16-5028-006
July 1, 2022

Daniel A. Pennington, PE
Town Engineer/Manager of Physical Services
Town of Glastonbury
2155 Main Street
Glastonbury, CT 06033

Re: **Traffic Peer Review of 1199 Manchester Road Traffic Impact Report**

Dear Mr. Pennington:

Tighe & Bond has reviewed the *Traffic Impact Report* prepared by Mitchell Traffic Engineering LLC, dated November 18, 2021, for the proposed residential development located at 1199 Manchester Road in the Town of Glastonbury (Town). The focus of our review was to provide our professional opinion related to the traffic data, traffic volume estimates, analysis, safety assessment, and potential impacts of the proposed development. The following sections summarize the comments.

Peer Review

According to the Traffic Impact Report (TIR), the applicant is proposing a 74-unit multi-family residential development at 1199 Manchester Road on the southwest corner of Hebron Avenue (Route 94) and Manchester Road (Route 83) in the Town of Glastonbury. The proposed residential development falls within the requirements for affordable housing. A total of 85 parking spaces are provided on the site. Access to the site will be provided via a full access driveway on Hebron Avenue, approximately 250 feet west of the Hebron Avenue and Manchester Road intersection, and a full access driveway on Manchester Road, approximately 275 feet south of the intersection. Given the size of the development and the proposed number of parking spaces, a review by the Office of State Traffic Administration (OSTA) is not anticipated. However, the new driveways, constructed within the Route 94 and Route 83 right-of-way require an Encroachment Permit from CTDOT District 1.

Roadway Network

1. The TIR describes the roadway characteristics of Hebron Avenue and Manchester Road, which are verified by the peer review. The study area selected for the traffic impact assessment is appropriate based on the locations of the driveways and the anticipated site generated traffic volumes.

Background Traffic

1. The TIR acknowledges the impacts of the COVID-19 pandemic on the collected August 2021 traffic volume data. The TIS adjusted the collected turning movement volumes by expanding factors between 12% and 60% to the individual legs of the Hebron Avenue and Manchester Road intersection based on the pre-COVID (October 2018) automatic traffic recorder counts published by CTDOT. However, the TIR does not provide details of the calculations between the referenced historical data from CTDOT and the collected traffic volumes to justify the 12% to 60% adjustment factors. It is recommended that the applicant's traffic engineer present figures illustrating the peak hour traffic volumes based on the August 2021 counts, the calculations used to arrive at the adjustment factors that establish the 2021 Existing Condition traffic volumes, and figures illustrating the resultant 2021 Existing Condition traffic volumes to clearly document the methodology.

Site Generated Traffic

1. The TIR indicates that the direction of traffic entering and exiting the site is following the ambient traffic patterns in the area. The method used to assign trip distribution is acceptable based on review of the roadway network and potential regional distribution patterns.

Analysis

1. The TIR states that the analysis was performed based upon the methodology provided in Highway Capacity Manual (HCM), 6th Edition, which was published in 2020. However, the capacity analysis worksheets in the appendix present the analysis results based on HCM 2010. The capacity analysis and results presented in the TIS should be updated to reflect the results based on the HCM 6th Edition to align with the report narrative.

2. In our opinion the TIS should include a summary of the queue analysis to review the impacts on the vehicle queues at all approaches at the study intersections. Queue lengths should be presented for both the 50 and 95 percentile queues in tabular form to facilitate a comparative review of the impact of the project on traffic conditions.

3. Tighe & Bond reviewed the capacity worksheets included in the Appendix of the TIR and have the following comments:

    - The peak hour factors and heavy vehicle percentages used in the analysis should be updated to match the peak hour traffic counts collected.
    - The capacity analysis worksheets included in the TIS for the signalized intersection of Hebron Avenue and Manchester Road should show detailed timing and phase inputs and the calculated vehicle queues.
    - The traffic control signal plan used as the basis of the analysis for the intersection of Hebron Avenue and Manchester Road should be provided in the TIR to verify the inputs for the capacity analysis.

4. The TIR states that crash data from January 2018 through July 2021 were reviewed for the portions of Hebron Avenue and Manchester Road within ¼ mile of the site in all directions. Tighe & Bond reviewed the crash data for the study area based on vehicle collision history included in the Connecticut Crash Data Repository and concur that a significant pattern of collisions was not identified with the crash data analyzed.

5. The TIR states that the available intersection sight distance at the site driveway intersection with Hebron Avenue exceeds the required sight distance in both directions for a speed of 60 mph which is greater than the measured 85th percentile speeds of 51 mph (eastbound) and 53 mph (westbound). The TIR also states that the available intersection sight distance at the site driveway intersection with Manchester Road exceeds the required sight distance in both directions for a speed of 55 mph which is greater than the measured 85th percentile speeds of 39 mph (northbound) and 41 mph (southbound). Tighe & Bond reviewed the intersection sight distance based on criteria set forth in the CTDOT Highway Design Manual, 2003 Edition (with 2020 Supplement) for a two-lane undivided roadway and concur that the available sight distances on Hebron Avenue and Manchester Road exceed the required sight distance in both directions for a passenger vehicle.

Summary

In summary, Tighe & Bond recommends the following revisions and suggests that the Town request update documents from the applicant:

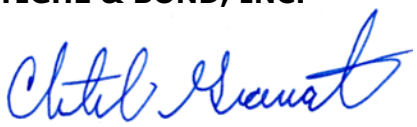
- Existing and Background Traffic – Justify and demonstrate the calculations associated with the expansion factors applied to the collected traffic volume data related to the impacts of COVID-19 and the time of year the traffic counts were collected. Provide additional figures, as necessary.

- Analysis – Update the capacity analysis results based upon HCM, 6th Edition; provide queue analysis for the study intersections; provide more detailed worksheets in the appendix; and revise capacity analysis results based on review comments.

If the Town has any questions related to our review, please feel free to contact me at (860) 704-4771 or COGranatini@TigheBond.com.

Sincerely,

TIGHE & BOND, INC.



Christopher O. Granatini, PE
Vice President

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