

May 14, 2018

Zoning Board of Appeals
Town of Wellesley
525 Washington Street
Wellesley, MA 02482

Attn.: Lenore Mahoney
Executive Secretary

**Re: Proposed Residential Development – 135 Great Plain Avenue
Traffic Peer Review**

Dear Mr. Seegel:

BETA Group, Inc. reviewed the Traffic Impact Assessment (TIA) prepared by Vanasse & Associates dated June 23, 2017. The proposed residential development consists of 44 townhouse and duplex units to be located at 135 Great Plain Avenue.

STUDY AREA

The intersections of Great Plain Ave (GPA) and Skyline Drive and the proposed site driveway were examined as part of the TIA. The GPA and Skyline Drive intersection is located approximately 350 feet north of the proposed site driveway.

EXISTING CONDITIONS

TRAFFIC VOLUME DATA

Automatic traffic recorder (ATR) data on GPA in the project vicinity (south of Skyline Drive), was obtained for a 24-hour period on Wednesday, June 14, 2017. Based on industry standards, ATR should be collected continuously over a 48-hour time period. The ATR data revealed an average daily traffic (ADT) volume of 14,220 vehicles per day (vpd), a morning peak volume of 1,171 vehicles per hour (vph), and evening peak volume of 1,128 vph.

1. ATR data should be collected for a minimum continuous 48-hour period.
2. Verify that Wellesley High School seniors and the surrounding colleges were still in session on June 14th, 2017 so the ATR data reflects typical daily roadway and peak volumes.

Turning Movement Count (TMC) data was collected at the intersection of GPA at Skyline Drive in June 2017. The TMC was collected between 7:00-9:00AM and 4:00-6:00PM. It is unclear which date the TMC data was collected.

3. Clarify the date of the TMC data collection. The date on the backup data in the Appendix is illegible.

SEASONAL ADJUSTMENT

The proponent compared the historical June AADT volumes collected with MassDOT counting station H8501 which showed June data to be 8% higher than the average month. To be conservative, the proponent did not adjust the volumes downward to reflect average month conditions which BETA finds acceptable.

SPEED DATA

Speed data was collected by the ATR machines. The posted speed limit along GPA in the study area is 35 miles per hour (mph). The 85th percentile speeds were found to be 39 mph southbound and 43 mph northbound, which both exceed the posted speed limit.

CRASH DATA

Five years (2010-2014) of MassDOT crash data were examined for the intersection of GPA and Skyline Drive. The crash data revealed two crashes at the intersection in those five years. Subsequent to the date of the TIA, MassDOT posted 2015 crash data. The Wellesley Police Department could provide the most up to date crash data for 2016-2018 which would be helpful to determine any more recent safety issues that should be addressed at the intersection and in front of the site.

4. The Applicant should provide a summary of the MassDOT crash data from 2015.
5. The Applicant should also obtain and summarize the latest three years (2016-2018) of Wellesley Police Department crash data for the intersection of GPA and Skyline Drive, the Brook Street rotary, and the segment of GPA in front of the proposed site to determine any safety issues in the area.

SIGHT DISTANCE EVALUATION

The intersection sight distances were determined using the 85th percentile speeds of 39 mph southbound and 43 mph northbound. The available sight distances are more than 450 feet in both directions on GPA which are adequate for speeds greater than 45 mph.

PEDESTRIAN SAFETY

Two existing crosswalks (one for the northbound and the other for the southbound travel direction) are provided on GPA. The crosswalks are located approximately 1000 feet west of the project site driveway. The crosswalks are also located in close proximity to the Brook Street/GPA rotary. These crosswalks do not conform to ADA requirements due to the lack of wheelchair ramps.

FUTURE CONDITIONS

BACKGROUND TRAFFIC GROWTH

Traffic volumes were projected to 2024 to reflect a future 7-year planning horizon. No-Build conditions were calculated by increasing existing traffic volumes by an annual growth rate of 1% per year (over a 7-yr period). This is consistent with TIA's completed in the Town of Wellesley so BETA finds this acceptable.

According to the TIA, no additional planned development traffic is expected in the vicinity of the study area.

6. Since the project is close to the Town of Needham, the Town of Needham should be contacted regarding any planned developments that may impact traffic along GPA in the study area.

TRIP GENERATION

The proponent estimated trip generation based on data from the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Land Use Code (LUC) 230 – Townhouse/Condominium was used to determine the trip generation of the 44-unit development. It is estimated that approximately 27 and 31 new vehicle trips would be generated from this development during the morning and evening commuting peak periods, respectively.

Subsequent to the date of the assessment, the 10th edition of the ITE Trip Generation Manual was published. The 10th edition includes many updates, one of which is that LUC 230 is no longer part of the manual. The LUC most similar to the proposed development is LUC 220 – Multifamily Housing (Low-Rise) which generates similar daily and peak hour trips. However, this data does not take into account the number of bedrooms per unit. Considering the majority of proposed units will consist of three-bedrooms, a further analysis of the trip generation would be beneficial.

7. Provide traffic data from other Northland sites similar in unit size and type to estimate a more realistic trip generation.

TRIP DISTRIBUTION

The trip distribution pattern for the project was determined by existing travel patterns and split 50/50 in the northbound and southbound direction. For purposes of this study, BETA finds this acceptable.

TRAFFIC OPERATIONS

Traffic analysis was completed at the two study intersections for the 2024 Existing, 2024 No-Build, and 2024 Build scenarios during the morning and evening commuting peak hours. The 2024 Build analysis shows that all movements at the proposed site driveway would operate at level-of-service (LOS) C or better during both peak periods. The intersection of Skyline Drive at GPA would operate at level-of-service LOS C or better during the morning peak period and a LOS B or better during the evening peak period. Each movement at both intersections would experience a delay of 22 seconds or less during the peak periods. It is our understanding that there are insufficient gaps for traffic to enter GPA due to the high volume (over 1,100 vehicle per hour during the peak AM and PM commuting periods). Therefore, it is important to understand the existing gaps along GPA in the study area and it would be helpful to calibrate the analysis and determine the number of sufficient/safe gaps.

8. Perform a gap analysis during the morning and afternoon peak commuting periods to determine the number of sufficient gaps available along GPA in the study area.

Additionally, based on our review, we recommend that the following safety improvements be provided:

9. Install ADA ramps at the existing crosswalks.
10. Install additional pedestrian crosswalk signs (W11-2 & W16-7P) for both the GPA northbound and southbound approaches. These signs will supplement the existing signs and provide added visibility for traffic approaching the crosswalks. An advanced crosswalk sign for the GPA eastbound approach (approximately 200 feet west of the crosswalk) should also be installed due to the limited sight line approaching the crosswalk.
11. An electronic feedback speed limit sign (non-solar type) coupled with a 35mph speed limit regulatory sign should be provided for the GPA northbound and southbound travel directions to discourage traffic from speeding this section of the roadway. The location of the speed signs shall be reviewed and approved by the Wellesley Engineering Department prior to installation.

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

Very truly yours,
BETA Group, Inc.

A handwritten signature in blue ink that reads "Kien Ho".

Kien Ho, P.E., PTOE
Vice President

CC:
Meghan Jop, Assistant Executive Director, Town of Wellesley
Jaklyn Centracchio, PE, BETA Group,
Job No: 5475-10

CC: Jaklyn Centracchio, PE
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