



September 28, 2023
(Revised November 7, 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.

TT 11/7/23 Update

The Applicant has supplied TT with a revised submission addressing comments provided in our previous letter including the following documents:

- A Response to Comments letter (VAI Letter), dated October 18, 2023, prepared by VAI.

The supplemental traffic information and analyses were reviewed against our previous comment letter (September 28, 2023) and comments have been tracked accordingly. Text shown in gray represents information contained in previous correspondence while new information is shown in black text.

While many of Tetra Tech's initial traffic-related comments have been addressed, there are several outstanding comments related to the site layout design. Tetra Tech recommends that the site layout comments be addressed prior to Board approval.

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).
 - o *VAI 10/18/23 Response: As requested, the study area that was evaluated in the December 2022 TIA has been expanded to include the intersection of Farm Road at Great Rock Road. Turning movement counts were conducted at the intersection on Wednesday, October 11, 2023, from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Based on a review of MassDOT seasonal adjustment factors for Group U4-7 (the group that includes the functional classification for Farm Road), traffic volumes during the month of October are approximately 6.4 percent above average-month conditions and, as such, a seasonal adjustment was not required. Based on updated guidance from MassDOT,1 further adjustment of the traffic count data to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic was not required.*

For the purpose of this evaluation and to be consistent with the traffic volume networks and analyses that are presented in the December 2022 TIA, the October 2023 peak-hour traffic volumes for the Farm Road/Great Rock Road intersection were incorporated on to the 2022 Existing traffic volume networks and are shown on Figure 3R, with the corresponding 2029 No-Build and 2029 Build condition traffic volumes shown on Figures 4R and 7R, respectively. A detailed discussion of the methodology used to develop the 2029 No-Build and 2029 Build condition traffic volumes is presented in the December 2022 TIA. A summary of the traffic operations analysis for the intersection is provided in response to Comment 13.

 - **TT 11/7/23 Update:** *The VAI letter included a summary of existing and future projected traffic volumes at the Farm Road/Great Rock Road intersection. Additionally, the letter included capacity analyses which indicate that the Farm Road/Great Rock Road intersection operates at acceptable levels of service (LOS B or better) operations under existing and future year conditions (with or without the project). In our opinion, this comment is resolved.*

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.
 - o *VAI 10/18/23 Response: No response required.*
 - **TT 11/7/23 Update:** *In our opinion, this comment is resolved.*

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 month 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.

- *VAI 10/18/23 Response: The traffic count worksheets and seasonal adjustment data that were included in the Technical Appendix of the December 2022 are attached.*
 - **TT 11/7/23 Update: The VAI letter included the traffic counts and adjustment calculations requested. In our opinion, this comment is resolved.**

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.
 - *VAI 10/18/23 Response: No response required.*
 - **TT 11/7/23 Update: In our opinion, this comment is resolved.**

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.
 - *VAI 10/18/23 Response: The MassDOT motor vehicle crash analysis has been updated to include crash data through 2022 and to incorporate crash data for the intersection of Farm Road at Great Rock Road and the segments of Farm Road between Route 27 and Great Rock Road and from Great Rock Road to Lake Street. The expanded motor vehicle crash data is presented in Table 4R, with the back-up crash data and supporting Crash Rate Worksheets attached. The expanded crash analysis continues to indicate a low incidence of motor vehicle crashes at the study area intersections and along Farm Road within the study area, with the calculated motor vehicle crash rates at all of the study intersections and roadway segments found to be below the MassDOT statewide and District average crash rates for similar intersections and roadways for the MassDOT Highway Division District in which the intersections are located (District 3).*
 - **TT 11/7/23 Update: The VAI letter included an expanded crash analysis including the additional study area intersection (Farm Road/Great Rock Road) and additional years of MassDOT data requested. The expanded analysis indicates that the study intersections and roadway segments experience less than one crash per year resulting in crash rates well below the MassDOT Statewide and Districtwide averages. In our opinion, this comment is resolved.**
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.
 - *VAI 10/18/23 Response: A summary of reported motor vehicle crashes occurring along the segment of Farm Road between and including the intersections with Route 27 and Lake Street was provided by the Sherborn Police Department for the period 2018 through 2022 (the most recent complete five-year reporting period) and is summarized in Table 1.*

Table 1
MOTOR VEHICLE CRASH DATA^a

Roadway Segment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
<i>Farm Road between Route 27 and Lake Street (Inclusive)</i>	3	3	0	2	0	2	0	1	3	0	3	2	19

^aBased on motor vehicle crash data provided by the Sherborn Police Department

As can be seen in Table 1, 19 motor vehicle crashes were reported to have occurred along the roadway segment over the five-year review period, which is generally consistent with the MassDOT motor vehicle crash data (Table 4R) with consideration that not all crashes are reported to MassDOT. Further review of the data indicates no discernable trend that would suggest that there is an increase in crashes during the fall/winter months that could be attributable to solar glare/icy conditions. This observation is also affirmed by the MassDOT crash data which indicated that only two (2) crashes were reported along Farm Road from 2015 through 2022 where a snow/ice covered roadway was identified. These observations will be revisited once the detailed police reports are received.

- **TT 11/7/23 Update:** The VAI letter included a summary of reported crashes on Farm Road between and inclusive of the intersections with Route 27 and Lake Street for the most recent five-year period available based on preliminary police crash data from the Sherborn Police Department. The VAI letter states that there is no discernible crash trend attributable to solar glare or icy roadway conditions. The VAI letter states that the crash analysis will be revisited once the Applicant receives the requested detailed police crash reports from the Sherborn Police Department. Tetra Tech will reserve comment on the expanded crash analysis until the Applicant receives and evaluates the detailed crash reports from the Sherborn Police Department.

Study Time Horizon

7. The TIA utilized a seven-year planning horizon (2029 Future Year condition) which is consistent with MassDOT traffic study guidelines.
 - **VAI 10/18/23 Response:** *No response required.*
 - **TT 11/7/23 Update:** **In our opinion, this comment is resolved.**

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.
 - **VAI 10/18/23 Response:** *The calculations that form the basis of the development of the background traffic growth rate that were included in the Technical Appendix of the December 2022 are attached.*
 - **TT 11/7/23 Update:** **The VAI response letter included the background growth rate calculations requested. In our opinion, this comment is resolved.**
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.
 - **VAI 10/18/23 Response:** *The subject residential developments by others include the following:*

- *Apple Hill Estates (27 single-family homes, Hunting Lane)*
- *Coolidge Crossing (120 multifamily units, 84 & 86 Coolidge Street)*
- *Meadowbrook Commons (40 duplex units and 27 single-family homes, 104 Coolidge Street)*
- *The Pines Residences (60 multifamily units, 41 North Main Street)*

These projects will result in additional trips along the Farm Road corridor within the study area, including parents/caregivers transporting children to/from the Dover-Sherborn High School and Middle School. The number of school age children residing in these projects is relatively small and a subset of this small number will consist of middle school and high school age children. As such, the trips attributable to school-related traffic from these projects would be reflected in the general background traffic growth rate.

- **TT 11/7/23 Update:** The VAI letter provided a discussion of potential school-related trips generated by four area residential development projects. The VAI letter stated that the number of school age children residing in these four developments is relatively small and are accounted for in the general background traffic growth rate used in the TIA analyses. In our opinion, this comment is resolved.

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 on 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.
 - *VAI 10/18/23 Response: The detailed trip-generation calculations for the Project that were included in the Technical Appendix of the December 2022 are attached.*
 - **TT 11/7/23 Update:** The VAI letter included the trip generation calculations requested. In our opinion, this comment is resolved.
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.
 - *VAI 10/18/23 Response: The development program for the Project was refined subsequent to the preparation of the December 2022 TIA and now includes 16 detached units and 16 attached units (32 units total). The trip-generation calculations for the revised development program are summarized in Table 5R along with a comparison to the trip-generation calculations that form the basis of the December 2022 TIA.*

Table 5R
TRAFFIC VOLUME COMPARISON

Time Period	(A) Refined Development Program ^a	(B) December 2022 TIA Development Program ^b	(A – B) Difference
<i>Average Weekday:</i>	260	264	-4
<i>Weekday Morning Peak-Hour:</i>	17	18	-1
<i>Weekday Evening Peak-Hour:</i>	24	24	0

^aBased on ITE Land Use Codes (LUCs) 210, *Single-Family Detached Housing* (16 units), and 215, *Single-Family Attached Housing* (16 units).

^bObtained from Table 5 of the December 2022 TIA.

As can be seen in Table 5R, the refined development program resulted in an decrease of 4 vehicle trips on an average weekday (two-way, 24-hour volume) over the development program that was assessed in the

December 2022 TIA, with one (1) fewer vehicle trip expected during the weekday morning peak-hour and no (0) change during the weekday evening peak-hour.

The noted traffic volumes changes would be considered nominal and would not materially impact the findings of the December 2022 TIA as they relate to the reported impact of the Project.

- **TT 11/7/23 Update:** The VAI letter included the updated trip generation estimates for the current building program which indicate that the current building program generates traffic volumes similar to or less than the building program assumed in the TIA. In our opinion, this comment is resolved.

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.
 - **VAI 10/18/23 Response:** The trip distribution calculations that were included in the Technical Appendix of the December 2022 are attached.
 - **TT 11/7/23 Update:** The VAI letter included the trip distribution calculations requested. In our opinion, this comment is resolved.

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.
 - **VAI 10/18/23 Response:** The traffic operations analysis has been revised to use the methodologies of the Highway Capacity Manual 6th Edition,2 the results of which are summarized in Table 8R and include the expanded study area intersection (Farm Road at Great Rock Road), with the detailed analysis worksheets attached.

A review of Table 8R indicates no material changes from the analysis results that are presented in Table 8 in the December 2022 TIA. As can be seen in Table 8R, all movements on the Great Rock Road approach at the Farm Road/Great Rock Road intersection are predicted to operate at level-of-service (LOS) B during both peak hours under all analysis conditions, with negligible vehicle queuing predicted. All movements along Farm Road approaching the intersection are predicted to operate at LOS A during both peak hours under all analysis conditions, also with negligible vehicle queuing.

- **TT 11/7/23 Update:** The VAI letter included revised capacity analyses using HCM 6th edition methodology which indicates that the study area intersections are anticipated to generally operate at LOS D or better operations under future year conditions with or without the Project. The exception is the Farm Road westbound approach to Route 27 which is anticipated to operate with longer delays at LOS E operations. However, this approach to the intersection is anticipated to operate below capacity (volume to capacity ratio less than one). The incremental delay due to the Project is four seconds or less resulting in no change in LOS between future No Build (without project) and Build (with project) and vehicle queue increases of one vehicle or less during peak hours. The fire station driveway is located approximately 250 feet east of the Route 27/Farm Road intersection and the capacity analyses indicate that the 95th percentile vehicle queues are 7 vehicles or less (approximately 175 ft or less). Tetra Tech recommends that the Applicant discuss with the Sherborn Fire Department their experience responding to calls from the Farm Road Fire Station to determine what, if any, traffic enhancements for emergency vehicle access at the station are warranted as part of the project.

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.
 - **VAI 10/18/23 Response: The sight distance calculations are attached.**
 - **TT 11/7/23 Update: The VAI letter included the sight distance measurements but did not include the sight distance calculations requested. Tetra Tech recommends that the Applicant include the sight distance calculations for the Town's 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.
 - **VAI 10/18/23 Response: A sight triangle plan is attached that depicts the sight lines at the Project site driveway intersection with Farm Road in plan view. A sight line profile was not prepared as there are no permanent vertical obstructions within the sight triangle areas that exceed 3.5 feet in height and would inhibit the sight lines at the intersection. As recommended in the December 2022 TIA, trees and vegetation location within the sight triangle areas should be selectively trimmed or removed and maintained. As shown on the sight triangle plan, the subject vegetation is located within the Project site or the public right-of-way along Farm Road.**
 - **TT 11/7/23 Update: The VAI letter included an evaluation of horizontal sight distances. Tetra Tech continues to recommend that the horizontal and vertical sight distance plans and profiles be provided in the site plan package to document and confirm that adequate sight lines will be available and indicate to the Town and the contractor the areas which shall remain free of sight distance obstructions. Given the existing topography in this area, it will be critical that any proposed (or existing to remain) rock walls, fencing, signage and vegetation be limited so as not to obstruct sight lines.**
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.
 - **VAI 10/18/23 Response: Signs and landscaping to be installed within the Project site will be designed and maintained so as not to restrict lines of sight.**
 - **TT 11/7/23 Update: Tetra Tech recommends that the Applicant add a note to the site plans that states any signs, landscaping and snow windrows will not obstruct sight lines within the sight distance triangles.**

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.
 - **VAI 10/18/23 Response: No response required.**
 - **TT 11/7/23 Update: The Erosion Control Plan (Dated September 28, 2023 with revisions through October 5, 2023) shows 20 to 21 foot site driveway and internal site drive widths. Tetra Tech continues to recommend (consistent with VAI's recommendation) that the minimum site driveway and internal site drive widths be 22 feet if on-street parking will be restricted and 24 feet otherwise.**

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.
 - *VAI 10/18/23 Response: The Applicant has been and will continue to consult with the Fire Department as the Project advances through the approval process.*
 - **TT 11/7/23 Update:** The site layout shown in the Erosion Control Plan (Dated September 28, 2023 with revisions through October 5, 2023) continues to show internal site drives with no turnaround areas for emergency vehicles. Tetra Tech recommends that the Applicant obtain and provide written Fire Department approval of the proposed site access and circulation.
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.
 - *VAI 10/18/23 Response: Trash and recycling will be collected by a private hauling company and will be picked-up at each residence. Residents will store trash/recycling bins within their individual unit and will place the bins curbside within the driveway apron and outside of the traveled-way for pick-up on the collection day. A truck turning analysis for a trash/recycling vehicle is attached.*
 - **TT 11/7/23 Update:** Similar to Tetra Tech's Comment 18, the site layout shown in the trash/recycling truck turning analyses provided in the VAI letter show internal site drives with no turnaround areas for larger vehicles. Tetra Tech recommends that the Applicant explore the feasibility of providing site circulation that does not require larger vehicles to travel in reverse for extended distances.
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.
 - *VAI 10/18/23 Response: No response required.*
 - **TT 11/7/23 Update:** Tetra Tech recommends that the site plans include a note that all proposed traffic signage and pavement markings be MUTCD compliant.
21. 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.
 - *VAI 10/18/23 Response: A new storage plan is attached.*
 - **TT 11/7/23 Update:** The Erosion Control Plan (Dated September 28, 2023 with revisions through October 5, 2023) shows several snow storage areas that would require a snow plow to maneuver in a way that may be infeasible (located on the sides of the internal site drives rather than the ends of the internal site drives) depending on the type of plow to be used. Additionally, the largest identified snow storage area to the north of the visitor parking field would likely be unable to be accessed due to the proposed solar canopy over the visitor parking field. Tetra Tech recommends that the Applicant identify alternative snow storage areas on site to minimize impacts to site access and circulation.
22. 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.
 - *VAI 10/18/23 Response: The Applicant will comply with the Town's Scenic Road regulations to the extent feasible.*
 - **TT 11/7/23 Update:** The VAI letter states that the Applicant will comply with the Town's Scenic Road regulations to the extent feasible. Tetra Tech recommends that this be included as a Condition should the Board approve the Project.

23. 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.

- **VAI 10/18/23 Response:** *The Applicant will work with the Town to explore the feasibility of establishing pedestrian and bicycle accommodations along Farm Road that connect to the pedestrian pathways that are being established within the Project site.*
 - **TT 11/7/23 Update:** *The VAI letter states that the Applicant will work with the Town to explore the feasibility of establishing pedestrian and bicycle accommodations along Farm Road that connect to the pedestrian pathways that are being established within the Project site. Tetra Tech recommends that this mitigative action be included as a Condition should the Board approve the Project.*

24. 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.

- **VAI 10/18/23 Response:** *A review of the motor vehicle crash data for the railroad crossings of Route 27 and Farm Road was undertaken for the same eight-year period that is presented in Table 4R (2015 through 2022, inclusive). Based on this review, two (2) motor vehicle crashes were reported on the approaches to the railroad crossing of Farm Road, neither of which involved a collision with a locomotive or rail car, with one crash reported as a rear-end crash and the other reported as a vehicle backing into a fixed roadside object.*

Thirteen crashes were reported at the Route 27 railroad crossing over the eight year review period, two (2) of which involved a collision with a locomotive or rail car and both occurred in 2022. The initial information reported for both crashes indicated that driver error was a contributing factor, with the driver in the latest crash that occurred on July 22, 2022 observed to stop at the crossing signal and then slowly "creep" into the path of the on-coming locomotive.

An inventory of the traffic control devices at the at-grade railroad crossings of Route 27 and Farm Road was completed in October 2023. Based on this inventory, the following recommendations are offered and should be considered independent of the Project:

Route 27 Crossing

 - Refresh the stop-line and RXR pavement markings with high visibility thermoplastic markings
 - Relocate/install railroad crossing warning signs (W10-1) opposite the leading edge of the RXR pavement markings and positioned 100 feet from the centerline of the stop-line on the approach to the rail crossing.
 - Consider installing a side street rail crossing warning sign (W10-4) for motorists exiting the south driveway that serves 19 North Main Street.

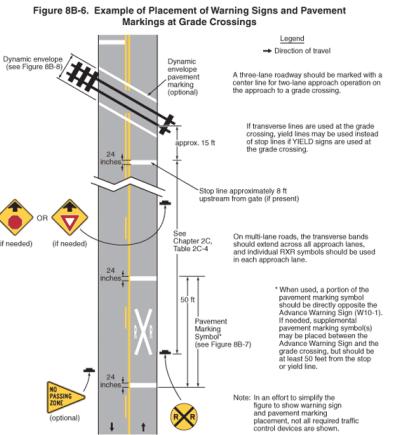


Figure 8B-6. Example of Placement of Warning Signs and Pavement Markings at Grade Crossings
Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, D.C.; 2009.

Farm Road Crossing

- Refresh the stop-line and RXR pavement markings with high visibility thermoplastic markings
- Relocate/install railroad crossing warning signs (W10-1) opposite the leading edge of the RXR pavement markings and positioned 100 feet from the centerline of the stop-line on the approach to the rail crossing.
- TT 11/7/23 Update: The VAI letter identified potential safety enhancements at the railroad crossings on Route 27 and Farm Road near the site. Tetra Tech recommends that the Applicant coordinate with the Board to identify which, if any, of these recommended measures be implemented as part of the Project. Any improvements should be reviewed and approved by the Sherborn DPW and potentially the owner(s) of the rail line in writing and provided to the Board.

25. 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.

- VAI 10/18/23 Response: The Applicant will discuss the location of the school bus stop for the Project with the Dover-Sherborn School Department and will provide the appropriate accommodations at the stop location.
- TT 11/7/23 Update: The VAI letter states that the Applicant will discuss the school bus stop location for the Project with the Dover-Sherborn School Department and will provide the appropriate accommodations at the stop location. Similar to Tetra Tech Comment 18 and 19, the site circulation design requires larger vehicles to reverse direction. Tetra Tech recommends this be taken into consideration as the Applicant addresses all of Tetra Tech's site layout comments.

26. 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.

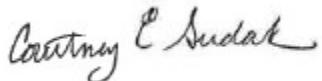
- VAI 10/18/23 Response: In conjunction with the Project, an easement to allow for equestrian access through the Project site for two specific people is provided and includes access to Farm Road.
- TT 11/7/23 Update: Tetra Tech recommends that the Applicant describe the proposed access design to this easement area (i.e., driveway, horse path, etc.). Additionally, it is recommended that the Applicant determine whether or not a horse crossing across Farm Road will be anticipated and, if so, if adequate sight distance will be provided and what safety measures

Farm Road Homes Residential Development
Engineering Peer Review - Traffic
55-65 Farm Road
November 7, 2023 Review Letter

should be implemented (i.e., advance warning signage, pavement markings, etc.) at the horse crossing.

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

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