Brewster Ponds Coalition
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September 15, 2016

Town of Brewster
Board of Health
2198 Main Street
Brewster, MA 02631

Re: Comments Regarding the Proposed Regulation of Sewage Disposal Systems to Protect Surface Water and Pond Water Quality - Draft July 20, 2016

Introduction
The Brewster Ponds Coalition (BPC) is dedicated to preserving and nurturing the natural beauty, healthy habitats, and recreational opportunities of Brewster's ponds, and to safeguarding them for current and future generations. The BPC is an independent non-profit organization and our membership of more than 300 individuals and families are advocates for - and indeed the voices of - our ponds.

We sincerely appreciate the long history of leadership by the Town and the commitment of Brewster residents in making watershed protection a high priority. The results of these efforts are notable in the high quality of Brewster's public water supply. The unique geology, hydrology, and development of Cape Cod present many challenges to protecting our sole source aquifer. Our freshwater ponds and groundwater are linked. What we put on and in the soil, air, and water directly affects both.

The BPC compliments the Board of Health for its attention to the impact of septic systems on Brewster's waters. Discharges from septic systems have been identified as important sources of nutrients and other contaminants into our groundwater and, through the natural flow of that groundwater, into our ponds, estuaries, and wells.

It is well established that the accumulation of nutrients, notably phosphorus, is a key reason why many of our freshwater ponds are already impaired and others threatened with algae and cyanobacteria blooms, as well as excessive, non-natural growth of water plants, and accelerated eutrophication.

Septic systems are only one of several sources of human-introduced nutrients that affect our ponds. Others include stormwater runoff, fertilizer, and (importantly) historic agricultural and other land uses that have accumulated large quantities of nutrients in pond bottom sediments. Through greater education of residents and visitors and, where appropriate, introducing regulatory standards, all controllable sources of pollutants should be part of the strategy to reduce nutrient loading and other pollutants to our ponds.

Septic system wastewater presents a significant concern to our ponds because of the highly reactive nature of organic phosphorus discharged from septic soil absorption systems into groundwater. Therefore, we support the efforts of the Town to focus on this specific source.

New septic system regulations may have a significant effect on property owners who live or plan to develop near water. While this is probably unavoidable as we strive to protect our ponds, we also encourage the Town to find ways to help mitigate the financial impact and even incentivize property owners to upgrade their systems voluntarily.

We offer the following comments, questions and suggestions regarding the proposed regulation as currently drafted.

General Topics

Scope
Phosphorus is generally the limiting nutrient in our ponds with regard to algae, cyanobacteria and water plant growth. However, septic systems also discharge other pollutants of concern, including nitrates (another critical nutrient affecting Cape Cod), bacterial contamination, and emerging pollutants such as pharmaceuticals and household chemicals. All of these pollutants are important - not only with respect to freshwater ponds, but to groundwater and other surface waters and estuaries - and should be recognized in the design and treatment standards being considered.

Cross-Town Borders
A number of the ponds in Brewster border with or could be impacted by discharges from properties in Harwich. Also, two ponds border with Dennis and one with Orleans. Has there been discussion with these towns about similar regulations and/or cooperative work between the towns to reduce nutrient discharges? Clearly, the ponds on the border, most of which are impaired, require reductions in pollutant discharges from all sides if they are to be improved and protected. It may not be reasonable to impose substantial costs only on Brewster property owners if there will be no effective pond protection due to inaction on the part of neighboring towns.

Financial Impacts
The cost to Brewster property owners for upgrading of septic systems to comply with the regulation will likely be significant and could be a major burden for homeowners with limited incomes and resources.

The Commonwealth of Massachusetts provides for certain financial assistance, low interest loans, and tax credits to individuals whose systems fail to meet the standards of Title 5 (310 CMR 15.000) of the Massachusetts State Environmental Code. However, it is not clear from this local regulation if a “Non-Compliant System” would enable a Brewster resident to benefit from these programs.

1) Has the Board of Health considered the financial impact on residents and, in particular, would there be any assistance available for low income homeowners to retrofit their systems?
2) Has the Board of Health considered any other incentives that would encourage residents to upgrade “Non-Compliant Systems” prior to “the time that any permit or system inspection is required by Title 5.”

Public Education and Communication

There are a number of questions about how this new regulation will be communicated to the public, and specifically to affected property owners. The BPC believes that to ensure successful implementation and fairness to property owners, effective communication and public education about the regulation is essential. For example:

1. Will there be an effort to identify and communicate with affected property owners, such as by reviewing groundwater flow and GIS data about house and septic system locations?
2. Will this be left to homeowners, who may get quite a surprise when they try to sell or expand their homes?
3. If the Town will be determining which home/property/septic systems may be affected by the regulation, will there be communication specifically to potentially impacted homeowners about the regulation and its requirements?
4. Will there be communication about the regulation to those who likely will play a part in its implementation, such as septic system pumping and maintenance companies, contractors who install septic systems, house construction or renovation contractors, and realtors?

Clear guidelines or "cookbook" instructions on how to implement the various provisions of the regulation will be an important aid to effective implementation. Such guidance could relate to technical provisions such as complying septic system design, how up or down-gradient decisions are to be made, vegetative buffer design and approval processes, and alternate technologies that can be used.

Implementation and Administration

To be successful in meeting its intended objectives, any proposed regulation must also address the means by which it will be administered and implemented. In this case::

1. Staff resources will be required to determine whether septic systems are regulated or not, evaluate construction and modification applications, make inspections, take enforcement actions, etc. Furthermore, coordination will also required between the Board of Health, Conservation Commission, Planning Board and Building Department. Have these resource requirements been evaluated and have plans been made to provide adequate staffing and internal procedures?
2. Under the proposed regulation, upgrading of "Non-Compliant Systems" is triggered "at the time that any permit or system inspection is required by Title 5." Since there is currently no direct involvement in the Title 5 inspection process by the Town (except when a failed system is being permitted for replacement), what administrative systems and procedures will be required to assure that there is awareness and appropriate administrative action and enforcement if any of these triggers occur?
3. Similarly, how/who/when will it be determined that a home/property/septic system falls within the proposed 100 and 300 ft contours?

Specific Comments on the Draft Regulation (Noted by Section)

Section 1 - Purpose and Authority

This proposed regulation is being promulgated by the Brewster Board of Health, which has the authority to enact it without a vote of the Town. We recognize that under Title 5, the Board of Health is the primary regulatory authority with jurisdiction over septic systems. However, this proposed regulation is principally an environmental standard to protect freshwater ponds from further degradation. Has this document been reviewed by Town Counsel to assure it is properly

placed as a Board of Health matter, as opposed to an environmental regulation and perhaps subject to a Town-wide vote? Has this proposed regulation been reviewed by Town Counsel for its validity for any legal challenges?

Paragraph 1.3 notes that this new regulation supersedes and replaces the Leaching Field Setback regulation promulgated by the Board of Health in 2006. How will the Board address septic systems that were built under this standard prior to the effective date of this new regulation? For example, would a septic system located within 300 feet up-gradient of a pond and approved by the Board of Health in 2015 under the 2006 standard now be considered as "non-compliant" and require replacement if the property were sold now?

Section 2 - Applicability

The proposed regulation prohibits the use of garbage disposals and that "and only phosphate free (less than 0.5% phosphorus) dishwashing detergents, soaps and cleaners shall be discharged to the system." As a practical matter, how will consumers know what they can legally use for such products and how will these requirements be enforced?

Section 4 - Setback Distance for Surface Waters Other than Lakes and Ponds

This section states that all septic distribution systems within 100 feet of surface waters other than lakes or ponds are also regulated by this regulation. Presumably this includes streams (of which there are about 5 in Brewster), estuaries, tidal marshes and Cape Cod Bay. Why is there inconsistency between these surface waters and ponds?

Specifically, why is the required 300 foot setback distance for up-gradient septic systems not applied to freshwater streams? These streams often flow into ponds and therefore nutrient discharges to them have the same effect as for groundwater flowing into ponds.

Section 5 - Design Requirements for Septic Systems Within 100 feet Downgradient and 300 feet Upgradient from a Lake or Pond

As written, determination of whether a system is up or down-gradient is to be made "by referencing the map titled Septic System Buffers and Groundwater Flow Directions near Brewster's Ponds, dated January 26, 2016." This map does not provide information related to groundwater flow direction for all ponds in Brewster. Where information is not included on this map or for properties that "straddle" groundwater flow direction, the regulation states that the 300 foot setback applies.

While the regulation also allows a professional engineer or qualified hydrogeologist to present data about whether a property not shown on this map is up or down-gradient, this would be an expensive proposition for homeowners to undertake.

There is more documentation available about groundwater flow than just this specific referenced map. In particular, USGS groundwater data is publicly available and is very useful in understanding groundwater flow. In the interest of being fair to property owners and minimizing implementation costs, such information also should be allowed for use in determining groundwater flow directions and setback distances for specific properties.

Section 7 - Upgrade of Non-Compliant Systems

This section states that non-compliant septic systems (i.e. those within the regulated setback distances) must be upgraded "at the time that any…. system inspection is required by Title 5." Since this includes real estate ownership transfers, there are important implications for the Town to consider:

a. Upgrading of many non-complying septic systems will not occur for a long time, as many properties may not be sold (or expanded) for years or even decades.
b. Real estate agents and sellers must be made aware of this requirement so that they can take this cost and the time needed to upgrade septic systems into account when making their plans. Buyers of such properties must also be made aware of this regulation regarding required maintenance of such systems.

The Brewster Ponds Coalition would encourage replacement of non-compliant systems more quickly so that the desired protection of our ponds can be achieved sooner. However, we recognize that due to the costs that would be imposed on homeowners, the proposed strategy for upgrading septic systems in this regulation may be the most financially reasonable, as the cost would be addressed when funds become available due to property sale or incorporated into expansion project budgets. Nevertheless, as noted above, the Town should establish incentives for homeowners not to delay upgrading.

There are also important procedural issues involved with this regulation as it pertains to real estate transfers. According to DEP Title 5 requirements: *"The property owner or facility operator is generally responsible for obtaining an inspection of the system. Prior to the transfer of title, however, the parties may contractually allocate responsibility for the inspection, provided that such inspection occurs within the specified timeframes. Inspections must be conducted by a MA DEP-approved System Inspector. The System Inspector must record the inspection results on the MA DEP-approved inspection form and submit the form, within 30 days of the inspection. In most cases, the inspection report is submitted to the local Board of Health."*

It is not clear how the Brewster Board of Health will enforce these local regulations at the time of transfer because the Town does not require the inspection - the Massachusetts DEP does. Only when there is a failure (as defined by Title 5) or the need for a system expansion or upgrade does the property owner apply to the Board of Health for a permit. Otherwise only an inspection report is required to be submitted to the Board of Health for its records.

Inspection reports coming into the Health Department would have to be individually reviewed to see if they have triggered this regulation. An alternative is to have the MA DEP-approved inspectors complete a separate Brewster inspection for all properties to ascertain whether or not this regulation would apply and if the septic system is compliant prior to transfer. All of this would require outreach and education to inspectors, property owners, and even attorneys and lenders and establishing an effective administration process by the Health Department.

Section 8 - Design and Treatment Standards

Paragraph 8.1 establishes specific design criteria for septic leach fields that are covered in this regulation. It is appropriate that some relief is given where leaching fields are elevated well above groundwater, as this is a very important factor that reduces the risk of nutrients from a septic system reaching ponds. However, there is a logical question about whether the elevation criteria and setback credit in subparagraphs (e) and (f), belong in this section or in Section 6, which establishes the setback distances.

We also recommend that the criteria be slightly modified to say in subparagraph (b) that, in addition to design such that the soil B horizon will accept effluent, systems shall, where possible, be shallow enough such that discharges will be within the root zone of grass and other plants above the leach field. This change is encouraged because the root zone is the most biologically active soil zone, which helps both take up phosphorus and nitrates into plants (thereby further reducing nutrient release risks) and helps decompose other pollutants, such as pharmaceuticals.

Paragraph 8.2 allows impacted property owners to comply with the regulation by installing a phosphorus treatment system meeting a 1 mg/l total phosphorus discharge standard as an alternative to the requirements of Paragraph 8.1. We support the approach of allowing alternate technologies to comply with this regulation. The Town and Board of Health should be open to new approaches, as there are a variety of technologies being tested now through the Massachusetts Alternative Septic System Test Center that may help meet this standard. As these systems develop they could have even better performance and/or may be less costly than those currently commercially available. However, limiting approvable technologies to only those "approved for use by the MA DEP" will discourage the use of new applications, as the approval process within the DEP may lag years behind development, especially for phosphorus removal. For obvious reasons this needs to be approached carefully, so we suggest that language be added to the end of the first sentence of this paragraph that includes other solutions providing the applicant provides clear evidence, including certification by a Professional Engineer, that the technology will achieve the 1 mg/l standard in a sustainable manner.

If alternate technologies are installed for phosphorus treatment systems as per Paragraph 8.2, inspection and monitoring must be done to assure these alternate systems are installed properly and continue to operate well. As stated: "Monitoring must be conducted …. as approved by the MA DEP." The proposed regulation does not identify who will be responsible for the monitoring (presumably the homeowner), who will receive and review the monitoring results (presumably the Health Department, but possibly the Conservation Department or MA DEP?), and how actions would proceed if unacceptable results are found. These matters should be clarified. Further, has the MA DEP agreed or have in place such monitoring requirements for phosphorus – particularly in a format and with adequate clarity that could be used by homeowners?

Paragraph 8.3 establishes requirements for vegetated buffers. Well designed native plantings will not only help prevent phosphorus discharges from septic systems from reaching ponds, but will also reduce other pollutants from reaching ponds from runoff of fertilizers, pesticides, and erosion. However:

1. The regulation does not make clear when vegetative buffers must be planted. Does the requirement take effect immediately (which appears to be how the regulation reads), or when other actions trigger a septic system upgrade, or when? Reasonable time for implementation should be provided, such as two years.
2. It may be obvious, but it should be made clear that where more that 50 feet of natural vegetative buffer already exists along pond shorelines (as is the case for many pond front properties in Brewster), no further action is needed and no Conservation Commission approval would be required.
3. It should be made clear that reasonable pathways to access ponds from properties are allowed; pond front homeowners need not be completely closed off from access to their ponds by the vegetative buffer.

4. The process for the Conservation Commission to review and approve plans for vegetative buffers under this regulation should be made clear. An elaborate process, involving a full Notice of Intent, should not be required for what should be a simple process of planting native bushes and trees. Guidance documents for design and construction of such buffers would be helpful.
5. It is also not clear why the vegetative buffer requirement is not part of Conservation Commission or Planning Board regulations, especially since permitting and enforcement is the responsibility of the Conservation Commission. Does the Board of Health have a role in enforcing the requirements of this paragraph?

Paragraph 8.4 requires all septic systems covered by this regulation to be pumped at least once every three years. The BPC strongly supports the need for regular maintenance of all septic systems, wherever they may be located. However, under this regulation:

1. How will the pumping requirement be monitored and enforced? Will there be a registry of all septic systems covered by this regulation? Who will be responsible for filing records of pumping to ensure compliance? Are sufficient resources allocated within the Department of Health for enforcement?
2. Many homes in Brewster have only seasonal occupancy or are occupied by only one or two residents. For such homes, requiring septic systems to be pumped every three years may be excessive, as little sludge will have been collected. In order to be fair to such homeowners, while also being protective of the environment, the language in this paragraph should be modified to require inspection by a qualified septic system service provider at least every 3 years, and must be pumped if needed.
3. A failure to comply with the required schedule of system pumping would presumably result in a violation and $200 fine per day as per Paragraph 12.3. This would appear to be an excessive penalty, and it should be clarified as it applies to this requirement.

In closing, the Brewster Ponds Coalition appreciates this opportunity to comment on these important regulations. We recognize that regulatory processes are complex and may be controversial. We commend the Town for its sincere interest in preserving the quality of our fragile environment, especially the sole source aquifer we all share.

We look forward to participating in the public hearing on September 21, 2016, and trust that these comments, suggestions and questions will be given serious consideration.

Sincerely,

Thomas E. Vautin

Thomas E. Vautin, President
On behalf of the Board of Directors of the Brewster Ponds Coalition, Inc.