

February 2, 2021

Mr. Shane Zalonis, Legal Assistant  
Greenspoon Marder, LLP  
200 East Broward Boulevard  
Suite 1800  
Fort Lauderdale, Florida 33301

**Re: Abundant Life Christian Academy – Traffic Statement**

Dear Shane:

Traf Tech Engineering, Inc. has prepared this traffic statement in connection with the existing Abundant Life Christian Academy located on the east side of Banks Road between Coconut Creek Drive and Copans Road in the City of Coconut Creek, Broward County, Florida. The existing Christian academy has been in operation for several years with a student population of approximately 465 students. The 465 students are broken down as follows:

- o 50 pre-school children
- o 262 elementary students
- o 130 middle-school students
- o 23 high-school students
- o **465 total student population**

This traffic memorandum addresses the following topics:

- o Trip Generation and Traffic Impacts
- o Traffic Circulation and Pick-up/Drop-off Locations
- o On-site Vehicle Accumulation

**Trip Generation and Traffic Impacts**

A trip generation analysis was performed for the site using the trip generation equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (10<sup>th</sup> Edition)*. The trip generation analyses were undertaken for daily, AM peak hour, and PM peak hour conditions.

Using the trip generation equations from the ITE document, a trip generation analysis was undertaken for the school. The results of this effort are documented in Table 1. As shown in Table 1, the Abundant Life Christian Academy is projected to generate approximately 1,234 daily trips, approximately 371 AM peak hour trips (224 inbound and 147 outbound) and approximately 111 trips during the typical afternoon peak hour (50 inbound and 61 outbound). Currently, approximately 30% of the student population does not attend the school campus (participate via virtual media).

According to the school, during pre-pandemic conditions, the Christian school had all 465 students attend classes at the school site. Figure 1 presents the traffic conditions near the school site. The information presented in Figure 1 includes pre-pandemic traffic counts, roadway capacity, available trips and the level of service of the roadway. The traffic counts recorded school trips since the school was in operation with 465 students when Broward County collected traffic counts near the school site. As documented in Figure 1, all roadways (Banks Road, Copans Road and Coconut Creek Parkway) are operating at an acceptable level of service and have over 13,000 daily trips of available capacity on Banks Road, +5,400 daily trips on Coconut Creek Parkway and +4,310 daily trips of available trips on Copans Road. Hence, the traffic impacts associated with the 465-student Abundant Life Christian Academy are already accounted for and all nearby roadways meet traffic level of service.

### **Traffic Circulation and Pick-up / Drop-off Locations**

The traffic circulation during the school's drop-off and pick-up peak periods has the majority of inbound traffic entering the site via the north driveway, circulates in a clockwise direction and exits onto Banks Road via the west driveway. In order to minimize the on-site vehicle accumulation (and to prevent traffic from backing up onto Copans Road), the school has implemented the following staggered arrival and dismissal times, including five (5) drop-off/pick-up locations:

#### Zone 1

- o Drop-off (1<sup>st</sup> – 4<sup>th</sup> grades - 8:00 AM to 8:30 AM)
- o Pick-up (2<sup>nd</sup> & 4<sup>th</sup> grades - 3:00 PM to 3:15 PM)

#### Zone 2

- o Drop-off (preschool - 8:00 AM to 8:30 AM)
- o Pick-up (preschool & 1<sup>st</sup> grade - 2:45 PM to 3:00 PM)
- o Pick-up (3<sup>rd</sup> grade – 3:00 PM to 3:15 PM)

### Zone 3

- Drop-off only (high school – 8:00 AM to 8:15 AM)

### Zone 4

- Drop-off (Kindergarten & 5<sup>th</sup> grade - 8:00 AM to 8:30 AM)
- Drop-off (6<sup>th</sup> - 8<sup>th</sup> grades - 8:00 AM to 8:15 AM)
- Pick-up (Kindergarten – 2:45 PM to 3:00 PM)
- Pick-up (5<sup>th</sup> grade – 3:00 PM to 3:15 PM)
- Pick-up (6<sup>th</sup> - 7<sup>th</sup> grades – 3:15 PM to 3:30 PM)

### Zone 5

- Pick-up only (8<sup>th</sup> grade & high school – 3:15 PM to 3:30 PM)

The five drop-off/pick-up locations are currently in operations at the school and are shown in Figure 2.

## **Vehicle Accumulation Study**

A vehicle accumulation study was undertaken at the school. Vehicle counts were undertaken during the morning (7-9) and afternoon (2-4) peak periods on Thursday, January 28, 2021. The traffic count documented the maximum number of vehicles, at the school campus, every 5-minute period. During the traffic counts, no vehicle backed up onto Banks Road. The results of the vehicle accumulation count are presented in Table 2. During the morning peak period, a maximum of 106 vehicles were accumulated on site. These vehicles were either parked or within the inside circulation drive aisles. During the afternoon peak period, a maximum of 102 vehicles were recorded on site.

During the above traffic count period, 254 students<sup>1</sup> attended school. At maximum capacity, approximately 83% more students will be on site (465 divided by 254). Therefore, the maximum on-site vehicle accumulation expected at full capacity is approximately 194 vehicles (106 vehicles counted during the morning peak x 1.83).

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<sup>1</sup> Based on attendance information provided by the Abundant Life Christian Academy.

The school campus has approximately 310 parking spaces. Additionally, the internal circulation drive aisles, with a length of approximately 2,100 feet can accommodate approximately 95 circulating vehicles (at 22 feet per vehicle). Therefore, the school campus can accommodate a maximum of approximately 405 vehicles (310 parked vehicles + 95 circulating vehicles).

Based on the above, the maximum on-site vehicle accumulation anticipated at the Abundant Life Christian Academy, at 465 students, is approximately 194 vehicles and the site can accommodate approximately 405 on-site vehicles. Hence, the school has sufficient on-site accumulation capacity to prevent traffic from backing up onto Banks Road during the school's arrival and dismissal peak periods.

Please give me a call if you have any questions.

**TRAFTech ENGINEERING, INC.**

A large, stylized handwritten signature in green ink, which appears to read "J. E. Vargas", is written over the printed name and title.

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

**TABLE 1**  
**Trip Generation Summary (Allowed under Proposed Plat Note)**  
**Abundant Life Christian Center**

| Land Use                      | Size       | Daily Trips  | AM Peak Hour |            |            | PM Peak Hour |           |           |
|-------------------------------|------------|--------------|--------------|------------|------------|--------------|-----------|-----------|
|                               |            |              | Total Trips  | Inbound    | Outbound   | Total Trips  | Inbound   | Outbound  |
| Private School K-12 (LUC 535) | 415 stu    | 1,029        | 332          | 203        | 129        | 71           | 31        | 40        |
| Day Care (LUC 565)            | 50 stu     | 205          | 39           | 21         | 18         | 40           | 19        | 21        |
| <b>External Trips</b>         | <b>465</b> | <b>1,234</b> | <b>371</b>   | <b>224</b> | <b>147</b> | <b>111</b>   | <b>50</b> | <b>61</b> |

Source: ITE Trip Generation Manual (10th Edition)

**ITE Land Use Code 535 - Private School (K12)**

Daily Trips:  $T = 2.48 (X)$ ,  $X$  = number of students

AM Peak:  $T = 0.80 (X)$  (61% inbound and 39% outbound),  $X$  = number of students

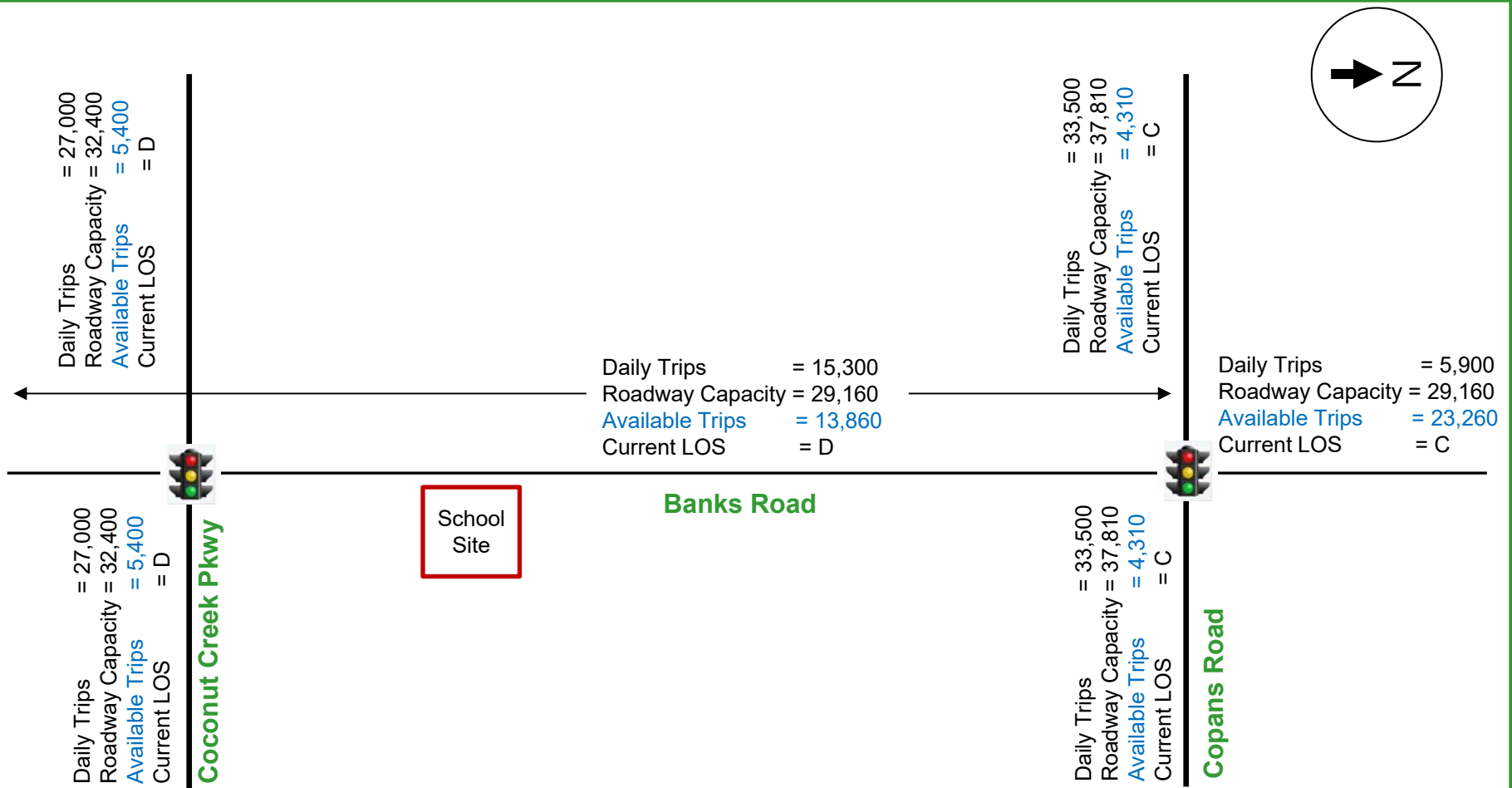
PM Peak:  $T = 0.17 (X)$  (43% inbound and 57% outbound),  $X$  = number of students

**ITE Land Use Code 565 - Day Care**

Daily Trips:  $T = 4.09 (X)$ ,  $X$  = number of students

AM Peak:  $T = 0.78 (X)$  (53% inbound and 47% outbound),  $X$  = number of students

PM Peak:  $T = 0.79 (X)$  (47% inbound and 53% outbound),  $X$  = number of students



SOURCE: Broward County



## Current Traffic Conditions Near School Site

**FIGURE 1**  
Abundant Life  
Coconut Creek, Florida





**TABLE 2**  
**Vehicle Accumulation Count**  
**Abundant Christian Academy**

| AM Peak Hour   |           |                |           |           |           |                  | PM Peak Hour   |           |                |           |           |           |                  |
|----------------|-----------|----------------|-----------|-----------|-----------|------------------|----------------|-----------|----------------|-----------|-----------|-----------|------------------|
| Time Period    |           |                | Ins       | Out       | Ins - Out | Vehicles on Site | Time Period    |           |                | Ins       | Out       | Ins - Out | Vehicles on Site |
| <b>6:55 AM</b> | <b>to</b> | <b>7:00 AM</b> | -         | -         | -         | <b>17</b>        | <b>1:55 PM</b> | <b>to</b> | <b>2:00 PM</b> | -         | -         | -         | <b>62</b>        |
| 7:00 AM        | to        | 7:05 AM        | 1         | 0         | 1         | 18               | 2:00 PM        | to        | 2:05 PM        | 0         | 0         | 0         | 62               |
| 7:05 AM        | to        | 7:10 AM        | 3         | 1         | 2         | 20               | 2:05 PM        | to        | 2:10 PM        | 0         | 1         | -1        | 61               |
| 7:10 AM        | to        | 7:15 AM        | 3         | 1         | 2         | 22               | 2:10 PM        | to        | 2:15 PM        | 0         | 0         | 0         | 61               |
| 7:15 AM        | to        | 7:20 AM        | 5         | 1         | 4         | 26               | 2:15 PM        | to        | 2:20 PM        | 0         | 1         | -1        | 60               |
| 7:20 AM        | to        | 7:25 AM        | 9         | 2         | 7         | 33               | 2:20 PM        | to        | 2:25 PM        | 1         | 4         | -3        | 57               |
| 7:25 AM        | to        | 7:30 AM        | 9         | 0         | 9         | 42               | 2:25 PM        | to        | 2:30 PM        | 1         | 0         | 1         | 58               |
| 7:30 AM        | to        | 7:35 AM        | 7         | 5         | 2         | 44               | 2:30 PM        | to        | 2:35 PM        | 3         | 0         | 3         | 61               |
| 7:35 AM        | to        | 7:40 AM        | 8         | 4         | 4         | 48               | 2:35 PM        | to        | 2:40 PM        | 5         | 0         | 5         | 66               |
| 7:40 AM        | to        | 7:45 AM        | 4         | 0         | 4         | 52               | 2:40 PM        | to        | 2:45 PM        | 10        | 0         | 10        | 76               |
| 7:45 AM        | to        | 7:50 AM        | 4         | 2         | 2         | 54               | 2:45 PM        | to        | 2:50 PM        | 14        | 7         | 7         | 83               |
| 7:50 AM        | to        | 7:55 AM        | 5         | 2         | 3         | 57               | 2:50 PM        | to        | 2:55 PM        | 19        | 11        | 8         | 91               |
| 7:55 AM        | to        | 8:00 AM        | 13        | 2         | 11        | 68               | <b>2:55 PM</b> | <b>to</b> | <b>3:00 PM</b> | <b>23</b> | <b>12</b> | <b>11</b> | <b>102</b>       |
| 8:00 AM        | to        | 8:05 AM        | 25        | 19        | 6         | 74               | 3:00 PM        | to        | 3:05 PM        | 16        | 25        | -9        | 93               |
| 8:05 AM        | to        | 8:10 AM        | 35        | 20        | 15        | 89               | 3:05 PM        | to        | 3:10 PM        | 10        | 7         | 3         | 96               |
| 8:10 AM        | to        | 8:15 AM        | 36        | 23        | 13        | 102              | 3:10 PM        | to        | 3:15 PM        | 14        | 15        | -1        | 95               |
| <b>8:15 AM</b> | <b>to</b> | <b>8:20 AM</b> | <b>29</b> | <b>25</b> | <b>4</b>  | <b>106</b>       | 3:15 PM        | to        | 3:20 PM        | 6         | 24        | -18       | 77               |
| 8:20 AM        | to        | 8:25 AM        | 23        | 25        | -2        | 104              | 3:20 PM        | to        | 3:25 PM        | 4         | 3         | 1         | 78               |
| 8:25 AM        | to        | 8:30 AM        | 14        | 24        | -10       | 94               | 3:25 PM        | to        | 3:30 PM        | 7         | 1         | 6         | 84               |
| 8:30 AM        | to        | 8:35 AM        | 10        | 8         | 2         | 96               | 3:30 PM        | to        | 3:35 PM        | 3         | 2         | 1         | 85               |
| 8:35 AM        | to        | 8:40 AM        | 1         | 5         | -4        | 92               | 3:35 PM        | to        | 3:40 PM        | 8         | 2         | 6         | 91               |
| 8:40 AM        | to        | 8:45 AM        | 2         | 2         | 0         | 92               | 3:40 PM        | to        | 3:45 PM        | 5         | 2         | 3         | 94               |
| 8:45 AM        | to        | 8:50 AM        | 1         | 2         | -1        | 91               | 3:45 PM        | to        | 3:50 PM        | 7         | 5         | 2         | 96               |
| 8:50 AM        | to        | 8:55 AM        | 4         | 3         | 1         | 92               | 3:50 PM        | to        | 3:55 PM        | 3         | 1         | 2         | 98               |
| 8:55 AM        | to        | 9:00 AM        | 2         | 0         | 2         | 94               | 3:55 PM        | to        | 4:00 PM        | 4         | 2         | 2         | 100              |

Source: Traf Tech Engineering, Inc. (Thursday, January 28, 2021)

**NOTES**

Prior to the AM count, 13 on-site vehicles + 2 buses. Buses counted as two passenger cars since they used 2 parking spaces, each.

Prior to the PM count, 58 on-site vehicles + 2 buses. Buses counted as two passenger cars since they used 2 parking spaces, each.



# **ATTACHMENT A**

**Roadway Capacity & Level of Service  
(Source: Broward County)**

## APPENDIX C: North / South Roadways Capacity and Level of Service Analysis 20

|             |                | 2019        |                  |          |      |     |                      |          |      |     |
|-------------|----------------|-------------|------------------|----------|------|-----|----------------------|----------|------|-----|
|             |                | Design Code | Daily Conditions |          |      |     | Peak Hour Conditions |          |      |     |
|             |                |             | AADT             | Capacity | V/C  | LOS | Volume               | Capacity | V/C  | LOS |
| N/S Roadway | Segment        | 464         | 15300            | 29160    | 0.52 | D   | 1454                 | 2628     | 0.55 | D   |
| Banks Rd    | N of Copans Rd | 464         | 5900             | 29160    | 0.20 | C   | 561                  | 2628     | 0.21 | C   |

## APPENDIX B: East / West Roadways Capacity and Level of Service Analysis 20

| <i>E/W Roadway</i> | <i>Segment</i> | <b>2019</b>            |                         |                 |            |            | <b>2019</b>                 |                 |            |            |
|--------------------|----------------|------------------------|-------------------------|-----------------|------------|------------|-----------------------------|-----------------|------------|------------|
|                    |                | <i>Design<br/>Code</i> | <i>Daily Conditions</i> |                 |            |            | <i>Peak Hour Conditions</i> |                 |            |            |
|                    |                |                        | <i>AADT</i>             | <i>Capacity</i> | <i>V/C</i> | <i>LOS</i> | <i>Volume</i>               | <i>Capacity</i> | <i>V/C</i> | <i>LOS</i> |
| Coconut Crk Pkwy   | E of SR 7      | 432                    | 27000 e                 | 32400           | 0.83       | D          | 2565                        | 2920            | 0.88       | D          |
| Coconut Crk Pkwy   | E of Lyons Rd  | 432                    | 26500                   | 32400           | 0.82       | D          | 2518                        | 2920            | 0.86       | D          |

## APPENDIX B: East / West Roadways Capacity and Level of Service Analysis 20

| <i>E/W Roadway</i> | <i>Segment</i> | <b>2019</b>            |                         |                 |            |            | <b>2019</b>                 |                 |            |            |
|--------------------|----------------|------------------------|-------------------------|-----------------|------------|------------|-----------------------------|-----------------|------------|------------|
|                    |                | <i>Design<br/>Code</i> | <i>Daily Conditions</i> |                 |            |            | <i>Peak Hour Conditions</i> |                 |            |            |
|                    |                |                        | <i>AADT</i>             | <i>Capacity</i> | <i>V/C</i> | <i>LOS</i> | <i>Volume</i>               | <i>Capacity</i> | <i>V/C</i> | <i>LOS</i> |
| Copans Rd          | E of SR 7      | 422                    | 33500                   | 37810 r         | 0.89       | C          | 3183                        | 3401 r          | 0.94       | C          |
| Copans Rd          | E of Lyons Rd  | 422                    | 37000                   | 37810 r         | 0.98       | D          | 3515                        | 3401 r          | 1.03       | F          |

# **ATTACHMENT B**

## **Accumulation Counts at Site**



# ABUNDANT LIFE CHRISTIAN ACADEMY

BANKS ROAD @ NW 15<sup>th</sup> STREET

MARGATE , FL.

(JAN 28<sup>th</sup> , 2021)

| TIME      | N/B RIGHT | S/B LEFT | W/B RIGHT | W/B LEFT | W/B THRU | E/B THRU | S/ENT. | S/EXIT |
|-----------|-----------|----------|-----------|----------|----------|----------|--------|--------|
| 7:00-7:05 | 0         | 1        | 0         | 0        | 0        | 0        | 0      | 0      |
| 7:05-7:10 | 1         | 2        | 0         | 0        | 0        | 0        | 0      | 1      |
| 7:10-7:15 | 1         | 2        | 0         | 0        | 0        | 0        | 0      | 1      |
| 7:15-7:20 | 3         | 2        | 0         | 0        | 0        | 0        | 0      | 1      |
| 7:20-7:25 | 4         | 5        | 0         | 0        | 0        | 0        | 0      | 2      |
| 7:25-7:30 | 3         | 6        | 0         | 0        | 0        | 0        | 0      | 0      |
| 7:30-7:35 | 2         | 5        | 1         | 0        | 0        | 0        | 0      | 4      |
| 7:35-7:40 | 2         | 5        | 0         | 0        | 1        | 1        | 0      | 3      |
| 7:40-7:45 | 3         | 1        | 0         | 0        | 0        | 0        | 0      | 0      |
| 7:45-7:50 | 2         | 2        | 0         | 0        | 0        | 0        | 0      | 2      |
| 7:50-7:55 | 3         | 1        | 0         | 0        | 0        | 1        | 0      | 2      |
| 7:55-8:00 | 7         | 8        | 0         | 0        | 0        | 0        | 0      | 2      |
| 8:00-8:05 | 12        | 11       | 0         | 0        | 0        | 2        | 0      | 19     |
| 8:05-8:10 | 17        | 18       | 0         | 0        | 0        | 0        | 0      | 20     |
| 8:10-8:15 | 21        | 15       | 0         | 0        | 0        | 0        | 0      | 23     |
| 8:15-8:20 | 8         | 20       | 0         | 0        | 0        | 1        | 0      | 25     |
| 8:20-8:25 | 12        | 9        | 0         | 0        | 0        | 2        | 0      | 25     |
| 8:25-8:30 | 5         | 9        | 0         | 0        | 0        | 0        | 0      | 24     |
| 8:30-8:35 | 4         | 4        | 0         | 0        | 0        | 2        | 0      | 8      |
| 8:35-8:40 | 1         | 0        | 0         | 0        | 0        | 0        | 0      | 5      |
| 8:40-8:45 | 2         | 0        | 0         | 0        | 0        | 0        | 0      | 2      |
| 8:45-8:50 | 1         | 0        | 1         | 0        | 0        | 0        | 0      | 1      |
| 8:50-8:55 | 2         | 2        | 0         | 0        | 0        | 0        | 0      | 3      |
| 8:55-9:00 | 1         | 1        | 0         | 0        | 0        | 0        | 0      | 0      |

(PARKED VEHICLES ON PROPERTY BEFORE COUNT: 13 + 2 SCHOOL BUSES)

# ABUNDANT LIFE CHRISTIAN ACADEMY

BANKS ROAD @ NW 15<sup>th</sup> STREET

MARGATE , FL.

(JAN 28<sup>th</sup> , 2021)

| TIME      | N/B RIGHT | S/B LEFT | W/B RIGHT | W/B LEFT | W/B THRU | E/B THRU | S/ENT. | S/EXIT |
|-----------|-----------|----------|-----------|----------|----------|----------|--------|--------|
| 2:00-2:05 | 0         | 0        | 0         | 0        | 0        | 0        | 0      | 0      |
| 2:05-2:10 | 0         | 0        | 0         | 0        | 0        | 0        | 0      | 1      |
| 2:10-2:15 | 0         | 0        | 0         | 0        | 0        | 0        | 0      | 0      |
| 2:15-2:20 | 0         | 0        | 0         | 0        | 0        | 0        | 0      | 1      |
| 2:20-2:25 | 1         | 0        | 0         | 2        | 0        | 0        | 0      | 2      |
| 2:25-2:30 | 0         | 1        | 0         | 0        | 0        | 0        | 0      | 0      |
| 2:30-2:35 | 0         | 3        | 0         | 0        | 0        | 0        | 0      | 0      |
| 2:35-2:40 | 3         | 2        | 0         | 0        | 0        | 0        | 0      | 0      |
| 2:40-2:45 | 6         | 3        | 0         | 0        | 0        | 1        | 0      | 0      |
| 2:45-2:50 | 7         | 7        | 0         | 0        | 0        | 0        | 0      | 7      |
| 2:50-2:55 | 11        | 7        | 0         | 0        | 0        | 1        | 0      | 11     |
| 2:55-3:00 | 15        | 7        | 0         | 0        | 0        | 0        | 0      | 12     |
| 3:00-3:05 | 9         | 7        | 0         | 0        | 0        | 0        | 0      | 25     |
| 3:05-3:10 | 5         | 5        | 0         | 0        | 0        | 0        | 0      | 7      |
| 3:10-3:15 | 7         | 7        | 0         | 0        | 0        | 0        | 0      | 15     |
| 3:15-3:20 | 3         | 3        | 0         | 0        | 0        | 0        | 0      | 24     |
| 3:20-3:25 | 2         | 2        | 0         | 0        | 0        | 0        | 0      | 3      |
| 3:25-3:30 | 3         | 4        | 1         | 0        | 0        | 0        | 0      | 0      |
| 3:30-3:35 | 2         | 1        | 0         | 0        | 0        | 0        | 0      | 2      |
| 3:35-3:40 | 3         | 4        | 0         | 1        | 0        | 1        | 0      | 1      |
| 3:40-3:45 | 2         | 3        | 0         | 0        | 0        | 0        | 0      | 2      |
| 3:45-3:50 | 4         | 3        | 0         | 1        | 0        | 0        | 0      | 4      |
| 3:50-3:55 | 1         | 2        | 0         | 0        | 0        | 0        | 0      | 1      |
| 3:55-4:00 | 1         | 3        | 0         | 0        | 0        | 0        | 0      | 2      |

Vehicles parked on site prior to 2PM= 58 + 2 buses