

To: Sherborn Zoning Board of Appeals (Z McBride, ZBA Chair) **Date: 10-10-24**
From: Sherborn Groundwater Protection Committee (T Trainor, GPC Chair)
Subject: Groundwater Protection Committee Comments to the ZBA on the proposed Pine Hill Residences (41 North Main Street) 40B.

The GPC met on Oct 9th at our monthly evening meeting and discussed this proposed project. Several initial groundwater protection related concerns of the committee were raised and are shared here with the ZBA. Documents posted at the town's Land Development website for this revised and remanded project (available online as of 9-9-24) were reviewed.

1. Given the fast timeline of this Comprehensive Permit hearing, 90 days, we are very disappointed to see few, if any, details on the major infrastructure items that always are a big challenge in Sherborn – water and wastewater. It is difficult to comprehend how the ZBA can rule on this permit request until the public water supply wells (MassDEP) and wastewater/septic system (Sherborn BOH) are independently reviewed and permitted.

Septic:

Our 1,500+ wastewater disposal systems in Sherborn, a town largely dependent on private wells and septic, represent the major past and ongoing sources of groundwater contamination within our borders. We as an appointed advisory committee have been studying groundwater quality issues and trends and recently prepared a summary of the situation which we would like to incorporate in this ZBA comment letter (see attached pdf file, "GPC Comments to the Select Board on our Sherborn Groundwater Quality Concerns – Nitrate and PFAS, 9-26-24"), which will help support several of our concerns on this project, which represents a major increase in septic density for this already water quality and quantity compromised area of Sherborn.

2. This project as proposed includes dwellings with 56 bedrooms, and MA Title V septic combined flows of 6,160 gpd. All of Sherborn is considered within a Title V "nitrogen sensitive area" due to private wells and septic, which by Title V limits septic flow to 440 gpd per acre. (see 310 CMR 15.214: *Designation of Nitrogen Sensitive Areas, (a) Public and Private Water Supply Protection Areas, and 15.215: Nitrogen Loading Limitations*). This project covers 7.24 acres (lot A 1.01 acres, lot B 6.23 acres), which corresponds to an "allowed" septic flow of 3,186 gpd, well below the higher proposed project flow.
3. The location of the proposed 6,160 gpd leach field appears to be located within the IWPA (Interim Wellhead Protection Area) of a MassDEP designated public water supply PWS well on an adjacent property (MassDEP PWS ID 3269024). Protection of this well, and numerous private wells along North Main Street, warrant careful consideration of this wastewater disposal location and size/loading.
4. For septic systems greater than 2,000 gpd flow, MassDEP guidance (*GUIDELINES FOR TITLE 5 AGGREGATION OF FLOWS AND NITROGEN LOADING 310 CMR 15.216*, available at: <https://www.mass.gov/doc/nitrogen-loading-and-aggregation-of-flows-310-cmr-15216-guidelines-0/download>) states, in part,: **(2) The Groundwater Quality Standard: 10 mg/l total nitrogen, and 10 mg/l nitrate-nitrogen.** Since a design flow of 2000 gpd or greater, but less than 10,000 gpd, may pose greater risks to public health and the environment, the Board of Health or DEP may require proponents of projects of this size to also meet the groundwater quality standard of 10 mg/l total nitrogen and 10 mg/l nitrate-nitrogen. The applicant must demonstrate, through a site-specific mass

balance analysis, that the proposed discharge will meet the standard of 10 mg/l total nitrogen and 10 mg/l nitrate-nitrogen at the facility's downgradient credit land property boundary or nearest sensitive receptor to ensure protection of public health and the environment. Sensitive receptors are public water supply wells, private wells, drinking water reservoirs and tributaries to drinking water reservoirs. (For more detail on mass balance analysis, see Section 7 below.). And further in this document: "To demonstrate that a proposed facility's discharge meets the 10 mg/l standards, the applicant must complete a hydrogeologic report with the following components: A) Hydrogeologic Assessment B) Mounding Analysis C) Analysis D) Groundwater Monitoring Program".

Given these multiple Title V requirements for proper design of a large septic system in a nitrogen sensitive area, the ZBA will want to ensure the project follows these protective measures, and the studies A-D noted above are conducted.

5. The location of the proposed leach field is sited under a large portion of the main access road serving the housing complex. Proper leach field design and long-term operation and maintenance mandate a pervious surface, not a heavily traveled paved road.

Water Supply:

The demonstration of an adequate water supply, considering both water quantity and quality, is normally step 1 for any housing construction project.

6. This proposal appears to rely on the design, MassDEP permitting, and installation of public water supply well(s) on an adjacent lot, close to a wetlands area (Sherborn ConCom permitting). Further, this same PWS also appears to be shared with, and required for, a second 40B housing complex (*Revised & Remanded Apple Hill Estates Development, Hunting Lane*). Given these multiple requirements for proper design of a public water supply in a nitrogen sensitive area, the ZBA will want to ensure the project water supply needs are fully met before approving the comprehensive permits.
7. Between the apparent locations of the PWS well(s) and the 41 North Main Street development, there exists a railroad (CSX) track, under which the PWS water supply piping will need to be accommodated. The ZBA should require the project to demonstrate all approvals have been acquired for the required drilling and installation of such piping.

Site Surficial Bedrock:

8. As apparent on MassGIS surficial bedrock mapping (ledge) of this site, considerable areas of near-surface bedrock ledge are present. Ledge blasting mitigation measures should be required by the ZBA to protect the underlying groundwater from known issues with blasting contaminants such as manganese and some blasting explosives components.