TETRA TECH

March 28, 2025

Mr. John J. McNicholas, Chair
Medfield Zoning Board of Appeals
Town Hall
459 Main Street
Medfield, MA 02052

Re: Winder Estates Residential Development – Comprehensive Permit
Engineering Peer Review – Traffic
86 Plain Street
Medfield, Massachusetts

Dear Mr. McNicholas:

Tetra Tech (TT) has reviewed specific submittal materials for the above-referenced Project to assist the Medfield Zoning Board of Appeals (Board) in its Comprehensive Permit review of the proposed Winder Estates development. The following letter provides comments generated during our review of Applicant submittals and generally focus on substantive concerns that speak to issues whose eventual resolution may substantially impact Project design or could otherwise result in potentially unsafe conditions or unanticipated impacts.

The Project includes development of 24 single-family residential homes on approximately 14.86 acres of land along Plain Street. The site is accessed from Plain Street and consists of one existing single-family dwelling. The Project also consists of raising existing dwellings, construction of approximately 1,800 linear feet of roadway, and associated driveways. Each unit is proposed with a porch, two car garage and additional two parking spaces in the driveway.

Our review is based on materials received from the Board comprising the following pertinent documents:

- A plan set (Plans) titled "Winder Estates Residential Development M.G.L. C. 40B Comprehensive Permit Project", dated February 3, 2025, prepared by Merrill Engineers and Land Surveyors (MELS).
- A Narrative titled "Winder Estates Design Narrative", not dated, prepared by MELS and BF Architects.
- A Traffic Report titled "86 Plain Street Traffic Impact Study ", dated October 2024, prepared by Howard Stein Hudson (HSH).
- A Response Letter from MassHousing Agency dated December 10, 2024.

Tetra Tech has reviewed the October 2024 Traffic Impact Study (TIS) 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 TIS generally conforms to accepted industry practices. However, there are several elements that are either missing, require updates or need further evaluation. Tetra Tech's specific comments on the above-mentioned materials are as follows.

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TRAFFIC REVIEW

Project Study Area Intersections

1. The TIS evaluated three (3) intersections along Plain Street in Medfield – High Street (Route 27), the Site Driveway and Briar Hill Road – and two (2) intersections along Granite Street in Walpole – Kittredge Street and Lincoln Road. The study area intersections chosen for analysis are appropriate for the anticipated building program and location.

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 use proposed.

Traffic Volumes and Data Collection

3. Automated traffic recorder counts (ATRs), including speed data, were conducted on Plain Street in the vicinity of the site from Tuesday, April 30, 2024 through Thursday, May 2, 2024. The TIS states that turning movement count (TMC) data was collected at the study area intersections on Tuesday, May 7, 2024 when schools were in session. The traffic count data sheets indicate a mix of TMC count dates (April 30, 2024 and May 7, 2024). Tetra Tech recommends that the Applicant confirm the TMC count dates.
4. The Plain Street speed data provided in the TIS indicates an 85th percentile speed (35 mph) above the prima facie speed limit of 30 mph. Tetra Tech recommends that the Applicant work with the Town to explore the feasibility of implementing traffic calming measures to reduce the travel speeds to not exceed the regulatory speed limit.
5. The TIS states that no adjustments (increase) were applied to the observed traffic volumes to account for seasonal fluctuations based on data published by the Massachusetts Department of Transportation (MassDOT). Tetra Tech generally concurs with this methodology.

Crash Analysis

6. The TIS includes a crash analysis for the existing study intersections between 2017 and 2021 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 review the two additional years of data to confirm the findings are consistent with the 2017 through 2021 data. The backup crash data should be provided for the Town's review.

2031 No Build Condition

7. The TIS used a 1 percent per year background growth rate in developing the future 2031 No Build traffic volumes. Tetra Tech generally concurs with this assumption.
8. The TIS states that they considered two background development projects when developing the 2031 No Build traffic volume projections (Medfield State Hospital and 981/191 East Street, Walpole). Given the locations of these background projects relative to the study area, the TIS assumed the traffic associated with these two developments is accounted for in the general one percent per year background growth rate. If not done so already, Tetra Tech recommends that the Applicant confirm with Town of Medfield and Town of Walpole Planning Staff that there are no other planned development projects that should be considered.

9. The TIS did not identify any key planned roadway infrastructure improvements within the study area. If not done so already, Tetra Tech recommends that the Applicant confirm this assumption in writing with Town of Medfield and Town of Walpole Public Works Staff.

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 24 units. Tetra Tech generally agrees with this methodology.

Trip Distribution

11. Vehicle trip distribution estimates for the proposed Project were based on US Census Journey-to-Work data. Tetra Tech generally agrees with this methodology.

Vehicle Operations Analysis

12. The TIS conducted capacity analyses at the study area intersections for the weekday morning and weekday evening peak hours using Synchro traffic analysis software and methodologies outlined in the Highway Capacity Manual, 6th Edition. Tetra Tech generally agrees with this methodology.

Sight Distance

13. The TIS includes a sight distance analysis of the proposed site access driveway intersection with Plain Street based on AASHTO's *A Policy on Geometric Design of Highways and Streets, 7th Edition* (2018). Tetra Tech generally agrees with this methodology. However, we recommend that the Applicant provide the supporting sight distance calculations to the Town for review. The Plain Street speed data provided in the TIS indicates an 85th percentile speed (35 mph) above the prima facie speed limit of 30 mph. Tetra Tech recommends that the sight distance calculations be based on the observed travel speeds (35 mph) rather than the regulatory speed limit.
14. The TIS included an assessment of intersection sight distance (ISD) for the site egress-only driveway. Tetra Tech recommends that the Applicant provide a complete sight distance evaluation of the proposed site access points (entrance and exit) to include ISD and stopping sight distance (SSD). The Applicant should provide the sight distance calculations based on the observed 85th percentile travel speeds as well as horizontal and vertical profiles to the Town for review. Any sight lines that extend into private property outside of the public right-of-way may require a sight line easement to ensure that the sight distance triangles remain clear of obstructions.
15. Tetra Tech recommends that the sight distance plans and profiles for the site access roadway be added to the final site plans to confirm that adequate sight distance will be provided at this location to document the areas to be cleared of obstructions. Additionally, the Applicant should ensure that all proposed landscaping and signage internal to the site (where vehicle conflicts may occur) will not impede sight lines.
16. The TIS recommends that any snow windrows at the proposed site driveway be promptly removed to sufficiently ensure adequate sight distance. Tetra Tech generally concurs with this recommendation.

Site and Emergency Vehicle Access/Circulation

17. Access to the site is proposed via an ingress-only 15-foot wide driveway and an egress-only 15-foot wide driveway on Plain Street separated by approximately 75 feet. The driveways merge approximately 50 feet into the site. Tetra Tech recommends that the Applicant explore the feasibility of providing a single, full-access driveway to minimize the number of curb cuts on Plain Street, enhance sight lines and maximize the spacing distance between the site driveway and adjacent Briar Hill Road/Plain Street intersection.
18. Tetra Tech recommends that the Applicant conduct a turning analysis of the largest emergency, trash and delivery vehicles anticipated to use the site to confirm that the site access roadway design can

accommodate the Project as the ingress-only and egress-only site access is proposed at 15-foot width. Tetra Tech recommends that the Applicant review and provide written confirmation from the Medfield Fire Department (MFD) related to the site access and circulation to confirm that the Town's largest emergency apparatus can adequately access the site.

19. Tetra Tech recommends that the Applicant inventory the paved width of Plain Street and identify any locations between Route 27 and the Walpole Town line that falls below the minimum roadway width guideline reported by AASHTO for low-volume roadways (18 feet). If the width falls below the AASHTO minimum, Tetra Tech recommends that the Applicant work with the Town to identify potential solutions to increasing the roadway width to provide safer and more efficient travel along Plain Street particularly in areas where on-street parking may regularly occur such as the Medfield Community Gardens facility.
20. The Plans indicate that the site access roadway will be 20 feet wide. Tetra Tech recommends that on-street parking be prohibited and signed along the site access roadway so that site access and circulation is not impeded.
21. Tetra Tech recommends that vehicles exiting the Project site be placed under Stop-sign control and that all signs and pavement markings installed within the Project site be consistent with the Manual on Uniform Traffic Control Devices (MUTCD).
22. 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, sight distance and circulation.
23. Tetra Tech recommends that the Applicant coordinate with the Medfield School Department to identify appropriate the pick-up location(s) near or within the site. Tetra Tech also recommends that the Applicant explore the feasibility of extending the proposed on-site sidewalks to the intersection with Plain Street to provide a continuous pedestrian travel path. The current sidewalk layout dead-ends at Unit 4, approximately 700 feet from Plain Street.
24. There are currently no dedicated pedestrian or bicycle accommodations along Plain Street in the site vicinity. Tetra Tech recommends that the Applicant explore the feasibility of implementing such accommodations in the study area.
25. Any existing vegetation or rock walls required to be removed as part of the Project should be identified for the Town's review given that Plain Street is designated as a Scenic Roadway.

These comments are offered as guides for use during the Town's review and additional comments are likely to be generated during the course of review. The Applicant shall be advised that any absence of comment shall not relieve him/her 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

Courtney E. Sudak, P.E.
Project Manager

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