



To: **Mark London**
Executive Director
Martha's Vineyard Commission

Date: **July 11, 2013**

From: **Keri Pyke, P.E., PTOE**

HSH Project No.: **2013062.00**

Subject: **Stop & Shop Expansion, Tisbury, MA**
Review of Traffic Peer Review Responses

Howard/Stein-Hudson Associates (HSH) submitted our peer review comments of the Traffic Impact and Access Study prepared for the proposed Stop & Shop expansion in Tisbury, Massachusetts, on May 3, 2013. We received the following additional information in response to the comments:

- *Memorandum, Stop & Shop Expansion, Tisbury, MA, Response to HSH Peer Review*, prepared by VHB, dated June 25, 2013.
- CD-ROM containing video files, VISSIM 2013 Existing Condition (PM PEAK/SAT MIDDAY PEAK) and VISSIM 2013 PROPOSED CONDITION (PM PEAK/SAT MIDDAY PEAK).
- Figure 1A – WB-50 Delivery Truck Turning Movement Entrance Route
- Figure 1B – WB-50 Delivery Truck Turning Movement Exit Route
- Figure 1C – SU-30 Delivery Truck Turning Movement Entrance and Exit Route

The key findings of our additional peer review of the traffic assessment are presented in the following sections. The comments are numbered for ease of reference and correspond to the numbers in our original peer review. The following areas, numbered to correspond to the numbers in our original comment letter dated May 3, 2013, did not require a response from the Applicant, and no further action is required:

1. Study Area Boundaries
3. Selection of Peak Hour
5. Background Traffic Growth
6. Planned Transportation Improvements

The following areas, numbered to correspond to our original comments, provide additional comments regarding additional information and analysis that the Applicant provided in their response memo.

Traffic Data Collection

2. In our initial peer review letter, we recommended that the Commission request that the Applicant collect new count data at the Five Corners intersection over the Memorial Day holiday weekend in May in order to confirm the peak seasonal factor. We also recommended that the Commission ask the Applicant to conduct ATR counts on Beach Road and/or State Road for comparison with MVC historical data to determine a more appropriate seasonal factor. The Applicant did not collect either of these data, citing a math error in HSH's initial calculations as the reasoning for not providing them. We are still skeptical that the traffic count data collected in January 2013 have been appropriately adjusted to account for the seasonality of traffic on Martha's Vineyard. The MVC staff are currently in the process of collection new count data at and around Five Corners. Now that the DRI review process is into the peak summer season, we request that the Commission ask the Applicant to conduct new summer traffic counts.

Safety Information

4. The Applicant provided the crash rate calculations using MassDOT's calculation sheets, as requested. The crash rate per million entering vehicles (MEV) for Five Corners is 1.01/MEV, which is 1.74 times the average crash rate for MassDOT District 5, which for unsignalized intersections is 0.58/MEV. Nearly half of the crashes were either rear-end or head-on crashes; surprisingly, there were only 4 injury crashes at Five Corners. Given that there is already a safety issue at this location, the Applicant should consider what safety improvements could be made to the intersection to mitigate their additional traffic. It should also be noted that the crash rate at the intersection of Water Street/Union Street has a crash rate of 1.95/MEV, or 3.36 times the District 5 average crash rate. The intersection only averages one crash per year, but it is a low volume intersection, which causes the crash rate to be higher.

Site Traffic Generation and Distribution

7. We are comfortable with the Applicant's trip generation methodology based on the additional detail provided, with the exception of the application of a seasonal adjustment factor, which we still find problematic based on the lack of additional data to support the lower adjustment rate (see response to item #2, Traffic Data Collection). The Applicant should review the trip generation rates once the new count data are collected, as requested in comment 2. We will provide additional comment on the trip generation once new traffic count data are collected, as requested in comment 2.
8. We requested that the Commission ask the Applicant to reconsider that all up-island traffic would use Main Street to access the expanded store, and instead distribute traffic through the Five Corners intersection. The Applicant provided a sensitivity analysis of the operations for two different directional distributions – the first in which all left-turns from "up island" via State Road occur through Five Corners, and the second in which 20% of the turns occur at the State Road/Main Street intersection and 80% occur at Five Corners. The sensitivity analysis summary table appears to have some math errors in the eastbound left-turn demand estimates in the Build condition in both scenarios. Nevertheless, the sensitivity analysis is based on the Synchro analysis that we did not feel was the appropriate method for analyzing the Five Corners intersection given its unusual geometry and control; therefore we do not believe the results show anything meaningful in terms of the potential impact on Five Corners. We request that the Commission ask the Applicant to re-run the analysis using the VISSIM model for comparison with other scenarios and using the peak summer traffic count data.

Parking Demand

9. The Applicant provided an explanation of how the parking spaces in the garage will be managed. According to this new information, the spaces in the garage will be for Stop & Shop customers only; all others will be warned, to be following by towing of vehicles. We believe this management plan coupled with the proposed reconfiguration of the Town parking lot will have the effect of increasing demand on the Town parking spaces, leaving the proposed garage underutilized. Anyone who might have planned a multi-purpose trip to patronize other shops and restaurants in addition to Stop & Shop will not park in the garage lest their vehicle be towed. We recommend that the Applicant work with the Town to implement a parking strategy that works to take advantage of shared parking.

Traffic Impact Analysis

10. The Applicant provided analysis of Five Corners for Existing and Build conditions using the VISSIM modeling tool. The results were summarized in tabular form. We reviewed the summaries and the output and viewed the videos that are an output from the model. Since the Applicant did not take new counts of the Five Corners intersection, it is unclear from the written response how the VISSIM model was calibrated. Typically, we would perform data collection and field observations of the following items in order to calibrate the existing conditions models:
- Volumes (origin-destination);
 - Speeds: 50th and 85th;
 - Vehicle composition (percentage of passenger vehicles/trucks/buses); and
 - Conflict areas/priority rules (includes gap acceptance/headways/yield rules).

We request that the Commission ask the Applicant to provide more detailed information regarding how the existing conditions models, which form the basis for the Build conditions models, have been calibrated.

Viewing the video clips for each scenario, it appears that the videos don't show the full extent of the queuing. The queues on all approaches appear to extend beyond the viewport of the video. The reported queues in the summary table seem far below the anecdotal information we have received from the MVC staff regarding queuing. We believe this may be a function of the finite lengths of each street entering the intersection. For example, if Beach Road is only modeled as 500 feet long, this is the maximum queue that the program can report on that approach. Other items that we noted on viewing the videos of the simulations:

- The vehicles seem very aggressive when entering the Five Corners intersection. It appears that the gap acceptance and/or priority rules are set very low. Some vehicles almost hit each other and in some instances drive over each other. While it is true that motorists can be aggressive at this location due to the delays during the peak season, the video doesn't seem realistic.
- Although only three of the five approaches to the intersection are stop-controlled, the legs that aren't stop-controlled tend to act as stop-controlled sometimes because a motorist on an uncontrolled approach (Beach Road or Beach Street) aren't really sure how the intersection is supposed to operate and who has a free movement and therefore the right of way.
- In the p.m. peak hour, the vehicles on Water Street going toward the Five Corners intersection are leaving space at the Stop & Shop and Town parking lot driveways to allow vehicles to enter, but there is a glitch in the model, because the vehicles are still not able to enter the parking lot and are shown queuing in the northbound direction on Water Street.

Five Corners is the most critical location in the study area. We and the MVC need to understand how the addition of approximately 150 new trips in the weekday evening and Saturday midday peak hours will impact this critical intersection. These trip numbers may increase based on our previous comments regarding the trip generation (see comment 7). The MVC is currently collecting peak season traffic count data for comparison to the seasonally adjusted volumes provided in the study. We have requested that the Commission ask the Applicant to conduct new traffic counts now that we are in the midst of the peak season. We request that the Commission ask the Applicant to use these new traffic data to re-run all analysis so that we may have a better understanding of the impacts, particularly at Five Corners. The Applicant should also collect the necessary data to calibrate the VISSIM model at Five Corners, which would then correspond to the new count data, and provide detailed information about how the model was calibrated.

Mitigation Measures

11. We believe there are additional or revised analyses that may be necessary once the peak summer traffic data have been collected and reviewed. We will revisit the issue of mitigation measures once that effort is complete.

Construction Period Traffic

12. The Applicant provided a narrative regarding construction period activities and how they will be managed. We recommend that the MVC require that the Applicant provide a formal submission of a Construction Management Plan, including to-scale drawings that show the limits of work, lay-down areas, etc., to ensure that there is no impact on the adjacent Town parking lot.

Site Access

13. The Applicant has revised its site access plan to remove the site egress driveway from the garage on Water Street. Access to the garage is provided via Norton Lane, where a driveway would provide both access and egress. This driveway would be aligned with the center aisle of the public parking area located across Norton Lane. The proposed site plan also reconfigures the Town parking lot, eliminating Norton Lane completely. We do not believe this is advantageous to the Town, as the Applicant has indicated that they will not allow a shared parking strategy of management of their garage. The site plan, as currently shown, eliminates any separation between the Town parking lot and the building, making the two properties feel like one parcel. As outlined in the comments regarding parking demand and management (see comment 9), this would only work for general users of the Town lot if the Stop & Shop garage parking spaces were also shared during store hours. We do not believe the MVC should support this proposal given the Applicant's proposal for management of its own garage. We believe that patrons will be less likely to use the garage if they have multi-use trips planned, i.e., visiting shops/restaurants on Main Street prior to doing their shopping at Stop & Shop, which will put a greater burden on the Town parking lot.

The Applicant also states that the closure of Norton Lane would be advantageous to the Town because it would eliminate a conflict point on Water Street and allow longer queuing distance from Five Corners. However, this change would also mean that motorists traveling to and from the Steamship Authority to pick-up or drop off ferry passengers would no longer have a straight route to the ferry using Norton Lane. Instead they would have to wind through the parking area, turn right onto Water Street, then left into the Steamship Authority pickup/drop off area. This could cause some of them to change their usual route and travel through Five Corners instead, increasing the burden on that intersection.

Truck Traffic/Loading

14. The Applicant provided additional information regarding loading activities such as deliveries and trash/recycling pickup. The Applicant indicated that there would be up to 13 delivery vehicles per day to the expanded store, including one tractor-trailer truck per day to the site. The Applicant provided the AutoTURN analysis for large vehicles using the loading area to demonstrate that a large vehicle can maneuver in and out of the loading docks. We have concerns regarding site access (see comment 13), but the figures provided indicate that the loading docks, and site layout can accommodate the appropriate sizes of trucks as currently configured.
15. We commented previously on a proposed layout of the Town parking lot in concert with the expansion of Stop & Shop. The Applicant has since put forth a revised proposed plan to reorganize the public parking lot located across Norton Lane from the Stop & Shop site. The plan eliminates several spaces from the Town lot, as well as the Town comfort station. We do not believe this plan is advantageous to the Town unless the Applicant proposes to share the Stop & Shop parking garage spaces with all patrons of Vineyard Haven shops and restaurants. This revised plan seems primarily to benefit the Applicant's ability to access the loading docks. Although this plan would eliminate a conflict point at Water Street/Norton Lane, we otherwise do not see the benefits to the public parking and access.

Conclusions and Recommendations

The following is summary of recommendations (numbering follows original numbering, and so therefore is not sequential):

2. Now that the DRI review process is into the peak summer season, we request that the Commission ask the Applicant to conduct new summer traffic counts.
4. Given that there is already a safety issue at this location, the Applicant should consider what safety improvements could be made to the intersection to mitigate their additional traffic.
7. The Applicant should review the trip generation rates once the new count data are collected, as requested in comment 2.
8. We request that the Commission ask the Applicant to re-run the distribution sensitivity analysis using the VISSIM model for comparison with other scenarios and using the peak summer traffic count data.
9. We recommend that the Applicant work with the Town to implement a parking strategy that works to take advantage of shared parking.
10. We have requested that the Commission ask the Applicant to conduct new traffic counts now that we are in the midst of the peak season. We request that the Commission ask the Applicant to use these new traffic data to re-run all analysis so that we may have a better understanding of the impacts, particularly at Five Corners. The Applicant should also collect the necessary data to calibrate the VISSIM model at Five Corners, which would then correspond to the new count data and provide detailed information about how the model was calibrated.
11. We believe there are additional or revised analyses that may be necessary once the peak summer traffic data have been collected and reviewed. We will revisit the issue of mitigation measures once that effort is complete.
12. We recommend that the MVC require that the Applicant provide a formal submission of a Construction Management Plan, including to-scale drawings that show the limits of work, lay-down areas, etc., to ensure that there is no impact on the adjacent Town parking lot.
13. We do not believe the MVC should support the current proposal for the reconfiguration of the Town parking lot and closure of Norton Lane at Water Street given the Applicant's proposal for management of its own garage as well as potential additional impacts at Five Corners.
14. We have concerns regarding site access (see comment 13), but the figures provided indicate that the loading docks, and site layout can accommodate the appropriate sizes of trucks as currently configured.
15. We do not believe the current site plan, including loading, is advantageous to the Town unless the Applicant proposes to share the Stop & Shop parking garage spaces with all patrons of Vineyard Haven shops and restaurants.

This concludes our review of the additional traffic impact and access information provided by the proposed Stop & Shop redevelopment team. If you have any questions or comments, please contact me at (617) 348-3301.