

STONEFIELD

February 3, 2020

Planning Board Secretary
Borough of Middlesex
1200 Mountain Avenue
Middlesex, NJ 08846

**RE: Responses to 3rd Engineering Review – Traffic Comments
Proposed School Bus Parking, Storage, and Maintenance Facility
Block 249, Lot 1 & 2 – Zone CLW
930 Lincoln Boulevard
Borough of Middlesex, Middlesex County, New Jersey**

Stonefield Engineering & Design, LLC is pleased to submit documents to address the traffic comments contained within the Najarian Review Letter, dated December 31st, 2019. The following is an itemized response to the traffic comments contained within the Najarian Review Letter:

4. Traffic

i. Traffic Analysis Comments

- a) Based upon the provided Supplemental Traffic Assessment, dated April 25, 2019, the Applicant indicates that they performed turning movement counts at the intersection of Lincoln Blvd & South Lincoln Ave on Thursday, April 18, 2019, from 6:30AM-9:00AM and 2:00PM-7:00PM. The Applicant identified an AM Peak Hour of 7:30AM - 8:30AM and a PM Peak Hour of 4:00PM - 5:00PM. We have reviewed the count data provided in the technical appendix.

We agree with this data collection protocol as it should capture both the peak hour along the adjacent roadway system as well the peak hour on site when buses are arriving and departing for service.

CONTINUING STATEMENT – No further action is required by the applicant at this time.

Response: Acknowledged.

- b) The Engineer may also wish to collect data from a sample site which operates similarly to the proposed land use. The Engineer may refer to the ITE Trip Generation Reference. A suitable land use code or combination of land use codes should be referenced for the proposed trip generation.

CONTINUING STATEMENT – No further action is required by the applicant at this time.

Response: Acknowledged.

- c) We agree with the Applicant's use of the NJDOT Background Growth Rate Tables to project future volumes. The Applicant elected to perform the analysis for a two (2) year build-out period. Typically, a three (3) build-out would present a more conservative analysis. Please provide some brief testimony regarding your choice of build-out period.

CONTINUING STATEMENT – Please provide some brief testimony regarding your choice of build-out period.

Response: The two (2)-year estimate utilized in the analysis corresponds with anticipated build-out date for the development and is an acceptable standard for background growth. The additional 1.25% background growth corresponds to eight (8) additional vehicles during each of the weekday morning and weekday evening peak hours, or less than one (1) vehicle every eight (8) minutes. The additional year of background growth does not have a significant impact on the Levels of Service of the surrounding roadway network.

- d) The Applicant's Engineer should provide references in support of their proposed parking capacity. The Engineer may collect data from a similar site and use this as reference. Reference may be made to the Borough Code or the ITE Parking Generation Reference. Please provide some testimony regarding the proposed parking capacity for the site.

ADDRESSED – The provided "Operational Memorandum", dated November 27, 2019, supports the proposed parking capacity.

Response: Acknowledged.

- e) Please provide information regarding parking figures and parking dimensions for the project site. References may be made to the ITE Parking Generation Manual or the ULI Dimensions of Parking, as well as the Township Code.

ADDRESSED – A Parking Space detail has been added to the plans.

Response: Acknowledged.

- f) We are concerned with the number of access points proposed for the site. It is our recommendation that the total amount of access points be reduced in order to reduce the amount of potential turning movement conflicts both within the site and along the adjacent roadway. The Applicant's Engineer should consider revisiting their site plans and reconfiguring their site layout to maximize cross access between uses on the site, parking areas, drive aisles, and minimizing the amount of access points.

CONTINUING STATEMENT – Please provide testimony if any access points are being considered for removal.

Response: The plans are revised to eliminate one (1) driveway, located closest to the loading area.

- g) We would request that the Applicant's Engineer review the trip generation figures which are being proposing for this site. The Engineer indicates that the site has the capacity to park 86 school buses, 16 additional personal use vehicles, in addition to many maintenance bays available on site. The Applicant indicates that some of the trips to the site will be reduced by carpooling and that only 36 of the school buses are expected to be in operation at a given time. Additionally, only 75 trips are expected during each of the AM and PM Peak Hours. Please provide some basis for the trip generation, such as an operation manual or employee roster indicating that only 36 bus drivers and 9 employees will be present at this site. Please provide testimony regarding the proposed trip generation.

ADDRESSED – The applicant has provided a letter entitled "Operational Memorandum" dated November 27, 2019, confirming amount and timing of buses and employees operating at the facility.

Response: Acknowledged.

- h) Based upon the provided trip generation figures, we note that the proposed site will generate approximately 75 primary trips during the AM Peak Hour and 75 primary trips during the PM Peak Hour in the Full-Build Conditions. Title 16 Chapter 47 (State Highway Access Management Code) defines a "Significant increase in traffic" as an increase in vehicular volumes exceeding the previously anticipated two-way traffic generated by a lot. The Institute of Transportation Engineers (ITE) and the Department both generally define this through the following thresholds:

- A. 100 movements during the peak hour of the highway or the development; and
- B. 10 percent of the previously anticipated daily movements.

While we are aware that the roadways in question are not classified as State Highways, these roadways are either under Municipal or County jurisdiction and there is some concern regarding the traffic generated from this site. We ask that the Engineer please provide further analysis regarding any mitigation which may be implemented at the adjacent intersection, as well as throughout the surrounding roadway network.

NOT ADDRESSED – We ask that the Engineer provide further analysis regarding any mitigation which may be implemented at the adjacent intersection of South Lincoln Ave.

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Traffic Comments Responses – 3rd Engineering Review
Proposed School Bus Parking, Storage, and Maintenance Facility
Middlesex, New Jersey
February 3, 2020

Stonefield's Response: Level of Service/Capacity Analyses have been prepared at the adjacent intersection, where traffic impacts would be greatest. Under the build-out condition, the surrounding roadway network would continue to operate at acceptable Levels of Service during the peak hours. The existing roadway design and roadway widths provide sufficient maneuverability to bypass turning vehicles without impacting traffic flow. The traffic volumes through the intersection do not meet MUTCD warrant requirements for any of the eight-hour, four-hour, or peak-hour warrants. As such, mitigation measures to improve acceptable Levels of Service in the future are not recommended.

- i) Please provide brief testimony regarding pedestrian access and pedestrian circulation throughout the proposed site.

CONTINUING STATEMENT – Please provide testimony pedestrian access and circulation throughout the site.

Response: Testimony will be provided regarding pedestrian access and circulation.

- j) Please provide information regarding site distance for each of the proposed access points. All matters regarding sight distance, sight lines, and sight triangles should conform to the guidelines set forth by AASHTO's A Policy on Geometric Design of Highways and Streets.

PARTIALLY ADDRESSED – The applicant shall provide the requested information for the most eastern access point.

Response: The sight lines at the easterly access point were reviewed, and the access point conforms with the guidelines for stopping sight distance set forth by AASHTO's A Policy on Geometric Design of Highways and Streets.

- k) Please ensure that all the appropriate signage and striping is provided throughout the site and at access points, in order to ensure safe access to/from the site and safe circulation of traffic throughout the site. All proposed signing and striping must adhere with the guidelines set forth within the FHWA's Manual on Uniform Traffic Control Devices.

ADDRESSED – All appropriate signage & markings have been provided.

Response: Acknowledged.

ii. Site Plan & Circulation Comments

- a) Based upon the provided Site Plans, we observe that five (5) access points are proposed for this site. Three (3) of these driveways provide for full- movements, and the remaining two (2) provide for ingress only. As stated above, we recommend that the site be reconfigured to provide cross-access between the proposed uses and parking areas. The Engineer should try to reduce the amount of access points in order to reduce the amount of potential conflicts both within the site and along the adjacent roadway.

NOT ADDRESSED – Please confirm if any changes to the site configuration are being considered to address this concern.

Response: The plans are revised to eliminate one (1) driveway, located closest to the loading area.

- b) We kindly request that the Engineer provide parking figures with references, from either the Borough Code or a National Standard like the ITE Parking Generation Manual. Please provide the requisite land use codes and references for all figures used within your analysis. We note that the Applicant proposes for their employees to utilize the available on-street parking along with the parking offered on the site, for their employees. We ask that the Applicant work with the Borough and its residents to ensure that they do not impact the surrounding uses.

CONTINUING STATEMENT – The applicant shall provide testimony that they will ensure that they do not impact the site's surrounding uses.

Response: The previously submitted "Operational Memorandum", dated November 27, 2019, supports the proposed parking capacity and is indicated as such in comment 4-ii-d. The proposed development would not impact on-street parking supply or surrounding uses.

- c) We ask that the Applicant provide accessible sidewalks throughout their portion of the site and adjoining public sidewalk. Please provide information to ensure the site is conducive to safe and efficient pedestrian circulation. Please ensure that the site is clearly signed and striped to provide safe pedestrian circulation internally for its employees as well.

CONTINUING STATEMENT – The applicant shall provide testimony entailing the pedestrian circulation within the site.

Response: Testimony will be provided regarding pedestrian access and circulation.

- d) We recommend that the Applicant's Engineer consider implementing new signage and striping to ensure proper internal and external circulation of traffic. Please review the regulatory signage and provide new signs at appropriate locations. Please ensure that the appropriate signs and pavement markings are in place in order to minimize any conflicts from the drive aisles, loading areas, and parking aisles.

PARTIALLY ADDRESSED – Appropriate signage and markings have been added. We recommend moving the "DO NOT ENTER" signs located on the single lane access aisle further south towards the end of this aisle.

Response: The "DO NOT ENTER" sign was relocated, as requested.

- e) We have reviewed the circulation plans provided for both the ladder truck and school bus. We note that both vehicles appear to intrude upon the school bus parking spaces; the school buses near the two-way driveway along the north of the site, and the ladder truck along the southeast of the site.

The Applicant's Engineer shall reconfigure the parking layout and revise the striping so that these vehicles can safely circulate throughout the site without intruding upon the proposed parking spaces.

NOT ADDRESSED – The provided circulation plan's turning templates do not reflect the current Site Plan, using a fifty-three (53) foot wide drive aisle, while the Site Plan shows a forty (40) foot drive aisle. Applicant shall revise these turning templates as well as provide turning templates for passenger vehicles and trash pickup trucks.

Response: Turning templates were revised as per the revised Site Plan layout.

- f) The appropriate design standards and permitting should be met for any roadway construction adjacent to the site, which may include but isn't limited to:
- A. County/Municipal Design Standards;
 - B. MUTCD Standards;
 - C. IES lighting design guidelines;
 - D. American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets;
 - E. ADAAG and/or PROWAG Guidelines; and
 - F. Motor Vehicle and Traffic Laws -Title 39

ADDRESSED – No proposed roadway construction outside of the site.

Response: Acknowledged.

- g) The Site Plan does not indicate sight distance or exhibit sight lines in either direction from the access driveways. Please provide information to ensure that the non-signalized access points meet AASHTO's A Policy on Geometric Design of Highways and Streets Sight Distance Requirements.

PARTIALLY ADDRESSED – The applicant shall provide the requested information for the most eastern access point.

Response: The sight lines at the access driveways were reviewed, and the access points conform with the guidelines for stopping sight distance set forth by AASHTO's A Policy on Geometric Design of Highways and Streets.

- h) We ask that the Engineer ensures the site is properly illuminated for internal circulation and minimizes any external conflict from light spilling over onto the Lincoln Boulevard.

PARTIALLY ADDRESSED – Sufficient internal illumination has been provided and is not predicted to cause any spillage onto Lincoln Boulevard.

Response: Acknowledged.

- i) The Engineer should provide a lighting plan sheet which includes a schedule of proposed luminaires, calculation areas, statistics table(s), and a luminaire location table. The provided "Lighting & Landscaping" plan does not provide this information. Please refer to a national standard, such as the IES guidelines, or the Municipal Ordinances to ensure that the minimum guidelines are met for average illumination levels, minimum illumination levels, and uniformity.

ADDRESSED – Sufficient information has been provided.

Response: Acknowledged.

- j) As the proposed land use has a large parking area and serves mainly as a storage and maintenance facility for commercial vehicles, illumination and uniformity values should be provided for both horizontal and vertical calculation areas. Please follow the guidance presented within the Borough Ordinances and/or a national accepted lighting standard. We recommend that a lighting plan be provided for the Board's review.

ADDRESSED – Sufficient information has been provided.

Response: Acknowledged.

Should you have any questions, please do not hesitate to contact our office.

Best regards,



Charles D. Olivo, PE, PP, PTOE
Stonefield Engineering and Design, LLC

cc: Robert W. Bucco, Jr. – Najarian Associates (via email)

STONEFIELD

November 27, 2019

Planning Board
Borough of Middlesex
1200 Mountain Avenue
Middlesex, NJ 08846

**RE: Operational Memorandum
Proposed School Bus Parking, Storage, and Maintenance Facility
Block 249, Lots 1 & 2
930 Lincoln Boulevard
Borough of Middlesex, Middlesex County, New Jersey**

Dear Board Members:

Stonefield Engineering and Design, LLC ("Stonefield") has prepared this operations summary based on consultations with the applicant:

Operational Statistics:

Hours of Operations: 6:00 a.m. – 5:00 p.m. Mon-Fri
Limited operations on weekends
Holiday and Summer hours may differ

Number of Employees: 36 Bus Drivers
4 Office Workers
5 Mechanics
45 Total Employees

Number of School Buses: 36 Buses operate daily
44 Buses are stored for backup
80 Total Buses

Number of Parking Spaces: 45 Passenger vehicle spaces
86 Bus spaces

Typical Operational Schedule (Weekday):

1. Bus drivers would arrive to the site at 6:00 a.m. via personal vehicle or carpool
2. School buses will begin departure at 6:45 a.m. for the morning shift (school opening)
3. Office workers and mechanics would arrive to the site by 7:30 a.m. via personal vehicle or carpool
4. All employee vehicles would be parked on-site
5. School buses will return to the site at approximately 8:45 a.m.
6. Bus drivers are dismissed upon returning from the morning shift
7. Bus drivers would arrive to the site at 1:15 p.m. via personal vehicle or carpool
8. School buses will depart between 2:00-2:30p.m. for the afternoon shift (school dismissal)
9. School buses will return to the site at approximately 3:45 p.m.
10. Bus drivers are dismissed upon returning from the afternoon shift
11. Office workers and mechanics would leave the site at approximately 5:00 p.m.

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General Notes:

1. Maintenance operations would take place throughout the day and may include employees leaving the site to obtain parts for repair. Weekend operations would generally be related to maintenance.
2. Operational Schedule is based on typical school day operations. Hours of operation may vary based on early dismissal, weather delays, or other events resulting in a modified school-day schedule.

Please do not hesitate to contact our office should you have any questions or comments.

Best regards,



Charles D. Olivo, PE, PP, PTOE
Stonefield Engineering and Design, LLC



John R. Corak, PE
Stonefield Engineering and Design, LLC