



CONCORD BOARD OF HEALTH

141 Keyes Road
Concord, MA 01742
Phone: (978) 318-3275
Fax: (978) 318-3281



Public Health
Prevent. Promote. Protect.

TO: Elizabeth Hughes, Planning Director

FROM: Susan Rask, Public Health Director

DATE: December 2, 2019

RE: Planned Residential Development, 1440 Main St.

This review is based on revised plans dated November 12, 2019, prepared by Williams and Sparages Engineers, which describes the above-referenced residential development.

The Health Division offers the following comments relative to construction of the proposed shared on-site sewage disposal system that will serve the 34 units

1. The plans submitted with the application do not show sufficient detail to determine if the on-site sewage disposal system will conform with all requirements of 310 CMR 15.000 (Title 5). Specifically, the following information will be needed:
 - (a) Per 310 CMR 15.212: Depth to Groundwater, a groundwater mounding analysis must be conducted to determine high groundwater elevation.
 - (b) Based on the elevation of the nearby isolated wetland, it is likely that the septic tanks and pump chamber may be located in groundwater. If so, invert elevations for these tanks must be above estimated seasonal high groundwater and buoyancy calculations must be provided.
 - (c) The septic system design requires sewage to be pumped to the SAS for pressure distribution. The pump chamber as designed provides storage capacity for two days of system design flow. In August 1, 2019 comments to the Planning Board, it was recommended that a generator be installed to power the septic system pump chamber in the event of a power failure. The revised plan shows a generator will be installed.
2. As noted in comments dated August 1, 2019, the space available for the septic system is highly constrained due to the number of units, significant competition for space for underground utilities, topography, and other site constraints. Health Division staff have the following concerns:
 - (a) The SAS is located in an open area in the middle of most of the units. The revised plan shows one of the units in this area has been removed from the design, which will improve access to construct or repair the system. The reserve area for each SAS is located in the same area as the primary SAS. If the primary SAS fails or needs repair, large areas of the SAS will need to be excavated, and clean soil brought in to construct a new SAS. Large equipment would be forced to drive over Zone B of the SAS to access Zone A, which could potentially damage Zone B.

- (b) Portions of SAS Zone A will be constructed 20 ft. from the foundations of some of the units. If repairs or replacement of the SAS is required, maneuvering heavy equipment to excavate and repair the SAS in close proximity to building foundations will be challenging
 - (c) Due to the site density and competition for space to provide for utilities and stormwater drainage, if the final design of the septic system does meet 310 CMR 15.000, there will be limited options for re-design and relocation of the system.
- 3. The revised plans show that the septic system will be designed for 90 bedrooms with a design flow of 9900 gpd. If the design flow was 10,000 gpd or above, a permit for construction of the on-site system would be issued by MA DEP who would require a Groundwater Discharge Permit. As part of this permit, DEP would likely require an advanced wastewater treatment unit be constructed in recognition that effluent must be treated to a higher level to prevent impacts to groundwater when high volumes of effluent are being applied to the ground in a small area. Adding one bedroom to the current design would put design flow above 10,000 gpd. The Planning Board may wish to require the installation of an Alternative Treatment Unit (as defined in 310 CMR 15.282) which provides secondary wastewater treatment as an additional component of the Title 5 system. A unit of this type should contribute to the longevity of the SAS.