



Traffic, Transportation and Parking Consultants

November 14, 2024

Darrin J. Scalzo, Chairman
Town of Newburgh
Zoning Board of Appeals
21 Hudson Valley Professional Plaza
Newburgh, NY 12550

RE: Updated Review of Traffic Impact Study
Proposed QuickChek Market with Fuel Sales
Town of Newburgh, New York

Dear Chairman Scalzo and Members of the Board:

Michael Maris Associates, Inc (MMA) was retained to perform a review of documents submitted in support of a proposed QuickChek Market with Fuel Sales (the Project) in the Town of Newburgh, New York. The documents show that the Project would consist of a 6,730-sf convenience store with 16 fuel positions and would be located on a vacant parcel situated to the north of NY Route 17K between Lakeside Road and the Westbound Interstate Route 84 (I-84) Ramps.

It is noted that MMA previously performed a preliminary review of the Project's Traffic Impact Study (TIS), prepared by Stonefield Engineering and Design, LLC (Stonefield) and dated June 20, 2024 and, and submitted its findings in a letter dated October 24, 2024. This letter is an update of the October 24, 2024 letter and presents the findings of a more detailed review of the TIS, as well as a Traffic Signal Modification Concept Plan dated July 9, 2024, a proposed Site Plan revised on July 10, 2024, and a letter to the Town of Newburgh Zoning Board of Appeals dated July 11, 2024. Presented herein are MMA's observations and comments (*in bold*). It is noted that in this review, NY Route 17K is referred to as an east/west roadway and Lakeside Road is referred to as a north/south roadway.

A. SITE ACCESS

The Site Plan, as well as the traffic figures in the TIS, show that access to the Project would be provided by three driveways from Lakeside Road. However, the TIS appears to describe four driveways and the traffic figures show arriving and departing traffic using two driveways and no traffic using the third driveway.

The discrepancies regarding the proposed access must be clarified. Also, an explanation must be provided regarding the need for three driveways, especially since the TIS findings indicate that two driveways would be adequate. It is known that driveways create vehicular conflicts at intersecting roadways and unnecessary driveways should be avoided. It is noted that the Pilot Travel Center operates with only one driveway and that the Mobil service station operates with two driveways.

1. **Southwestern Driveway**

The Site Plan shows that the southwestern driveway would be 36-feet wide and limited to entering traffic. The Plan also shows that a sign would be installed facing northbound Lakeside Road stating “No Tractor Trailer”.

- a. *The 36-foot width of the driveway is excessive and equivalent to the width of three travel lanes. There is no explanation in the TIS regarding the need for an unusually wide driveway which could create vehicular conflicts and driver confusion, as well as invite exiting traffic to use the driveway. Turning vehicle paths should be assessed and, if appropriate, the driveway width should be reduced.*
- b. *The traffic volume Figures in the TIS show that only right-turns-in would occur at this driveway, which indicates that left turns would be prohibited. If so, a “No Left Turn” sign should be installed facing southbound Lakeside Road and “Do not Enter” signs should be installed facing the Project. Also, the geometry of the driveway should be modified to physically prohibit the inbound left-turn movement.*

2. **Central Driveway**

The Site Plan shows that the central driveway would be 30-feet wide and permit entering and exiting traffic. The Plan also shows that a sign would be installed facing northbound Lakeside Road stating “No Tractor Trailer”.

The traffic volume Figures in the TIS do not show any right-turns entering this driveway, which indicates that the right-turn movement may be prohibited. If so, a sign should be installed facing northbound Lakeside Road and the driveway geometry should be modified to physically prohibit the entering right-turn movement.

3. **Northeastern Driveway**

The Site Plan shows that the northeastern driveway would permit only exiting traffic and be channelized to separate the left-turn movement from the right turn movement.

The traffic volume Figures in the TIS do not show any traffic using this driveway. Since unnecessary driveways should be avoided, and the Capacity Analyses in the TIS show that the other driveways will adequately serve the Project, this driveway should be eliminated. However, if the driveway is maintained, the TIS findings are inaccurate and the TIS traffic projections and analyses must be revised to reflect the actual access plan.

B. **SCOPE OF TIS**

The TIS analyzes peak-hour traffic conditions at six intersections and includes traffic counts of existing volumes, estimates of future volumes with and without the Project, and Capacity Analyses to identify the existing and future traffic conditions with and without the Project’s traffic.

1. Study Intersections

The TIS analyzes existing and future traffic volumes at six existing Study Intersections in the vicinity of the Project, as well as future conditions at the Project's driveways.

Based on field observations and a review of the existing traffic volumes, it is MMA's opinion that analyses of the Study Intersections is sufficient to define the impact of the Project.

2. Hours of Analyses

The analyses and traffic projections in the TIS assess existing and future traffic volumes during the weekday Peak AM and PM Hours and the Saturday Peak Midday Hour.

The hours analyzed typically represent periods with higher traffic volumes and are acceptable for analysis of commercial developments.

C. YEAR 2024 EXISTING TRAFFIC VOLUMES

1. Traffic Counts

The traffic projections and analyses in the TIS are based on turning-movement traffic counts undertaken during the peak AM and PM commuter periods on Thursday, February 8, 2024, and the midday period on Saturday, February 10, 2024. Tables of the counted traffic volumes at each of the Study Intersections are appended to the TIS.

- a. *A Table listing the Thursday AM and PM traffic volumes at the NY Route 17K and Lakeside Road intersection was not included in the TIS (there are two copies of the Lakeside Road/Patton Road counts). Since the NY Route 17K and Lakeside Road intersection will be most impacted by the Project, the missing traffic count data must be provided.*
- b. *The traffic Tables do not show counts of heavy vehicles, right-turn-on-red vehicles, pedestrians and bicyclists. This data is input into the Capacity Analyses and the information must be provided.*

2. Existing Traffic Volumes

The February traffic counts were used as the existing traffic volumes and formed the basis for the estimates of the future volumes.

There is no indication in the TIS that the February traffic volumes were seasonally adjusted. Although the weather during the survey dates was acceptable, traffic volumes during February are typically lower than those of the average month and data published by the New York State Department of Transportation (NYSDOT) must be consulted to determine whether seasonal adjustments are necessary.

D. YEAR 2026 NO-BUILD TRAFFIC VOLUMES

The Year 2026 No-Build Traffic Volumes (without the Project's traffic generations) were estimated by increasing the counted volumes by an annual growth rate of 1.0 percent published by NYSDOT and by adding the anticipated trip generations of three other approved/entitled developments in the area.

The methodology used to estimate the No-Build Traffic volumes is standard practice and acceptable.

E. YEAR 2026 BUILD TRAFFIC VOLUMES

The Year 2026 Build Traffic Volumes were calculated by estimating and distributing the Project's trip generations to the Study Intersections and by adding them to the No-Build Traffic Volumes.

1. Project Trip Generations

The Project's trip generations were estimated using Hourly Trip Generation Rates published by the Institute of Transportation Engineers (ITE). Two separate estimates were made, one based on the number of fueling stations and one based on the size of the building, and the higher of the two estimates was used for the traffic projections.

The TIS notes that the Project's trip generations will not be completely new to the area due to Pass-by Trips, which will occur when drivers already on the roadway stop at the Project and then continue to their destination. The Pass-by Trip credits used in the TIS are based on discussions with NYSDOT representatives.

MMA checked the trip generation estimates using ITE data and reviewed the Pass-by Trip credits and found them acceptable.

2. Project Trip Distributions

The TIS states that the distribution of the Project's trip generations on the surrounding roadways was determined based upon an assessment of the existing conditions in the area.

MMA performed an assessment of the existing traffic volumes and found the Trip Distribution estimates reasonable.

F. CAPACITY ANALYSES FINDINGS

The TIS presents the findings of Synchro Capacity Analyses that compared the Existing, No-Build and Build Traffic Volumes to the existing intersection geometries and traffic controls. The findings of the Capacity Analyses are presented in terms of Levels of Service (LOS) and Average Delays (Delays) in seconds. Per the Highway Capacity Manual, LOS A represents optimum traffic conditions, LOS B through D represent generally acceptable traffic conditions, LOS E

represents capacity and long traffic delays, and LOS F represents congestion and very long traffic delays. Copies of the Capacity Analyses printouts are appended to the TIS and the findings are summarized in several summary Tables that identify the LOS and Delays for the individual traffic movements and the overall intersections.

MMA reviewed the Capacity Analyses findings and summary Tables and submit the following comments and observations regarding the three key intersections of NY Route 17K/Lakeside Road, NY Route 17K/Westbound I-84 Ramps, and NY Route 17K/Eastbound I-84 Ramps.

1. NY Route 17K and Lakeside Road

a. Traffic Conditions

The Capacity Analyses with the Build Traffic Volumes show that the Project's traffic would significantly impact traffic flow on the southbound left-turn movement from Lakeside Road to NY Route 17K and increase the Delays to 487.9 seconds during the Peak AM Hour, 229.9 seconds during the Peak PM Hour, and 168.9 seconds during the Peak Saturday Hour. To mitigate the Project's impact, the TIS recommends roadway widening and signal timing modifications.

The proposed roadway and signal timing modifications would improve the traffic conditions on the Lakeside Road approach. However, the signal timing changes would have a negative impact and increase the Delays on the left-turn movement from NY Route 17K into the Pilot Travel Center during the Peak AM Hour and the Delays on the left-turn movement from the Pilot Travel Center onto NY Route 17K during the Peak PM Hour. Therefore, the timing increases to benefit the Lakeside Road approach would have negative impacts on other movements through the intersection.

b. Proposed Modifications

The TIS and the traffic signal modification plan show the following roadway and signal modifications:

- Widening of the Lakeside Road approach to provide two left-turn lanes and one through/right-turn lane.

Since the proposed Project will generate truck traffic, a truck turning path analysis must be performed to determine whether the existing NY Route 17K pavement can receive two vehicles turning left concurrently, or whether the pavement will need widening. It is noted that the existing pavement on eastbound NY Route 17K is only about 24 feet.

- Striping of the Pilot Travel Center driveway approach to provide one through/left-turn lane and one right-turn lane.

It is noted that the Build Capacity Analyses were performed with the above-described traffic lanes. However, the Tables show one left-turn lane and one through/right-turn lane. This discrepancy must be corrected.

The existing driveway is wide enough to accommodate two lanes. However, it's not clear who would implement this modification since the Project may not have the right to stripe a private driveway.

- Modification of the existing signal timing to take green time away from the Pilot Travel Center driveway approach and allocation of that green time to the Lakeside Road approach.

The proposed timing changes will reduce the delays on the Lakeside Road approach but will increase the delays on the Pilot Travel Center driveway approach. As the LOS and Delay Tables show, the signal timing changes will improve the Lakeside Road approach at the expense of the Pilot Travel Center approach and should not be acceptable.

- The Traffic Signal Concept Plan shows that the length of the NY Route 17K eastbound left-turn lane would be increased to 200 feet.

This modification is not discussed in the TIS and the Capacity Analyses printouts do not show the queuing analyses results to verify that a 200-foot left-turn lane will be adequate.

c. Queuing Assessment

The TIS does not include an assessment of the Project's impact on vehicle queues at the Study Intersections and only presents the Existing, No-Build, and Build vehicle queues on the Lakeside Road approach to NY Route 17K. A summary Table in the TIS shows that the proposed roadway widening of the Lakeside Road approach and the signal modifications are needed or the queues will exceed the distance to the Project's driveway.

- *A summary of the vehicle queues on one approach to one intersection is not adequate to assess the Project's impact. Further, the Capacity Analyses printouts show the queue lengths under the Existing and No-Build Conditions, but none of the queue lengths under the Build Conditions. To properly assess the Project's impact, all Capacity Analyses must show the vehicle queue lengths and the Analyses must be revised to include this information.*

- *The vehicle queue lengths shown in the summary Table represent the Average queue lengths. However, the Capacity Analyses also calculate the 95th Percentile queue lengths that are typically used to plan roadway improvements and the 95th Percentile queues should be included in the Table.*

2. NY Route 17K and Westbound I-84 Ramps

The TIS states and the Tables show that the Project's traffic will not significantly impact traffic flow through this intersection and that the overall intersection and all its movements will operate at similar conditions to those under the No-Build Traffic Conditions.

- a. While the Capacity Analyses show that the overall intersection and most movements will operate at acceptable conditions, it is important to note that the westbound left-turn movement from NY Route 17K to the I-84 Ramp experiences and will continue to experience long delays.*
- b. As previously noted, most of the Capacity Analyses printouts do not show the vehicle queues. This information is needed to determine whether the lane storage lengths are adequate. It is noted that during a field visit, MMA observed vehicle queues on eastbound NY Route 17K extending past the Lakeside Road intersection.*

3. NY Route 17K and I-84 Eastbound Ramps

The TIS states and the Tables show that the Project's traffic will not significantly impact traffic flow through this intersection and that the overall intersection and all its movements will operate at similar conditions to those under the No-Build Traffic Conditions.

- a. It is important to note that the TIA shows that the eastbound left-turn movement from NY Route 17K to the I-84 Ramp and the northbound left-turn movement from the I-84 Ramp to westbound NY Route 17K operate and will continue to operate at LOS E and experience long delays.*
- b. It is again noted that the Capacity Analyses printouts do not show the queuing findings. The queue information is very important for this location since the NY Route 17K left-turn lane does not have sufficient storage length to serve the existing volume demand. During field visits, MMA observed that the left-turn vehicles often exceeded the available storage of the left-turn lane and blocked one of the through lanes. Consequently, the capacity of eastbound NY Route 17K was reduced, creating long through queues that extended past the Lakeside Road intersection. It is noted that the Project will add traffic to the left-turn movement and obviously increase the length of the queues.*
- c. While the long queues could be reduced by changing the signal timing to allocate more green time to the left-turn movement, it is understood that the signals along NY Route 17K are coordinated and timing changes may not be possible. Without signal timing*

changes, the long queues could be reduced by widening eastbound NY Route 17K to provide two left-turn lanes, as well as widening of the I-84 On-Ramp to accept two concurrently turning vehicles.

G. PARKING ASSESSMENT

The TIS states that the Project will provide a total of 62 parking spaces, which includes 54 standard spaces, three ADA spaces, three truck spaces and two compressed air spaces. Based on calculations of the Town parking requirements, the TIS concludes that the 62 spaces would exceed the Town parking requirements.

- 1. The Site Plan does not show 62 striped parking spaces, and this apparent discrepancy must be clarified. Also, none of the striped spaces on the Site Plan appear to be large enough to accommodate trucks and, if truck parking is provided, the Site Plan must be revised to show the proper striping and identify the truck spaces.*
- 2. An estimate of the Project's parking needs using the Average Parking Generation Rates published by the ITE indicates that the proposed parking spaces will be adequate. However, use of ITE's 85th Percentile Rates, which is the design standard, indicates that more parking will be needed.*

H. ACCIDENT ASSESSMENT

The TIS states that accident (crash) data was obtained for each Study Intersection covering the latest 54-month period. The accident data is summarized in Tables listing the number and type of accidents at each Study Intersection. The TIS notes that no fatalities were recorded and states that the Project will not adversely impact on the current accident rates.

- 1. The TIS does not state whether any analyses were performed to justify the statement that the Project will not impact accident rates. The Project is expected to increase passenger and truck traffic in the area and the safety impact of the additional traffic should be assessed to verify the accuracy of this statement.*
- 2. An assessment of the accident types was not performed to determine whether they indicate a need for roadway and/or signal modifications/improvements. Based on MMA's experience, this assessment is typically required by NYSDOT and must be performed.*
- 3. The Accident Rates at the Study Intersections were not calculated and comparisons to Statewide Average Rates were not performed. Based on MMA's experience, this assessment is also typically required by NYSDOT and must be performed.*


Darrin J. Scalzo, Chairman
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We trust the findings presented herein are clear and adequately respond to your request. Please call us if you have any questions.

Respectfully submitted,
MICHAEL MARIS ASSOCIATES, INC.

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Michael Maris
President

A handwritten signature in cursive script, appearing to read "John Maris", written in black ink on a light-colored background.

John Maris
Vice President

cc: Mr. James Bacon, Esq.