



Ref.: 22027

May 27, 2022

Mr. Edward L. Pesce, P.E., LEED AP
Pesce Engineering & Associates, Inc.
43 Porter Lane
West Dennis, MA 02670

Reg.: 2nd Traffic Peer Review
Mill Creek Residential
Commerce Way, Marshfield, MA

Dear Ed:

Ron Müller & Associates (RMA) is in receipt of the supplemental information submitted by the applicant for the above-referenced project in response to our April 21, 2022 initial review letter. The following additional document was reviewed as part of our peer review services to the Town of Marshfield:

- May 5, 2022 Response to Comments letter from Vanasse & Associates, Inc. to the Zoning Board of Appeals of the Town of Marshfield.

For ease of reading, this letter paraphrases our initial comments where additional information was requested, the applicant's responses, and any additional comments we have at this time (in bold).

Comment 5: The volume on the southbound right turn movement from School Street to Plain Street (Route 139) does not match the traffic counts during the weekday PM peak hour. The volume is labeled as 15 when the counts show that volume as 151. It was recommended that the network be updated to reflect the proper volume. The volume has been updated on the networks. **Comment resolved.**

Comment 8: Given the proximity of the site to Pembroke, it was recommended that the applicant contact the town to see if there are any developments proposed in the area that would have an impact on traffic volumes within the study area. The applicant reached out to the Town of Pembroke and based on discussions it was

determined that there are no developments proposed in the area that would result in an increase to future year traffic volumes. **Comment resolved.**

Comment 12: As mentioned in Comment 5, the traffic volume shown on the southbound right turn movement at the intersection of School Street and Route 129 is incorrect during the weekday PM peak hour. The incorrect volume was carried through to No-Build and Build conditions. Analysis should be rerun with the correct volume during all time periods. The applicant has updated the analysis and supplied a revised capacity analysis table. The corrected analyses did not reveal and additional capacity concerns. **Comment resolved.**

Comment 13: The unsignalized capacity analyses tables do not include the volume-to-capacity (v/c) ratio for each movement. It is recommended that these tables be updated to show the v/c ratio as this measure of effectiveness can be helpful in determining the project's impacts in particular with movements that are approaching capacity. The volume to capacity ratios at the unsignalized intersections have been added to the tables. **The volume to capacity ratios for the unsignalized intersections within the study area show that the traffic associated with the development project will not have a significant impact on operations. Comment resolved.**

Comment 14: The signalized intersection analyses were performed using the Highway Capacity Manual (HCM) 2000 methodology. It is recommended that the results be updated to reflect the newest HCM 6th methodology, or a reason be provided why this older version of the methodology was used. The applicant commented that MassDOT has approved the use of the 2000 *Highway Capacity Manual* (HCM) methodology for signalized intersection capacity analyses due to inconsistencies in the results reported at intersections with complex signal phasing. While HCM 6 methodology might not report correctly for signalized intersections with complex signal timing, for future reference, it is recommended that this methodology be used for the unsignalized intersections. **Since use of the HCM 6 methodology for unsignalized intersections is not likely to alter the conclusions of the study, we agree that this comment is resolved.**

Comment 15: The capacity analysis worksheets indicate vehicle queues and delays are expected to increase to unacceptable levels on the westbound and northbound left turn approaches at the intersection of Route 139 and Enterprise Drive. Although these conditions are expected to occur with or without the project, the overall intersection operations are expected to incur a significant increase in delay during the Saturday peak hour with the addition of the site traffic. The Town of Marshfield should determine if this project warrants improvements to this intersection. This is further discussed in Comment 19. See applicant's response to Comment 19.

Comment 18: Based on the analysis, an off-site recommendation was made at the intersection of Route 139 and Enterprise Drive. The applicant has suggested optimized signal timing and phasing to improve operations. Multiple movements currently operate at or over capacity with delays expected to increase in the future with the additional site traffic. These enhancements will improve operations on all movements from LOS F to LOS E or better. These improvements will require MassDOT permitting as Route 139 in this area is under MassDOT jurisdiction.

The applicant responded that the project proponent will apply to MassDOT for the issuance of the necessary rights, permits and approvals to implement an optimal traffic signal timing and phasing plan for the Route 139/Enterprise Drive intersection at the completion of the local approval process for the Project. **At the discretion of the board, these improvements may be added as a Condition in the Decision.**

Comment 19: Based on discussions with the town, there have been longstanding traffic issues associated with the intersections of Route 139 at Enterprise Drive and Route 139 at Furnace Street/Proprietors Drive. To rectify these issues, the town would like to widen Enterprise Drive to provide two left turn lanes onto Route 139 as well as to install protective/permissive left turn phasing for the northbound and southbound Proprietors Drive and Furnace Street approaches at their intersection with Route 139. It is our understanding that the prior athletic complex that was proposed on the site as part of the Enterprise Park Master Plan committed to a contribution toward these improvements in the amount of \$90,000. The applicant and the town should discuss whether a similar contribution is appropriate based on the project's anticipated traffic impacts.

The applicant responded that the Project proponent will discuss providing a contribution to the Town for the design and construction of the improvements at the intersections of Route 139 and Enterprise Drive and Route 139 and Furnace Street/Proprietors Drive as identified in RMA's comment in the context of the overall mitigation package for the Project. The contribution will be proportionate to the incremental impacts of the Project at the intersections over No-Build conditions (i.e., a "fair-share" cost contribution).

There are a number of ways to determine a "fair-share" cost contribution including comparing the number of peak hour trips added by the development to the existing peak hour traffic and applying that percentage to the cost of improvements. Another way would be to compare the volume of traffic generated by the current development to the volume of traffic that would have been generated by the approved athletic complex and apply that ratio to the original \$90,000 contribution. Lastly, the Town may have a separate method to determine

a “fair-share” contribution for the project. **It is recommended that the Town determine an appropriate “fair-share” cost contribution for this size project.**

Comment 20: It is recommended that a crosswalk and ADA compliant wheelchair ramps be proposed across the driveway. It is further recommended that a stop line and STOP sign (R1-1) be placed on the driveway exit. The stop line should be located 5 feet from the proposed crosswalk and the stop sign should be placed adjacent to the stop line. The applicant responded that a STOP-sign (R1-1) and marked STOP-line will be provided for the Project site driveway as requested, and ADA compliant wheelchair ramps will be provided for crossing the driveway. This information will be added to the Site Plans and submitted by others under separate cover. **Comment resolved pending review of the revised site plan submission.**

Comment 21: RMA recommended that the applicant provide a swept path analysis of the largest fire truck to be used on site. It was further recommended that the proponent coordinate with the Marshfield Fire Department regarding accessibility to all sides of each building.

A swept path analysis was submitted as part of the responses. The applicant has also agreed to continue to coordinate with the Marshfield Fire Department regarding accessibility to all sides of each building. **Comment resolved.**

Comment 22: RMA recommended that the site plan show the sight triangles at the proposed driveways to assure that any proposed landscaping or signs are outside these sight triangles and do not impede driver visibility. The applicant responded that the sight triangles will be included on the site plan. **Comment resolved pending review of the revised site plan submission.**

Comment 23: RMA recommended that the applicant include a signing and striping plan of the interior drive aisles showing the dimensions of each and the proposed parking spaces. If the parking spaces are less than 20 feet deep, then the adjacent drive aisles should be 24 feet, rather than the 23 feet recommended in the traffic study. Pedestrian connectivity through the site by way of crosswalks and ADA-compliant wheelchair ramps should also be included on these plans. The applicant responded that the site plans will be updated to show signing and striping. **Comment resolved pending review of the revised site plan submission.**

Comment 25: The site plan proposes 505 parking spaces which equates to a parking ratio of 1.68 spaces per unit. As labeled on the site plan, 306 parking spaces will be surface parking and 204 spaces will be garage and tandem spaces. Based on this information, the total number of parking spaces will be 510 not 505. It was recommended that the applicant confirm the total number of parking spaces. The

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applicant noted that the proposed parking supply will be updated on the site plans.
Comment resolved pending review of the revised site plan submission.

Please feel free to contact me if you have any questions regarding this review.

Sincerely,

Ron Müller & Associates



Kirsten Braun, P.E.
Associate