

Ref: 7198

June 20, 2016

Ms. Jody Kablack  
Director of Planning and Community Development  
Town of Sudbury  
278 Old Sudbury Road  
Sudbury, MA 01776

Re: Supplemental Traffic Engineering Peer Review  
The Village at Sudbury Station – 30 Hudson Road  
Sudbury, Massachusetts

Dear Jody:

Vanasse & Associates, Inc. (VAI) has completed a review of the June 16, 2016 *Second Response to Peer Review Comments* prepared by MDM Transportation Consultants, Inc. (MDM) on behalf of Sudbury Station LLC (the “Applicant”) in support of the proposed The Village at Sudbury Station residential community to be located at 30 Hudson Road in Sudbury, Massachusetts (hereafter referred to as the “Project”). This information was responsive to the comments that were raised in VAI’s June 14, 2016 Supplemental Traffic Engineering Review letter concerning the Project and we are satisfied that the Applicant’s engineer has addressed the comments that were raised therein.

For reference, listed below are the comments that were raised in our June 14, 2016 review letter that required additional information or analysis, followed by a summary of the response submitted on behalf of the Applicant, with additional comments indicated in **bolded** text for identification.

**(1) Fire Apparatus Accessibility at Hudson Road Driveway**

**Comment:** *The Applicant’s engineer should provide revised AutoTurn® exhibits for both driveways that show not only the tire paths of the fire truck, but also the swept path of the bumper and ladder overhangs. To the extent required, the corner radii of the driveways should be modified such that all elements of the fire truck (tire paths and overhangs) are accommodated within the paved areas without centerline incursions.*

**Response:** The Applicant’s engineer clarified the information that was depicted on the AutoTurn® exhibits and provided updated turning diagrams that illustrated the tire paths and the swept path for the bumper and ladder overhang for the fire truck design vehicle. In addition, a revised fire truck turning analysis was prepared for the modifications to the Concord Road driveway (discussion follows). These analyses have demonstrated that the Project site driveways are appropriately designed to accommodate the turning and maneuvering requirements of the fire truck design vehicle (ladder truck) within the paved areas of the driveways and without centerline incursions. **No further response required.**

**(2) Measures to Reduce Potential for Site “Cut-Through” Traffic**

**Comment 1:** *Signs should be posted on Peter’s Way at Concord Road stating “Residents Only” and “No Outlet”. Similar signs should be posted on the northbound exit from the roundabout internal to the Project site.*

**Response:** The Applicant has agreed to add the requested signs to the Site Plans. **No further response required.**

**Comment 2:** *The proposed gate system should incorporate an emergency vehicle pre-emption system (OPTICOM™) for responding emergency vehicles.*

**Response:** Based on input that the Applicant received at a working session with the Town on June 13, 2016, the proposed gate system has been removed from the Site Plans. **No further response required.**

**Comment 3:** *In order to prohibit left-turn movements exiting Peter’s Way to Concord Road, a necessity given the sight distance restrictions posed by vehicle queues along Concord Road at Peter’s Way, the proposed channelizing island should be raised with accompanying corner radii on the island and driveway that position exiting vehicles such that a left-turn maneuver cannot be made in a practical manner.*

**Response:** The proposed channelizing island has been revised to be a raised island with increased corner radii to position exiting vehicles in a manner that promotes the right-turn only exit restriction. In addition, the Applicant’s engineer has incorporated the requisite signs and pavement marking to regulate turning movements at the intersection. These modifications will serve to: i) address the sight distance limitation identified for vehicles turning left exiting Peter’s Way as a result of vehicle queuing on Concord Road; ii) limit Project-related impacts on Candy Hill Road; and iii) minimize the potential for cut-through traffic through the Project site. **No further response required.**

**Comment 4:** *Given the limited utility of allowing left-turn entering movements from Concord Road, the Applicant could consider restricting access by way of Peter’s Way to right turns only, prohibiting left-turn movements both entering and exiting excepting emergency vehicles entering from Concord Road.*

**Response:** Expansion of the raised island to further restrict left-turn entering movements cannot be accomplished without compromising fire truck maneuverability. The volume of traffic associated with this movement (left turns entering Peter’s Way) is predicted to be small and limited benefit if any would be achieved by the restriction. **No further response required.**



### **(3) Candy Hill Road Impacts**

**Comment:** *We would recommend that the Applicant's engineer collect additional travel time data for the reverse movement (entering the Project site vs. exiting) during the weekday evening peak-hour for the travel routes that were evaluated as vehicle queues on the Old Sudbury Road westbound approach to Concord Road were observed to be excessive during this period. These queues were observed to extend beyond the Peter Noyes Elementary School at times and may influence the selection of return travel routes to the Project site during the evening peak commuter period.*

**Response:** As requested, the Applicant's engineer conducted additional travel time studies for alternative travel routes for vehicles entering the Project from the east (westbound) on Old Sudbury Road. Based on these measurements, it was observed that under current conditions, the shortest route to the Project site by distance traveled was to continue on Old Sudbury Road to Hudson Road; however, the shortest distance by time of travel was identified as Water Row, Plympton Road and Candy Hill Road to Concord Road, which was identified to be approximately 37 seconds shorter than continuing on Old Sudbury Road to Hudson Road.

The Applicant's engineer also performed observations of operating conditions for the traffic signal system at the Hudson Road/Concord Road intersection. These observations indicated that the traffic signal system is operating in a temporary configuration while the intersection is under construction. The temporary traffic signal timing plan and operation of the vehicle detection system was observed to be inefficient and is not properly allocating sufficient time for vehicle demands at the intersection. The Applicant's engineer noted that these operational inefficiencies are the primary cause of the vehicle queues and delays that are currently occurring at the intersection, and will be rectified once the improvements are complete; the final traffic signal timing plan is implemented; and the signal system is calibrated to intersection demands over the course of the day. With the completion of the improvements, the Applicant's engineer modeled travel times both entering and exiting the Project site and demonstrated that the use of Hudson Road to travel to/from the east on Old Sudbury Road was the shortest travel route both by distance and time of travel. **Not further response required.**

**As committed to by the Applicant, the Applicant should be required to review operating conditions at the Hudson Road/Concord Road intersection within 6-months of achieving 80 percent occupancy of the Project. Said review shall include the collection of manual turning movement and vehicle classification counts during the weekday morning (7:00 to 9:00 PM) and evening (3:00 to 6:00 PM) peak periods, vehicle queue observations on each approach to the intersection, and the completion of a traffic operations analysis based on the then current timing and phasing plan for the traffic signal system. If as a result of the traffic operations analysis and/or the vehicle queue observations it is determined that adjustments are required to the traffic signal system to reduce motorist delays and/or vehicle queueing, the Applicant shall design and implement the improvements at no cost to the Town and subject to receipt of all required rights, permits and approvals.**

**Comment:** *Based on a review of the alignment of Candy Hill Road, the nature of the abutting land use (residential) and the proximity of roadside objects (trees, utility poles, etc.), it is apparent that intensification of the use of the roadway by other than occasional traffic and that associated with the residential homes along the roadway is not advisable. Portions of the roadway are limited in width with restricted sight lines, limiting the ability to safely convey two-way traffic at volumes that exceed those currently using Candy Hill Road. For this reason, it is important that the Applicant design the exit from Peter's Way in a manner that restricts or limits the potential for increased use of Candy Hill Road. Independent of the Project, the Town may want to consider implementing peak period turn restrictions to/from Candy Hill Road at Concord Road or Plympton Road as a means to reduce cut-through traffic.*

**Response:** As requested, the Applicant has revised the design of the Peter's Way access to the Project site to restrict left turns exiting and has acknowledged that implementing peak-period turn restrictions to/from Candy Hill Road can occur independent of the Project. **No further response required.**

#### **(4) Pedestrian Route Inventory**

**Comment:** *Given the speed of traffic approaching the Concord Road crossing at Candy Hill Road (prevailing speed of approximately 40 miles per hour), we would suggest that the Applicant consider the installation of pedestrian activated rectangular rapid flashing beacons (RRFBs) on either side of the improved crossing or a High Intensity Activated cross-Walk (a.k.a. "HAWK") pedestrian beacon to facilitate the safe crossing of Concord Road. Should similar accommodations be desired for the Hudson Road crossing, we would suggest the use of RRFBs vs. the HAWK system given the proximity of the crossing to Peakham Road.*

**Response:** The Applicant has agreed to install RRFBs at both the Concord Road and Hudson Road crosswalks. **This commitment should be a condition of any approvals that may be granted for the Project. No further response required.**

**SUMMARY**

VAI has completed a review of the June 16, 2016 *Second Response to Peer Review Comments* prepared by MDM on behalf of Sudbury Station LLC in support of the proposed The Village at Sudbury Station residential community to be located at 30 Hudson Road in Sudbury, Massachusetts. This information was responsive to the comments that were raised in VAI's June 14, 2016 Supplemental Traffic Engineering Review letter concerning the Project and we are satisfied that the Applicant's engineer has addressed the comments that were raised therein.

This concludes our review of the materials that have been submitted to date in support of the Project. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

*Jeffrey S. Dirk*

Jeffrey S. Dirk, P.E., PTOE, FITE  
Principal

cc: File