Stantec Planning and Landscape Architecture, PC.
226 Causeway Street, Boston, MA 02114-2155

October 19, 2021

Attention: Maria Morelli, AICP, Senior Planner

Department of Planning and Community Development
333 Washington Street
Brookline, MA 02445

Reference: 108 Centre Street Development, Brookline, MA

Dear Maria,

We have reviewed the traffic peer review by Environmental Partners (EP) addressed to Alison C. Steinfeld and dated October 13, 2021. The EP review considers a trip generation study and a traffic impact study both prepared by Stantec for the above-referenced project and dated September 2021. The Stantec studies conclude that the proposed development will generate up to six peak hour vehicle trips and that these trips will not have a significant impact on the area roadway system. The EP memorandum notes that the Stantec studies were prepared "in a professional manner, consistent with standard engineering practices". EP also provided comments regarding certain study assumptions and offered recommendations. In response to these comments, Stantec updated portions of the traffic impact study. The updated traffic impact study is attached. The findings of the original traffic study have not changed. The EP comments and Stantec's responses are provided below.

1. *EP recommends that Stantec review available historical data to determine if the traffic counts should be adjusted to account for pandemic-related reductions in traffic.*

Stantec cited data in the traffic study from 2016 for the Williams Street/Harvard Street intersection which represents pre-pandemic conditions. The 2021 peak hour volumes are 12 to 13 percent lower than the 2016 volumes. The existing (2021) peak hour volumes reported in the traffic study were increased to 2016 levels to represent pre-pandemic conditions. These revised "Existing" volumes were then used to develop future No Build and Build condition traffic volumes in the same manner as described in the September traffic study.

2. *EP requests a review of the supplemental memorandum relating to crash data requested from the Town upon completion.*

Stantec requested crash data from the Town on September 8, 2021. As soon as Stantec receives these data from the Town, it will analyze and share it.

3. *EP requests clarification on how the K Factors used in the crash rate calculations were derived.*

The K factors used were default factors carried over in the worksheet from a prior study. The K factors have been changed using the K factor derived from the 2021 24-hour count taken on Centre Street at the subject site. Updated crash analysis worksheets have been provided.

4. *EP recommends consideration for mitigation related to bicycle accommodations.*

The proposed development includes indoor accommodations for bicycle storage and outdoor racks are now proposed for visitor bicycle parking. The traffic impact study indicates that the proposed

project will not have a significant impact on bicycle volumes in the study area. The applicant is not proposing mitigation for the area bicycle network.

5. *EP recommends using a background traffic growth rate based on local data.*

There is insufficient local data available to establish a reliable background growth rate. The background growth rate applied, based on more regional data, is consistent with the rate used in recent traffic studies for other developments in Brookline.

6. *EP requests backup data related to traffic forecasts for other development in the area for verification.*

Stantec will make available for EP review files of the traffic studies considered in estimating background development trips.

7. *EP notes, however, that Journey-to-Work data may not be the most accurate reflection of travel mode choice for the proposed senior housing development, and we recommend using a secondary source or reviewing TMC data or the log records maintained in the lobbies of the existing campus facilities that were used to supplement the TMC data for the vehicle trip generation, if existing pedestrian data is available.*

The trip generation analysis for alternative modes indicates that the project will have an insignificant impact on area pedestrian and bicycle traffic volumes. The analysis is based on U.S. Census Journey-to-Work data as there is no other reliable data source for this land use type. The log records collected in the existing building lobbies are not a suitable substitute for the Journey-to-Work data. As with most private residences, the log data are limited to visitors (it does not include employees, residents, and certain contractors) and does not distinguish among walking, biking, or transit trips.

8. *EP recommends providing a Synchro report which includes all factors outlined below (if applicable) for verification.*

The Synchro reports have been updated to include the requested factors. The updated Synchro reports are included in the appendix of the updated study.

9. *EP recommends using the measured PHF by approach and heavy vehicle percentage by lane movement from the TMC data for each intersection and updating roadway grades if data is available.*

The Synchro calculations were updated to use peak hour factors and heavy vehicle percentage data from the TMC reports. Roadway grades are generally flat and zero percent grades were assumed in the analysis.

10. *Stantec provided the Queuing report for the existing conditions but did not include it for the No-Build and Build condition analyses at the signalized intersections. EP requests the Queuing reports to compare No-Build and Build conditions.*

Queueing reports for No Build and Build conditions are provided in the updated report appendix and the queue information is summarized in the updated level of service tables.

11. *Stantec did not include conflicting pedestrian or bicycle movements in the Synchro analysis. Given the relatively high volume of pedestrians and bicycles in the study area, the analysis*

should accurately represent the inclusion of all modes. As such, EP recommends including conflicting pedestrian volumes and bicycle volumes for more accurate analysis results.

The updated analysis includes conflicting pedestrian and bicycle volumes as reported in the traffic count data.

12. *EP requests verification of the existing signal phasing.*

The signal timing used in the analyses reflects existing timing as reported on the Town's signal timing plans included in the appendix.

13. *At the intersection of Centre Street and Williams Street, volumes for the northwestbound left turn and through movements have been swapped for the evening peak hour analysis for Existing, No-Build, and Build conditions. Volumes and analysis should be updated at this location.*

The turning movement graphics and intersection operations analysis have been updated to address the swapped volumes.

14. *EP recommends reporting all movements for each intersection to better indicate areas for potential improvements in operations.*

The intersection operations summary tables have been updated to document performance for each individual lane group.

15. *While EP agrees the previously prepared analysis shows only minor increases in delay, with the revisions to the analysis as recommended above, we would anticipate that some of the critical movements at the study intersections would degrade in level of service under No-Build conditions, which could potentially result in more significant impacts to the traffic operations with the addition of the project-generated traffic under Build conditions.*

The updated analyses do not indicate any changes in level of service for any lane group due to the addition of project related traffic.

16. *We note that any proposed signs or landscaping adjacent to the driveways should be maintained below a height of 2.5 feet.*

The project does not propose any signs or landscaping adjacent to the site driveways above 2.5 feet other than the STOP signs requested by EP for the site driveways.

17. *In addition to bicycle parking for the residents, EP also recommends an off-site, street-level bicycle rack in addition to the proposed bicycle storage inside the parking area for visitors and fast turnover for daily use, which will provide additional convenience and further promote bicycle usage.*

The project site plans now include a street level bike rack for visitors.

18. *EP recommends installing a "STOP" sign and stop line at the site driveway(s) in compliance with the Manual of Uniform Traffic Control Devices (MUTCD). All other signs and pavement markings, as applicable, shall also be MUTCD-compliant.*

MUTCD compliant STOP signs and STOP lines will be provided on the site driveways.

19. *In reviewing the emergency vehicle turning templates at the proposed Site driveway provided in the appendix, EP noted that the "AEV Type I" vehicle appears to be driving over the curb corner when entering the driveway. We recommend revising the design accordingly to accommodate the emergency vehicles.*

    The project site plans have been modified to adequately accommodate emergency vehicles. An updated turning template has been provided in the report.

20. *To provide additional mitigation for the increasing pedestrian volume, pending input from the Transportation Board, EP recommends considering pedestrian improvements including:*
    a. *Tightening intersection corners or installing curb bump-outs within the study area (where applicable) to shorten crosswalks and reduce delay for pedestrians at signalized intersections*
    b. *Retiming exclusive pedestrian intervals to provide adequate timing for pedestrian crossing at all locations, conforming to MUTCD standards.*

    The applicant will meet with the Transportation Board to discuss potential additional transportation mitigation measures. As noted above, the project is not expected to generate significant new pedestrian demands on the area roadway network.

We trust that the above adequately addresses comments raised in the traffic peer review. Please do not hesitate to contact us if you require additional information.

Regards,

Stantec Planning and Landscape Architecture, PC.

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