



Town of Carlisle
Office of
BOARD OF HEALTH
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MEMORANDUM

To: Zoning Board of Appeals
From: Board of Health
Date: February 19, 2015

In Re: 100 Long Ridge Road 40B Application – 310 CMR 15.00 (Title 5)

The Board of Health believes that LifeTime Green Homes should provide the services of a peer reviewer to demonstrate to the Zoning Board’s satisfaction that the project as a whole will meet the health and environmental assumptions being proposed by the applicant. Although the Board of Health is the local approving authority for issuance of the Title 5 Construction Permit, similar issues pertain to both Permits and should be considered by the Zoning Board in making its decision and imposing conditions. The issues include:

- Determine whether the on-site sewage disposal should be treated as one facility consisting of a series of systems under single ownership and subsequently that the total design flows exceed the 2,000 GPD threshold for a large system (310 CMR 15.011).
- Clarify whether the following local health regulations apply:

| Town of Carlisle Sewage Disposal Regulations | |
|--|--|
| 15.221 General Construction Requirements for All System Components | Table only applies to a maximum of 2000 GPD; facility exceeds this capacity |
| 15.211 Distances | The minimum setback distance between a system 2000 GPD or larger to a well is 150' |
| 15.290-15.293 Shared Systems, Condominiums and Systems over 2000 GPD | Minimum design flow of 165 GPD per bedroom required |
| Town of Carlisle Water Supply Regulations | |
| VI. Well Location and use Requirements | Requires a 150' setback from a well to systems 2000 GPD or greater |

- The efficacy of using E-ONE Grinder Pumps in seven units (18 bedrooms)

This is new technology in Carlisle; a number of potential problems have been identified including: how to deal with power outages, a shorter life span than traditional pump chambers, whether the pulverized sewage will interfere with the how the alternative technologies function due to an overload of organics, and whether there is an environmentally safer method. From a literature search it appears that grinder pumps are used when there is no other alternative, based on topography or costs. This should be demonstrated.

- Recommend whether the Board should grant relief from 310 CMR 15.229 “Pumping to Septic Tanks” which restricts the volume of sewage pumped to a septic tank to less than 25% of the design flow of the system and specifically whether the E-ONE Grinder Pump meets the necessary criteria in 15.229(2) (a) (b) (c).

LifeTime Green Homes, LLC
"The Birches"

- A process for the dual permitting of the E-ONE Grinder Pumps which are regulated in both Title 5 and the State Plumbing Code and how this might be conditioned in the Comprehensive Permit.
- Whether the design for the Alternative Technologies proposed for denitrification and pressure dosing is appropriate for the site and the system configuration.
- Review the assumptions of a Groundwater Mounding and Nitrogen transport analysis to show that nitrogen will not exceed 5 mg/L at the property boundaries.
- Determine the proposed Facility Aggregation Plan for Nitrogen Loading that includes adjacent credit land is reasonable and acceptable and has no conflicting issues such as land under water.

These Title 5 questions are integral to the design of the overall project. In many instances there are no alternative design options given the density of the project. A civil engineer with expertise in Title 5 and its policies, Grinder Pumps and Alternative Technologies will help the Zoning Board to weigh the pros and cons of the overall septic system design and ultimately whether to issue a Comprehensive Permit and with what conditions.

If you have any questions, please contact this office.

BOH:lmf

/Lifetime Green Homes

cc: Town Clerk