

December 30, 2014

Ms. Emilie Cademartori, Coordinator  
Town of Wenham  
Zoning Board of Appeals  
Wenham Town Hall, 2<sup>nd</sup> Floor  
138 Main Street  
Wenham, Massachusetts 01984

**Re: Traffic Impact Study Peer Review  
Maple Woods Age Restricted (+55) 40B Development  
Wenham, MA**

Ms. Cademartori:

Weston & Sampson is pleased to provide this letter report related to our peer review of the Traffic Impact Study performed by MDM Transportation Consultants, Inc. (MDM) in November of 2014 for the Maple Woods Age Restricted 40B Development at 62 Maple Street in Wenham, MA. The Study was performed to determine if the traffic analysis for the development is appropriate for the given use and that the development has no adverse effects on this location due to traffic generated by the proposed use.

We began our preliminary review of the following materials as submitted to the Board of the following major documents provided by the Town of Wenham:

- Traffic Impact Study by MDM Transportation Consultants, Inc.
- ZBA Application and Plans by Meridian Associates, Inc.

The Proponent generated the anticipated traffic volumes for the proposed 60 unit facility utilizing the ITE Trip Generation Manual, 9<sup>th</sup> Edition, based on Land Use Code (LUC) 251 – Senior Adult Housing – Detached. After review of local MassDOT permanent counting stations the Proponent noted that the Average Yearly Growth calculated to -1.2% per year. A 1% Growth Rate was utilized per year as a conservative approach to the evaluation. Both the Trip Generation and the Growth Rate calculations are reasonable for this development. ***We concur with the LUC chosen for this project and the Growth Rate utilized.***

Existing observed traffic speeds were taken by radar recorder to determine the average travelling speed of vehicles during the study period. The results show that the 85<sup>th</sup> percentile speed is approximately 39 MPH in both directions versus the posted speed limit of 30 MPH. As a result the proponent has spoken with the Wenham Police Department and has recommended the installation of speed radar assemblies along Maple Street. ***We concur with this recommendation.***

The Proponent gathered turning movement counts (TMC's) at the existing driveway at 68 Maple Street (location of proposed site entrance), the two driveways for Burnett's Garage (east and west) and the signalized intersection of Maple Street/Route 97/Cherry Street on weekday peak hours in May and June 2014. As is standard procedure for a MassDOT type study, traffic volumes at the nearest MassDOT permanent count stations to the project site were reviewed for seasonal variations. It was determined that the traffic volumes at the nearest permanent count stations, during the latest four years of published counts, showed that the counts in May and June (period when counts were taken for this study) of those years were above average traffic months. As a result there was no seasonal adjustment made to bring the recently gathered counts down. **We concur with this decision.**

The actual TMC's were evaluated to determine the Level of Service (LOS) of the intersections for the AM and PM Peak Hours of the day, typically between 7-9 AM and 4-6 PM. The signalized intersection and the existing/proposed Tee intersections representing the driveway of the proposed development and the existing Burnett driveways were evaluated for the following conditions:

- Existing Conditions (AM/PM)
- Future NO BUILD (AM/PM of existing volumes with 1.0% growth rate added for 5 years)
- Future BUILD (AM/PM of Future NO BUILD plus anticipated site generated traffic)

The LOS for the signalized intersection of Maple Street/Route 97/Cherry Street indicates a LOS C for all the scenarios listed above with little difference in the seconds of delay in each scenario. The evaluations of the proposed tee intersections at the site driveway and the east and west driveways at Burnett's indicate that the proposed site driveway will operate at a LOS B for the AM and PM peak hours while the east Burnett driveway operates at a LOS A for the AM and PM peak hours and the west Burnett driveway operates at a LOS B for the AM peak hour and a LOS A for the PM peak hour. It should be noted that all LOS B locations above are borderline LOS A with one second of delay difference. See the table below for results of the LOS evaluation. **We have reviewed the LOS evaluation performed and concur with the results.**

INTERSECTION	2014 EXISTING		2019 NO BUILD		2019 BUILD	
	PEAK HOUR	LOS	DELAY	LOS	DELAY	LOS
<b>ROUTE 97/MAPLE/CHERRY</b>						
AM PEAK HOUR	C	22	C	24	C	25
PM PEAK HOUR	C	24	C	25	C	26
<b>MAPLE/BURNETT EAST DRIVEWAY</b>						
AM PEAK HOUR	A	10	A	10	A	10
PM PEAK HOUR	A	<5	A	<5	A	<5
<b>MAPLE/BURNETT WEST DRIVEWAY</b>						
AM PEAK HOUR	B	11	B	11	B	11
PM PEAK HOUR	A	9	A	9	A	10
<b>MAPLE @ SINGLE SITE DRIVE (68 MAPLE ST)</b>						
AM PEAK HOUR	N/A	N/A	N/A	N/A	B	11
PM PEAK HOUR	N/A	N/A	N/A	N/A	B	12

In addition to the entrance/exit traffic evaluation we looked at the **site circulation** as a part of the traffic peer review. In general, the circulation works for passenger car vehicles and single unit trucks (SU-30) and appears tight for tractor trailer movements (WB-50). The **entrance driveway** appears to work for passenger car vehicles and single unit trucks (SU-30) but the right turns into the site and the right turns out of the site do not appear to work for tractor trailer movements (WB-50). **The Proponent should confirm with AutoTurn templates that tractor trailers, that may be making deliveries to the site, and appropriate Town of Wenham emergency apparatus can safely make the required turns into and exiting the site as well as within the confines of the site circulation.**

The proponent has investigated the site distance as it relates to the proposed site driveway. Sight distance for vehicles approaching the site are recommended based on safe Stopping Sight Distance (SSD) or the amount of distance required to see an obstruction or vehicle at the driveway, react and be able to stop before hitting the object. AASHTO sets the SSD requirements from the site driveway based on the travel speed of the vehicles on Maple Street. The recommended safe Stopping Sight Distance (SSD) for 30 MPH (posted speed) is approximately 205 feet, for 35 MPH (average observed speed) approximately 255 feet and for 39 MPH (85<sup>th</sup> percentile observed speed) a distance of approximately 300 feet. The available sight distance is approximately 400 feet in both directions. Sight distance for vehicles leaving the site is based on Intersection Site Distance (ISD) or the distance required for the stopped driver at the driveway to see the oncoming vehicle on Maple Street and be able to safely perform a left or right turn onto Maple Street. AASHTO also sets the ISD requirements from the site driveway based on the travel speed of the vehicles on Maple Street. The recommended ISD for 30 MPH (posted speed) is approximately 205 feet, for 35 MPH (average observed speed) approximately 255 feet and for 39 MPH (85<sup>th</sup> percentile observed speed) a distance of approximately 295 feet. The available sight distance is approximately 400 feet in both directions. **We have been to the site and concur with the available lines of sight noted by the Proponent and also concur with their requirement to selectively clear some of the vegetation at the site driveway and the need for any proposed plantings to be under two feet in height to conserve the sight distances.**

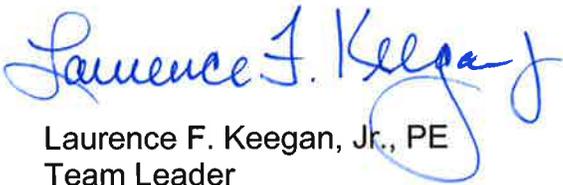
The proposed development of 60 units is proposing 66 parking spaces. This equates to a parking space rate of approximately 1.1 spaces per unit. It has been our experience that a typical 40B apartment complex utilizes approximately 1.5 spaces per unit. An average rate for senior housing is reported to be less than 1.0 space per unit including staff and visitor parking. **Therefore, we concur with the 66 parking spaces being supplied for this 60 unit development.**

In conclusion, it is our opinion that the traffic evaluation for the site was performed according to appropriate criteria (MassDOT procedures for traffic studies) and that the traffic generated by the proposed site will not deteriorate the background traffic appreciably beyond what should be anticipated in a NO Build scenario for a 5-year window of time. We are also in agreement that the reduced parking rate of 1.1 vehicles per unit is appropriate for this site given the type of development and documented historic data available through ITE and local developers. We also recommend that the Proponent review the site driveway and site circulation for turning movements by appropriate vehicles to ensure they will be able to circulate within the site confines and access/egress the site within the proposed curbed limits of the driveway and are able to access/egress the site within the paved limits of Maple Street.

Weston & Sampson appreciates the opportunity to present our findings. If you have any questions or require additional information please call me. I may be reached at 978-977-0110 x7456.

Very truly yours,

**WESTON & SAMPSON**

A handwritten signature in blue ink that reads "Laurence F. Keegan, Jr." with a stylized flourish at the end.

Laurence F. Keegan, Jr., PE  
Team Leader

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