



Ref.: 22037

December 29, 2022

Mr. Josh Bows, President
Merrill, Inc.
427 Columbia Road
Hanover, MA 02340

Reg.: 2nd Traffic Peer Review
The Cottages
279-281 Old Oaken Bucket Road, Scituate, MA

Dear Josh:

Ron Müller & Associates (RMA) has reviewed the additional information submitted by the applicant in response to our August 15, 2022 initial review letter. The following lists the documents reviewed as part of this second peer review:

- Letter from Vanasse & Associates, Inc. to Scituate Zoning Board of Appeals regarding The Cottages at Old Oaken Bucket – 279-281 Old Oaken Bucket Road, Scituate, MA dated October 24, 2022 providing written responses to peer review comments.
- *Site Plan for The Cottages at Old Oaken Bucket, Scituate, MA*; prepared by South Shore Survey Consultants, Inc.; October 21, 2022.

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 1: There was a discrepancy between the various site plans submitted that requires clarification. There is a site plan set dated February 7, 2022 that shows a different unit mix and access configuration than the June 6, 2022 Preliminary Plan on which the traffic study was based. The February 7, 2022 plan shows 26 duplex units in 13 buildings and 5 single family homes in addition to an existing house on the site. Most of the units are shown to be accessed via the same driveway as on the June 6, 2022 plan with the exception of one duplex building and the

existing home that have direct access from Old Oaken Bucket Road. It is unclear which site plan is proposed, but for the purpose of the initial review, the June 6, 2022 site plan was assumed to be the correct one as it matches the description in the traffic study.

The applicant responded that the development plan has since been updated to include 24 single family detached cottages. All of the single-family cottages will be accessed from a full access driveway that will intersect the south side of Old Oaken Bucket Road at the approximate location of the existing driveway that serves 279 Old Oaken Bucket Road. Comment resolved.

Comment 6: Accident data were reviewed and summarized within the traffic study. The intersections of Old Oaken Bucket Road at Maple Street / Winter Street and Old Oaken Bucket Road at Route 123 experienced a crash rate higher than both the statewide and district wide averages indicating that safety issues exist. Furthermore, the Scituate rotary has experienced 18 crashes over the five-year period averaging 3.6 crashes per year. A Road Safety Audit (RSA) was conducted in December 2021. The RSA provided suggestions for improvements to enhance safety. RMA suggested that the town include a condition of approval that these RSAs be completed and submitted to the town.

The applicant responded that subsequent to the preparation of the June 2022 TIA, the Applicant retained Toole Design to conduct a Road Safety Audit (RSA) for the Old Oaken Bucket Road/Maple Street/Winter Street and Old Oaken Bucket Road/Route 123 intersections. After discussions with MassDOT and the Town, the Old Oaken Bucket Road/Route 123 intersection was removed from the RSA locations as this intersection was included in the RSA that was performed for the Scituate Rotary (Chief Justice Cushing Highway (Route 3A) at Route 123, New Driftway and County Road), and it was MassDOT's opinion that the frequency of crashes occurring at Old Oaken Bucket Road/Maple Street/Winter Street did not warrant conducting an RSA. MassDOT suggested to the Town that VAI provide recommended improvement measures that could be implemented at the intersection to improve safety. The Town concurred with this suggestion and, as such, VAI has reviewed existing conditions at the Old Oaken Bucket Road/Maple Street/Winter Street intersection and developed a list of potential improvement measures for the intersection that are intended to enhance safety. These measures are as follows and will be designed and constructed in conjunction with the Project subject to receipt of all necessary rights, permits and approvals.

1. Replace the STOP-signs, "All Way" plaques and marked STOP-lines on all approaches to include high visibility, thermoplastic pavement markings and the addition of red reflective tape to the sign posts;

2. Relocate the STOP-signs and marked STOP-lines on the Maple Street approaches so as to be located 5-feet from the edge of the traveled-way along Old Oaken Bucket Road to define the desired stopping point and improve sight lines to and from Old Oaken Bucket Road;
3. Selectively trim/remove vegetation located within the sight triangle areas on the corners of the intersection; and
4. Install/replace the “Stop Sign Ahead” warning signs (graphic symbol) on all approaches and include supplemental street name and “All Way” plaques.

RMA concurs with the improvements recommended at the intersection of Old Oaken Bucket Road and Maple Street/Winter Street. These improvements should be included as a condition of approval of the project.

The following low-cost improvements/suggestions were identified as part of the RSA that was completed at the intersection of Route 123 and Old Oaken Bucket Road:

- **Consider making the Chief Justice Cushing Highway (Route 3A) southbound channelized right turn lane a truck-only lane.**
- **Evaluate the STOP sign visibility at the Chief Justice Cushing Highway (Route 3A) southbound channelized right turn lane.**
- **Consider adding signs to inform drivers to keep one lane of traffic within the rotary.**
- **Evaluate signage at the rotary to see if improvements can be made.**
- **Replace the missing sharp turn warning sign (W1-1R) on the Cornet Stetson Road (Route 123) approach.**
- **Trim vegetation around the rotary that inhibits sight distance.**

The town should consider requiring the applicant to investigate and implement these improvements.

Comment 8: Based on discussions between the applicant and the Town of Scituate, there are three developments that should be included in the background growth rate assumptions. Traffic associated with the following developments was included:

- Greenbush Mixed Use Development on New Driftway
- Mixed Use-Development at 48-52 New Driftway

- Residential Development at 7 New Driftway

Given the proximity of the site to Norwell, it was recommended that the applicant also contact that town to see if any developments there would have an impact on traffic volumes within the study area.

The applicant responded that the Director of Planning and Community Development for the Town of Norwell was contacted in order to determine if there were any planned future developments with the Town that would result in an increase in traffic volumes that would exceed the background traffic growth rate. Based on discussions with the town, no projects were identified for inclusion in the future condition traffic volumes. Comment resolved.

Comment 10: Based on the site plan there will be 32 residential units on site consisting of 11 attached duplexes (22 units) and 10 single family detached homes. The anticipated trip generation of the duplex units was appropriately estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* for Single Family Attached Housing (Land Use Code 215) and Single Family Detached Housing (Land Use Code 210).

The applicant responded that as previously noted, the development program of the project has been revised and now includes the construction of 24 single family detached cottages. ITE Land Use Code (LUC) 210, Single-Family Detached Housing was used to estimate the trip generation of the site. As such, 272 weekday daily vehicle trips can be expected with 20 vehicle trips (5 in and 15 out) occurring during the weekday AM peak hour and 26 vehicle trips (16 in and 10 out) occurring during the weekday PM peak hour. The change in development plan results in 32 additional vehicle trips on a daily basis with 5 additional trips (1 in and 4 out) occurring during the weekday AM peak hour and 6 additional trips (4 in and 2 out) occurring during the weekday PM peak hour. RMA concurs with these trip generation assumptions.

Comment 12: The unsignalized capacity analyses tables do not include the volume-to-capacity (v/c) ratio for each movement. It was 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 applicant revised the table to include the requested information and to include the revised traffic operations analyses for the 2029 Build condition to reflect the revised development program for the Project. A comparison of the results that were presented in Table 8 of the June 2022 TIA to those presented in the updated table indicates that the minor increase in peak-hour trips that are associated with the revised development program did not result in a change in level of service or

in vehicle queuing for any movement at the study area intersections over No-Build conditions. All movements at the site driveway intersection with Old Oaken Bucket Road are expected to continue to operate at LOS A during peak hours with negligible vehicle queuing. RMA concurs that the increase in trips due to the change in development plan will have minimal impacts on traffic operations.

- Comment 14: Available sight distances from the proposed site driveway were measured and compared with minimum requirements as established by the American Association of State Highway and Transportation Officials (AASHTO) assuming a travel speed on Old Oaken Bucket Road of 40 mph. Based on the speed data, these minimum requirements should be based on an 85th percentile speed of 38 mph traveling eastbound and westbound, however use of a higher speed of 40 mph results in a more conservative assessment. Based on a speed of 40 mph, the minimum required sight distance would be 305 feet in both directions. Table 11 in the study shows that the minimum required distances can be exceeded assuming trimming or removal of trees and vegetation located within the sight triangle areas of the site driveway. The existing embankment to the east of the project site driveway should be regraded in order to provide the required line of sight. A field investigation of the proposed site driveway confirms this information and concurs that vegetation will need to be removed along the south side of Old Oaken Way within the sight triangles and the embankment east of the site driveway will need to be regraded. It was recommended that a sight line plan and profile be developed to specifically identify the areas of regrading and vegetation removal necessary to ensure that adequate sight distance will exist.

The applicant responded that the project proponent is in the process of obtaining detailed ground survey for Old Oaken Bucket Road approaching the site driveway. Once this information is received the applicant will be able to develop the requested sight line plan. This plan will be provided under separate cover once the survey data is received.

The sight line plan and profile were not included in the updated plan set. **It is still recommended that a sight line plan and profile be developed to identify the areas of regrading and vegetation removal necessary to ensure that adequate sight distance will exist.**

- Comment 16: Independent of the Project, the Old Oaken Bucket Road and Maple Street at Winter Street and Route 123 at Old Oaken Bucket Road intersections were identified to have motor vehicle crash histories that warrant further review and advancement of specific improvements to enhance safety. As part of the project the proponent has committed to facilitate the completion of a Road Safety Audit (RSA) at these intersections that is intended to identify improvement strategies to increase safety. The proponent has also agreed to provide a financial contribution

(fair-share contribution) to the town for the design and construction of the short-term improvements suggested as part of the RSA. As noted in Comment 6, it was recommended that the town include a condition of approval that these RSAs be completed and submitted to the town prior to issuance of a Certificate of Occupancy. It was further recommended that the town determine what a “fair-share” contribution for these improvements should be. One way to establish a fair share contribution is to calculate the percentage increase in volume-to-capacity ratio of the critical movements at the intersections and apply that percentage to the estimated cost of design and construction of the improvements.

The applicant responded to this in Comment 6.

Comment 17: The site plan proposes one full access driveway to the site on the south side of Old Oaken Bucket Road. The site plan does not show any interior signing, striping, or dimensions. It was recommended that the applicant include a signing and striping plan of the interior of the site. A sidewalk is proposed along both sides of the driveway providing pedestrian connections to all buildings. It was recommended that a stop line and STOP sign (R1-1) be placed on the driveway exit to Old Oaken Bucket Road and that traffic control be established at the internal intersections.

The updated plan set does not include a signing and striping plan of the interior of the site. **It is recommended that a plan be included in the plan set showing interior signing and striping.**

Comment 18: The fire department’s largest vehicle should be able to traverse the site. It was recommended that the proponent coordinate with the Scituate Fire Department regarding adequate accessibility to all dwellings.

The revised plan set includes an emergency vehicle turning movement plan. The plan set does not show a firetruck entering the site via Old Oaken Bucket Road. **It is recommended that a right turn movement entering the site be included on the plans. The applicant should also confirm adequate accessibility to all buildings with the fire department**

Comment 19: The site plan should show the sight triangles at the proposed driveway to assure that any proposed landscaping or signs are outside these sight triangles and do not impede driver visibility. As discussed in Comment 14, a sight line plan and profile should be developed for the site driveway intersection with Old Oaken Bucket Road to specifically identify the areas of regrading and vegetation removal necessary to ensure that adequate sight distance will exist.

The applicant responded that the sight triangle areas will be added to the site plans and a profile of the sight line for motorists exiting the project site driveway will be developed to define the areas of vegetation removal and regrading. These plans were not included with the revised site plans. **It is recommended that the sight triangles at the proposed driveway be shown on the plans.**

Once the above comments have been addressed, we will be able to finalize our independent traffic peer review of the proposed residential project. Please feel free to contact me if you have any questions regarding this review.

Sincerely,

Ron Müller & Associates

A handwritten signature in dark ink, appearing to read "Kirsten Braun".

Kirsten Braun, P.E.
Associate