

EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Traffic Impact Study (TIS) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a mixed-use development to be located along the east side of NH Route 125 (Calef Highway) and south of Scruton Pond Road in Barrington, New Hampshire (hereafter referred to as the "Project"). This study was prepared in consultation with the Town of Barrington, the New Hampshire Department of Transportation (NHDOT) and the Strafford Regional Planning Commission (SRPC); was performed in general accordance with the NHDOT guidelines for the preparation of Traffic Impact Studies (TISs) and the standards of the Traffic Engineering and Transportation Planning Professions for the preparation of such reports; and is responsive to the scoping determination issued by NHDOT for the Project.

Based on the analyses presented herein, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹ and with adjustment to account for pass-by trips, the Project is expected to generate approximately 1,732 new vehicle trips on an average weekday and 1,064 new vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with approximately 201 new vehicle trips expected during the weekday morning peak-hour, 219 new vehicle trips expected during the weekday evening peak-hour, and 160 new vehicle trips expected during the Saturday midday peak-hour;
2. In general, the Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions); however, it was noted that one or more movements at the intersection of NH Route 125 at NH Route 9 (Franklin Pierce Highway/Littleworth Road) are currently operating at or over capacity (defined as a level-of-service (LOS) of "E" or "F", respectively) independent of the Project;
3. Similar to other unsignalized intersections along the NH Route 125 corridor, motorists exiting the Project site are expected to experience delays during the peak traffic volume periods, with residual vehicle queues of up to six (6) vehicles predicted which can be

¹*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

contained within the Project site without impeding access or circulation, or the movement of vehicles, pedestrians and bicyclists along NH Route 125;

4. Lines of sight at the Project site roadway intersections with NH Route 125 were found to exceed the required minimum line of sight for safe operation based on the posted speed limit along NH Route 125 (50 miles per hour) and can be made to exceed the required minimum distance for the measured 85th percentile vehicle travel speed (58-59 mph); and
5. A review of the criteria for the installation of auxiliary turn lanes at the Project site roadway intersections with NH Route 125 indicates that the addition of both a left-turn lane and a right-turn deceleration lane are justified based on the applicable criteria.

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 with implementation of the recommendations that follow.

RECOMMENDATIONS

A series of recommendations have been developed that are designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits and approvals.

Project Access

Access to the Project will be provided by way of two (2) new roadways that will intersect the east side of NH Route 125 as follows: the north roadway will be situated opposite the driveway to 246-248 Calef Highway (Casella Sales & Marketing Inc. and 603 Self-Storage); the south roadway will be located approximately 2,175 feet south of Scruton Pond Road. An access easement will also be established to allow for a future connection between the Project site and property to the north of Old Green Hill Road. To the extent that the future connection is formalized and open to public travel, motorist delays and vehicle queuing for vehicles exiting the Project site would be reduced from the conditions presented herein. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

- The Project site roadways and internal circulating roads should be 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.
- Consideration should be given to providing separate left and right-turn lanes exiting the Project site in order to reduce motorist delays and vehicle queuing for exiting traffic.
- Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.
- Let-turn lanes should be provided on NH Route 125 approaching both the north and south Project site roadways, with the turn lane accommodations at the north Project site roadway to include a left-turn lane in both the north and southbound directions to

facilitate access to the driveway serving the driveway to 246-248 Calef Highway. The existing shoulder width along NH Route 125 (nine (9) to 10 feet) combined with properly designed corner radii for the Project site roadways will accommodate vehicles decelerating to enter the Project site without impeding the flow of traffic along NH Route 125. As such, separate right-turn deceleration lanes are not recommended at this time.

- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23-feet in order to facilitate parking maneuvers.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Control Devices (MUTCD)*.²
- Pedestrian accommodations should be provided within the Project site.
- Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at all pedestrian crossings internal to the Project site.
- The embankment situated along the east side of NH Route 125 and north of the north Project site roadway should be regraded in order to provide the recommended minimum line of sight to and from the north along NH Route 125.
- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.
- Bicycle parking should be provided at appropriate locations within the Project site to serve the municipal, retail and bank uses.

Off-Site

NH Route 125/Scruton Pond Road

The intersection of NH Route 125 at Scruton Pond Road has been identified by the Town as a priority location for a Road Safety Audit (RSA) in order to identify potential safety-related improvements at the intersection. In order to advance this effort, the Project proponent will facilitate the completion of a RSA in order to identify improvements for this intersection.

NH Route 125/NH Route 9

One or more movements at the intersection of NH Route 125 at NH Route 9 were identified to be operating at or over capacity during the weekday and Saturday peak hours independent of the Project, with Project-related impacts defined as a predicted increase in motorist delay that resulted in a corresponding increase in vehicle queuing of up to three (3) vehicles. In an effort to reduce overall motorist delay and vehicle queuing at the intersection, the Project proponent will design and implement an optimal traffic signal timing and phasing plan subject to receipt of all necessary rights, permits and approvals. With the implementation of an optimal traffic signal timing and phasing plan, overall motorist delays at the intersection were shown to be reduced

²*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

over No-Build by up to 17± seconds under 2020 Opening-Year Build with Mitigation conditions and by up to 24± seconds under 2030 Build with Mitigation conditions. These improvements will be completed prior to the issuance of the final Certificate of Occupancy for the Project.

Transportation Demand Management Measures

Public transportation services are not currently provided in the vicinity of the Project site. In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures will be implemented as a part of the Project:

- Information regarding public transportation services, maps, schedules and fare information will be posted in a central location and/or otherwise made available to residents and employees;
- Tenants of the commercial components of the Project will be encouraged to offer specific amenities to discourage off-site trips, including providing a break-room equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing telecommuting or flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic volume periods;
- Pedestrian and bicycle accommodations will be incorporated into the Project including sidewalks and bicycle parking in appropriate locations; and
- To the extent that public transportation services are provided along NH Route 125 in the future, an area should be reserved for a bus stop to be established.

With implementation of the above recommendations, safe and efficient vehicular, pedestrian and bicycle access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.