



September 28, 2023

Mr. Richard S. Novak, Chair
Sherborn Zoning Board of Appeals
Town Hall
19 Washington Street

**Re: Farm Road Homes Residential Development – Comprehensive Permit
Engineering Peer Review – Traffic
55-65 Farm Road
Sherborn, MA**

Dear Mr. Novak:

Tetra Tech (TT) has performed a review of the specific submittal materials for the above-referenced Project as they relate to transportation to assist the Town of Sherborn Zoning Board of Appeals (Board) in its Comprehensive Permit review of the proposed Farm Road Homes development (the Project). The Project is located at 55–65 Farm Road in Sherborn, Massachusetts. The Applicant proposes the construction of 32 residential homes. TT is in receipt of the following materials:

- A plan (Plans) set titled “Comprehensive Permit Plan of Farm Road Homes at Farm Road” dated July 6, 2023, prepared by Creative land & Water Engineering, LLC
- A Traffic Study titled “Transportation Impact Assessment, Proposed Residential Development, 55 and 65 Farm Road, Sherborn, Massachusetts” dated December 2022, Prepared by Vanasse & Associates Inc. (VAI)
- A Firetruck Turning Analysis dated July 7, 2023, Prepared by Vanasse & Associates Inc. (VAI)
- A Presentation to the Zoning Board of Appeals titled “Farm Road Homes” dated August 1, 2023, Prepared by LDS Consulting Group.
- A Landscape Improvement Plan, dated July 17, 2023, Prepared by Ryan Associates

Tetra Tech has reviewed the December 2022 Traffic Impact Assessment (TIA) for conformance with standard professional practices in the Commonwealth of Massachusetts for the preparation of traffic impact studies for Projects of the size and nature of the proposed development. The Project was also reviewed for good engineering practice and overall site circulation.

The TIA generally conforms to accepted industry practices. However, there are several elements that are either missing, require updates or need further evaluation. Tetra Tech recommends that the appendix materials referenced in the TIA be provided including all supporting calculations and background data used in the technical analyses. Tetra Tech’s specific comments on the above-mentioned materials are as follows.

TRAFFIC REVIEW

Project Study Area Intersections

1. The TIA evaluated four intersections Farm Road, including Farm Road at Route 27 and Farm Road at Lake Street. Tetra Tech recommends that the Applicant provide an evaluation of the Farm Road/Great Rock Road intersection given its proximity to the site (approximately 100 feet west of the site property boundary).

Study Time Periods

2. The study includes an impact analysis of the weekday morning (7am-9am) and weekday evening (4pm-6pm) peak periods when the combination of site-generated traffic and volumes on the adjacent roadways is expected

to be greatest. The time periods chosen for detailed analysis are generally appropriate for the residential uses proposed.

Traffic Volumes

3. Automated traffic recorder counts (ATRs), including speed data, were conducted on Wednesday, September 14, 2022 and Thursday, September 15, 2022 on Farm Road, in the vicinity of the site. Turning movement count (TMC) data was also collected at the study area intersections on Wednesday, September 14, 2022 when schools were in session. To account for traffic volume fluctuations caused by the COVID-19 pandemic, the TIA applied a 5.9 percent adjustment (increase) to the observed traffic volumes, based on comparisons with pre-pandemic (2019) continuous count station data published by the Massachusetts Department of Transportation (MassDOT). No adjustments were made for seasonal fluctuations as the TIA indicates that September is an above-average traffic volume months based on MassDOT data. Tetra Tech generally agrees with this methodology. However, supporting traffic counts and adjustment calculations should be provided in the appendix material for the Town's review.

Public Transportation

4. The TIA states that regularly scheduled public transportation service is not provided within the Town of Sherborn. The TIA states that the Sherborn Council of Aging provides discounted taxi rides through an agreement with JFK Transportation. The trip generation estimates presented in the TIA do not take a credit (reduction) for transit use. Tetra Tech generally concurs with this methodology.

Crash Analysis

5. The TIA includes a crash analysis for the existing study intersections between 2015 and 2019 based on MassDOT crash data. The current MassDOT crash database includes data through 2022 (years 2021 and 2022 are still open and subject to change pending MassDOT's completion of processing all crash reports for these two years). Tetra Tech recommends that the Applicant expand the crash assessment to include the additional years of data. The backup crash data and crash rate worksheets should be provided in the appendix for the Town's review.
6. Tetra Tech is aware of concerns made by the public during the Zoning Board of Appeals public hearing process regarding potential solar glare and existing drainage and icy conditions on Farm Road as they relate to traffic. Tetra Tech recommends that the Applicant request crash reports for all reported crashes on Farm Road in the study area for the last 5-years to identify any potential safety deficiencies that may not have been reported in the MassDOT crash database.

Study Time Horizon

7. The TIA utilized a seven-year planning horizon (2029 Future Year condition) which is consistent with MassDOT traffic study guidelines.

Future No-Build Traffic Volumes

8. A one-and-a-half percent per year growth rate was applied to the 2022 Existing Conditions peak hour traffic volumes (for the 7-year forecast period from 2022 to 2029) to estimate peak hour traffic volumes in the planning year 2029 based on MassDOT count data. Tetra Tech generally agrees with this methodology, however backup calculations should be provided in the appendix.

9. The TIA indicated that the Applicant consulted with Town of Sherborn Planning staff to identify specific background development Projects for consideration in the development of future traffic volumes. The TIA determined that the traffic associated with the background projects identified could be generally accounted for in the background growth rate. Several residential projects totaling more than 200 additional residential units proposed by others north and west of the site may use the study area intersections to access the Dover-Sherborn High School and Middle School. Tetra Tech recommends that the Applicant discuss the potential traffic-related cumulative impact of these projects and the proposed Farm Road residential project at these locations.

Trip Generation

10. Vehicle trip generation estimates for the proposed Project were based on trip generation rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition for Land Use Code (LUC) 210 (Single-Family Detached Housing) applied to 18 units and LUC 215 (Single-Family Attached Housing) applied to 14 units. Tetra Tech generally agrees with this methodology. However, trip generation calculations should be provided in the appendix.
11. The TIA assumed 18 detached units plus 14 attached units. However, the site plans indicate 12 detached units plus 16 attached units. Tetra Tech recommends that the Applicant confirm the currently proposed building program.

Trip Distribution/Trip Assignment

12. The trip distribution patterns presented in the TIA were based on existing travel patterns and US Census Journey to Work data which is generally consistent with standard industry practice for the proposed residential land uses. However, the trip distribution calculations should be provided in the appendix.

Intersection Operational Analysis

13. The TIA states that it utilized the capacity analysis methodologies from the Highway Capacity Manual (HCM) 2010 using Synchro software. Tetra Tech recommends that the HCM 6th Edition methodology, the currently approved version of the HCM for unsignalized intersections, be used as the basis for the analysis. The intersection capacity analysis worksheets should be provided for the Town's review.

Sight Distance

14. The TIA states that it conducted a sight distance analysis at the proposed site driveway on Farm Road based on AASHTO's A Policy on Geometric Design of Highways and Streets, 7th Edition (2018). It is recommended that the supporting sight distance calculations be provided to the Town for review.
15. Tetra Tech recommends that the sight distance plans and profiles for each site driveway be added to the site plans to confirm that adequate sight distance will be provided at this location. Any existing vegetation or rock walls required to be removed to provide adequate sight lines should be identified for the Town's review given that Farm Road is designated as a Scenic Roadway.
16. The TIA recommends that any snow windrows at the proposed site driveway be promptly removed to sufficiently ensure adequate sight distance. Tetra Tech recommends that the Applicant also ensure that all proposed landscaping and signage internal to the site (where vehicle conflicts may occur) will not impede sight lines.

Site and Emergency Vehicle Access/Circulation

17. The TIA recommends that the site driveway and internal drives be a minimum of 22 feet if on-street parking will be restricted and 24 feet otherwise. The site plans show the site driveway and internal drives as 21 feet wide. Tetra Tech agrees with the TIA's recommendation to provide a minimum of 22 feet or 24 feet wide depending on the determination of on-street parking restrictions.
18. The Applicant included a turning analysis of a fire ladder truck. The analysis indicates that the fire truck would be required to reverse for an extended distance when accessing the rear of units 1-7. Tetra Tech recommends that the Applicant continue to review the site access and circulation with the Fire Department.
19. Tetra Tech recommends that the Applicant describe anticipated trash removal operations. Tetra Tech recommends that the Applicant conduct a truck turning analysis of trash removal vehicles to ensure that they can be adequately accommodated on-site without impeding site access and circulation particularly in areas where the site driveway would potentially require a trash truck to navigate the site in reverse.
20. The TIA recommends that the site driveway be signed and marked with Stop sign control consistent with the Manual on Uniform Traffic Control Devices (MUTCD). Tetra Tech agrees with this recommendation.
20. Tetra Tech recommends that the Applicant label the snow storage areas and ensure that adequate snow storage will be available on-site without impeding parking, site access and circulation.
21. Farm Road is designated by the Town as a Scenic Road and any improvements to Farm Road should be consistent with the Town's Scenic Road regulations to the extent feasible.
22. Tetra Tech recommends that the Applicant explore the feasibility of providing pedestrian and bicycle accommodations on Farm Road to connect to the proposed on-site sidewalks to be consistent with the Town's Master Plan and transportation circulation initiatives.
23. There are two existing at-grade rail crossings on the study area roadways – one located on Farm Road approximately one-quarter mile west of the site and one on Route 27 approximately one-half mile north of Farm Road. Tetra Tech is aware of a collision between a motor vehicle on Route 27 and a train that occurred in July 2022. Tetra Tech recommends that the Applicant inventory the existing conditions of these two rail crossings in the study area to identify any potential safety deficiencies as well as improvements that may be warranted.
24. The TIA recommends a school bus waiting area widened sidewalk should be provided on site. Tetra Tech recommends that the Applicant discuss the potential bus stop location(s) with the Dover-Sherborn School Department staff.
25. Tetra Tech recommends that the Applicant discussed the planned easement at the site for horse activity as it relates to access and potential horse crossings across Farm Road.

These comments are offered as guides for use during the Town's review and additional comments may be generated during the course of review. The Applicant shall be advised that any absence of comment shall not relieve them of the responsibility to comply with all applicable local, state and federal regulations for the Project. If you have any questions or comments, please feel free to contact us at (508) 786-2200.

Very truly yours,



Courtney E. Sudak, P.E.
Project Manager