

**TOWN OF TISBURY**  
**Board of Health Regulation**  
**Deployment of Enhanced De-Nitrification Technologies within the**  
**Lake Tashmoo and Lagoon Pond Watershed Nitrogen Management Districts**

**SECTION 1. FINDINGS**

In connection with, and for the purpose of, adoption of this regulation the Board of Health makes the following findings, pursuant to Massachusetts General Laws Chapter 111, section 31 and all other enabling authority.

- 1.1 The Town's population has grown to the point where the wastewater treatment infrastructure in place lacks the capacity and/or capability a) to remove sufficient nitrogen to assure that Tisbury's ponds and other water resources meet applicable water quality standards and b) provide for the safety of those using those resources.
- 1.2 It is now established that excess amounts of nitrogen, in the form of oxides, have the potential to damage human health, particularly in infants, young children, pregnant women and some people with compromised immune systems who consume nitrates in excess of established safe drinking water standards under the federal Safe Drinking Water Act and other regulatory authority.
- 1.3 In addition, the presence of excess nitrogen in water resources contributes to undesirable algal and aquatic plant growth, destroying wildlife habitat and degrading the waters for shellfishing, recreation and other public purposes. In addition, excess nitrogen can result in harmful algal blooms (HABs) that are toxic and create a potential public health issue for swimmers.
- 1.4 The Massachusetts Estuaries Project final report for Lake Tashmoo, dated February, 2015 and draft report for Lagoon Pond dated June, 2010 ("**Reports**") concluded that 6,435 pounds (32%) and 13,016 pounds (35%), respectively, of the *current* nitrogen load entering these water bodies annually must be removed in order for Lake Tashmoo and Lagoon Pond to comply with the nitrogen standards in the federal Clean Water Act and remain sustainable water resources. These quantities are premised on the assumption that *no new nitrogen* will be entering these water bodies as a result of any further development.
- 1.5 To this end, the Board of Health proposed, and the Town approved, at the April 29, 2014 Special Town Meeting, regulations reducing by approximately one-third the amount of nitrogen entering Lake Tashmoo and Lagoon Pond from lawn fertilizer (Fertilizer Management District of Critical Planning Concern Regulations).
- 1.6 The Reports noted that nitrogen from human wastewater is considered to be controllable locally and that it constitutes 80% and 76% of the overall controllable nutrient loading for Lake Tashmoo and Lagoon Pond, respectively. The current wastewater loading equates to approximately 15,128 and 27,695 pounds, respectively, of nitrogen annually to these water bodies.

**SECTION 2. PURPOSE**

This regulation seeks primarily to protect the public health by mitigating nitrogen toxicity in Lake Tashmoo and Lagoon Pond, while moving toward compliance with applicable water quality standards relating to controllable nitrogen. Accordingly, the regulation requires that new on-site waste treatment systems and system upgrades which are deployed in the Watershed Districts (as defined in Section 4) employ 'best available de-nitrification technology', removing significantly more wastewater nitrogen than standard Title 5 septic systems. Suitable technologies include those approved for pilot program use by the Massachusetts Department of Environmental Protection, thus enabling the Board of Health to partner with property owners and septic engineers in the in-field testing of innovative de-nitrification technologies. This approach is designed to enhance the Town's capability and capacity to reduce the flow of nitrogen from on-site wastewater treatment systems into Lake Tashmoo and Lagoon Pond.

### **SECTION 3. AUTHORITY**

This Regulation is adopted by the Tisbury Board of Health as authorized by Massachusetts General Laws, Chapter 111, Section 31 and all other enabling authority.

### **SECTION 4. DEFINITIONS**

For the purposes of this regulation (including the Appendices), the following words shall have the following meanings unless the context clearly indicates a different meaning:

**Approved Sewer District** means a district (with specified boundaries) approved by the Town for sewerage.

**Watershed District** means the area of Tisbury lying within the boundaries of (a) the Lake Tashmoo Watershed Nitrogen Management District or (b) the Lagoon Pond Watershed Nitrogen Management District, both as established and defined by the Town of Tisbury at the Special Town Meeting of April 14, 2015, and as indicated on Appendix A.

**Enhanced De-Nitrification Technology** means an on-site de-nitrification wastewater disposal technology that is intended to meet a nitrogen groundwater discharge standard of not more than 19mg/liter and is approved by the Massachusetts Department of Environmental Protection for general use, provisional use, or pilot program use for nitrogen reduction. For the avoidance of doubt, Enhanced De-Nitrification Technology includes self-contained, zero discharge, stand-alone composting toilets, used in conjunction with a greywater system, approved by the Massachusetts Board of State Examiners of Plumbers and Gas Fitters.

**Property** means residential or commercial property or properties.

**Proposed Sewer District** means a district (with specified boundaries) proposed by the Tisbury Wastewater Planning Committee or the Tisbury Sewer Advisory Board, or other method provided for by law, for sewerage.

**Subsidy** means a program or scheme the purpose of which is to subsidize some or all of the costs of engineering, installing, monitoring, and/or testing an Enhanced De-Nitrification

Technology the beneficiaries of which include eligible owners of Property on which wastewater treatment systems have failed and require replacement.

## **SECTION 5. INSTALLATION OF ENHANCED DE-NITRIFICATION TECHNOLOGY**

- 5.1 Upon the occurrence of a “trigger event” as set out in section 5.2 (and subject to sections 5.4 and 5.5), the Board of Health will only issue a permit for a proposed new wastewater treatment system and/or any system upgrade for a property in a Watershed District provided:
- a) the application provides for an Enhanced De-Nitrification Technology; and
  - b) all other conditions for the issuance of a permit are met.
- 5.2 The following situations are trigger events for the purposes of section 5.1:
- a) a new wastewater treatment system is required to serve a Property (i.e., new construction);
  - b) a Property’s existing wastewater treatment system fails and replacement is necessary, as determined by the Board of Health, provided a Subsidy has been approved by the Board of Selectmen or the Town at a Town Meeting, as may be required;
  - c) a Property’s existing wastewater treatment system capacity is insufficient to handle any proposed additional development, as determined by the Board of Health;
  - d) a Property is transferred, or proposed for transfer, to another owner and, based on a septic system inspection, the Board of Health determines that a new wastewater treatment system or system upgrade is necessary.
- 5.3 An Enhanced De-Nitrification Technology required under this regulation must be installed, commissioned, monitored, tested and maintained in accordance with all applicable state and local regulations and any manufacturer instructions. Copies of testing reports must be provided to the Board of Health within 30 days after completion of the testing.
- 5.4 This regulation does not apply to any Property within an Approved Sewer District.
- 5.5 If a Property is within a Proposed Sewer District, the Board of Health in its discretion may require an applicant for a wastewater treatment system permit to engineer the proposed wastewater treatment system to accommodate an Enhanced De-Nitrification Technology. Such an applicant will be required to install the Enhanced De-Nitrification Technology only if the Proposed Sewer District is not approved by the Town at a Town Meeting. In this event, installation of the Enhanced De-Nitrification Technology must be completed within 12 months of the date the Proposed Sewer District is voted down.
- 5.6 The Board of Health will review new technologies as they become available and may amend this regulation to lower the 19mg/liter nitrogen groundwater discharge standard as appropriate.

## **SECTION 6. EFFECTIVE DATE**

This regulation applies to all applications for wastewater treatment system permits submitted after the date of approval of this regulation. The Board of Health will declare that the regulation

ceases to apply in respect of a Watershed District as of the date on which the Board determines or confirms that sufficient nitrogen is being removed from that Watershed District to enable it to meet established applicable state and federal water quality standards for nitrogen applicable to that Watershed District.

## **Appendix**

### **Appendix A**

Map of the Lake Tashmoo Watershed Nitrogen Management District and the Lagoon Pond Watershed Nitrogen Management District

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