
To: Mr. Richard Gosselin, Chairman
Millbury Planning Board
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Millbury, Massachusetts 01527

From: Evan G. Drew, P.E.* PTOE
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File: Rice Pond Village
Traffic Impact Study
Comment Response
Peer Review

Date: November 19, 2021

Stantec Consulting Services, Inc. (“Stantec”) has reviewed the *Responses to Stantec’s Comments Relative to Traffic Study for Rice Road Residential Development Project* by AK Associates dated November 2, 2021. The applicant is proposing a 52 unit (26 duplexes of two- or three-bedrooms) residential development located at 15-17 Rice Road, utilizing a single proposed full-access driveway at the existing unsignalized intersection with Thomas Hill Road. Stantec has previously reviewed the *Traffic Impact Study* provided by AK Associates as it relates to this development in a memorandum titled *Rice Pond Village, 15-17 Rice Road, Traffic Impact Study Peer Review* dated May 4, 2021. That review went into the depth of the traffic impact study by following the Town of Millbury’s Zoning Bylaws, dated May 2018, and industry best practices of such an effort.

Due to no revised traffic impact study provided, this memorandum is only intended to review the memorandum provided by AK Associates as a response to the May 4th comments. That initial comment memorandum should be referenced for Stantec’s original comments to which AK Associates is providing response. Within this memorandum, only AK Associates responses and Stantec’s review of those responses are included.

Comment #1 Response: *It should be noted that there are no speed data available for Rice Road in the MassDOT traffic volumes database. Additionally, this is a very short residential street with pavement width of 20’-22’, and serving a total of approximately 40 residential homes, thus little opportunity exists for motorists to drive at speeds greater than the Massachusetts statutory prima facie speed of 30 miles per hour, particularly if some residents occasionally park on the street. Regardless, the speed on Rice Road is not expected to influence the analysis, findings, and recommendations in the traffic study.*

Comment #1 Response Review: **Stantec concurs with AK Associates use of Massachusetts statutory prima facie speed of 30 MPH for Rice Road.**

Comment #2 Response: *As stated herein above, there are no such data available for Rice Road from the MassDOT traffic volumes database. Also, as a traffic engineer and familiarity with the area, and based on the turning movement counts conducted for the intersection of Rice Road and Thomas Hill Road, it is easy to estimate and conclude the daily volume along Rice Road is minimal. As such, if the seasonally adjusted turning movement counts (baseline) are used in accordance with the MassDOT default K factor of 0.09, the daily traffic for Rice Road can be estimated at 333 vehicles per day. If the number of homes along Rice Road, Thomas Hill Road, Aldrich Avenue, and Capt. Peter Simpson Road were used to estimate daily traffic along Rice Road using ITE land use code 210, Rice Road estimated volume would be anywhere from 378 to 448 daily trips. Regardless of which estimate is used, Rice Road carries little traffic to warrant collecting a set of new daily counts. Nevertheless, the Rice Road daily volume will have no meaningful impact on the analysis, findings, and recommendations in the traffic study.*

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Comment #2 Response Review: Stantec appreciates AK Associates detailed analysis of the existing Rice Road and Thomas Hill Road volumes derived from both applying K factors to turning movement counts and by reviewing expected traffic generation of existing residential parcels that use Rice Road. Stantec concurs with AK Associates methods for estimating average daily traffic for the development's study.

Comment #3 Response: *It should be noted that the growth rate for both COVID correction and determination of future intersection volumes were projected using the MassDOT guidelines and the MassDOT Yearly Growth Rates on page 29 of the traffic study (also shown below). The average rate of 0.0034, or 0.34% per year was calculated for R4-7 roads. Therefore, the volumes were multiplied by this factor twice to achieve COVID correction for the year 2021. After the data were subjected to seasonal correction, the data were then multiplied by this rate five times to reflect future no build year of 2016. Regardless, because the intersection volumes are not significant, the growth rates will have no meaningful effect on the analysis, findings, and recommendations in the traffic study.*

Comment #3 Response Review: Stantec has reviewed the response and concurs with AK Associates response and conclusion that regardless, the low background growth rates are of low impact to the existing volumes along Rice Road.

Comment #4 Response: *The accident that occurred on August 22, 2020, at/near 69 South Main Street was not at the intersection of South Main Street and Rice Road. It involved a single vehicle (a motorcycle) and it occurred in the middle of the night (2:45 AM). The street was lighted, and records don't indicate as to which direction the motorcyclist was traveling. This accident could be attributed to high speeds and loss of control of the vehicle. Therefore, no deficiencies could be attributed to the roadway segment, and particularly to the intersection of South Main Street and Rice Road. As for accidents on Providence Street (Route 122A), there were three accidents reported at/near 48 Providence Street, the site of CK Smith Gas facility, which is approximately 500' west of the Rice Road intersection. One accident was a single vehicle accident involving a driver losing control of the vehicle and hitting a fence on the side of the road. Two accidents were of rear-end type that involved a vehicle turning left onto the CK Smith facility. Again, these accidents occurred at an establishment approximately 500' west of the Rice Road intersection, thus cannot be attributed to any deficiencies at this intersection.*

Comment #4 Response Review: Stantec has reviewed the response and appreciates AK Associates detailed review of the crashes in the vicinity of the development and concurs with the findings as it pertains to Rice Road and the development.

Comment #5 Response: *It should be noted that the intersection of Rice Road and Thomas Hill Road is an existing intersection, thus making intersection sight distance analysis would be pointless. Also, the Google Earth approximate profile was intended for visualization purposes only. Having said that, as stated in the traffic study, it was determined ample stopping sight distances are available for the subject intersection. As for Intersection Sight Distances, the desired Intersection Sight Distances for the Massachusetts statutory prima facie speed limit of 30 miles per hour are given in the Exhibit 3-11 of MassDOT Design Guide (see attached Sight Triangle) as 335' for left turns and 290' for right turns. As stated in the traffic study, the available sight distances are 500'+ to the right (west) and 350' to the left (east), thus exceeding the desired Intersection Sight Distances. The following table shows the relationship between the available sight distances, required stopping sight distances, and the desired intersection sight distances.*

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Sight Distances

Direction	Available SD	Required SSD	Desired ISD
Looking to right (west)	500'+	200'	335'(LT), 290'(RT)
Looking to the left (east)	350'	200'	335'(LT), 290'(RT)

Comment #5 Response Review: Stantec has reviewed the response and appreciates AK Associates providing a Sight Distance table. Stantec concurs with AK Associates findings relating to intersection and stopping sight distances for the development's access onto Rice Road.

Comment #6 Response: *The current land use designation for the proposed multifamily development site is R-1, and the site is currently mostly undeveloped. The parcel includes one existing single-family residence. Regardless, the presence of one existing single-family residence will have no impact on the analysis, findings, and recommendations in the traffic study. In fact, since the new trips associated with the proposed development are so low, the number of trips associated with the existing single-family residence was not subtracted from them, thus resulting in conservatively higher trip generation to reflect worst case scenario.*

Comment #6 Response Review: Stantec has reviewed the response and appreciates AK Associates clarification of the development parcel's existing condition. Stantec concurs with AK Associates response to Comment #6.

Comment #7 Response: *The at-grade railroad crossing was identified and described under Study Area Roadway Network section of the traffic study. Again, due to very low existing (less than one vehicle every two minutes during PM peak) and little anticipated traffic volumes and familiarity with the area, no impact is expected on the railroad crossing facility or on the development traffic.*

Comment #7 Response Review: Stantec accepts AK Associates response to the comment regarding revisiting the existing railroad crossing on Rice Road, east of the proposed development.

Comment #8 Response: *It is a typographical error. It should have read "Finally, a total of 190 vehicles will be arriving at and 191 vehicles will be departing from the proposed site during a 24-hour period on an average day".*

Comment #8 Response Review: Stantec accepts AK Associates response to the comment regarding a trip generation reporting error.

Comment #9 Response: *It is a typographical error in Figure 4. The analysis will have resulted in a more conservatively high resultant due to using 7 vehicles entering instead of 4 vehicles. Regardless, because of very low traffic volumes on Rice Road and those expected from the proposed development, the use of seven vehicles instead of four vehicles entering from South Main Street will have no impact on the analysis, findings, and recommendations in the traffic study.*

Comment #9 Response Review: Stantec accepts AK Associates response to the comment regarding a traffic volume network error.

Comment #10 Response: *The total entering traffic during PM peak is 21 vehicles, eight vehicles from the east and 13 vehicles from the west, as depicted in Figure 4. Of the eight vehicles coming from the east, five vehicles will be arriving from points north, and three vehicles from points south of the South Main Street intersection.*

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Similarly, of the 13 vehicles arriving from the west, five will be from points north and eight from points south along Providence Street. Again, regardless of the above-mentioned typographical misprints, because the traffic volumes on Rice Road and those expected from the proposed development are insignificant, the use of seven vehicles instead of four vehicles entering from South Main Street will have no impact on the analysis, findings, and recommendations in the traffic study.

Comment #10 Response Review: Stantec accepts AK Associates response to the comment regarding PM volumes entering from Rice Road.

Comment #11 Response: *As mentioned by the review engineer, there is no land use code 230 in the 5th edition of the Parking Generation Manual. However, the 3rd edition of ITE's Parking Generation Manual has data for the correct land use code 230 that represents the proposed residential development which was used in the traffic study. A copy of the Parking Generation Manual's land use code 230 is attached hereto. As mentioned in the traffic study, the 85th percentile parking demand was based on condominiums/Townhouses in suburban areas. Also, it should be noted that the demand for off-street parking is greatest for residences located in suburban areas primarily due to the lack of public transportation and long distances from daily conveniences.*

Comment #11 Response Review: Stantec accepts AK Associates response to the comment regarding PM parking generation clarification.

Comment #12 Responses: *The 5th version of Synchro computer software which is based on the Highway Capacity Manual was used for analyzing the unsignalized intersections in the study area. It should be noted that any later version of the Synchro computer software should provide similar results as they are based on the same document (Highway Capacity Manual), and as well as particularly since we are talking about intersections with so little traffic volumes. Regardless, because the intersection volumes are not significant, the version of the Synchro software will have no meaningful effect on the analysis, findings, and recommendations in the traffic study. As stated in the review, the traffic study identified truck percentage within the area to be 1.7%. However, the Synchro's default value of 2% was used throughout the analysis to assess worst-case scenario. Regardless, because the intersection volumes are not significant, the truck percentage will have no meaningful effects on the analysis, findings, and recommendations in the traffic study.*

Comment #12 Response Review: Stantec accepts AK Associates response to the comments related to Synchro Analysis for the project.

Comment #13 Response: *Again, regardless of the review comments relative to typographical errors, the lack of daily traffic volume for Rice Road, which version of the Parking Generation Manual or Synchro computer software was used, given the very low intersection volumes, reanalyzing the intersections will have no meaningful effects on the analysis outcome, findings, and recommendations in the traffic study. It should be noted that throughout the preparation of the traffic study, efforts were made at each step to analyze and assess the worst-case scenarios. Therefore, any reanalysis should result in the same outcome or better Levels Of Service.*

Comment #13 Response Review: Stantec accepts AK Associates response to the comment regarding negligible changes to results deriving from the revisions and clarifications identified in the previous review.

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STANTEC SUMMARY

In summary, Stantec has reviewed AK Associates responses (contained in *Responses to Stantec's Comments Relative to Traffic Study for Rice Road Residential Development Project*) to Stantec's initial review of the project (contained in *Rice Pond Village, 15-17 Rice Road, Traffic Impact Study Peer Review*) and agree with their clarifications, verifications, and revisions provided for the Rice Pond Village Traffic Impact Study.

Stantec appreciates the opportunity to review this document for the Town of Millbury.

Best regards,

Stantec Consulting Services Inc.

A handwritten signature in blue ink, appearing to read "Evan Drew", is positioned above a faint, illegible stamp.

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