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Brewster, MA 02631

April 29, 2016

Richard Roy, Chairman

Cape Cod Commission Subcommittee

P.O. Box 226

Barnstable, MA 026390

Subject: Town of Harwich CWMP Joint Review Hearing MEPA/CCC

Dear Mr. Roy,

I attended the Town of Harwich CWMP SEIR Joint Hearing, MEPA/CCC on April 28, 2016. It was my first time attending a Harwich hearing on this matter. I live in Brewster. I am writing you as a concerned citizen.

I was thoroughly impressed with the extensive, comprehensive approach to limit nitrogen to the surrounding embayments. However, the 208 Plan does not address phosphorus with the same intensity. As phosphorus, not nitrogen, is the controlling nutrient for algae bloom in our Cape Cod ponds more emphasis needs to be given to limiting phosphorus pond contamination.

It is well established that algae, in the absence of a nitrogen source, can synthesize nitrogen from the air to be incorporated into algae growth. Algae cannot synthesize phosphorus from the air. Limiting nitrogen sources only to ponds will not decrease algae blooms. If the Town of Harwich wishes to address its pond algae problem long term, it must address the phosphorus pond nutrient contamination problem with the same intensity it is addressing the nitrogen nutrient contamination problem to its embayments.

As the major source (over 60%) of phosphorus contamination of Harwich ponds is transferred to the ponds by surface waters, storm surface runoff to ponds needs to be addressed. At the meeting last night, it was stated that the cost/benefit to reduce the nitrogen load to Harwich ponds was not favorable. I wonder if the cost/benefit of limiting the phosphorus load to ponds was considered. Again, this is the major source of phosphorus to ponds.

At last night's meeting, David Young, PE, BCEE, stated that dredging removes a residual source of nutrients found in the sediment, but it does not lower future source contamination of nutrients to the pond. In the same way, alum was added to Long Pond four years ago to lower phosphorus levels (aluminum phosphate binding), not nitrogen levels. Adding alum does not prevent future nutrient source contamination of Long Pond. Long Pond remains an impaired pond.

Requiring a vegetative buffer along ponds edges greatly limits surface water runoff into the pond. In addition, limiting fertilizer applications and composting near ponds also reduce phosphorus entering the nearby surface waters.

In contrast to septic system source nitrogen transfer to ground water of 80%, septic system source phosphorus transfer accounts for about a third of all sources to ponds. Although Cape Cod sand is high in iron and magnesium, which adsorb phosphorus, that ability is finite. Once the sand between the septic system drain field and the nearby surface water reaches its phosphorus adsorption capacity, additional septic system source phosphorus will continue to the nearby pond forever!

A phosphorus breakthrough analysis (PBA) considers 12 factors to calculate an individual phosphorus breakthrough year. The individual PBA will identify those septic systems that are polluting nearby ponds now or will pollute nearby ponds in the near future. All information needed to complete a PBA can be obtained

from the septic system plan on file with the Board of Health. Identifying and remediating polluting septic systems should be a priority.

In Summary, limiting nitrogen to Harwich Ponds will not prevent algae blooms. Phosphorus has to be limited to control algae growth and should play a prominent part in future plans to maintain the water quality in all Harwich waters.

Please feel free to contact me if I can be of future assistance. Thank you for listening to my concerns.

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'Carmen S. Scherzo, DVM', written in dark ink.

Carmen S. Scherzo, DVM

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