



Ref.: 21016

May 4, 2021

Mr. Peter Matchak, Director of Planning  
Town of Ashland  
101 Main Street  
Ashland, MA 01721

Reg.: Traffic Review, Arbella at Ashland  
MBTA Access Road, Ashland, MA

Dear Peter:

***Ron Müller & Associates*** (RMA) has initiated an independent peer review of the traffic memorandum and site plan prepared for the proposed Arbella at Ashland age-restricted apartment development to be constructed on the MBTA Access Road in Ashland, Massachusetts. The project proposes to construct 180 apartment units on site with access via a new driveway on the MBTA Access Road. The site will provide 243 parking spaces which will be a mix of surface and covered spaces.

The submitted traffic memorandum and site plan were reviewed with respect to traffic impacts and site access and compared with state guidelines and standard traffic engineering practice. Based on a review of the submitted materials, we have some comments and recommendations that require further action from the applicant. Once these items are addressed, we will be able to finalize the traffic review of the project. The following lists the documents reviewed as part of the independent peer review:

- *Traffic Memorandum, Arbella at Ashland Age-Restricted Residential Development*; prepared by MDM Transportation Consultants, Inc.; March 11, 2021.
- *Comprehensive Permit Plan Set, Arbella at Ashland, Ashland, MA*; prepared by Allen & Major Associates, Inc.; March 24, 2021.

The comments below follow the same outline as the submitted traffic study for ease of reading.

## TRAFFIC MEMORANDUM REVIEW

### Project Description

1. The site will consist of approximately 17.98 +/- acres of undeveloped land located on the MBTA Access Road in Ashland. 180 age-restricted apartment units will be constructed on site amongst a number of buildings. The site provides approximately 243 parking spaces which will be a mix of surface and covered parking. Access to the proposed apartment complex will be via a two-lane roadway with shoulders which will intersect the MBTA Access Road at an unsignalized intersection. The new access drive will be stop controlled while the MBTA Access Road will operate freely.

### Baseline Traffic and Safety Characteristics

2. The traffic study focused on the intersection of the MBTA Access Road and the proposed site driveway. Based on the site location, expected use, and area roadway network, the study location is appropriate for analysis.
3. The study provided a description of the area roadway network. Traffic volume data on the MBTA Access Road was collected in June 2019, prior to the pandemic, on a weekday daily basis and during the weekday AM and PM peak periods. RMA concurs with the selected time periods used for analysis. **It should however, be confirmed that the Cirrus Apartment development was fully occupied at the time that the counts were conducted, or otherwise the volumes adjusted to account for any unoccupied units.**
4. The existing traffic counts were not seasonally adjusted. However, based on our review of MassDOT permanent count station data from 2019 at AET 08, located on I-90 in Southborough and AET 09, located on I-90 in Framingham, traffic data during the month of June is typically four percent above average. Therefore, use of the counted volumes without any seasonal adjustment factor is appropriate.
5. To grow traffic volumes to the present year, traffic data were obtained from MassDOT permanent count Station 307, located on Route 9 in Westborough east of the Northborough town line. Count data between 2007 and 2016 were reviewed. Based on that data, a 0.5 percent annual growth rate was used. Upon reviewing data from the aforementioned AET 08 and AET 09, it was found that traffic has grown approximately one percent per year between 2017 and 2019. However, considering that ample capacity will be provided at the site driveway intersection, the use of a slightly higher traffic growth rate would not materially affect traffic operations and no further analysis is necessary.

### **Future Conditions**

6. A 7-year design horizon was used for the No-Build and Build condition analyses consistent with MassDOT's *Transportation Impact Assessment Guidelines*. As previously discussed, an annual growth rate of 0.5 percent per year was used to project the future No-Build volumes. However, considering that ample capacity will be provided at the site driveway intersection, the use of a slightly higher traffic growth rate would not materially affect traffic operations and no further analysis is necessary.
7. No site-specific development projects were included in the study's No-Build traffic volumes. **The applicant should confirm with the Town of Ashland that there are no approved or planned developments in the area that would impact traffic within the study area.**
8. The anticipated trip generation of the age restricted apartment development was appropriately estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* for Senior Adult Housing – Attached (Land Use Code 252).
9. The traffic study describes that the trip distribution methodology was based on Journey-to-Work data obtained from the U.S. Census for persons residing in the Town of Ashland. Travel patterns for the adjacent apartment complex were also reviewed. Based on these data, the study assumes 10 percent of the new site traffic will utilize the Ashland MBTA station and therefore travel to and from the north on the MBTA Access Road, while the remaining 90 percent of site traffic would travel to and from the south on The MBTA Access Road. The trip distribution assumptions are appropriate.

### **Traffic Operations Analysis**

10. Capacity analyses were performed under Build conditions at the proposed site driveway intersection with the MBTA Access Road. Capacity analysis results show that the proposed site driveway will operate at desirable levels (Level-of-Service A to B) with minimal delays and queue lengths for vehicles exiting the site. The MBTA Access Road is also expected to operate at a desirable level A during all time periods. It should be noted that the level-of-service summary table should have listed the operations of the critical left-turn movement into the site, versus the approach level of service. However, the capacity analysis worksheets confirm that the critical left-turn movement also operates at level A during both peak hours.

### **Additional Traffic Study Comment**

11. Available sight distances at the proposed site driveway intersection with the MBTA Access Road were not measured. While the site plan shows that 390 feet of sight distance are available to the north and 455 feet to the south of the driveway, the required sight distances

are based on the speed of traffic on the MBTA Access Road. **It is recommended that vehicle speed data be collected on the MBTA Access Road and that the available sight distances be compared with minimum requirements as established by the American Association of State Highway and Transportation Officials (AASHTO) based on the measured 85<sup>th</sup> percentile speeds.**

## SITE PLAN REVIEW

12. The site plan proposes one access driveway to the site, located south of the driveway to Cirrus Apartments. The proposed access driveway is to be 32 feet wide, with 12-foot-wide travel lanes and four-foot-wide shoulders. Near the site entrance, 14-foot-wide travel lanes are proposed with five-foot-wide shoulders separated by a center island. The entrance design is appropriate and allows adequate room for emergency vehicles to bypass any vehicles that may be stalled or broken down in this area. **It is recommended that after the divided entrance, 11 foot-wide-travel lanes be proposed with 5-foot shoulders on either side of the road.** The Massachusetts Highway Department Project Development and Design Guide<sup>1</sup> suggests that on local rural roads four-foot shoulders may be used for bicycle and pedestrian accommodations. Given the topography of the site, an ADA-compliant sidewalk is likely unable to be provided along the driveway. A five-foot wide shoulder would act as a full width bike lane as well as a means for pedestrians to walk along the road. Furthermore, narrowing the travel lanes will likely also reduce travel speeds on the access road.
13. Given the grade of the roadway, a review was made of the guard rail locations. According to a design speed of 25 mph and a low ADT of 700 vehicles per day, the use of guard rail would fall within engineering judgment. Given the height of the embankment (20 feet) and the fact that the slope is nonrecoverable, it is good judgement to propose guard rail. The section is proposed to be test level 3 single faced W-Beam coreten style guard rail, chosen for its aesthetic value. This is more than adequate in this situation and the placement of the guard rail is logical. **We do have two recommendations associated with the proposed guard rail:**
  - **Install terminal end section for all four guard rail ends.**
  - **On the driver approach ends to the guard rail it is recommended to use a curved section of guardrail to flare the terminal end section away from oncoming traffic to avoid any potential spearing to an oncoming vehicle.**
14. The site plan shows a stop line and two R1-1 (STOP) signs located at the driveway approach to the MBTA Access Road. **It is recommended that the stop line be located 5 feet from the proposed crosswalk and the stop signs be placed adjacent to the stop line.**

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<sup>1</sup>*Massachusetts Highway Department Project Development and Design Guide*; 2006 Edition; Prepared by Vanasse Hangen Brustlin Inc.; January 2006.

15. The site plan includes a Vehicle Movement Plan showing that the Town of Ashland's Tower One fire truck can safely navigate the site and the access road. **The applicant should confirm this with the Ashland Fire Department including the potential need for accessibility to all sides of each building.**
  
16. **The sight triangles at the proposed site driveway intersection with the MBTA Access Road may need to be revised pending the results of the vehicle speed study described in Comment 11. Also, please ensure that any proposed landscaping or signs are outside these sight triangles and do not impede driver visibility.**

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*



Kirsten Braun, P.E.  
Associate