

Mr. Philip Eugene, Chairman  
Economic Development Committee  
Town of Lancaster  
701 Main Street  
Lancaster, MA 01523

October 19, 2021

Ref. T0852.04

Re: Capital Commerce Center – Lunenburg Road – Lancaster, Massachusetts  
Response to Traffic Engineering Peer Review

Dear Mr. Eugene:

TEC, Inc. (TEC) is pleased to provide the enclosed response to traffic engineering peer review comments on the Capital Commerce Center, located along McGovern Boulevard at Lunenburg Road (Route 70) in Lancaster, Massachusetts. The following information is supplied to address the several peer review comments generated by Vanasse and Associates, Inc. (VAI) during review of the Traffic Impact and Access Study (TIAS) dated July 28, 2021. The bold text is from VAI's memorandum, and the regular text is TEC's response.

**Vanasse and Associates, Inc. (Jeffrey S. Dirk, PE, PTOE, FITE) – September 7, 2021**

- T1. The Applicant's engineer should consult with the Town of Lunenburg to determine if there are any planned development projects by others that may result in an increase in traffic within the study area that may exceed the background traffic growth rate.**

TEC Response: TEC contacted the Town of Lunenburg Land Use Department on October 4, 2021 to inquire about any planned development projects by others that may result in an increase in traffic within the study area. The Town identified a project at 475 Leominster-Shirley Road which is proposed to include a 372,000 square foot (SF) warehouse and distribution facility. A *Trip Generation and Site Access Letter*<sup>1</sup> was recently completed by Greenman-Pedersen, Inc. (GPI) which included a projection of 30% of site generated traffic entering/exiting through the defined study area for the Capital Commerce Center study. These traffic volumes, which are generally minimal (21 trips during the weekday morning peak hour and 22 trips during the weekday evening peak hour) have been superimposed on the No Build and Build conditions. Overall, the addition of these traffic volumes has minimal effect on the overall results of the Traffic Impact and Access Study (TIAS). Updated operational analysis results are included in the revised TIAS.

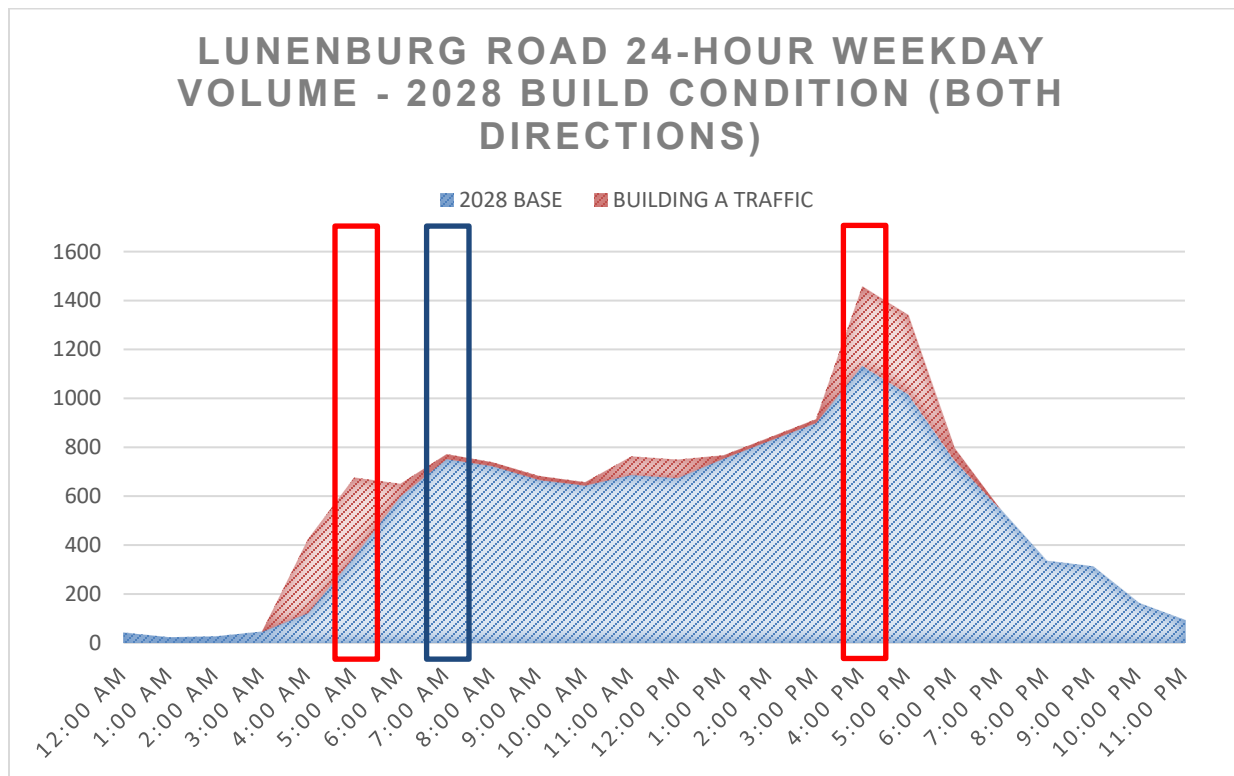
- T2. Additional information is required to substantiate the trip-generation calculations for Building A. The type of warehouse should be identified (i.e., non-sortation or sortation fulfillment center, or other) and a traffic flow profile for an average weekday and Saturday should be provided that superimposes the 24-hour traffic flow profile of Building A onto the traffic volumes along Lunenburg Road. This composite traffic flow profile should identify traffic volumes during the peak-hour of the roadway, the**

<sup>1</sup> *Trip Generation and Site Access Letter – Industrial Development – 535 Leominster Shirley Road – Lunenburg, Massachusetts;* Greenman-Pedersen, Inc.; Wilmington, MA; July 15, 2021

**peak-hour of the generator (Building A) and the traffic volumes during the design hours that were assessed in the July 2021 TIAS.**

TEC Response: The tenant's name has not been released; however, the land use can be described as a box-store distribution center. The trip generation information provided for Building A is empirical data supplied by the proposed tenant for the specific facility, which is based upon equivalent facilities current in place, including the entering and exiting traffic for both employees and trucks.

The exhibit below is a weekday hour-by-hour chart comparing Building A site generated traffic and the existing traffic volumes along Lunenburg Road, north of McGovern Boulevard (64% of use traffic). The chart shows an overlap of the peak site generator traffic and commuter traffic during the weekday evening peak period and a separation of the peak commuter traffic and the peak site generator traffic during the weekday morning period. The TIAS traffic operational analysis is completed to show an overlap of the peak commuter and peak site generator traffic to provide a conservative scenario.



There is no Saturday ATR data available at this time for Lunenburg Road; however, Saturday operations at the Building A facility are expected to be the same as weekday operations based on the nature of “box store” operations.

- T3. The Applicant should affirm that the retail use will consist of dry goods retailers and will not include restaurants or a coffee shop. If restaurant uses are planned or are being considered, the trip-generation calculations for the retail component of the Project would be higher than presented in the July 2021 TIAS.**

TEC Response: At the current time, there have been no tenants or specific retail land uses identified to fill the outparcels designated as general retail portion of the site. Land Use Code (LUC) 820 as defined in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10<sup>th</sup> Edition*, identifies the land use may contain restaurants. Please note that a reasonable expectation may be that the site would include potential restaurant space; however, the overall effect of a standard restaurant may only result in a slight increase in traffic volumes if known at this time. Further evaluation of traffic volumes post-occupancy will be assessed as part of the Transportation Monitoring Program (TMP) that the Applicant has committed to as part of the project.

In regard to a potential coffee shop use, which does have a substantially higher trip generation as compared to LUC 820, a Dunkin Donuts is already operating on the site in the existing condition, and it is not expected that an additional coffee shop or similar land use would be viable or permitted by current lease agreement on the site.

- T4. A summary table should be provided for the truck trips that will be associated with the Project and a separate trip distribution pattern and trip assignment network should be created for truck trips. This will allow for a better understanding of the truck routes for the Project and inform the traffic operations analysis and design of the improvements that are planned as a part of the Project.**

TEC Response: The revised TIAS includes a separated evaluation of truck trips and distribution based on the truck percentages presented in Table 8 of the TIAS. A truck specific traffic network has also been included as Figure 5b.

- T5. Based on the volume of turning traffic at the Lunenburg Road/McGovern Boulevard intersection, the trucking dependent nature of the uses and the planned installation of a traffic control signal at the intersection, the installation of both a northbound left-turn lane and a southbound right turn lane are justified and have been recommended by the Applicant's engineer. This should be clarified.**

TEC Response: TEC has clarified the text within the TIAS to better convey the left-turn lane along Lunenburg Road northbound is warranted.

- T6. The traffic operations analysis should be reviewed and revised as necessary to reflect the increase in truck volumes that will result from the Project. In particular, the impacts to vehicle queuing on the Route 2 off-ramps and within the turn lanes at the study area intersections should be evaluated to determine if there is a need to extend the vehicle queue storage that is (or will be) available.**

TEC Response: Minor adjustments to heavy vehicle percentages have been completed as noted and are reflected in the revised TIAS. These minor adjustments have no substantial impact to the results of the impact analyses.

- T7. A plan showing the sight triangle areas for the Lunenburg Road/McGovern Boulevard intersection should be provided and include a note stating: “Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed.”**

TEC Response: A plan sheet has been added to the submission to the Town.

- T8. The Applicant should commit to reviewing and adjusting the traffic signal timing at the intersections of Main Street at Lunenburg Road and Main Street at Seven Bridge Road based on the results of the annual traffic monitoring program, which should be expanded to include the Main Street/ Seven Bridge Road intersection.**

TEC Response: As noted in the TIAS, the Applicant is committed to adjusting the traffic signal timings at the intersections of Main Street at Lunenburg Road and Main Street at Seven Bridge Road at agreed upon occupancy thresholds through full build-out. As the overall schedule of each building for the full build-out construction is not known, there may be periods that eclipse a year between individual building occupancy which would render a year-by-year schedule of timing optimization as ineffective. The Applicant and its traffic engineer believe that the most effective strategy to implement timing optimization is, as described, to at individual occupancy levels under agreement with the Town.

- T9. The Applicant should define how the pedestrian crossings will operate at the Lunenburg Road/McGovern Road intersection prior to the installation of a traffic control signal given the high-speed nature of traffic along Lunenburg Road.**

TEC Response: The Applicant has added a commitment to install an interim Rectangular Rapid Flashing Beacon (RRFB) at the crosswalk across the Lunenburg Road southbound leg at the first building occupancy outset, while the committed traffic signal is not installed (or fully operational based on *MUTCD* warrants). Following completion of the traffic signal installation, when warranted, the RRFB will be removed and be donated to the Town of Lancaster to be reused at another location within the Town as needed.

- T10. The Applicant should review alternative traffic control measures for the Lunenburg Road/Fort Pond Road/Woods Lane intersection, including the installation of a modern roundabout. The traffic operations analysis indicated limited benefit to traffic operations resulting from the installation of a traffic signal at the intersection.**

TEC Response: The Applicant disagrees with the assessment provided by VAI in terms of the benefit to traffic operations at the intersection of Lunenburg Road / Fort Pond Road / Woods Lane with the implementation of an interim traffic signal at this location. MassDOT's current planning for the reconstruction of Interchange 103 is ongoing. The expectation is that the full build-out of the Capital Commerce Center will not be realized prior to the reconstruction of the interchange. A roundabout at this location is a possible alternative defined by MassDOT in the interchange's planning study; however, the final location and effect on other private property is not complete.

The analysis presented in the TIAS shows that operations at the intersection greatly improve at the intersection with the implementation of a traffic signal. Specifically, the worst intersection movement (Fort Pond Road westbound left-turn during the weekday evening peak hour) is anticipated to improve from a LOS F during the No Build to a LOS B during the Build with Mitigation condition. In addition, queues along the approach are greatly reduced to not extend toward the Route 2 WB Off-Ramp, which is seen as a major concern in the existing condition.

**T11. The traffic monitoring program should be expanded/revised to include the following:**

- **The Main Street/Seven Bridge Road intersection should be included.**
- **Motor vehicle crash data should be obtained for the most recent one-year period from the Lancaster Police Department to ascertain changes in crash frequency, patterns or severity at the monitored intersections.**
- **The data collection period should include the Saturday midday peak period (11:00 AM to 2:00 PM).**
- **The automatic traffic recorder counts on McGovern Boulevard should be extended to include a complete 7-day, weeklong period.**
- **The parking demand observations should be conducted between 5 and 9 AM for the multifamily residential development and from 10 AM to 1 PM for the office, retail and industrial uses. For Building A, the parking demand observations should include the period with the largest shift. Additional parking observations may be required during the peak shipping season for Building A.**

TEC Response: The noted expansion of the TMP is acceptable to the Applicant and has been added to the list of commitments in the TIAS and in the state's MEPA review process.

- **A traffic signal warrants analysis should be performed for the intersections of Lunenburg Road at McGovern Boulevard and Lunenburg Road at Fort Pond Road and Woods Lane following the methodology defined in the MUTCD to include a 12-hour manual turning movement count at each intersection on an average weekday.**

TEC Response: The Applicant agrees that an additional signal warrant analysis be prepared for the intersections as noted in the comment based on *MUTCD* methodology. As noted in the TIAS, the timeframe of the study during COVID-19 did not provide an opportunity to recount existing traffic during the full 12-hour block. The TIAS notes that traffic volumes will be recounted, and warrants reevaluated, prior to implementation of said traffic signals.

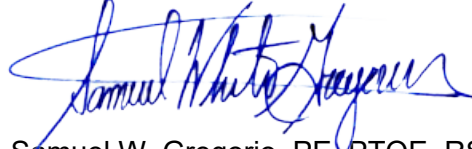
- **The thresholds for determining the need for additional mitigation should be defined as follows:**
  - i. **To the extent that any of the following are evidenced by the results of the Annual Traffic Monitoring Program: i) the measured traffic volumes for the Project exceed the projected traffic volumes established in the July 2021 TIAS by more than 10 percent (i.e., 110 percent of the projected traffic volumes); ii) one or more of the movements at a monitored intersection is identified to be**

**operating at or over capacity (defined by a volume-to-capacity (v/c) ratio that equals or exceeds 1.0); and/or iii) there is a pronounced increase in the frequency of occurrence of motor vehicle crashes at a monitored intersection and the calculated motor vehicle crash rate exceed the MassDOT average crash rate for similar intersections; corrective actions to reduce the unmitigated impact of the Project should be proposed and implemented. The corrective actions should be documented in the traffic monitoring report and undertaken by the Applicant subject to receipt of all necessary rights permits and approvals.**

TEC Response: The noted expansion of applicable additional mitigation derived from the Traffic Monitoring Program is acceptable to the Applicant and has been added to the list of commitments in the TIAS and in the state's MEPA review process.

Please do not hesitate to contact me directly if you have any questions concerning our responses and revised TIAS at 978-794-1792. Thank you for your consideration.

Sincerely,  
TEC, Inc.  
"The Engineering Corporation"



Samuel W. Gregorio, PE, PTOE, RSP<sub>1</sub>  
Project Manager / Senior Design Engineer  
Transportation Planning & ITS

Enclosure – Revised TIAS