

MEMORANDUM

Date: July 25, 2022

To Ms. Jacki Byerly, Town Planner
Town of Andover
36 Bartlett Street
Andover, MA 01810

From Jane R. Davis, P.E.

CC James D. Fitzgerald, P.E., LEED AP

Subject 3000 Minuteman Road Traffic Peer Review:
Review of Response to Comments (RTC)

Environmental Partners (EP) has reviewed the responses prepared by Vanasse & Associates, Inc. (VAI) to the comments/questions raised in the Traffic Peer Review (dated July 8, 2022) regarding the proposed development (“the Project”) located at 3000 Minuteman Road in the Town of Andover (“the Town”). EP has provided a response (“**EP Response 07/25/2022**”) to each of the original EP comments (“**EP Comment 07/08/2022**”) and subsequent VAI responses (“**VAI Response 07/15/2022**”) as outlined below.

Existing Conditions

Comment 1

EP Comment 07/08/2022:

The TIA states that bicycle lanes are present along River Road between the 1776 Drive intersection and Minuteman Road/Shattuck Road intersection. EP notes that although a 5-foot-wide striping exists within that roadway segment, no bicycle lane markings are present.

VAI Response 07/15/2022:

Comment acknowledged.

EP Response 07/25/2022:

No further action; **Comment 1 closed.**

Comment 2

EP Comment 07/08/2022:

VAI noted that on study roadways other than the above-mentioned segment, bicycle accommodations exist in the form of a shared traveled-way. While EP concurs that these study roadways have a combined shoulder and travel lane width of 14-feet or wider, no specific bicycle accommodations are present on these roadways.

VAI Response 07/15/2022:

Comment acknowledged.

EP Response 07/25/2022:

No further action; **Comment 2 closed.**

Comment 3

EP Comment 07/08/2022:

The intersection of River Road at Minuteman Road/Shattuck Road was stated to include bicycle detection as part of the traffic signal system. During our site visit, EP was unable to verify bicycle detection at this intersection; the appropriate signage and pavement markings are not apparent.

VAI Response 07/15/2022:

Comment acknowledged.

EP Response 07/25/2022:

No further action; **Comment 3 closed.**

Existing Traffic Volumes

Comment 4

EP Comment 07/08/2022:

EP agrees that volumes collected in May typically represent above-average month conditions, and we take no exception to VAI's approach.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 4 closed.**

Comment 5

EP Comment 07/08/2022:

EP concurs with VAI's methodology and the resultant decision to not adjust the volumes.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 5 closed.**

[Comment 6](#)

EP Comment 07/08/2022:

EP takes no exception to the collected data.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 6 closed.**

Public Transportation Services

[Comments 7](#)

EP Comment 07/08/2022:

EP confirmed the provided information in the TIA.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 7 closed.**

Motor Vehicle Crash Data

[Comments 8](#)

EP Comment 07/08/2022:

Backup data has not been provided to support the crash data summary. Our independent review of the MassDOT Crash Portal revealed minor inconsistencies that would not significantly impact the crash rates, which are expected to remain below the State and District 4 averages.

VAI Response 07/15/2022:

The requested backup data for the motor vehicle crash analysis that is presented in the June 2022 TIA is attached.

EP Response 07/25/2022:

Backup information supports the crash analysis; **Comment 8 closed.**

[Comments 9](#)

EP Comment 07/08/2022:

EP typically recommends obtaining crash reports from the Police Department to further assess the crash history at the study area intersections.

VAI Response 07/15/2022:

The Andover Police Department was consulted during the preparation of the June 2022 TIA and the assessment reflects their input as it relates to the evaluation of the impact of the Project on the transportation infrastructure and the associated recommendations. To the extent deemed necessary by the Police Department, a supplemental assessment of motor vehicle crashes occurring within the study area will be undertaken. That being said, we do not anticipate that such an assessment would alter the findings of the crash analysis that is presented in the June 2022 TIA.

EP Response 07/25/2022:

EP will review the supplemental assessment once received for completeness. If any crash trends are identified through the supplemental data, potential mitigation measures may be recommended at that time.

Future Conditions

Comment 10

EP Comment 07/08/2022:

EP agrees with the methodology.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 10 closed.**

Comment 11

EP Comment 07/08/2022:

We assume that VAI's research and correspondence with the Town of Andover has adequately identified all major projects and developments that may impact travel patterns in the study period; verification from the Town is recommended.

VAI Response 07/15/2022:

VAI coordinated with the Planning Division of the Department of Community Development and Planning before and during the preparation of the June 2022 TIA to identify the specific development projects by others to be included in the future condition traffic volumes.

EP Response 07/25/2022:

No further action; **Comment 11 closed.**

Comment 12

EP Comment 07/08/2022:

Backups have not been included for the trips associated with the nearby developments; as such, we cannot verify all the volumes in Figure 4 of the TIA for the 2029 No-Build Peak-Hour Traffic Volumes.

VAI Response 07/15/2022:

Figures A-1, A-2 and A-3 are attached and illustrate the assignment of trips to the study area intersections associated with the reoccupancy of the Philips Healthcare campus and those attributable to the identified specific development projects by others.

EP Response 07/25/2022:

Backup information supports the 2029 No-Build Peak Hour Traffic Volumes; **Comment 12 closed.**

Comment 13

EP Comment 07/08/2022:

It is our understanding that under existing conditions, the former Philips Healthcare facilities are partially or fully vacant and are currently generating fewer vehicles than a fully-occupied campus. To estimate the 2029 No-Build conditions, VAI incorporated the impacts of the fully-occupied campus, under which the site is currently approved to operate, though not currently experienced. Although we do not take exception to this methodology, we note that the 2029 No-Build conditions do not reflect a projection of the existing conditions were the site vacancies to remain.

VAI Response 07/15/2022:

Significant portions of the former Philips Healthcare campus were vacant or underutilized at the time that the traffic counts that form the basis of the June 2022 TIA were completed (May 2022). As discussed with the Town and EP in advance of the preparation of the June 2022 TIA, it was agreed that the Existing conditions analysis would reflect conditions and the campus occupancy at the time that the traffic counts were performed, and that the future No-Build condition would reflect conditions with the reoccupancy of the campus by similar uses that existed when Philips Healthcare operated the campus given that such reoccupancy could occur "as-of-right".

EP Response 07/25/2022:

Assuming the Town concurs with VAI's methodology, we have no further comments. **Comment 13 closed.**

Future Build Conditions

Comment 14

EP Comment 07/08/2022:

EP agrees with the use of these land use code and the methodology.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 14 closed.**

Comment 15

EP Comment 07/08/2022:

The trip generation for the former Philips Healthcare campus uses LUC 760 – “Research and Development Center” for a small portion of the total square-footage, though the description of the existing buildings under the Project Description section of the TIA does not specify this land use. Clarification is requested.

VAI Response 07/15/2022:

LUC 760 was applied to the building area within the former Philips Healthcare campus that was allocated to office space in Buildings 2 and 3 which included associated electronics manufacturing as the office function in these buildings was dedicated to electronics research and development. The combined building area within these buildings totaled 83,825 sf.

EP Response 07/25/2022:

Clarification provided; **Comment 15 closed.**

Comment 16

EP Comment 07/08/2022:

Table 6 states that the number of vehicle trips includes the trips associated with the Link & Amenities Building. However, based on the trip generation backups in the appendix for the total square-footage of each land use code, it does not seem that these trips have been included. Based on the description in the TIA, EP understands that this building will operate similarly under both former and proposed conditions, and therefore the trip generation will remain the same. Although the difference between the two uses in Table 6 will remain the same, any trips associated with this building should be included in the total trips.

VAI Response 07/15/2022:

The Link & Amenities Building (48,200± sf) contains amenities such as a cafeteria, meeting space and other services that are supportive of the other uses located within the campus (both formerly and proposed) and will not produce additional traffic beyond that attributable to the other buildings.

EP Response 07/25/2022:

Based on the provided explanation, it appears the Link & Amenities building does not generate traffic on its own and only supports the other buildings on the campus. Typically, these types of “other services” are located within the same building as a proposed use, and as most land use codes assume a percentage of space for such services, they are included in the total square footage used to estimate the trip generation. While we recognize that the Links & Amenities building itself does not generate traffic, not including the square-footage of the building likely underestimates the trip generation since these services have been accounted for within the land use codes. However, since the building wasn’t included in the total square-footage for either the no-build conditions with the previous use or the build conditions with the proposed use, we understand that the difference between the no-build and build conditions will be negligible and as such we do not request any further revision. **Comment 16 closed.**

Comment 17

EP Comment 07/08/2022:

Table 6 indicates an increase in the average weekday daily trips of 314 trips when comparing the fully-occupied former Philips Healthcare campus to the proposed Project, but a decrease of 117 vehicle trips during the weekday morning peak hour and a decrease of 87 vehicle trips during the weekday evening peak hour. As discussed above regarding the projection of the existing conditions to the future no-build conditions, although we do not take exception to this methodology as the site is currently approved to operate under the fully-occupied conditions, we note that in actuality, there will not be a decrease in vehicle trips based on the current existing conditions (with vacancies), and in fact, there will be an increase of between 600 and 700 vehicle trips during each of the peak hours.

VAI Response 07/15/2022:

We acknowledge the comment pertaining to the comparison to existing traffic volume conditions with the former campus essentially vacant; however, as discussed with the Town and EP in advance of the preparation of the June 2022 TIA, it was agreed that the relevant comparison is the impact of the Project as it relates to the full "as-of-right" reoccupancy of the campus given that such reoccupancy can and will occur to the extent that the Project were not advanced. Further, the transportation infrastructure along the River Road corridor and the at the access points to the Project site was designed and constructed to support the build-out of the properties along Minuteman Road, 1776 Drive and Shattuck Road, including the prior use of the campus.

EP Response 07/25/2022:

Assuming the Town concurs with VAI's methodology, we have no further comments. **Comment 17 closed.**

Comment 18

EP Comment 07/08/2022:

EP concurs with this assumption.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 18 closed.**

Comment 19

EP Comment 07/08/2022:

Based on the methodology and the assumptions, the 2029 Build conditions volumes appear to be accurate.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 19 closed.**

Traffic Operations Analysis

Comment 20

EP Comment 07/08/2022:

The peak hour factor (PHF) and heavy vehicle percentage Synchro inputs are inconsistent in No-Build and Build conditions compared to the existing conditions and collected data.

VAI Response 07/15/2022:

The PHFs and heavy vehicle percentages were adjusted to the default values for the No-Build condition given the change in traffic volumes and traffic patterns at the study intersections resulting from the "as-of-right" reoccupancy of the Philips Healthcare campus. The default values were retained for the Build condition in order to allow for a comparative assessment of the impact of the Project vs. the "as-of-right" reoccupancy (i.e., No-Build condition).

EP Response 07/25/2022:

EP takes no exception to the methodology described in VAI's response. We note that it doesn't appear that the PHFs and heavy vehicle percentages were adjusted consistently across all lane groups as the PHFs range from 0.67 to the default value of 0.92 and the truck percentages range from 0 percent to the default value of 2 percent. However, since the project results in a decrease in vehicle trips during the peak hours, any discrepancies in the analysis based on the PHFs and heavy vehicle percentages are assumed to be minor and we therefore do not request any further revision.

Comment 20 closed.

Comment 21

EP Comment 07/08/2022:

At the intersection of River Road and Minuteman Road/Shattuck Road, the channelized westbound right turn lane operates under free control, and the channelized southbound right turn lane operates under yield control, though both movements are modeled under signalized control in the analysis. However, we note that with the signalized control, the analysis still shows an acceptable level of service.

VAI Response 07/15/2022:

Comment acknowledged. As indicated by EP, revising the analysis to remove the channelized right-turn movements would result in improved operating conditions at intersections that were indicated to be operating acceptably in the June 2022 TIA.

EP Response 07/25/2022:

No further action; **Comment 21 closed.**

Comment 22

EP Comment 07/08/2022:

In Table 7 of the TIA (Signalized Intersection Level-of-Service and Vehicle Queue Summary), we recommend presenting the actual delays when exceeding 80 seconds.

VAI Response 07/15/2022:

Table 7 has been updated to present the modeled delays for the movements that were identified to be operating over capacity (i.e., LOS "F"). We note that the modeled delays are not indicative of the delays that are or that will be experienced under such conditions, as the analysis model is not an accurate predictor of delays under oversaturated conditions where flow becomes unstable.

EP Response 07/25/2022:

We agree with VAI's statement pertaining to the software limitations in accurately modeling delays under oversaturated conditions, but recommended all the delays be displayed in the summary table for the purposes of comparison (a "small" F versus a "big" F is worth noting). The revised table is consistent with the analysis. **Comment 22 closed.**

Comment 23

EP Comment 07/08/2022:

Similar to the discussion above, comparing the 2029 No-Build conditions, which reflect the fully-occupied Philips Healthcare campus (although it is currently substantially vacant), to the 2029 Build conditions does not reflect the change in traffic operations compared to existing conditions. Based on the comparison of the proposed Project to the fully-occupied former use, we agree that the impacts of the proposed Project are minimal and in some instances provide an improvement in operations. However, when compared to the existing conditions which include site vacancies, the traffic operations are expected to degrade from the current LOS C to a LOS F along the impacted movements at the intersection of River Road at Minuteman Road/Shattuck Road with significant increases in delay. EP notes that the proposed mitigation discussed under the Recommendations Section includes optimization of the traffic signal timings, which improves the traffic operations such that all movements are expected to operate at a LOS D or better.

VAI Response 07/15/2022:

See response to Comments 13 and 17.

EP Response 07/25/2022:

No further action; **Comment 23 closed.**

Comment 24

EP Comment 07/08/2022:

Although the intersections with the Interstate 93 (I-93) ramps at River Road were not included in the study area based on the impacts of the proposed Project as presented, we note that the increase in the number of vehicle trips due to the proposed Project as compared to the current existing conditions will likely have a significant impact on these intersections, as it is assumed a large portion

of these trips will not be locally-generated trips and will be using I-93 to access the site. Optimization to the traffic signal timings at these intersections should also be considered.

VAI Response 07/15/2022:

The scope of the June 2022 TIA was developed in consultation with and approved by the Town and EP. It was agreed that the appropriate condition to be assessed for the Project was based on the "as-of-right" reoccupancy of the former Philips Healthcare campus, consistent with the approach to conducting TIAs for redevelopment projects where the former use is or was occupied within the past 3-years, the statutory timeline established for consideration of the former use of a property under 301 CMR 11.00: MEPA Regulations.

As identified in the June 2022 TIA and acknowledged by EP, the Project will result in a reduction in traffic during the weekday peak hours when compared to the "as-of-right" reoccupancy of the Phillips Healthcare campus. Accordingly, the Project will not result in an impact to operating conditions at the I-93 ramp intersections with River Road over the conditions that existed when the Phillips Healthcare campus was fully occupied. As such, the focus of the June 2022 TIA and the recommendations presented therein are on the access points to the campus, defined as the intersections of River Road at Minuteman Road and Shattuck Road and River Road at 1776 Drive. It was acknowledged that additional development beyond the initial phase that is the subject of the June 2022 TIA would be subject to further assessment to include an assessment of additional intersections along the River Road corridor.

EP Response 07/25/2022:

Following VAI's clarification, we understand that the intersections with the I-93 ramps on River Road will be assessed during a future phase of this project. Although we do not request a detailed analysis of these intersections as part of this initial phase, we recommend that once the Build conditions for this phase are in place, the operations at these intersections be observed to verify that queues on the I-93 off-ramps do not extend onto I-93 causing a potential safety concern. If such queues are observed, we recommend incorporating signal timing adjustments at that time. Following a phone conversation with the VAI on July 25, 2022, it is our understanding that the Applicant's team will perform observations to verify safe operating conditions at the I-93 interchange, and we therefore have no further comment. **Comment 24 closed.**

Sight Distance Assessment

Comment 25

EP Comment 07/08/2022:

EP takes no exception to the measured values reported.

VAI Response 07/15/2022:

No response required.

EP Response 07/25/2022:

No further action; **Comment 25 closed.**

Recommendations

Comment 26

EP Comment 07/08/2022:

The TIA states that drive aisles will continue to be a minimum of 23-feet wide in places where perpendicular parking is proposed. We note that according to the Town of Andover zoning bylaws, a minimum width of 24-feet is required for two-way drive aisles.

VAI Response 07/15/2022:

Comment acknowledged. The recommendation is intended to provide a minimum dimension for parking maneuvers.

EP Response 07/25/2022:

It is assumed that any deviations from the Town standards will be coordinated prior to implementation to ensure the Town's concurrence with the proposed design. We have no further comments at this time. **Comment 26 closed.**

Comment 27

EP Comment 07/08/2022:

The parking lot located south of the existing Building 1 is shown on the site plans to have 60-degree angled parking spaces. According to the Town of Andover zoning bylaws, a minimum drive aisle of 18-feet-wide is required when angled parking spaces from 46- to 60-degree are proposed. EP's measurements of both drive aisles at this parking lot appear to show narrower widths.

VAI Response 07/15/2022:

The subject drive aisle will be reviewed for maneuverability noting that a minimum drive aisle width of 13.5 feet is deemed acceptable for parking maneuvers with 60 degree angled parking. To the extent necessary, the required approvals will be sought from the Town of Andover for a reduced aisle width.

EP Response 07/25/2022:

It is assumed that any deviations from the Town standards will be coordinated prior to implementation to ensure the Town's concurrence with the proposed design. We have no further comments at this time. **Comment 27 closed.**

Comment 28

EP Comment 07/08/2022:

Truck-turning templates should be provided for emergency vehicles, refuse vehicles, and other vehicles intended to use the Project site for review.

VAI Response 07/15/2022:

The requested turning templates will be included in a subsequent revision of the Site Plans that will be submitted by others under separate cover.

EP Response 07/25/2022:

Pending review of the revised Site Plans once received, we assume this comment has been adequately addressed and have no further comments at this time.

[Comment 29](#)**EP Comment 07/08/2022:**

Traffic sign and pavement marking plans should be provided for review.

VAI Response 07/15/2022:

The requested plan will be included in a subsequent revision of the Site Plans that will be submitted by others under separate cover.

EP Response 07/25/2022:

Pending review of the revised Site Plans once received, we assume this comment has been adequately addressed and have no further comments at this time.

[Comment 30](#)**EP Comment 07/08/2022:**

Accessible curb cut should be provided at the end of sidewalks in both the northern and southern parking lots.

VAI Response 07/15/2022:

ADA compliant ramps will be provided at the subject locations and shown on a subsequent revision of the Site Plans that will be submitted by others under separate cover.

EP Response 07/25/2022:

Pending review of the revised Site Plans once received, we assume this comment has been adequately addressed and have no further comments at this time.

[Comment 31](#)**EP Comment 07/08/2022:**

In the updated timing plans provided by VAI at the intersection of River Road and Minuteman Road/Shattuck Road, the exclusive pedestrian phase has been maintained at 26-seconds, which appears to be inadequate given the length of the crossings. We recommend reevaluating the pedestrian clearance and extending the phase as necessary to meet the requirements set forth in the Manual on Uniform Traffic Control Devices (MUTCD).

VAI Response 07/15/2022:

The pedestrian phase timing for the River Road crossing has been increased from 26 seconds to 30 seconds to reflect the current pedestrian phase timing requirements specified in the Manual on Uniform Traffic Control Devices (MUTCD)1 for the subject crossing. Table 10R summarizes operating conditions at the intersection with the revised pedestrian phase timing. As shown in Table 10R and consistent with the findings of the June 2022 TIA, all movements at the intersection of River Road at Minuteman Road/Shattuck Road are predicted to operate at LOS D or better with the

implementation of an optimal traffic signal timing plan, inclusive of the revised pedestrian phase timing.

EP Response 07/25/2022:

The revised pedestrian timing provides an improvement for pedestrian safety. EP reviewed the revised traffic analysis with increased pedestrian timing and we agree that such modification did not have a significant impact on the previous findings of the TIA. **Comment 31 closed.**

[Comment 32](#)

EP Comment 07/08/2022:

EP recommends providing shortest path pedestrian connections between the closest transit station serving the Project site and each of the buildings.

VAI Response 07/15/2022:

Comment acknowledged. At the present time there are no transit stations located within the campus. That being said, the planning for future bus or shuttle stops within the campus will be consistent with this recommendation.

EP Response 07/25/2022:

No further action; **Comment 32 closed.**

[Comment 33](#)

EP Comment 07/08/2022:

As discussed above, depending on the level of impact, we recommend considering optimization of the traffic signal timings at the intersections of the I-93 ramps with River Road.

VAI Response 07/15/2022:

See response to Comment 24.

EP Response 07/25/2022:

No further action; **Comment 33 closed.**

Summary of Outstanding Items

Pending a future review of the supplemental crash data and site plan revisions once finalized, VAI has provided additional information and adequately addressed EP's comments from the original peer review. We have no further comments at this time and remain available for any further review or discussion.