Shropshire Associates LLC

SBE Certified

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June 30, 2025

Mr. Ryan Sutherland (via email: rsutherland@amsacquisitions.com)
AMS Acquisitions
One Bridge Plaza North, Suite 840
Fort Lee, NJ 07024

Re: **Traffic Engineering Assessment**
Marlton Crossing
Block 24.21, Lot 3
Centre Boulevard
Evesham Township, Burlington County, NJ
SA Project No. 25074

Dear Ryan:

At your request, Shropshire Associates LLC has prepared a supplemental Air Quality Assessment report to support the Evesham Township application for the proposed Marlton Crossing residential development along northbound Centre Boulevard in Evesham Township, Burlington County, New Jersey. This letter is to supplement the recently submitted Traffic Engineering Assessment dated June 19, 2025.

Air Quality Report

NJDEP Protocol

The New Jersey Department of Environmental Protection (NJDEP) outlines an air quality evaluation protocol in *Air Quality Analysis for Intersections*. NJDEP requires dispersion modeling to demonstrate that the National Ambient Air Quality Standards (NAAQS) for carbon monoxide will not be exceeded due to the additional traffic to be generated by a proposed development. As per N.J.A.C. 7:27-13.5, carbon monoxide concentrations shall not exceed 35 ppm for one-hour average concentrations and 9 ppm for eight-hour average concentrations.

Levels of service (LOS) results are the basis for determining whether or not an intersection requires dispersion modeling. Generally, a LOS A, B or C indicates that vehicle delays at an intersection are not significant enough to generate excessive CO concentrations. At signalized intersections, any movement that functions at a LOS D, E or F requires CO dispersion modeling. For unsignalized intersections, a LOS E or F on the stop-controlled approaches, and a LOS D, E or F for the major street left-turn movement indicates the need for CO dispersion modeling.

Data Analysis

The intersections to be analyzed for air quality violations are dependent on the levels of service at each intersection. Based on the levels of service presented in the June 19, 2025 Traffic Engineering report and the NJDEP protocol, dispersion modeling is required for the Old Marlton Pike (CR 600) and Centre Boulevard signalized intersection. Dispersion modeling is performed during the peak hour that experiences the highest total volume at the intersection. Based upon this

criterion, the Old Marlton Pike (CR 600) and Centre Boulevard study intersection was analyzed during the weekday PM peak hour.

The future No-Build and Build levels of service at the other study locations contained in the June 19, 2025 Traffic Engineering Assessment do not require modeling based upon the latest NJDEP Protocol.

Data Results

Dispersion modeling was performed for the study intersections using the MOVES3.0 program. The MOVES3.0 program estimates carbon monoxide emission factors for motor vehicles using default values issued by the NJDEP. It should be noted that the results of the MOVES3.0 program give CO concentrations in grams. To convert grams to ppm, the results were divided by 1,000.

To obtain the one-hour average CO concentration, the default background concentration of 5.0 ppm for a suburban area was added to the modeled CO concentrations obtained from the MOVES3.0 program. The eight-hour average CO concentration is obtained by multiplying the one-hour average CO concentration by a 0.7 persistence factor. The resulting CO concentrations are provided in Table 5 for the study intersection under the No-Build and Build conditions.

Table 1
CO Concentrations (ppm)

Study Intersection	Scenario	One Hour Average	Eight Hour Average
Old Marlton Pike (CR 600) and Centre Boulevard	No-Build	5.52	3.86
	Build	5.54	3.88

The results presented in Table 1 show that the CO concentrations resulting from the dispersion modeling presented in this report do not violate the NAAQS of 35 ppm for one-hour average concentrations and 9 ppm for eight-hour average concentrations. The maximum carbon monoxide concentrations for the Build conditions occur in the southern approach of the Old Marlton Pike (CR 600) and Centre Boulevard signalized intersection. The maximum one-hour average CO concentration of 5.54 ppm does not exceed NAAQS standards; therefore, no further improvements are required at the study locations due to air quality conditions.

Should you have any questions or require additional information, please feel free to contact us.

Sincerely,
Shropshire Associates LLC

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NBM/crc
Attachments

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Run	Header Item:	Item Value
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	Report Date/Time:	2025-6-30 9:30:23
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1	Run Spec Description:	25074 - Marlton Crossing Old Marlton Pike (C.R. 600) and Centre Boul
1	Mass Units:	g
1	Energy Units:	J
1	Distance Units:	mi
1	Time Units:	hour

Year	Month	State	County	Run	CO
2027	3	34	34005	1	515

Category	Field	Value	Description
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	countyID	34005	Burlington County

Run	Header Item:	Item Value
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1	Run Spec Description:	25074 - Marlton Crossing Old Marlton Pike (C.R. 600) and Centre Boul
1	Mass Units:	g
1	Energy Units:	J
1	Distance Units:	mi
1	Time Units:	hour

Year	Month	State	County	Run	CO
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Category	Field	Value	Description
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	countyID	34005	Burlington County