

September 11, 2023

NEX-2300229.00

Ms. Allison Rees, P.E.
Underwood Engineers
25 Vaughan Mall
Portsmouth, New Hampshire 03801

SUBJECT: Traffic Peer Review – Proposed Multifamily Residential Development
242 South Main Street (NH Route 152) – Newmarket, New Hampshire

Dear Ms. Rees:

Greenman-Pedersen Inc. (GPI) previously performed a review of the transportation impacts associated with the proposed 32-unit age-qualified multifamily residential development to be located at 242 South Main Street (NH Route 152) in Newmarket, New Hampshire in a letter dated August 23, 2023. The review focused on the following documents:

- *Traffic Impact Study, Proposed Multifamily Residential Development, 242 South Main Street (NH Route 152), Newmarket, New Hampshire*; prepared by Vanasse & Associates, Inc. (VAI); May 22, 2023.
- *Parking/Pavement Plan for Residential Development*, prepared by Beals Associates, PLLC; Jan 2023.

Subsequent to this review, the Applicant's traffic consultant, VAI has prepared additional documents to respond to GPI's review comments. These documents include:

- *Response to Traffic Peer Review, Proposed Multifamily Residential Development, 242 South Main Street (NH Route 152), Newmarket, New Hampshire*; prepared by Vanasse & Associates, Inc. (VAI); September 6, 2023.

All comments requiring responses have been addressed by VAI and are provided below:

Motor Vehicle Crash Data

5. Crash data was requested from the Newmarket Police Department but had not yet been received. A supplement to the Traffic Impact Study will be provided once the data is received. **In the interim, data for the following two intersections should be investigated from available NHDOT crash data to determine if there any identifiable crash patterns:**
 - a. NH Route 152 at Grant Road
 - b. NH Route 152 at the Newmarket Elementary School Driveway

VAI Response: *A follow up request for motor vehicle crash data has been sent to the Newmarket Police Department. NHDOT was also contacted regarding motor vehicle crash data at the specified intersection as public crash information appears to have been removed from the NHDOT website.*

GPI Final Comment: **As stated in the Traffic Impact Study, a supplement to the Traffic Impact Study will be provided once the crash data from the Newmarket Police Department is received, which is sufficient.**

Trip Generation

9. Based on the Project Description in the Traffic Impact Study, the existing single-family home (242 South Main Street) will be removed to accommodate the project, however, it appears the building is still included on the Parking/Pavement Plan dated January 2023. **The Applicant should clarify whether or not the existing single-family home will be razed or remain.** Regardless, the Applicant has not applied any credit for the trips generated by this use, nor would it make an impact either way due to the low traffic it generates.

VAI Response: *The existing single-family home located at 242 South Main Street will be retained and will be situated on a separate lot that will be created through the subdivision of the subject property to create two (2) lots. Traffic volumes associated with the existing home are reflected in the traffic volume data that forms the basis of the May 2023 TIS.*

GPI Final Comment: Response acknowledged. No further information is needed.

Trip Distribution

10. The Applicant has based the distribution of site-generated trips on U.S. Census Journey-to-Work data for residents of the Town of Newmarket and then refined based on review of existing traffic patterns. Below is a table exhibiting the trip distribution calculated by GPI based on Journey-to-Work data and the distribution utilized by VAI. It should be noted that the Trip Distribution section of the Appendix inadvertently provides the growth rate calculations instead of the Journey-to-Work back-up. **GPI requests that the Trip Distribution calculations be provided.**

TABLE 1
Trip Distribution Comparison

Roadway	Direction To/From	GPI Calculations	VAI Study
NH Route 152	East	80%	75%
NH Route 152	West	5%	10%
Grant Road	South	15%	15%
TOTAL	--	100%	100%

VAI Response: *The trip distribution worksheet is attached.*

GPI Final Comment: GPI reviewed the journey-to-work data provided by VAI and it is deemed satisfactory. Minor discrepancies in the expected travel routes resulted in the minor discrepancies in the overall distribution. The difference in distribution is not expected to have an impact on the end result of the analysis. No further information is needed.

Sight Distance Analysis

12. VAI states that “with the selective trimming/removal of trees and vegetation located within the sight triangle areas of the Project site driveway, the available lines of sight to and from the Project site driveway intersection with NH Route 152 were found to exceed the recommended minimum sight distance to function in a safe manner (SSD).” **While GPI agrees with the required minimum distances based on 40 mph, the sight triangle areas should be provided on a sight line diagram based on the proposed plan and profile of the finished grade at the proposed site driveway. The vegetation to be cleared should be indicated on the diagram. Additionally, it is unclear as to where the driveway was assumed to be located, considering the driveway shown on the Concept Site Plan 2 provided in the Appendix of the Traffic Impact Study is in a different location than the driveway shown on the Parking/Pavement Plan dated January 2023.**

VAI Response: A Sight Triangle Plan for the Project site driveway is attached and reflects the current driveway location.

GPI Final Comment: A Sight Triangle Plan was provided showing intersection sight distances of 310 feet west of the site driveway and 400 feet east of the site driveway. Vegetation within these triangles must be cleared and maintained in order to achieve minimum intersection sight distance (ISD) requirements for safe operation based on a speed of 40 miles per hour (mph). The 85th percentile speeds were documented as 37 mph in the Traffic Impact Study; accordingly, the use of 40 mph is conservative. It should be noted that the desirable ISD (445 feet) to the west of the site driveway will not be achieved based on the clearing shown on the Sight Triangle Plan. Although minimum ISD requirements will be met, any additional clearing would be preferred for the proposed type of use.

Site Access & Parking

13. It appears that the Concept Site Plan 2 provided in the Traffic Impact Study has progressed since submission of the Study.
- The Concept Site Plan 2 in the Traffic Impact Study provides spaces for 33 vehicles.
 - The Parking/Pavement Plan appears to provide spaces for 34 vehicles.

GPI concurs that the proposed number of parking spaces (34 spaces) is in excess of the required 32 parking spaces (1 space per unit) for the elderly housing based on Chapter 32, Appendix B, §3.02. – Parking, of the Municipal Code of the Town of Newmarket. **The proposed number of parking spaces should also be compared with the ITE *Parking Generation Manual, 5th Edition for Land Use Code (LUC) 252 (Senior Adult Housing - Multifamily)*.** It should be noted that there does not appear to be any guest parking and the parking provided only exceeds the number of proposed units by 2 spaces.

VAI Response: A review of parking demand data published by the ITE for LUC 252, Senior Adult Housing – Multifamily, indicates that the observed peak parking demand for a multifamily senior housing community is 0.61 parking spaces per unit and the 85th percentile peak parking demand is 0.67 parking spaces per unit. As such, the ITE parking demand data affirms that the proposed parking supply is sufficient to accommodate the anticipated peak parking demand of the Project.

GPI Final Comment: Based on the ITE *Parking Generation Manual*, the provided parking spaces (34 spaces) exceeds the average peak demand (20 spaces) by 12 spaces and exceeds the 85th percentile peak demand (21 spaces) by 11 spaces. Accordingly, based on data provided in the ITE *Parking Generation Manual* for Senior Adult Housing (LUC 252), sufficient parking will be provided. No further information is needed.

14. As designated on the Parking/Pavement Plan dated January 2023, the distance between the proposed site driveway and the Grant Road intersection measures ± 100 feet from center to center or ± 50 feet from edge of right-of-way. Per the Newmarket Site Plan design standards, Section 3.01 – Vehicle Access, *Driveways shall not be located closer than 50' from the edge of the right-of-way of an intersecting street.* Accordingly, the driveway distance appears to meet the Town standards. It should be noted that the driveways are aligned as such that the left-turn movements out of the minor road approaches do not conflict with one another, and due to the low traffic volumes projected at the proposed site driveway, the proximity of the two intersections is not of concern. **Although the minimum driveway offset requirement appears to be satisfied, the Applicant's engineer should provide a supplemental/supporting sketch or site plan revision that graphically depicts the 50-foot offset reference in relation to the ROW line of Grant Road.**

VAI Response: *A sketch plan is attached that illustrates that the Project site driveway location exceeds the 50-foot off-set per Section 3.01 – Vehicle Access, Driveways, of the Newmarket Site Plan design standards.*

GPI Final Comment: Response acknowledged. No further information is needed.

Pedestrian Access

15. The proposed crosswalk on the Parking/Pavement Plan is shown on the east side of the Newmarket Elementary School Driveway. It is our understanding that, based on discussions at the August 8, 2023 TRC Meeting, Newmarket DPW officials prefer the proposed crosswalk on the west side of the school driveway, eliminating the short stretch of sidewalk along Route 152, with a concrete tipdown and truncated down on the south side. **This update should be incorporated on a revised Site Plan.**

VAI Response: *A revised Parking/Pavement Plan is attached that reflects the relocation of the proposed crosswalk to the west side of the Newmarket Elementary School driveway. In addition, as requested at the TRC meeting, VAI conducted sight distance measurements at the relocated crosswalk location, the results of which are summarized in the table below:*

CROSSWALK SIGHT DISTANCE MEASUREMENTS^a

Intersection/Sight Distance Measurement	Feet	
	Required Minimum (SSD)	Measured
<i>NH Route 152 at the Proposed Crosswalk</i>		
<i>Stopping Sight Distance:</i>		
NH Route 152 approaching from the east	305	372
NH Route 152 approaching from the west	305	460
<i>Intersection Sight Distance:</i>		
Looking to the east from the north side of the Crossing	305	321
Looking to the west from the north side of the Crossing	305	372
Looking to the east from the south side of the Crossing	305	460
Looking to the west from the south side of the Crossing	305	460

^aRecommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on an approach speed of 40 mph along NH Route 152.

As can be seen in the table above, the available sight distances to and from the proposed crosswalk exceeds the recommended minimum distances for safety. As discussed at the July 11, 2023 Planning Board hearing, the crosswalk should include the installation of a pedestrian actuated Rectangular Rapid Flashing Beacon (RRFB) and should include School Zone pedestrian crossing warning signs at and in advance of the crosswalk.

GPI Final Comment: GPI reviewed the revised Parking/Pavement Plan that reflects the relocation of the proposed crosswalk to the west side of the Newmarket Elementary School driveway. GPI has no concern with the location of the crosswalk and is in agreement with the installation of a pedestrian actuated Rectangular Rapid Flashing Beacon (RRFB) as well as School Zone pedestrian crossing warning signs at and in advance of the crosswalk.

Should you have any questions or require additional information, please feel free to contact me at (603) 766-5229 or bbollinger@gpinet.com.

Sincerely,

GREENMAN-PEDERSEN, INC.



Robert E. Bollinger, P.E., PTOE
Traffic Engineering Department Head