

October 22, 2020

Luke DiStefano  
Bohler Engineering  
352 Turnpike Road  
Southborough, MA 01772

RE: Preliminary Peer Review Response to Comments  
Proposed 7-Eleven Store  
306 Boston Post Road (US Route 1)  
Darien, Connecticut

Dear Luke,

McMahon Associates (McMahon) has completed a preliminary review of the Traffic Peer Review comments completed by Michael Galante from Hardesty & Hanover, LLC dated September 17, 2020 regarding the proposed 7-Eleven Convenience Store and Gas Station (referred to as “the Project”) proposed to be located at 306 Boston Post Road (US Route 1) in the Town of Darien, Connecticut. The Hardesty & Hanover comments are based on the July 2020 Traffic Impact Study (TIS) McMahon completed for Bohler Engineering.

The proposed site is currently occupied by a fully-operational fast-food restaurant and drive-through, and is bounded by US Route 1 and dense tree cover to the north, a professional office complex to the south, Interstate 95 (I-95) to the east, and US Route 1 to the west. The Project calls for the demolition of the existing fast-food restaurant on the site and the construction of an approximately 4,050 square-foot convenience store which would include a foodservice counter and a gas station with 12 vehicle fueling positions. Limited indoor seating would be provided for the foodservice portion of the convenience store. The Project would also provide a self-service vacuum and air station in the northeast corner of the site. Project access would continue to be provided by the existing full-access driveway on US Route 1.

The McMahon preliminary responses to the Hardesty & Hanover comments are provided below:

#### Site Plan

**Comment 1** – Under current conditions the driveway is one-lane in and one-lane out with a flush painted center median. Connecticut Department of Transportation (CTDOT) will not accept a two-lane exit from a driveway under STOP sign control. The reason for not permitting this is a concern with restricting sight lines for each vehicle exiting the site.

**Response 1** – We acknowledge this comment and note that Mr. Galante expressed to the Planning and Zoning Commission that if permitted by CTDOT, he prefers the proposed layout permitting full access at the proposed site driveway from a safety perspective when compared to potentially prohibiting left-turns exiting the site.

**Comment 2** – It is recommended that the Applicant consider eliminating the first parking space located on the right as motorists enter the site from Boston Post Road. There is a concern that this parking space is too close to

the throat of the driveway and interferes with a motorist pulling into the site from Boston Post Road at a higher rate of speed and not being able to stop in time when a motorist is backing out of that first parking space.

**Response 2 – This parking space has been removed from the plan.**

**Comment 3** – The Applicant should update its turning movement template maneuvers for the site driveway for large trucks, which will serve the site for fueling purposes. This modification should maintain that a truck entering and exiting the site will not travel over the centerline in or out of the site; however, the truck can travel over the flush painted median to turn into the site or out of the site.

**Response 3 – The AutoTURN templates will be revised accordingly.**

### **Preliminary Review Comments**

**Comment 1 – Existing Conditions** – Based on the Town Property Record Card for the existing Duchess restaurant, there is 2,983 square feet of franchise (retail) area and 1,221 square feet of support area in the basement, for a total of 4,204 square feet. Existing site traffic generation should have been based on the 2,983 square feet of franchise (retail) area only. Therefore, the existing Duchess restaurant volumes at the site driveway should be revised.

The size of the fitness studio across the street should be provided to confirm the traffic calculated for it. The Applicant should provide an explanation on how the existing Duchess restaurant traffic distribution was determined, as it differs from the distribution used for the proposed 7-Eleven/Gas Station.

**Response 1 – McMahon will review the descriptions from the Institute of Transportation Engineers (ITE) to establish the proper area for use in the Trip Generation calculations.**

**Comment 2 – Background Conditions** – The Applicant applied an annual growth rate of one percent, which accounts for the other development identified in the area and is reasonably acceptable. See Comment 1.

**Response 2 – Comment noted. No action required.**

**Comment 3 - Site Traffic Distribution** – The site traffic distribution estimates are reasonably acceptable.

**Response 3 – Comment noted. No action required.**

**Comment 4 – Site Traffic Generation** – See Comment 1 above regarding the revision to the existing Duchess restaurant traffic estimates. The site traffic estimates for the proposed land uses are reasonably acceptable. The methodologies used to calculate the new trips are acceptable. The net increase in site traffic should be revised based on Comment 1.

Review of Figures 9 and 10 indicated that the figure titles do not clearly define what is illustrated. Based on our review, the net increase site traffic estimates in Table 1 were not used on these figures. It is unclear where the site traffic estimates provided in these figures are from.

**Response 4 – Based on the results of Response 1, McMahon will clarify the noted site traffic estimates.**

**Comment 5 – Combined Traffic Volumes** – See Comments 1, 2 and 4. Volumes shown in Figures 11 and 12 are not the sum of the background traffic in Figures 6 and 7 and site traffic in Figures 9 and 10 as stated on page 18. The Applicant should provide an explanation.

**Response 5 – Based on the results of the above responses, McMahon will clarify the noted site traffic estimates.**

**Comment 6 – Capacity Analysis** – It appears that the approach Peak Hour Factors (PHF) were used and is unacceptable. As stated on Page 19-26 of the Highway Capacity Manual (HCM) 6th Edition, "If peak hour factors are used, a single peak hour factor for the entire intersection is generally preferred because it will decrease the likelihood of creating demand scenarios with conflicting volumes that are disproportionate to the actual volumes during the 15-minute analysis period." Therefore, the peak hour factor for the intersection should be used for analysis purposes and is accepted by CTDOT.

Review of the proposed traffic signal timing plan indicated that some of the inputs provided are incorrect. The vehicle extension and minimum gap should be 3 seconds for each phase. The maximum split timings and cycle lengths do not appear to match the timing plan. Also, our office conducted field timings and they do not match the analysis maximum splits and cycle. Typically, with a closed loop system, CTDOT has a time space diagram sheets that provide the maximum splits, cycle lengths and offsets for each intersection in the system for each time period's timing plan. Enclosed please find the time space diagram cover sheets requested by this office from CTDOT. The Applicant should revise their analysis to use these splits, cycle lengths and offsets. A more detailed review of the capacity analysis will be performed once all comments are addressed.

**Response 6 – McMahon will revise the 2020 Existing, 2022 Background and 2022 Combined Synchro analyses to utilize the PHF for the intersection and provide a revised level-of-service (LOS) summary table for the study area.**

**Additionally, McMahon has worked with Mr. Galante to coordinate the Planning and Zoning Commissions request for traffic counts at the Birch Road intersection. The parties await feedback from CTDOT prior to finalizing that response.**

Please let us know if you have any additional questions.

Very truly yours,



Jeffrey T. Bandini, P.E., PTOE  
Project Manager