

To: Chestnut Hill Investments LLC
Brookline, Massachusetts

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

Date: September 15, 2016

Subject: 1180 Boylston Street - Traffic Peer Review

In general, the Traffic Impact Assessment by Vanasse & Associates, Inc. for the proposed development located at 1180 Boylston Street has been prepared in a professional manner, consistent with standard engineering practices with the exception of the issues identified below.

The Traffic Impact Assessment provides a comparison of anticipated trips generated by the proposed age-restricted apartments and retail development to the existing gas station and service center. Plans showing proposed parking accommodations and a loading bay have also been reviewed for traffic review. The following is a summary of Environmental Partners Group's review of available documents.

Existing Conditions

Boylston Street travels primarily in an east/west direction and accommodates two lanes of traffic in each direction. Land use along Boylston Street consists primarily of residential and commercial properties. Cement concrete sidewalks are provided along both sides of Boylston Street.

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. Hammond Street travels primarily in a north/south direction and, in the vicinity of the proposed development, also accommodates two lanes of traffic in each direction. Land use on Hammond Street near the site consists primarily of residential and commercial properties. Cement concrete sidewalks are provided along both sides of Hammond Street with metered on-street parking near the site.

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.

Memorandum

September 15, 2016

Page 2

Proposed Project

The Applicant, Chestnut Hill Investments, LLC is proposing to construct a mixed-use transit oriented development. The project will consist of 45 age-restricted (55+) apartments and 7,000 square feet of retail. The site is currently occupied by a gasoline/service station that is no longer in service.

Parking for this development is proposed underground and accessed by way of two car lifts and a 20-foot wide right-in/right-out driveway onto Boylston Street. Stop sign control has been proposed for exiting site traffic. A ramp to underground parking is not proposed by the Applicant. Documents claim that below grade parking will be provided for 80 vehicles- 20 individual spaces and 30 stacker spaces- all of which will be served by a full time valet service.

Access for delivery and trash service is proposed at a designated loading zone adjacent to the site, along the eastern side of Hammond Street, cutting into the existing sidewalk.

The report indicates that bicycle racks and transit schedules are proposed to be located on property.

Existing Traffic Volumes

November 2014 Turning Movement Counts (from the February 2015 Traffic Impact Study by Howard/Stein-Hudson) were used in this report.

The study limits appear to be reasonable and include the intersections of Boylston Street (Route 9) at Hammond Street and Hammond Street at Heath Street.

Table 1 (Existing Roadway Traffic-Volume Summary) references a 2014 daily traffic volume along Boylston Street from MassDOT but the count data was not provided for verification.

The gasoline/service station is no longer in business. It was not documented whether or not the above traffic counts were performed before or after the gas station was permanently closed.

Intersection Safety

The report included a review of crash data at the study intersections from MassDOT. The crash rate at the Boylston Street/Hammond Street intersection and at the Hammond Street/Heath Street intersection for the five-year period of 2009 through 2013 were calculated at 0.28 C/MEV and 0.12 C/MEV respectively, far below the District average (0.70 C/MEV). It should be noted however 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 14 times over the five year period typically due to unexpected or sudden stops.

As reported by the Town, accident data from MassDOT for the Town is known to be lacking due to (an) IT failure between the BPD and Mass RMV computer systems. Therefore reports from the Brookline Police Department would provide likely more accurate and reliable results.

Memorandum

September 15, 2016

Page 3

In reviewing online information available through CTPS at the Boylston/Hammond intersection for the earlier three year period of 2004 through 2006, a substantially higher number of crashes (36) were reported during the three years with a crash rate of 0.69 C/MEV, almost at the District average.

Projected Traffic Volumes

Existing traffic volumes were projected the required 7 years to 2023 using an assumed background growth rate of 1% per year. No additional traffic volumes were included to reflect individual substantial developments anticipated in the area.

The Institute of Transportation Engineers (ITE) Trip Generation Manual was used to anticipate site generated traffic. Land Use Code (LUC) 252 Senior Adult Housing was used to estimate trips generated by the 45 over-55 apartments. ITE describes this LUC to include "age-restricted housing." "Residences in these communities live independently, are typically active (requiring little to no medical supervision) and may or may not be retired."

Trip generation evaluated anticipated 7,000 square feet of retail proposed on the ground floor yet the plans call for approximately 7,900 square feet.

LUC 826 Specialty Retail Center was used to calculate trips generated by 7,000 square feet of retail proposed on the ground floor. According to ITE, "specialty retail centers are generally small strip shopping centers that contain a variety of retail shops and specialize in quality apparel, hard goods and services, such as real estate offices, dance studios, florists and small restaurants." Available data points in ITE for this LUC is very limited, significantly impacting the accuracy of predicted trip generation. For instance, in the case of the evening peak hour, three data points are provided for approximately 15,000 square foot retail ranging from 45 to almost 100 trips yet only 19 retail trips were included for this 7,900 square foot retail development. (Only two other data points are provided, both for substantially larger developments.) In most cases, the size of this retail component is not shown or within the limits of the data points. Therefore, local data or a different LUC would be required in order to accurately estimate the retail trips.

In Table 3 (Trip Generation Summary: Retail), reductions for walking and transit were assumed based on Traffic Analysis Zone 752 data obtained from Central Transportation Planning Staff but the information was not provided for confirmation.

In Table 4 (Trip Generation Summary: Residential), the new person trips for the Average Weekday Daily Traffic is shown as 51 but should be 112 according to the numbers provided, resulting in an increase in new vehicle trips from 46 to 102.

Although the above change will carry through to Table 5 (Trip Generation Comparison), the results will still show a net reduction in trips when comparing the former gasoline/service station use to the proposed residential/retail use.

In Table 4 (Trip Generation Summary: Residential), for the weekday evening peak hour, a typo of 16 cars is listed as exiting. It was intended to be 6 cars per the trip generation calculations in the Appendix.

Memorandum

September 15, 2016

Page 4

Traffic generated by retail is anticipated to peak on Saturdays. However traffic counts and evaluations of site generated traffic were not provided for a Saturday mid-day peak hour.

Traffic Operations

Traffic analysis was performed to compare the future 2023 No-Build to the 2023 Build, reflecting the proposed residential/retail trips. Negligible increases in delay are anticipated with the volumes as they currently appear in the report, without the above anticipated increases in retail trip generation.

- The Boylston/Hammond intersection will continue to operate as a LOS F during both morning and evening peak hours.
- The Hammond/Heath intersection will continue to operate a LOS E and LOS D during the morning and evening peak hours respectively.

Operations during the Saturday Mid-day peak hour were not evaluated.

Environmental Partners observed traffic briefly during the morning and evening peak periods and verified long delays (and queues) in the operational analysis results for the two study intersections. Lacking or poor phasing coordination between the two signalized intersections appears to contribute to the long queues and delays along Hammond Street.

Pedestrian Accommodations

The site plan shows direct pedestrian access from Boylston Street to the ground level retail and access from Hammond Street to the apartments lobby and elevators. A corridor is proposed between the apartments lobby and the valet pickup area immediately outside of the vehicle elevator (to the underground garage). This corridor appears to provide access to the rear of the retail spaces; it is anticipated that the corridor will be used by anyone using the underground parking to access the apartments and retail uses (including patrons).

This redevelopment project will increase the foot traffic in the area. Considerations should be made for pedestrian improvements such as traffic signal upgrades with Accessible Pedestrian Signals and ADA compliant crossings at the Hammond Street at Heath Street intersection.

Parking

A separate peer review of the parking needs, capacity and design are being provided independent of this document by Walker Parking Consultants. This separate review will address the many concerns relative to the parking layout and whether or not the claim of 80 parking spaces is realistic.

The driveway entrance should not be depressed but should be at the elevation of the sidewalk to minimize impacts by pedestrians.

The 20-foot wide right in/right out driveway onto Boylston Street from the parking garage is quite narrow considering that there will be walls on either side. Therefore two way travel will feel restricted.

Memorandum

September 15, 2016

Page 5

In order for the valet to allow occupants on the passenger side of the vehicle to enter or exit and access the corridor leading to the back doors of retail spaces and the apartment lobby, the vehicle will be required to stop immediately outside of the car lift. For exiting vehicles, this location could impact other exiting vehicles from using the lift if the car owners aren't immediately ready to depart. Moving the vehicle into the sidewalk to allow access on the pedestrian side would result in blocking pedestrians along Boylston Street.

If the proposed complex parking system (mechanical stackers, car elevators and valet service) and the need to relocate several of the 80 vehicles results in delays, the potential exists that vehicles will queue into Route 9 or will instead seek other easier/faster parking opportunities such as on-street parking, a concern of the residents.

Sight Distance

Sight distance was reviewed for the site driveway. Speed data for Boylston Street was not provided. Although speed limits are posted at 40 m.p.h., 85th percentile speeds of 45 m.p.h. to 50 m.p.h. during off-peak periods are assumed. An independent sight distance calculation was performed using Stopping Sight Distance (SSD) calculations from the American Association of State Highway and Transportation Officials (AASHTO), the minimum sight distance required. Based on this, a sight distance of 360 feet or 425 feet is required for 45 m.p.h. to 50 m.p.h. respectively. The measured sight distance without protruding into the sidewalk is estimated at 390 feet, meeting sight distance requirements for 45 m.p.h. but not 50 m.p.h.

Zoning bylaw requirements (Section 6.04.4.f.1) for sight distance to pedestrians appear to be met.

The report indicates "Boylston Street has unrestricted parking on the south side of the roadway that contains approximately 20 parking spaces." However it is our understanding from previous ZBA hearings that the Applicant has indicated that there will be no parking along the site frontage along Boylston Street. (The site driveway is also being coordinated with MassDOT since it is along State Highway.) "State Highway Parking Prohibited" signs and "No Parking Anytime" signs exist along some areas of Route 9 but do not exist in front of this site. Regardless of the signage, parking has been observed within the narrow shoulder (approximately 6 foot wide) in several areas of Route 9 including in front of the site. Since parking in front of the proposed site will impact sight distance from the driveway, additional signage is recommended in front of the site as well as increased police enforcement.

Transit

The report recommends providing transit schedules on site, although not seen on the current provided plans.

Bicycle Accommodations

The report recommends providing bicycle racks on site, although not seen on the current provided plans.

Memorandum

September 15, 2016

Page 6

Loading Zone/ Trash Pickup

A loading zone/trash pickup area is proposed along the eastern Hammond Street sidewalk, adjacent to the site. The latest proposed plans show the northbound Hammond Street approach to Boylston Street to be striped with two travel lanes (an 11-foot and a 12-foot lane) and an 11-foot wide loading bay cutting into the existing sidewalk by almost 7 feet, significantly narrowing it and requiring the increased volume of pedestrians resulting from this development to alter their path of travel to walk around it.

Based on approximate field measurements by Environmental Partners, by retaining the existing roadway centerline, there is only approximately 4 feet of sidewalk (not including curb) that will remain within the town right-of-way, resulting in pedestrians walking on private property where additional sidewalk width is shown on plan. A consistent sidewalk surface treatment is recommended. A permanent easement will be required.

Loading times should be restricted to off-peak times to minimize impacts at this congested intersection and allow for easier access to the loading zone.

Summary

- As reported by the Town, accident data from MassDOT for the Town is known to be lacking due to (an) IT failure between the BPD and Mass RMV computer systems. Reports from the Brookline Police Department would provide more accurate results than from MassDOT.
- Given the limited available data points provided in ITE for LUC 826 Specialty Retail Center, local data or use of a different LUC would be necessary to accurately estimate the retail trips and measure increases in delay between existing conditions and build conditions through updated operational analysis.
- 7,000 square feet of retail was assumed but approximately 7,900 square feet is seen on plan.
- Traffic Analysis Zone 752 data obtained from Central Transportation Planning Staff and used in reducing retail trips to account for walking and transit should be provided for confirmation.
- In Table 4 (Trip Generation Summary: Residential), the new person trips for the Average Weekday Daily Traffic is shown as 51 but should be 112 according to the numbers provided, resulting in an increase in new daily vehicle trips from 46 to 102.
- Traffic generated by retail is anticipated to peak on Saturdays. However traffic counts and evaluations of site generated traffic were not provided for a Saturday mid-day peak hour.
- The site plan shows direct pedestrian access from Boylston Street to the ground level retail and access from Hammond Street to the apartments lobby and elevators. A corridor is proposed between the apartments lobby and the valet pickup area immediately outside

Memorandum

September 15, 2016

Page 7

of the vehicle elevator (to the underground garage). This corridor appears to provide pedestrian access to the rear of the retail spaces and is anticipated to be used by anyone using the underground parking (from the apartments or retail uses).

- A separate peer review of the parking needs, capacity and design are being provided independent of this document by Walker Parking Consultants. This separate review will address the many concerns relative to the parking layout and whether or not the claim of 80 parking spaces is realistic.
- The driveway entrance should not be depressed but should be at the elevation of the sidewalk to minimize impacts by pedestrians.
- The 20-foot wide right in/right out driveway onto Boylston Street from the parking garage is quite narrow considering that there will be obstructions (walls) on either side. Therefore two way travel will feel restricted.
- In order for the valet to allow occupants on the passenger side of the vehicle to enter or exit and access the corridor leading to the back doors of retail spaces and the apartment lobby, the vehicle will be required to stop immediately outside of the car lift. For exiting vehicles, this location could impact other exiting vehicles from using the lift if the car owners aren't immediately ready to depart. Moving the vehicle into the sidewalk to allow access on the pedestrian side would result in blocking pedestrians along Boylston Street.
- If the proposed complex parking system (mechanical stackers, car elevators and valet service) and the need to relocate several of the 80 vehicles results in delays, the potential exists that vehicles will queue into Route 9 or will instead seek other easier/faster parking opportunities such as on-street parking, a concern of the residents.
- The measured sight distance from the proposed site driveway without protruding into the sidewalk is estimated at 390 feet, meeting sight distance requirements for 45 m.p.h. but not 50 m.p.h. Zoning bylaw requirements (Section 6.04.4.f.1) for sight distance to pedestrians appear to be met.
- The report recommends providing transit schedules on site, although not seen on the current provided plans.
- The report recommends providing bicycle racks on site, although not seen on the current provided plans.
- A loading zone/trash pickup area is proposed along the eastern Hammond Street sidewalk, adjacent to the site. The latest proposed plans show the loading bay cutting into the existing sidewalk by almost 7 feet, significantly narrowing it and requiring the increased volume of pedestrians resulting from this development to alter their path of travel to walk around it.
- Based on approximate field measurements by Environmental Partners, there is only approximately 4 feet of sidewalk (not including curb) that will remain within the town right-of-way, resulting in pedestrians walking on private property where additional

Memorandum

September 15, 2016

Page 8

sidewalk width is shown on plan. A consistent sidewalk surface treatment is recommended. A permanent easement will be required.

- Loading times should be restricted to off-peak times to minimize impacts at this congested intersection and allow for easier access to the loading zone.
- The existing no parking restriction in front of the site requires additional signage and police enforcement in order to provide adequate sight distance from the site driveway.
- This redevelopment project will increase the foot traffic in the area. Considerations should be made for pedestrian improvements such as traffic signal upgrades with Accessible Pedestrian Signals and ADA compliant crossings at the Hammond Street at Heath Street intersection.
- Improvements in operations between the Stateø Boylston/Hammond intersection and the Townø Hammond/Heath intersection should be considered with improved coordination between the two signalized intersections.