



Town of Carlisle  
*Office of*  
**BOARD OF HEALTH**  
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## **MEMORANDUM**

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To: Zoning Board of Appeals  
From: Carlisle Board of Health  
Date: September 8, 2016

In Re: **Lifetime Green Homes 40B Proposed Project Changes**

In addition to comments submitted on August 5, 2016, the Board of Health would like to present these additional issues for your consideration:

### **Nitrogen Loading**

**Applicant should demonstrate that the proposed project has sufficient land area available to comply with the nitrogen loading limitations of Title 5 (310 CMR 15.214)**

The proposed Project Changes for Lifetime Green Homes now include seven Public Water Supply Wells with overlapping Zone I's. According to 15.216(3):

Land located within a Zone I of a public water supply well may be used as nitrogen credit land unless the well is determined to be at risk in accordance with the Department's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading" **or the proposed design flow is 2,000 gallons per day or greater [emphasis added].**

The Zoning Board has already determined that the total project flows exceed 2000 gallons per day<sup>1</sup> so therefore the Zone I's cannot be used for nitrogen loading. Eliminating the combined Zone I areas will severely restrict the land area available for nitrogen loading. The original project contained 9.84 acres and required 0.75 acres of nitrogen credit land from the adjacent property.

### **Aquifer Protection**

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<sup>1</sup> Zoning Board of Appeals Decision August 2015 pg 10 par.22. See also DEP Clarification dated 7/25/06 (enclosed)

Special consideration should be given to the placement of multiple wells within the same recharge area. If all wells are pumping simultaneously the production rate could potentially cause a severe drawdown of the aquifer.

1. Adequate water storage capacity would be essential to meet the peak demand periods.
2. Testing of neighboring wells should be included in the Source Approval/Pumping Test submitted to DEP.
3. DEP will determine whether to assign combined yields based on the locations of the wells. If combined, the Zone I radius will be calculated on the combined yield increasing the land area no longer available for nitrogen loading.

### **Interim Well Head Protection Area (IWPA)**

This is a calculated recharge area for any Public Water Supply that does not have a delineated Zone II.<sup>2</sup> It should be shown on the plan.

### **Snow Disposal**

The proposed "Plan P Public Water Supply – Utility" locates a snow storage area within a Zone I. Mass. DEP "Snow Disposal Guidance – December 21, 2015" stipulates":

"Do not dispose of snow in salt marshes, vegetated wetlands, certified vernal pools, shellfish beds, mudflats, drinking water reservoirs and their tributaries, Zone IIs or **IWPAs** of public water supply wells, Outstanding Resource Waters, or Areas of Critical Environmental Concern."

### **Fire Suppression Flows**

According to the applicant the seven public water supply wells will have an estimated total yield of 6,380 gal/day in order to meet the Title 5 flow rate. The well yield would need to be increased to meet National Fire Protection Association fire flows. The proposed 15,000 gallon storage tank would not be adequate for both drinking water and fire suppression.

Board of Health chairman, Lee Storrs will be attending the meeting of 9/12/16. If you have any questions, please contact this office.

enclosure  
\ES:lmf

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<sup>2</sup> IWPA radius in feet = (32 x pumping rate in gallons per minute) + 400