at least be included as a recommendation. Standard 3 should be strengthened by inserting the words “at least” before 10%.

### **7.0 Agricultural Water Use**

Recommendation 1 requiring a “documented approach to water conservation and a method to measure water use” seems quite basic to a successful program and should be a Standard. Because agriculture is highly water-dependent and users tend to be self-

suppliers, metering of withdrawals is important and will provide agricultural users with a benchmark with which to evaluate BMPs. This section should reference the high rate of evapotranspiration in the summer and should emphasize the use of soil moisture meters to schedule irrigation when it is actually needed by the plants.

### **8.0 Lawn and Landscape Water Conservation**

In the Background section there is a typo in the first sentence, which should read “Water used for maintaining landscapes and lawns should not be used at the expense of public health and safety or the environment.”

We believe that streamflow should be explicitly mentioned as an “environmental indicator” in Standard 1 and the importance of tying watering restrictions to low streamflows recognized. Streamflow triggers are the single most important fail safe for protecting rivers and streams when flows are low. Importantly, they also provide a critical link for the public between the need for conservation measures, and particularly an effective reduction in lawn watering, and streamflow and habitat protection. Conservation is far more successful when the public understands the need to take action.

It should stressed that summertime lawn watering demand increases at the time when ground and surface waters are most stressed and virtually no recharge is occurring. Since we have heard even DEP staff opine that water from lawn watering goes back into the ground, it would be helpful to highlight here the high rate of evapotranspiration and consumptive loss of this water to the atmosphere, with virtually no return of irrigated water to the groundwater.

DEP’s model bylaw needs to be updated: it includes odd/even day watering, which in some cases actually results in increased water use and it does not reference hand-held watering, which is a very effective method of reducing outdoor use. Additionally, the recent by-law passed by the Town of Middleton making private wells subject to the same restrictions as those on public water supply should be referenced in the Appendix. We note that the Middleton by-law does not require “a clear and imminent threat” to the aquifer as the Falmouth by-law does.

This section does not mention two BMPs – reducing lawn size and planting drought resistant species of plants and turf that are in the Lawn and Landscape Guidance and which we think should be included here.

Since the hottest hours of the day in summer are centered on 3:00 p.m. it would be better to restrict watering from 11:00 a.m. to 7:00 p.m. rather than 10:00 a.m. to 6:00 p.m. This should also be a standard in high and medium stressed basins. Lastly, an irrigation audit should include an assessment of irrigation uniformity (spatial variability) and irrigation efficiency (how much water ends up in the root zone).

### **10.0 Education and Outreach**

Establishing a State Water Conservation Coordinator within EOEA should be a priority. A coordinator is necessary to facilitate and to ensure the successful statewide

implementation of the Standards. It has been 13 years since a water conservation coordinator was first proposed in the Standards. It is now time to make this position a reality.

Please feel free to call if you have any questions about our comments. And again, we commend EOE and DCR staff for their excellent effort in updating the Standards.

Sincerely,

Margaret Van Deusen

Nigel Pickering  
Charles River Watershed Association

Carol Lee Rawn  
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cc: Kathy Baskin