



ENGINEERING SUCCESS TOGETHER

April 22, 2013

Mr. Hans Larsen, Executive Director
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Re: **Traffic Impact and Access Study**
Proposed Babson College Residence Hall

Dear Mr. Larsen:

As requested, BETA Group, Inc. (BETA) has reviewed the Traffic Impact and Access Study (TIAS) for the proposed Residence Hall for the Babson College campus, located near the intersection of Wellesley Avenue and Forest Street. The TIAS was prepared by Transportation Engineering, Planning and Policy (TEPP LLC), dated February 6, 2013. The proponent proposes the construction of a 200 room residence hall for first year students within the existing residential quadrangle of Babson College. This residence hall is intended to address the shortage of on-campus housing, but will also provide academic and community related spaces. The construction of the new residence hall is not intended to increase the enrollment of the college.

STUDY AREA

The proposed site is located southwest of the Wellesley Avenue and Forest Street intersection. Access to the site is provided via the Main Gate entrance on Forest Street and the West Gate entrance on Wellesley Avenue. The study area for this TIAS included Wellesley Avenue, Forest Street and the three unsignalized intersections discussed above. BETA finds this study area to be appropriate.

TRAFFIC VOLUMES

Manual turning movement counts (TMC) were collected at all three intersections on Wednesday, November 14, 2012 for the hours of 7:00AM - 9:00AM and 3:00PM - 10:00PM. Daily traffic volumes were collected between Tuesday, November 13, 2012 and Wednesday, November 14, 2012 via automatic traffic recorders (ATR) on Wellesley Avenue, Forest Street, the Main Gate driveway, and the West Gate driveway. The ATR units collected directional traffic volumes and speeds.

It should be noted that Wellesley Public Schools release students early on Wednesdays. Because some students were released early, these trips may not have been captured on the roadway network during the peak periods. Historical volume data for Wellesley Avenue has shown little change in morning peak-hour volumes on early release days versus normal release days. However, evening peak-hour volumes were found to be 5% higher on normal release days than on early release days. Based on this data, it is recommended that the evening peak-hour volumes be increased by 5% to

account for school related traffic. We recommend that the evening peak analysis for the three intersections be revised.

HISTORIC TRAFFIC GENERATION

The proponent provided historic campus trip generation data, collected at the Main Gate driveway and West Gate driveway, for six different years between 1993 and 2012. A table was provided to show a comparison of AM peak hour trips and PM peak hour trips for each year of data. This data shows relatively stable AM peak hour trips, while PM peak hour trips follow a decreasing trend. The proponent noted that these volumes have decreased, even with the expansion of Babson College over the past two decades. It is expected that this trend will continue, despite the construction of the new residence hall, as fewer students would need to commute daily. For comparison purposes, is the traffic generation comparable to the college enrollment for these years?

SIGHT DISTANCES

Stopping sight distance (SSD) was measured/observed for the three unsignalized study area intersections. The intersection of Wellesley Avenue and Forest Street was found to have adequate sight distance. Both site driveways were also found to have adequate sight distance, in excess of the required 300 feet for all directions. To further improve the sight line, the proponent will trim branches on Forest Street, south of the Main Gate driveway.

ACCIDENT HISTORY

The most recent three years (2008 - 2010) of MassDOT crash data was collected for the three study area intersections. No crashes were found to have occurred during this period at either Babson College driveway. Ten crashes were found at the Wellesley Avenue/Forest Street intersection. Three crashes resulted in injury, but none were fatal. The data described primarily angle and rear-end crashes, which typically occur at an all-way stop controlled intersection. The crash rate for this intersection was found to be 0.70 crashes per million entering vehicles (mev). This is higher than the MassDOT district-wide crash rate of 0.57 crashes/mev, and the state-wide crash rate of 0.61 crashes/mev.

BACKGROUND TRAFFIC GROWTH

An annual growth rate of 1.0% (5.1% compounded) was used to increase existing volumes to 2017 volumes. This growth rate was used in correspondence with the two Wellesley Country Club projects, located nearby. The TIAS included the proposed Wellesley Country Club projects.

ROAD IMPROVEMENTS

It was noted that as part of the Wellesley Country Club project, "All-Way" plaques would be added to all four stop signs at the Wellesley Avenue/Forest Street intersection. The proponent proposes to install these plaques if the Residence Hall is constructed before the Wellesley Country Club projects.

SITE TRAFFIC

The residence hall is intended to address the shortage of on-campus housing at the college, not to add additional students. The proponent noted the project will likely reduce the number of commuting trips to the college. The proponent should provide the estimated vehicle trip reduction as a result of this project since off-campus students will now be on-campus. For analysis purposes, it was assumed

that the full-build volumes would remain the same as the no-build condition; therefore no trip reduction was used.

We recommend clarifying the trips related to staffing the new residence hall. What effect will this project have on the internal circulation within the site? Which driveways will the students likely use as a result of the new residence hall? How will this new residence hall affect on-site parking? It is unclear where students and parents will park during move-in and move-out days.

OPERATIONAL ANALYSIS

The study area intersections were analyzed using Synchro 8. For unsignalized intersections, Level of Service (LOS) is determined for each approach to the intersection. The existing condition analysis found both site driveways to operate at LOS C or better in the AM and PM peak-hours. The intersection of Wellesley Avenue at Forest Street was found to operate with LOS ranging from C to F.

For example, the Wellesley Avenue (eastbound/westbound) approaches of this intersection currently experience LOS F and LOS E, respectively, during the AM peak-hour. This is reversed in the PM peak-hour, as the directional flow changes from eastbound to westbound. The Forest Street approaches were found to operate at LOS C and D and expect less than 30 seconds of delay for both peak-hours.

Since no new trips will be added to the network under the full-build condition, the no-build and build conditions were the same. Thus, the intersection LOS for the build condition will be the same as the no-build condition. During these conditions, the intersection of Wellesley Avenue and Forest Street will continue to operate with LOS ranging from C to F.

SITE CONSTRUCTION

It is unclear when this project will start construction. To minimize construction vehicle impacts to the study area roadways, the construction of this project should be coordinated with the two proposed development projects at the Wellesley Country Club.

CONCLUSION

- Stopping Sight Distances at both site driveways were found to be adequate.
- The evening peak analysis for the three intersections should be revised to reflect the higher traffic volume on a normal school release day.
- The proponent should provide information on the potential number of off-campus students that will be using the proposed residence hall and the estimated number of vehicular trips that will be reduced as a result of the shift from off-campus to on-campus.
- BETA recommends clarifying the trips related to staffing the new residence hall. Likewise, what effect will this project have on the internal traffic circulation within the site, and which driveways will the students likely use as a result of the new residence hall? How will this new

Mr. Hans Larsen, Executive Director

April 23, 2013

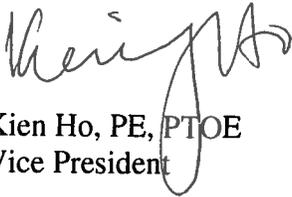
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residence hall affect on-site parking? It is unclear where students and parents will park during move-in and move-out days.

- To minimize construction vehicle impacts to the surrounding roadway network, the proposed residence hall construction should be coordinated with the proposed projects at the Wellesley Country Club.
- While the Wellesley Avenue/Forest Street intersection experiences queue problems and poor level of service (LOS E & F) on the Wellesley Avenue approaches during the peak morning and afternoon commuting periods, none of the study area intersections meet the PSI criteria for an impacted roadway.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.



Kien Ho, PE, PTOE
Vice President

cc: Terry Connolly, Town of Wellesley

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