From: Scott Cole <SCole@bealsassociates.com>
Sent: Tuesday, December 08, 2020 9:52 AM
To: Marcia Gasses <mgasses@barrington.nh.gov>
Subject: RE: Multi-Family

Marcia, here's an update:
No parking signs added at entrance for no parking in roadways.
Buildings updated to new design
Internal loop sidewalk added at boards request.
Roads have been lowered where possible to better suit the building designs.
Lighting plan updated with lumens and security lighting on each unit.
Landscape note added for Eastern abutter in case of thin areas. As requested by board.

Nitrate setback exhibit supplied showing the nitrate setback down gradient from septics Per NHDES which is based on gallons per day of flow and have to stay on the property similar to a well radius.

Let me know if you have any questions.

Scott
Scott D. Cole
Senior Project Manager

Beals Associates, PLLC
70 Portsmouth Ave., Stratham, NH 03885
Tel: 603-583-4860, Mobile: 603-686-0353
scole@bealsassociates.com

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Traffic Summary

SUMMARY

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of an 80-unit multifamily residential community to be known as The Crossing at Village Center and generally situated in the southeast quadrant of the intersection of NH Route 125 at NH Route 9 in Barrington, New Hampshire. This study is responsive to the scope of work that was identified in the October 1, 2020 letter from NHDOT Highway Maintenance District 6 concerning the Driveway Permit Application that was submitted for the Project and has been completed in accordance with NHDOT standards for the preparation of a TIS. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE,[10] the Project is expected to generate approximately 564 vehicle trips on an average weekday and 652 vehicle trips on a Saturday (both two-way, 24 hour volumes), with 39 vehicle trips expected during the weekday morning peak-hour, 48 vehicle trips expected during the weekday evening peak-hour and 56 vehicle trips expected during the Saturday midday peak-hour;

2. Under 2021 Opening -Year Build conditions, all movements exiting the Project site were shown to operate at a level-of-service (LOS) of C or better during the peak-hours with a predicted vehicle queue of up to one (1) vehicle. Under 2031 Build conditions, traffic volumes along NH Route 9 are expected to increase independent of the Project and resulted in increased delays for motorists exiting the Project site. The increased delay was shown to result in a degradation in LOS for vehicles existing the Project site during the weekday morning peak-hour from LOS C to LOS E; however, the residual vehicle queue was shown to continue to be minor (up to one (1)) and can be contained within the Project site without impeding access, circulation, or the movement of vehicles along NH Route 9;

3. Lines of sight at the Project site roadway intersection with NH Route 9 were found to exceed the required minimum distance for the intersection to function in a safe and efficient manner; and

4. A review of the criteria for the installation of auxiliary turn lanes at the Project site roadway intersection with NH Route 9 indicates that the addition of a right-turn lane is not justified based on the applicable criteria and that the installation of a left-turn lane is justified during the weekday evening peak-hour only and, as such, does not appear to be necessary at this time.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner. This conclusion is predicated on the implementation of the following specific recommendations that should be advanced as a part of the Project, many of which are reflected on the Site Plans:

- The Project site roadway and internal circulating roads should be a minimum of 24-feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Barrington Fire Department.

- Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.

[10] Ibid 1.

TURN LANE WARRANTS ANALYSIS

An auxiliary turn lane warrants analysis was conducted for the NH Route 9 approaches to the Project site roadway in accordance with the methodology and procedures outlined in *NCHRP Report 457*[9] published by the National Cooperative Highway Research Program (NCHRP).

Left-Turn Lane

Determination of the need for a left-turn lane of adequate storage length is a function of the volume of left-turning vehicles at the intersection under study and the magnitude of opposing or conflicting traffic volumes along the roadway. Based on a review of this criteria under the 2021 Opening Year and 2031 Build conditions, the provision of a left-turn lane on the NH Route 9 westbound approach to the Project site roadway is warranted during the weekday evening peak hour only. The detailed analysis of the left-turn lane criteria is presented as an attachment.

A review of the traffic operations analysis at the Project site roadway intersection with NH Route 9 indicates that there are sufficient gaps in through traffic along NH Route 9 to allow left-turning vehicles to enter the Project site without unduly hindering through traffic such that no residual vehicle queuing was reported as a result of left-turn movements accessing the Project site. As such and given that the installation of a left-turn lane on NH Route 9 was found to be justified during the weekday evening peak-hour only, the installation of a left-turn lane does not appear to be necessary at this time.

Right-Turn Lane

Consideration of the need for a right-turn lane is a function of the volume of right-turning vehicles at the intersection and the total volume of traffic on the same approach (advancing volume). Based on a review of this criteria under the 2021 Opening Year and 2031 Build conditions, the provision of a right-turn lane on the NH Route 9 eastbound approach to the Project site roadway is not warranted. The detailed analysis of the right-turn lane criteria is presented as an attachment.

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[9] *NCHRP Report 457 – Evaluating Intersection Improvement: An Engineering Study Guide*, National Cooperative Highway Research Program; 2001.