



Memorandum

Date: May 6, 2025

To: Ms. Jacki Byerley, Town Planner
Town of Andover
36 Bartlet Street
Andover, MA 01810

From: Steve Shekari, E.I.T.
Ryan Kloiber, E.I.T.

CC: Jane R. Davis, P.E.

Subject: Traffic Peer Review – 140 Haverhill Street Development
Review of Traffic Impact and Access Study, Proposed Development, 140 Haverhill Street

Apex Companies, LLC (Apex) has reviewed the Traffic Impact and Access Study (TIAS) dated February 25, 2025, and prepared by Fuss & O'Neill for the proposed medical office building and childcare center redevelopment ("the Project") located at 140 Haverhill Street in the Town of Andover, Massachusetts ("the Town"). Apex also reviewed the site plans titled "140 Haverhill Street", dated December 18, 2024, and prepared by Ranger Engineering Group, Inc. for transportation/traffic-related comments.

Project Description

The TIAS outlines the following project description:

"The site is in the northwest corner of the intersection of Haverhill Street (Route 133) and High Street. Currently, the site consists of Doctors Park I and Doctors Park II. Two driveways currently serve the site, one from Haverhill Street and one from High Street. Doctors Park I, approximately 25,000 square feet (sf) of medical office space, is currently a vacant.

The current development proposal consists of construction of two buildings. The first building, consisting of 19,200 gross square feet of space will be a new medical office building. The second building, the Gardner School, will consist of a 17,688 square foot (sf) childcare center. The childcare center is expected to have a maximum enrollment of 195 students and a maximum staff of thirty-two (32) employees. A total of 150 parking spaces will be provided for the site.

The two buildings will replace the existing Doctors Park I building. Access would continue to be provided by way of the driveways to Haverhill Street and High Street."

The Project includes the following study roadways:

- Haverhill Street (Route 133)
- High Street

The Project includes the following study intersections:

- Haverhill Street (Route 133) and High Street
- Haverhill Street and Existing Site Driveway
- High Street and Existing Site Driveway

Comments

Existing Traffic Conditions

1. Apex notes discrepancies on the jurisdictions and classifications of the study roadways compared to the Massachusetts Department of Transportation (MassDOT) Roadway Inventory database. First, the TIAS states that Haverhill Street is owned by MassDOT. However, the MassDOT database lists the roadway as being owned by the Town. Second, the TIAS states that High Street is a Rural Major Collector, whereas the MassDOT database states that it is an Urban Minor Arterial. Apex requests confirmation on the jurisdiction and classification of both roadways.
2. The TIAS states that the traffic signal at the Haverhill Street at High Street study intersection has pedestrian activation. While Apex has not performed a recent field visit to verify conditions per the scope of our review, we referenced available Google street view imagery from September 2023 and did not find any pedestrian signal equipment at the intersection. Apex requests confirmation on whether the traffic signal at this intersection includes pedestrian accommodations.
3. The High Street and Existing Site Driveway study intersection description appears to be the same description provided for the Haverhill Street and Existing Site Driveway study intersection. Apex requests an updated description for the High Street and Existing Site Driveway study intersection.
4. A seasonal adjustment factor of seven (7) percent was chosen based on a review of data provided in the 2023 Weekday Seasonal Factors table provided by MassDOT and data from a continuous MassDOT count station (Station No. 502) on Turnpike Street (Route 114) near Merrimack College. While we take no exception to the MassDOT count station being reviewed as a secondary reference, we note that MassDOT's Weekday Seasonal Factors Report is their preferred source for seasonal adjustment. Based on this report, Haverhill Street, which is an Urban Principal Arterial under group 'U3', should have an adjustment factor of two (2) percent for the month of February, and High Street, which is an Urban Minor Arterial under group 'U4', requires no adjustment for the month of February, both of which are less than the applied seven (7) percent. Providing greater adjustments to existing volumes can underestimate the impact of the trips generated by the proposed project over the background traffic. While this item alone may not have a significant impact on the overall outcome of the study, cumulative alterations identified within this document may have an impact. As such, Apex recommends the seasonal adjustment factors be reviewed and updated as necessary for both Haverhill Street and High Street, along with the other items identified in this document to determine the overall impacts.
5. Apex performed a high-level review of the existing traffic volumes against the counts provided in the Appendix. It appears that volumes at the two site driveways have been adjusted based on the volumes at the intersection of Haverhill Street and High Street. Apex requests verification.
6. Apex notes discrepancies in the existing traffic volumes presented in Figure 3 of the TIAS. After performing backup calculations to increase the traffic counts from the Appendix by the seasonal adjustment factor of seven (7) percent, we found discrepancies greater than 15 vehicles. Additionally, as noted above, we recommend revisiting the seasonal adjustment factors, which would impact the traffic volumes. While the volume discrepancies alone may not have a significant impact on the overall outcome of the study, cumulative alterations identified within this document may have an impact. As such, Apex recommends a review of the traffic volumes and an updated analysis if necessary.
7. The TIAS states that the motor vehicle crash data for the study area intersections were obtained from the Andover Police Department for 2015 through 2024. However, the information provided in the

Appendix appears to show that the MassDOT crash database was utilized for 2015-2021 crashes, and the Town's Police Department reports were utilized for 2022-2024 crashes. While Apex takes no exception to the crash information provided, we note that for the three most recent years of data (typical of a crash analysis), which also coincides with the data available directly from the Police reports (typically more exhaustive than the MassDOT database alone), the crash rate at the intersection of Haverhill Street at High Street appears to be slightly higher than the Statewide and District 4 averages. The higher crash rate indicates there may be some safety concerns at the intersection that could possibly be mitigated with minor improvements.

No-Build and Build Traffic Conditions

8. The TIAS states that background information is provided on the traffic generation of the nearby project at 7 Tantalum Road. However, no information is provided in the Appendix. Apex requests this information to verify the volumes that were added from this project to the no-build condition.
9. No backups are provided on how the trip distribution shown in Table 5 and Figure 5 of the TIA was calculated. The TIAS states that the existing driveway distributions were used to develop the expected trip generation patterns for the proposed facilities. Apex requests backups to verify the calculated trip distribution.

Analysis

10. The Synchro capacity analysis reports appear to show some of the peak hour factors (PHF) being changed for the morning and evening build conditions, whereas the majority of these values remain the same as existing and no-build conditions. It is assumed that the adjusted PHF values may have been applied to movements that have minimal traffic in the absence of site-generated traffic with anomalously low PHF. Typical methodology may follow MassDOT requirements to allow for a direct comparison of the future conditions, which is to provide a consistent PHF of 0.92 for no-build and build conditions. Apex recommends updating all PHF values to 0.92 for the no-build and build conditions. While this item alone may not have a significant impact on the overall outcome of the study, cumulative alterations identified within this document may have an impact.
11. Table 9 of the TIAS lists the Haverhill Street eastbound approach as having an undesirable level of service (LOS) E under the no-build conditions. Apex notes that due to the volume-to-capacity (v/c) ratio of this movement exceeding 1.0, this movement should be listed as operating under an unacceptable LOS F.
12. The TIAS states that at the intersection of Haverhill Street and High Street, the Project has minimal impact on the intersection with small increases in the volume to capacity (v/c) ratio and projected delays compared to future No-Build conditions. However, based on the analysis as presented, several lane groups degrade in level of service as a result of the Project, and some lane groups show noteworthy increases in delay of up to 19 seconds; additionally, the overall operation of the intersection is shown to degrade from an acceptable LOS D to an undesirable LOS E with approximately 11 seconds of increase in delay during the evening peak hour. We note that with the recommended revisions identified herein, the traffic operations and impacts due to the Project may differ.
13. Apex notes that the background information on the parking analysis with empirical data at the Gardner School in Northbrook, Illinois, while comparable in terms of the size of the development, reflects information in a different geographic region prior to the COVID-19 pandemic. Understanding that the Gardner School has multiple locations in Massachusetts, Apex recommends considering collecting updated and local empirical data to validate findings of the study at the Northbrook, Illinois location and confirm appropriateness of such data to be used for the proposed Project.

Recommendations and Conclusions

14. The TIAS recommends providing sight distance triangles at the site driveways to identify areas where existing obstructions should be removed and vegetation maintained at a low height. Apex concurs with this recommendation and requests sight distances for review.
15. Apex understands that the Project proponent is committed to monitoring the intersection of Haverhill Street and High Street after substantial occupancy of the Project and considering mitigation if necessary. However, given the degradation in traffic operations already apparent in the presented analysis, we recommend implementing traffic signal retiming as part of the Project mitigation.

The traffic signal retiming included in the TIAS shows minimal timing changes compared to the existing/no-build conditions. During the morning peak hour, the signal retiming results appear to show relatively similar operations to the no-build conditions and minor improvements compared to the unmitigated build conditions. However, during the evening peak hour, the signal retiming results still show degraded operations compared to the no-build conditions, particularly along the High Street approaches. Apex recommends a further evaluation of the optimal signal timings to improve upon these operations.

Ultimately, if the Town and the Project proponent decide not to proceed with mitigation upfront, Apex recommends developing a formalized transportation monitoring program, outlining details, including but not limited to, timeframe and frequency of data collection as well as measurable thresholds with a commitment from the Project proponent to reevaluate mitigation measures should the thresholds be exceeded.

16. Crash history at the intersection of Haverhill Street and High Street shows that the predominant crash types consist of angle and rear-ends, which both may be susceptible to improvement by modifying signal timing clearances. As such, Apex recommends reviewing signal timing clearances and propose modifications as necessary along with the retiming evaluations outlined above.
17. Apex recommends that the Transportation Demand Management (TDM) plan be formalized and mutually agreed upon between the Applicant and the Town.
18. The TDM states a “welcome packet” will be provided to new employees detailing available public transportation services, bicycle and walking alternatives, and other commuter options. However, it appears that the pedestrian and bicycle accommodations in the vicinity of the Project site do not provide an adequate network for access to the site. Apex recommends a further evaluation of the feasibility of bicycle and walking alternatives and considering improvements to leverage these alternatives in line with the TDM.

Site Plans

19. The site plans do not include or indicate many site features, including edge of pavement treatment and signs. Apex requests the plan be updated to include this pertinent information to allow for a thorough review of the site.
20. The site plans do not show and/or call out the pedestrian curb ramp (PCR) locations. Apex requests indicating the PCR locations and calling out the applicable detail at each location.
21. All pedestrian curb ramp (PCR) details included in the plans should be updated to address the following:
 - A detectable warning panel detail should be provided as referenced on the PCR details.
 - The “level landing” area must be sloped at 1.5% or less in all directions.
 - Guidance on transition lengths should be added to the details.
 - It is recommended that all PCR openings be a minimum of five (5) feet wide.

22. The precast concrete curb detail indicates a typical curb reveal of seven (7) inches. A curb reveal of six (6) inches is more typical. Apex requests explanation on why seven inches of curb reveal is required.
23. This site plan does not include a sign summary. We recommend a sign summary be added to the plans to show the proposed traffic sign sizes and sign layouts.
24. Apex recommends adding stop lines and stop signs at both driveway access locations exiting the site.
25. The site plan states that 150 parking spaces are provided at the site. However, we found only 147 parking spaces shown on the plan. Apex requests confirmation of the number of parking spaces.
26. As indicated in the TIAS and shown on the site plans, Apex notes that the required number of parking spaces according to the Town by-laws is not met in the proposed site. We recommend coordination with the Town on any waiver that may be required for deficiencies in the number of proposed parking spaces.
27. The dimension of proposed accessible parking spaces do not meet the minimum requirements of Town zoning by-laws. However, we note that the dimensions comply with the Americans with Disabilities Act (ADA) standards.
28. The accessible parking space detail does not show a curb cut at the access aisle. Apex requests the detail be modified to indicate this curb cut.
29. The crosswalk pavement markings detail shows the width of the crosswalk to be six (6) feet wide. We recommend updating the detail to show at least eight (8) feet of width for improved visibility.
30. The pavement detail indicated on Sheet CS0002 of the site plans is inconsistent with the detail on sheet CS6001. Apex requests this inconsistency be reconciled.
31. The Town by-laws defer to the Massachusetts Architectural Access Board (AAB) 521 CMR for accessible parking space requirements. This document requires that one in eight accessible parking spaces be van accessible, requiring specific accommodations for van access. The site plans do not indicate any van accessible spaces. Apex recommends the plans updated to show intended locations for van accessible spaces.
32. Pedestrian access lacks connectivity between the buildings and existing sidewalk along Haverhill Street. As noted on Comment 18 above relevant to the TDM measures, Apex recommends evaluating continuous pedestrian access between the site and the nearby existing sidewalk, while also considering opportunities for improving off-site pedestrian accommodations in the vicinity of the site.
33. As shown on the site plans, access to the northeast of Building 2 would appear to require a ramp up with a handrail between the ramp and the adjacent sidewalk. Apex requests confirmation that the design intent is accurately interpreted. We recommend calling out the handrail location on the plans to clarify the intent and adding a handrail detail.
34. The Town by-laws require that one off-street drop-off/pickup area per 25 children be provided for childcare centers. The site does not appear to provide this. Apex recommends updating the plans to accommodate the drop-off/pickup area in compliance with Town by-laws.
35. The site plans provided show fire truck maneuvers entering and exiting the driveway on Haverhill Street from west. Apex requests fire truck maneuvers be evaluated for access from Haverhill Street driveway from east, access from High Street driveway from north and south, and circulation throughout the site. We also request information and turning templates on other heavy vehicle types the site is intended to accommodate outside of emergency vehicles.

Summary

Based on the analysis as presented, although minimal, it seems there is some degradation in traffic operations and an increase in delay for some individual lane movements and the overall intersection of Haverhill Street at High Street without mitigation. Additionally, the crash analysis for the three most recent years shows the potential for safety concerns. Based on this information, Apex recommends mitigation in the traffic signal timings as discussed above. However, we note that we are unable to provide a definitive conclusion on the impact of the Project until the above requested information is provided, most particularly revisions pertaining to the traffic operations as summarized below:

- Updating the seasonal adjustment factor
- Addressing discrepancies in the traffic volumes
- Updating the PHF for the future conditions analyses

We appreciate the opportunity to be able to assist you with this project. We remain available for any questions or additional review.