

Farm Road Homes Response to Tetra Tech Peer Review
October 27, 2023
Water Supply Items 51-56

The Plans indicate the Project will be served by 7 private water supply wells for the proposed 32 units. It is our concern that the information required to make reasonable conclusions on the viability of the proposed water supply is lacking and additional information is required to ensure the Project is feasible given the current development program. Furthermore, the density of the Project and site conditions/constraints provide minimal latitude for any deviations in the water supply scope related to unforeseen site conditions or impacts the system may have on the aquifer and abutting properties.

The following comments are offered specific to Project water supply and related analysis or lack thereof.

51. Clean potable water is perhaps the most important part of any development. In the case of Farm Road Homes, the only potential source is from the local bedrock aquifer. MA DEP has provided preliminary approval to allow this development to be considered a private supply rather than public. However, we recommend that in either case the water supply be evaluated during this initial permitting phase since well yield and water quality may have the potential to alter the Project scope based on well placement, impact and degraded water quality.

Water supply evaluation is not required at this point in the permitting process under local or state regulation. The Sherborn BOH has regulations for semi-public water supplies that have been used by market rate projects in the past. Imposing a requirement on this project to require water supply to be evaluated at this state would subject it to unequal treatment in violation of G. L. c 40B, s.

20. Furthermore, the Sherborn ZBA has recently issued a Comprehensive Permit (Coolidge Crossing) based on a theoretical municipal water supply which requires legislation and a significant further regulatory process.

52. The ZBA requested a comparison between a public water supply (PWS) and private water supply. We are not advocating one way or the other on a MA DEP decision, however, through discussion with DEP, this type of water supply has been allowed in several developments in the state including one previously in the

Town of Sherborn. A PWS is typically centralized, while a private supply in this case will be divided into individual groups. Based on the information presented below it is far more costly to operate a PWS than a private supply. In addition, water quality can change over short distances in bedrock and multiple parameters may require treatment in a centralized system. In this case, if the MA DEP considers this a PWS it would be considered a Community supply under 310 CMR 22.00 because it would serve greater than 25 persons as their primary residence year round. This requires a higher degree of permitting and long-term operation and maintenance than a Non-Transient or Transient public water supply, both of which do not serve the same population full time. The requirements for developing a PWS can be found in the DEP Guidelines for Public Water Supplies- Chapter 4 (Guidelines).

A PWS would require:

a) A Zone I protective radius that no activity other than passive recreation be allowed around the well head and the Zone I must be owned or controlled by the PWS. The minimum Zone I radius is 100 feet for a well that would produce 1,000 gallons per day (gpd). Typically, the Zone I for a residential development is based on Title V design flow based on the preliminary number (septic plans are not yet available) that would be for 76 bedrooms or 8,360 gpd. Using the Zone I formula from the Guidelines ($150 \times \log \text{ of pumping rate in gpd} - 350$) from a single well, the Zone I would be 238 feet or approximately 4 acres. However, it is typical to install more wells relatively close together to shrink the Zone I to a more palatable area exclusion area. b) For a Community supply, a back-up well is needed with the same Zone I requirements. Back-up wells are usually placed within 20 feet of the production well. c) A Community supply would require a 48-hour constant rate pumping test. If one well was proposed on this Project, it would be conducted at 8 gallons per minute (gpm) in order to be approved for 6 gpm. Both drawdown and recovery are measured, those measurements must meet specific requirements. This test in some cases requires the monitoring of other wells in the area to assess impact. d) Water quality testing requirements are attached and are referred to in the Guidelines. Prior to the test (when well is installed) basic water quality is tested along with volatile organic compounds and more recently inclusion of PFAS6 compounds (Method 537) in the testing regime. e) Once approved (the well yield, Zone I and any treatment needed) the PWS is overseen by a Certified Water Operator who ensures compliant operation of the PWS and performs required sampling. For a Community supply, this sampling schedule is more expensive than for other PWS types.

For a private supply, DEP has developed the Private Well Guidelines, which contains a Model Board of Health (BOH) Bylaw that can be adopted by local BOH. Review of the Sherborn BOH Bylaw for a potable water supply would indicate it is not as robust as the suggested DEP Bylaw. We anticipate the Sherborn BOH would consider these wells as semi-public. The Sherborn BOH requires a 4-hour pumping test with no drawdown measurements to show basic yield and basic water quality, along with volatile organic compounds analysis.

Based on the above analysis a site with a PWS is far more expensive for installation and long-term operation than the private supplies proposed.

No comment.

53. We recommend the proposed wells be installed and tested for both quantity, quality and potential impact during this initial permitting phase. The wells should be installed consistent with the requirements of a Community PWS, using similar methods described above. Protective setbacks should be implemented in the design meeting a minimum of Title 5, not Zone I requirements unless required by MA DEP in their final approval.

Tetra Tech's recommendation above is inconsistent with Sherborn BOH and MA DEP requirements and timing for market rate housing. Once again, this recommendation subjects the Project to unequal treatment in violation of G. L. c. 40B, s. 20.

54. The Applicant shall detail method for replenishing the proposed fire cistern. Additional information on its inspection and maintenance, including associated costs should be provided to ensure future homeowners are aware of the costs associated with the upkeep of the cistern.

The fill level of the cistern will be checked quarterly by the Sherborn Fire Department (as is their practice for other on-site cisterns in Sherborn). The cistern will be re-filled as necessary by using on site wells or a water truck if necessary. This will be detailed in the operations and maintenance manual provided by the developer to the association.

55. The Applicant shall clarify unit distribution to each of the private wells (which serve multiple units each) and if the affordable units will be evenly distributed across the wells. This is required to ensure the affordable units are not disproportionately affected in the event of a well failure.

The applicant as required by law will work with Mass Housing in the future to determine which homes will be designated as affordable. As a practical matter, the affordable homes will not be bunched up on the site and therefore will not all be on the same well or wells.

56. Well #6 and #7 are located adjacent to developed areas where potential exists for contamination of the wells. The Applicant shall clarify method for ensuring these wells are properly protected.

MA DEP has carefully reviewed the locations and has not expressed any concerns on the siting for these private wells. The identified well locations are in compliance with Sherborn BOH and MA DEP regulations.