

## Memorandum

Date 06/18/2019

**To** Alison C. Steinfeld, Planning Director  
Department of Planning and Community Development  
333 Washington Street  
Brookline, MA 02445

**From** James D. Fitzgerald, P.E., LEED AP

**Subject** 1180 Boylston Street, Brookline, MA – Traffic Peer Review

Environmental Partners (EP) has reviewed the Supplemental Traffic Information for 1180 Boylston Street dated April 26, 2019 that was provided by Vanasse & Associates, Inc. (VAI).

In general, VAI has prepared the supplemental traffic information in a professional manner, consistent with standard engineering practices with the exception of the issues identified below. The following is a summary of EP's traffic review. Walker Parking Consultants will provide a separate peer review of the proposed parking.

### Proposed Project

The Applicant, Chestnut Hill Investments LLC, is proposing to construct a mixed-use transit oriented development at 1180 Boylston Street in Brookline, Massachusetts. The site is occupied by a gasoline/service station that is no longer in service. Since the original review of this project, the number of age-restricted (55+) residential units increased from 45 to 50 units and the retail space increased from 5,300 sf to 6,424 sf. Access and egress will remain off Boylston Street, as previously reviewed. The number of parking spaces increased from 69 to 70 spaces and parking changed from 24-hour valet service to all self-park.

### Existing Conditions

The proposed site is located at #1180 Boylston Street, on the southeast corner of the Boylston Street at Hammond Street intersection in the Chestnut Hill section of Brookline. Both roadways accommodate two lanes of traffic in each direction near the site with primarily residential and commercial land uses. Cement concrete sidewalks are provided along both sides of each road.

An MBTA bus stop for Route #60 (eastbound) is located along Boylston Street, across Hammond Street from the site; a Route #60 (westbound) bus stop is directly across Route 9 from the site. The bus route travels from Kenmore Square to Chestnut Hill via Brookline Village and Cypress Street.

The MBTA Green Line D Branch (Chestnut Hill Station) is located along Hammond Street approximately 1,500 feet north of the project site.

### Trip Generation

VAI used the latest edition (Tenth Edition) of the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate the site-generated vehicle trips: Land Use Code (LUC) 820 (“Shopping Center”) for 6,424 sf of retail space and LUC 252 (“Senior Adult Housing – Attached”) for 50 residential units.

According to ITE, LUC 820 describes “Shopping Center” as “an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center’s composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands.” EP agrees with the use of this Land Use Code; however, due to the relatively small size of this retail space, the development falls outside of the available data set (the smallest data point at 9,000 sf), which may skew the results of the trip generation from standard ITE methodology. As such, VAI used the data points for the smallest developments available to calculate an average rate, which is more likely to accurately predict the trips generated from a retail development of this size. EP agrees with this methodology and the calculations appear to be accurate.

LUC 252 describes “Senior Adult Housing – Attached” as “attached independent living developments, including retirement communities, age-restricted housing, and active adult communities. These developments may include limited social or recreational services. However, they generally lack centralized dining and onsite medical facilities. Residents in these communities live independently, are typically active (requiring little to no medical supervision) and may or may not be retired.” EP agrees with the use of this Land Use Code. VAI used the average rate to calculate the vehicle trips where the fitted curve typically provides more accurate results; however, as the trip generation was approximately the same or more conservative for each of the time periods evaluated, EP agrees with this methodology and the calculations appear to be accurate.

Given the proximity to transit opportunities and general mode splits in the Town of Brookline, VAI anticipates a reduction in site-generated traffic for both retail and residential trips. For retail, vehicle trips are reduced based on Traffic Analysis Zone 752 data obtained from Central Transportation Planning Staff (CTPS). EP confirmed this reduction with the backups provided during the previous review of this project. For residential, vehicle trips are reduced based on journey to work data for the Town of Brookline obtained from the United States Census Bureau. VAI used a 28.7 percent reduction for commuters who use public transportation and an 11.4 percent reduction for commuters who walk, which appears reasonable.

Pass-by trips account for vehicles that are already present in the adjacent passing stream of traffic and are not considered new trips generated by the site. Traffic studies<sup>1</sup> show that LUC 820 produces a substantial amount of pass-by trips during the PM peak period, though no data is available for the AM period. In Table 1 (Trip Generation Summary: Retail), VAI used a 25% reduction for pass-by trips in both the AM and PM peak periods. Although there is no data available to support a pass-by trip reduction during the AM period, EP agrees with this reasonable assumption due to the conservative percentage used and its minimal impact to trips.

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<sup>1</sup> ITE Trip Generation Handbook, 3<sup>rd</sup> Edition

Table 3 (Trip Generation Comparison) compares trips anticipated by the proposed usage (residential/retail) to estimated trips of the prior usage (gas station) *without* consideration for pass-by trips. The evaluation shows the site is anticipated to still experience a net reduction in vehicle trips compared to the prior usage. Although VAI did not include a comparison *with* pass-by trips taken into consideration (to reflect new vehicle trips added to the roadway network), EP estimates there will still be a net reduction compared to the prior gas station use.

Compared to the previous analysis of this site performed in March 2016, the total number of new vehicle trips has increased by a relatively small amount due to the change in the proposed development.

- Average Weekday Daily Traffic = 248 (2016), 266 (2019) = 18 additional trips
- Weekday Morning Peak Hour = 9 (2016), 17 (2019) = 8 additional trips
- Weekday Evening Peak Hour = 19 (2016), 39 (2019) = 20 additional trips

Note the minor discrepancy in the above trip increases is the result of the 2016 and 2019 analyses using different editions of the ITE Trip Generation Manual appropriate at the time the evaluations were performed (the 9<sup>th</sup> and 10<sup>th</sup> editions respectively).

VAI did not provide updated traffic analyses based on the new trip generation; however, as the site is still expected to generate fewer trips than the previous usage, further analysis is not requested at this time. Given the relatively low volume of additional vehicle trips for each peak period, EP would anticipate only little effect on the delay at the study intersections as compared to that of the previous analysis. It should be noted however that the previous 2016 analysis is outdated at this time and would not reflect constructed and/or newly anticipated development in the area over the past three years.

Retail developments typically generate peak traffic on Saturdays; this supplemental information does not provide trip generation for Saturday midday peak hour for comparison.

#### Intersection Safety

VAI provided an updated review of crash data at the study intersections from MassDOT. For a more accurate crash history, it is recommended that crash data from the Brookline Police Department be utilized.

For the five-year period between 2012 and 2016, the intersection crash rate at the Boylston Street/Hammond Street intersection was 0.37 per million entering vehicles (MEV) and at the Hammond Street/Heath Street intersection was 0.11 per MEV. Both rates are lower than the District and state averages for signalized intersections of 0.71 per MEV and 0.78 per MEV, respectively. VAI did not provide the backups for the updated crash data.

It should also be noted that although the provided evaluations show the number of accidents to be low compared to the significant traffic that travels through the Boylston/Hammond intersection, the most common accident was the rear end type, occurring 12 times over the five year period typically due to unexpected or sudden stops. Additionally, for the five-year period of 2012 through 2016, 12 out of 29 of the total crashes that occurred at the Boylston/Hammond intersection occurred during 2016.