



PROJECT # 16-3060.00

DATE: September 16, 2020  
TO: James Fitzgerald, P.E., LEED AP  
COMPANY: Environmental Partners Group, Inc.  
ADDRESS: 1900 Crown Colony Drive, Suite 402  
CITY/STATE: Quincy, MA 02169  
COPY TO: Arthur G. Stadig, P.E.  
FROM: Brandon C. Schrenker, P.E.  
PROJECT NAME: 500 Harvard Street  
PROJECT NUMBER: 16-3060.00

20 Park Plaza, Suite 1202  
Boston, MA 02116  
617.350.5040  
walkerconsultants.com

Walker Consultants (Walker) has been retained by the Town of Brookline through Environmental Partners Group to review parking design for the 500 Harvard Street 40B application.

Walker has reviewed the application materials provided by the Applicant that are generally available on the Town’s website for this project. This review included the following:

- Drawings / presentation materials by Cube 3 Studio dated October 17, 2018
- Transportation Impact Study dated March 13, 2020 and addendum dated May 8, 2020
- Traffic Demand Management Plan dated May 2020
- Traffic and Parking Narrative dated October 2019
- **\*new\*** Parking Response to Peer Review from Cube3 (C3) dated July 23, 2020
- **\*new\*** Traffic Response to Peer Review from Vanasse and Associates (VAI) dated July 31, 2020
- **\*new\*** Letter from MAPC dated September 1, 2020

The development project proposes 30 residential units (3 studios, 17 one-bedrooms, 7 two-bedrooms, and 3 three-bedrooms), 1,740 SF of ground level retail, and 6 parking spaces in the building and one new on-street space to provide 7 total spaces.

Walker offers the following comments from our review of the application materials:

1. This site is in the L1.0 Zoning District and the Coolidge Corner Design Overlay District.
  - a. This district requires:
    - i. 2.0 spaces per residential unit for 1 to 2 bedrooms units
    - ii. 2.3 spaces per residential unit with 3 or more bedroom units
    - iii. 10% increase of residential spaces for visitors and tradespeople
    - iv. 1 space per 200 SF of ground floor retail; maximum.
    - v. Total parking minimum requirement per Zoning for the proposed program is 77 spaces (61 residential; 7 visitor/tradespeople; 0 retail). A maximum of 9 spaces for retail parking can be provided.
  - b. Waiver Item N in the application indicates the project is reducing the number of required spaces to 6 parking spaces for the development. The application does not provide a rationale or methodology for how the number of spaces was determined and which user group will have access to the parking.

- c. The Traffic Assessment notes that the 6 interior spaces will be for residents. This is a ratio of 0.2 spaces per unit. One additional space is provided outside for delivery / visitor use.
2. The Traffic and Parking Narrative anecdotally explains that many of the existing residents in the Applicant's other projects do not own vehicles.
  - a. The Applicant should be more definitive in defending a large reduction in required parking.
  - b. The Traffic Assessment indicates a proposed trip generation summary of weekday daily total vehicle trips to be 128 vehicles. This includes a reduction based on journey to work data for this census tract. It goes on to say that "most residents will not have vehicles", but there is no data provided to support this.
  - c. The pricing and parking allocation for residents affects parking demand and is not addressed in the application materials.
3. To estimate a reasonable range of parking demand for this project, Walker has performed research based on the Census Data related to residences and vehicle ownership for this project's location.
  - a. In Walker's research based on US Census review of this specific Tract 4003, we would anticipate the parking demand falling in the range of 0.7 to 0.95 spaces per unit.
  - b. However, given the proximity of this development to the Green Line transit service and that this project is rental units opposed to condominiums, this development will likely be more similar to the adjacent Census Tracts 7.03 and 7.04 just to the north in Brighton. These tracts are predominantly along the transit service and are 90% rental units, whereas Tract 4003 is only 47% rental units.
  - c. If using the Tract 7.03 and 7.04 data, an estimated parking supply would be between 0.4 to 0.6 spaces per residential unit, or 12 to 18 spaces, for this project, not including visitor or service vehicle parking. Note that price-point of the units will also impact the parking demand.
4. This zoning district further requires that in a mixed-used development 10% of the residential spaces are designated for use by visitors or tradespeople.
  - a. The Parking Demand Management Plan and Parking Narrative indicate one new on-street parking space. For the 6 spaces provided in the garage, providing one space on-street does comply with the 10% requirement.
  - b. However, if considering the 12- to 18-space demand range noted in Item 3 above, an additional 2 spaces would be required for visitors and tradespeople. This would bring the total residential demand of 16 to 20 spaces corresponding to a ratio range to 0.47 to 0.67 spaces per rental unit.

**9.15.2020 Response to VAI on Walker Items 1 -4:**

*There is general disagreement from VAI with Walker's recommended supply ratios for residential parking. To offer additional comment on VAI's responses:*

1. *There is mention of upcoming Brookline Warrant Memos, which may encourage reducing parking requirements in the town. The warrants appear to be proposals currently before the Town, however until those warrants become law and part of the Zoning Ordinance, we cannot comment further on how they may or may not apply to this development.*



2. *The VAI response lists eight proximate properties to this project (ten properties are indicated but 524 Harvard Street and 514-516-Harvard Streets are each listed twice) which range in units from 3 to 62 and parking supply ratio from 0.0 to 0.92 spaces per unit. This range of data appear inconclusive.*
  - a. *Five existing properties provided a total of one parking space. These unit were built during a time that predates vehicles or vehicles were used in a substantially different way (1890 to 1915). These represent part of the 2000+ garage orphans identified in Brookline.*
  - b. *384 Harvard Street, a newly built development, provides a similar parking ratio to what is proposed for this project. This is an age-restricted, affordable house building which results in a different user group and therefore perhaps different consideration for parking supply.*
  - c. *420 and 455 Harvard Street are newly built 40B developments with a cumulative supply of 0.78 (33 total parking spaces for 42 total units, individually are 0.59 and 0.92). These supply metrics are approximately triple the amount proposed for this project. We understand some of the parking supply may be for the 7,600 sf of total retail space between the two developments, but even at that the ratios would exceed the proposed ratio for 500 Harvard.*
3. *In response to VAI's question regarding the census data, Walker used census data from the American Community Survey which was referenced in the original traffic report and is often used to project parking demand in a specific neighborhood. In addition to the specific tract that this project is located in, Walker also considered two adjacent Census tracts to better define the potential demand range for this location.*
4. *The VAI response notes that the Metropolitan Area Planning Council (MAPC) has performed a study providing evidence that there is a reduced need for parking; this is assumed to the Perfect Fit report. MAPC also provided a letter for this project, noting that MAPC feels that 7 parking spaces for this site is adequate. This is a ratio of 0.23 spaces per unit.*
  - a. *Walker has reviewed the data publicly available in Perfect Fit report. This report includes 200 surveyed locations and provides the parking demand observed at those locations. In general, Walker is in agreement that there are areas where parking is overbuilt. However, in Walker's opinion, the data provided in this report does not suggest a demand ratio in the range of 0.2 is appropriate for this project.*
  - b. *The data in the report does not include Brookline, however a few proximate locations in Boston / Allston are provided. A close comparable location observed is Gateway Boston, located at 900 Beacon St. The demand ratio reported is 0.39. It should be recognized that this is located in the Fenway area directly on the Green Line (C-Line) and is approximately one mile closer to downtown Boston than this project site.*
  - c. *There are three other locations in Allston which are proximate to the project where the demands recorded are 0.58, 0.58, and 0.78. These locations are a slightly longer walk to the MBTA Green Line Harvard Ave. Station (0.5 miles vs. 0.2 miles), however are a representation of what the higher end of demand could*

*be suggested for this area. These locations and 500 Harvard are all in close proximity to the MBTA Route 66 bus.*

- d. These data point correlate well with the demand range of 0.4 to 0.6 that was offered by Walker using a census data review as a means to calculate demand.*
- e. The majority of data points fall into the range of approximately 0.4 to 1.0 spaces per unit. It is recognized that each location and project will have unique characteristics, however that is the common demand range recorded. Demand ranges of 0.25 spaces per unit or less represent 7.5% (15 locations) of the data points collected. Of those 15 locations, at least 8 are elderly housing and at least 10 are 95%+ affordable housing project.*
- f. The MAPC letter also suggest other arguments for reducing parking requirements depending on the specific project. Walker's opinion in this memo reflects only that the expected parking demand from the 500 Harvard project is greater than the proposed parking supply.*

*Based on Walker's initial peer review of this project, review of the Applicant's responses, and review of the data provided by the MAPC in the Perfect Fit Report, we feel the recommended demand range of 0.4 to 0.6 per unit remains an appropriate range.*

5. The development is compliant with Zoning by providing 0 spaces for retail. A The number of spaces, up to the maximum 9-spaces allowed, may be high for some and low for other retail uses. We suggest the Applicant clarify the type of retail intended for the space.

**9.15.2020 Response to VAI on Walker item 5:**

*Walker has no comment to the neighborhood-type retail noted in VAI's response.*

6. Walker agrees with the traffic assessment findings that 62% of trips to work in Tract 4003 are by a mode other than personal vehicle. However, the Census information also suggest that some of those who take public transportation to work also own a vehicle that needs to be stored. This is reflected in the Census data indicating noted in Item 3 above suggesting that a range of 0.7 to 0.95 spaces per unit is appropriate for this tract.

**9.15.2020 Response to VAI on Walker item 6:**

*See our response to Items 1-4 above. Note that we used Census data from the American Community Survey.*

7. The Applicant is showing a vertical semi-automated mechanical "puzzle" parking system. Walker takes no exception with the puzzle parking layout.
  - a. The drawings indicate a 22-ft drive aisle adjacent to the puzzle parking system; this meets zoning requirements. Some larger vehicles may have difficulty maneuvering into and out of the puzzle parking system without a multi-point turn due to this clearance.
  - b. With the puzzle system, when a parking maneuver is taking place, no other movements can be happening at the same time inside the garage. When considering the peak hour volume condition



- provided in Vanasse & Associates, Inc. (VAI) report, this is generally acceptable for most residential parking who are used to urban-like conditions.
- c. It should be noted that a puzzle parking system has unique characteristics such as limited pedestrian headroom, footing that is affected by the pallet system, and requirements to place the vehicle into the system which reduce parcel management time. These systems work and are effective for densifying parking, but some users will find them less convenient / accessible than others and there are some operational characteristics that will need to be managed.
8. The parking spaces and drive aisle appear to comply with Zoning but should be confirmed.
    - a. The spaces appear to be 9-ft (based on scaling) and the drive aisle is 22-ft wide, but it is unclear if the actual parking space is less than that if the puzzle parking system encroaches on that dimension.
    - b. If the spaces are reduced to 8.5-ft wide, Zoning requires the drive aisle to be 23-ft wide and this layout would not comply.
    - c. Note that Zoning does not explicitly address mechanical parking; these requirements are based on typical self-park conditions.
  9. The entry/exit off to the garage does not show parking access control equipment.
    - a. The plans appear to indicate an opening for two overhead doors; one for entering and one for exiting.
    - b. The turning maneuvers to access the spaces adjacent to the doors may affect the operation of the doors and cause queuing into the driveway or street periodically (it is recognized that the peak flow conditions are very low and likelihood of queuing is minimal but should be anticipated on occasion).
    - c. While not critical at this time, future phases of design should define the parking access control requirements and impacts to the access doors.
  10. There is one van accessible space shown on the plans. Confirm 8'-2" headroom clearance at the van accessible space and for the movements to / from the space. The Applicant should confirm the accessible layouts and locations comply with ADAAG.
  11. The parking facility is enclosed and will require a ventilation system.
    - a. We suggest that a general description be provided of how the ventilation system is arranged. This would include where intake and exhaust air are provided and how the air is moved.
    - b. Show or describe how ventilation does not adversely affect neighbors.
    - c. Confirm ventilation equipment will not reduce headroom in the parking areas below code minimums.
  12. We suggest the Applicant consider including electric vehicle charging stations in the garage and/or the ability to add charging stations in the future.



**9.15.2020 Response to VAI and C3 on Walker items 7-12:**

*We take no exception to VAI and C3's responses to our comments in these items. One item to clarify is the vehicle access control, Item 9. C3 states that access control will be handled with a "proximity reader". We understand this to be a transponder, similar E-ZPass, and not a proximity car. A proximity card requires more physical equipment.*

We remain available to answer further questions and attend the Town's ZBA meeting as required.