STONEFIELD

May 9, 2022

Ashley Neale, Board Secretary
Verona Town Hall
600 Bloomfield Avenue
Verona, NJ 07044

RE: Traffic Assessment Report
Proposed Multifamily Residential Development
Block 303, Lot 4
Township of Verona, Essex County, New Jersey
Block 301, Lot 5 & Block 401, Lot 1
Township of Montclair, Essex County, New Jersey
SE&D Job No. S-19187

Dear Board Members:

Stonefield Engineering & Design, LLC ("Stonefield") has prepared this analysis to examine the potential impacts of the proposed residential development on the adjacent roadway network. The subject property is located at the southwesterly quadrant of the intersection of Bloomfield Avenue and Sunset Avenue and spans two (2) municipalities. The subject property is designated as Block 303, Lot 4 as depicted on the Township of Verona Tax Map, and as Block 301, Lot 5 and Block 401, Lot 1 as depicted on the Township of Montclair Tax Map. The site has approximately 540 feet of frontage along Sunset Avenue and approximately 210 feet of frontage along Bloomfield Avenue. The existing site is occupied by a private school known as "Academy 360" that provides education for special needs students. The existing access is provided via two (2) driveways along Sunset Avenue with turn restrictions. Under the proposed development program, the existing structures would be razed and a multi-story residential building consisting of 200 apartment units and a parking garage would be constructed along with an accessory surface parking lot. Access is proposed to remain via the existing two (2) driveways along Sunset Avenue without the existing turn restrictions. Land uses in the area are predominately residential, educational, and commercial uses.

2019 Existing Conditions

The subject property is located at the southwesterly quadrant of the intersection of Bloomfield Avenue and Sunset Avenue in the Township of Verona, Essex County, New Jersey. The subject property is designated as Block303, Lot 4 as depicted on the Township of Verona Tax Map, and as Block 301, Lot 5 and Block 401, Lot 1 as depicted on the Township of Montclair Tax Map. The site has approximately 540 feet of frontage along Sunset Avenue and approximately 210 feet of frontage along Bloomfield Avenue. Land uses in the area are predominately residential, educational, and commercial uses.

Sunset Avenue is classified as a local road with a general east-west orientation and is under the jurisdiction of the Township of Verona. Along the site frontage, the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 25 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is not permitted. Sunset Avenue provides east-west mobility within the Township of Verona for predominantly residential uses along its length.

Bloomfield Avenue (CR 506) is classified as an Urban Principal Arterial roadway with a general east-west orientation and is under the jurisdiction of Essex County. Along the site frontage, the roadway provides two (2) lanes of travel in each direction with an additional left-turn lane in the northbound direction, and has a posted speed limit of 35 mph. Curb and sidewalk are provided the westerly side of the roadway, a narrow shoulder is provided along the easterly side of the roadway, and on-street parking is not permitted. Bloomfield Avenue

provides mobility throughout Essex County for a mix of residential, commercial, and educational uses along its length.

Sunset Avenue, Bloomfield Avenue, and Claremont Avenue intersect to form a signalized intersection controlled by a three (3)-phase traffic signal operating on a 120-second background cycle during the weekday morning and weekday afternoon peak hours. The eastbound approach of Sunset Avenue provides one (1) full-movement lane. The northbound approach of Bloomfield Avenue provides one (1) exclusive left-turn lane and two (2) exclusive through lanes, and the southeastbound approach of Bloomfield Avenue provides one (1) exclusive through lane and one (1) shared through/right-turn lane. The northwestbound approach of Claremont Avenue provides one (1) exclusive left-turn lane to merge with Bloomfield Avenue and one (1) right-turn lane towards Crestmont Road. Crosswalks and pedestrian signals are provided across all the intersection legs except the northbound approach.

The proposed development is located within 0.2 miles (5-minute walk) from bus stops that service two (2) NJ Transit bus routes and one (1) charter bus route, with the nearest stop located at the intersection of Bloomfield Avenue and Sunset Avenue. NJ Transit Bus Routes 11 and 29 provide service to Newark Penn Station and Broad Station and other points of interest throughout Essex County and Morris County. The charter bus route, known as DeCamp #33, provides service to New York City and other points of interest throughout Essex County. The non-vehicular transportation modes available in the general vicinity of the subject site are summarized on **Table 1**.

TABLE 1 – MULTI-MODAL TRANSPORTATION OPTIONS

Travel Mode	Proximity to Site	Peak Commuter Period Headways	Destination(s)	Time Travel to Major Destination
DeCamp #33	0.2 miles	Inbound: 60 minutes Outbound: 60 minutes	NYC Port Authority, Bloomfield, Clifton, Montclair, West Orange, Caldwell	New York City: 57 minutes
NJ Transit Bus Route 11	0.2 miles	Inbound: 15 minutes Outbound: 15 minutes	Newark Broad Station, Willowbrook Mall, Little Falls, Montclair, Bloomfield, Cedar Grove	Newark Broad Station: 30 minutes
NJ Transit Bus Route 29	0.2 miles	Inbound: 15 minutes Outbound: 15 minutes	Newark Penn Station, West Caldwell, Verona, Montclair, Glen Ridge, Parsippany	Newark Penn Station: 35 minutes

Turning movement counts were collected during the typical weekday morning and weekday afternoon time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the signalized intersection of Sunset Avenue, Bloomfield Avenue, and Claremont Avenue. Specifically, turning movement counts were conducted on Thursday, September 26, 2019 from 8:30 a.m. to 9:30 a.m. and from 2:30 p.m. to 3:30 p.m. during the existing school drop-off/pickup peak hours. The 2019 Existing weekday morning and weekday afternoon peak-hour volumes are summarized on appended **Figure 1**.

Trip Generation

Trip generation projections for the proposed residential development were prepared utilizing the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition. Trip generation rates associated with Land Use 221 "Multifamily Housing (Mid-Rise)" were cited for the proposed 200-unit residential development. **Table 2** provides the weekday morning and weekday afternoon peak-hour trip generation volumes

associated with the proposed development as well as a comparison with the as-counted trip generation of the existing school.

TABLE 2 –TRIP GENERATION

	Weekday Morning Peak Hour			Weekend Afternoon Peak Hour			Weekday Evening Peak Hour		
Land Use	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
Proposed 200 Units Multifamily Housing (Mid-Rise) *ITE Land Use 221*	17	57	74	23	18	41	48	30	78
Existing Private School *As-Counted*	37	50	87	36	65	101	-	-	-
Total	**-20**	**+7**	**-13**	**-13**	**-47**	**-60**	**+48**	**+30**	**+78**

The proposed residential development is expected to generate a total of 74, 41, and 78 trips during the weekday morning, weekday afternoon, and weekday evening peak hours, respectively. Based on the as-counted data, the proposed development would generate less trips as compared with the existing school during the weekday morning (13 trips) and weekday afternoon (60 trips) peak hours. The proposed development would generate less than 100 new trips during the weekday evening peak hour, causing no significant changes to the nearby roadway network.

The location of the proposed development is particularly suited to provide transit options for its occupants as it is located within an approximate five (5)-minute walk from multiple bus routes that provide access to Newark Penn Station, NYC Port Authority and other points of interest. These available transit options within walking distance of the proposed development would likely reduce vehicular travel by residents to and from the subject property. Additionally, based on American Community Survey data provided by the U.S. Census Bureau, approximately 49% of the Township of Verona residents living in Census Tract 169, where the site is located, use public transportation, walk, or use means other than single-passenger vehicles to commute to work. However, in order to conduct a conservative analysis, no trip reductions were considered.

The trips generated by the proposed development were distributed evenly between Bloomfield Avenue eastbound and westbound, and are illustrated on appended **Figure 2**.

2025 Future Traffic Volumes

For the purpose of this analysis, a complete project "build out" is assumed within three (3) years of the preparation of this study. To evaluate the future traffic conditions, the site-generated trips associated with the existing school were removed from the 2019 Existing Traffic Volumes and a background annual growth rate of 1.00% was applied for six (6) years. The 1.00% background growth rate was obtained from the New Jersey Department of Transportation (NJDOT) Annual Background Growth Rate Table. The site-generated trips associated with the proposed development were then added to the grown traffic volumes to create the 2025 Build Traffic Volumes, which are summarized on appended **Figure 3**.

Traffic Capacity Analysis

A Level of Service and queuing analysis was conducted at the study intersection of Sunset Avenue and Bloomfield Avenue under the existing and future conditions during the weekday morning and weekday afternoon peak hours.

Two (2) analyses were conducted for the future condition. The first analysis does not consider any off-site mitigation and the second includes a new exclusive right-turn lane for the eastbound approach of Sunset Avenue. **Tables 3** and **4** provide a Level of Service and queuing comparison of the analysis conditions and peak hours, respectively. The capacity analysis detail sheets are appended at the end of this letter.

TABLE 3 – LEVEL OF SERVICE (DELAY IN SECONDS)

Lane Group		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Existing Condition	Build Condition	Build (RT Lane)	Existing Condition	Build Condition	Build (RT Lane)
Sunset Avenue	EB Left/Right	E (75.1)	E (62.0)		E (55.9)	E (58.6)	
	EB Left			E (55.5)			D (54.9)
	EB Right			D (51.5)			D (50.4)
Bloomfield Avenue	NB Left	A (4.2)	A (3.6)	A (3.2)	A (5.7)	A (4.1)	A (4.0)
	NB Through	A (2.7)	A (2.2)	A (1.9)	A (3.7)	A (2.1)	A (2.1)
	SB Through/Right	A (6.7)	A (5.9)	A (5.4)	A (8.4)	A (6.0)	A (5.8)
Overall Intersection		**A (9.2)**	**A (6.9)**	**A (6.0)**	**A (9.8)**	**A (6.0)**	**A (5.8)**

As shown in Table 2, the study intersection in the Build Condition is calculated to operate at overall Level of Service better than the Existing Condition. This is due to the traffic associated with the proposed development being equally distributed throughout the peak hour, as compared to the traffic associated with the existing school being heavily concentrated over a 15 to 20-minute period during school day start and dismissal. Furthermore, the construction of a right-turn lane would only minimally improve the Sunset Avenue approach by approximately five (5) seconds in the weekday morning peak hour and four (4) seconds in the weekday afternoon peak hour.

It should be noted that the trip generation values associated with the weekday evening peak hour for the proposed residential development were used to conduct the weekday afternoon peak hour analysis to conduct a conservative analysis, since the weekday evening peak hour values are greater than the weekday afternoon peak hour values.

TABLE 4 – 95th PERCENTILE QUEUE LENGTHS (IN VEHICLES)

Lane Group		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Existing Condition	Build Condition	Build (RT Lane)	Existing Condition	Build Condition	Build (RT Lane)
Sunset Avenue	EB Left/Right	9.0	6.0		9.7	4.8	
	EB Left			2.7			2.1
	EB Right			6.0			5.2
Bloomfield Avenue	NB Left	0.3	0.2	0.2	0.6	0.6	0.5
	NB Through	2.9	2.4	2.0	4.6	2.7	2.5
	SB Through/Right	10.8	10.3	9.5	12.7	10.6	10.4

As shown in Table 3, the study intersection in the Build Condition is calculated to operate with reduced queuing as compared to the Existing Condition. This is due to the traffic associated with the proposed development being equally distributed throughout the peak hour, as compared to the surge in traffic demand for the existing school which tends to create longer queues. As it relates to queuing, the construction of a right-turn lane would not significantly change the Sunset Avenue queue length. Without the right-turn bay, the expected design queue would be less than six (6) vehicles which would be expected to clear during each cycle.

Widening Sunset Avenue would increase the pedestrian crossing length which may not be desirable based on the pedestrian activity and the presence of sidewalks and crosswalks at the study intersection. As such, and based on the minimal Level of Service and queueing improvements, we do not recommend the construction of a

right-turn bay at this intersection approach. The installation of adaptive controllers at the study intersection and the downstream intersection of Bloomfield Avenue, Pompton Avenue and Mount Prospect Avenue may serve to better coordinate the intersections with better allocated green time.

Site Circulation & Parking Supply

A review was conducted of the proposed multifamily residential development using the Site Plan prepared by Matrix New World Engineering, dated December 10, 2021. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Access is proposed via the existing two (2) driveways along Sunset Avenue without the existing turn restrictions. The proposed multifamily residential development would be centrally located on the site with parking provided via a parking garage northerly located on the site and a parking lot easterly located on the site. The parking garage would consist of 373 total spaces, inclusive of 8 ADA spaces, and the parking lot would consist of 9 total spaces (inclusive of 1 ADA space) and a loading area. Circulation throughout the site would be facilitated via a minimum of 24-foot-wide two-way drive aisle.

Regarding the parking requirements for the proposed development, the New Jersey Administrative Code Residential Site Improvements Standards (RSIS) (NJAC 5:21) requires 1.8 spaces per one (1) bedroom unit, 2.0 spaces per two (2) bedroom unit, and 2.1 spaces per three (3) bedroom unit. For the proposed 95 one (1)-bedroom units, 110 two (2)-bedroom units, and three (3) three (3)-bedroom units multifamily housing development, this equates to 381.9 required spaces. The site would provide 382 total parking spaces, inclusive of nine (9) ADA accessible parking spaces, which meets the parking requirement and would be sufficient to support this project's parking demand. The spaces would be nine (9) feet wide by 18 feet deep in accordance with industry standards.

As per the New Jersey Senate Bill S3223 signed by Governor Murphy on July 9, 2021, all projects involving multifamily dwellings with more than five (5) units must have 15% of the parking supply be pre-wired for electric vehicle charging stations ("make-ready"). Of the make-ready spaces, 5% must be ADA compliant. For the proposed parking supply of 382 parking spaces, this equates to 58 make-ready spaces with three (3) being ADA accessible. The electric vehicle requirements consider electric vehicle spaces as a minimum of two (2) parking spaces for the purpose of satisfying parking requirements, up to a 10% reduction of total requirement. As such, the development plan would be considered to provide 420 (382 + 38) total parking spaces, whereas 381.9 are required.

The parking supply was evaluated with respect to data published within the ITE's Parking Generation, 5th Edition, for Land Use 221 "Multifamily Housing (Mid-Rise)." Specifically, parking generation rates for "General Urban/Suburban" locations were utilized. The 85th percentile parking demand rate during the peak weekday period for Land Use 221 "Multifamily Housing (Mid-Rise)" is 1.27 vehicles per dwelling unit. For the 200-dwelling unit multifamily housing development, this equates to 254 parking spaces. As such, the proposed parking supply of 382 spaces would be sufficient to support the parking demand of the site.

Based on nearby transit options for the site's residents and published ITE parking demand rates, the proposed parking supply of 382 spaces would be sufficient to support the expected parking demand of the proposed development.

Conclusions

This report was prepared to investigate the existing traffic conditions and determine the traffic impacts of the proposed residential development at the signalized intersection of Bloomfield Avenue and Sunset Avenue. The analysis findings, which have been based on industry-standard guidelines, indicate that the proposed residential development would result in a reduced impact on the adjacent signalized intersection of Sunset Avenue

and Bloomfield Avenue as compared with the existing school. Further, based on the anticipated benefits not outweighing the associated costs and pedestrian impacts, it is not recommended to widen Sunset Avenue to provide an exclusive right-turn lane at the study intersection. The installation of adaptive controllers at the subject intersection and the downstream intersection may serve to better coordinate the intersections with better allocated green time. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property. Based on nearby transit options, published ITE parking demand rates, the parking supply would be sufficient to support this project.

If you have any comments regarding the above information, please contact our office.

Best regards,

Matthew J. Seckler PE, PP, PTOE
Stonefield Engineering and Design, LLC

cc: David Antonio – Essex County Planning Board