

# *TRIP GENERATION MEMORANDUM UPDATE*

*for*

## Madison Trace Residential Neighborhood

215 Shadybrook Drive  
Parcel ID 233 008A  
Athens, Georgia 30605  
TPA Job No. 1-23-0508



1586 Mars Hill Road, Suite A  
Watkinsville, Georgia 30677  
(706) 310-1551



FOR THE FIRM  
Travis Pruitt & Associates, Inc.

Issued: 5/2/2024



### Trip Generation Memorandum-Madison Trace Residential Neighborhood

The purpose of this memorandum is to address transportation comments that were provided by the Athens-Clarke County Transportation and Public Works Department Staff and are as follows:

- Please provide a Traffic Impact Analysis that includes a signal warrant analysis for the following street intersections:
  - o Lexington Road / Seagraves Drive

The proposed development is a mixed density residential (RM-1) neighborhood located on tax parcel 233 008A at 215 Shadybrook Drive in Athens-Clarke County, Georgia. The property is a 23.474-acre undeveloped lot. The proposed development will include 61 cottage units. The project will include a private internal roadway network that connects the proposed development to Seagraves Drive, detention and stormwater quality facilities, and a clubhouse/leasing office.

The development will be accessed by connecting Seagraves Drive to the development via parcel 233A4 A099. There will be an additional access point for emergency services located between Tax Parcel 233A4 A025 and 233A4 A026. Each of the project access points will be a 2-lane road, consisting of a single ingress lane and a single egress lane. The emergency services access is proposed with a 30-foot easement and the other access will be private. All roads will be constructed in accordance with ACC Standards.

Figure 1 is a vicinity map for the subject property and Figure 2 is a site plan that shows the location of the proposed access points for the project.

Traffic Impact Analysis Thresholds and Signal Warrant Analysis Thresholds will be conducted for the intersections listed above.

### TRAFFIC IMPACT ANALYSIS THRESHOLDS

#### Trip Generation

The accepted procedure for determining the trips generated by the development of a property based on the land use and intensity is to apply the rates or equations developed by the Institute of Transportation Engineers (ITE) as published in the Trip Generation Manual – 11<sup>th</sup> Edition. The rates or equations in this informational report are calculated from nationally collected data. This method was used to establish the trip generation for the proposed development.

The results of the trip generation for the Madison Trace Residential Neighborhood are given in Table 1.

Table 1. Trip Generation Results Madison Trace

Trip Generation Madison Trace									
Land Use (ITE Code)	Intensity	Independent Variable	ADT	AM Peak Hour			PM Peak Hour		
			2-Way	Enter	Exit	Total	Enter	Exit	Total
Single-Family Detached Housing (210) - Cottages	61	Dwelling Units	414	7	19	26	19	14	33
Total			414	7	19	26	19	14	33



**FIGURE 1**  
**VICINITY MAP**



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Athens, Georgia 30677  
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Contact Person:  
Michael Greenlee  
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**VICINITY MAP**

**MADISON TRACE S/D**

215 SHADYBROOK DRIVE  
ATHENS CLARKE COUNTY GEORGIA

DATE: 10/24/2023

SCALE: NTS

CN: 230508TRAFFIC

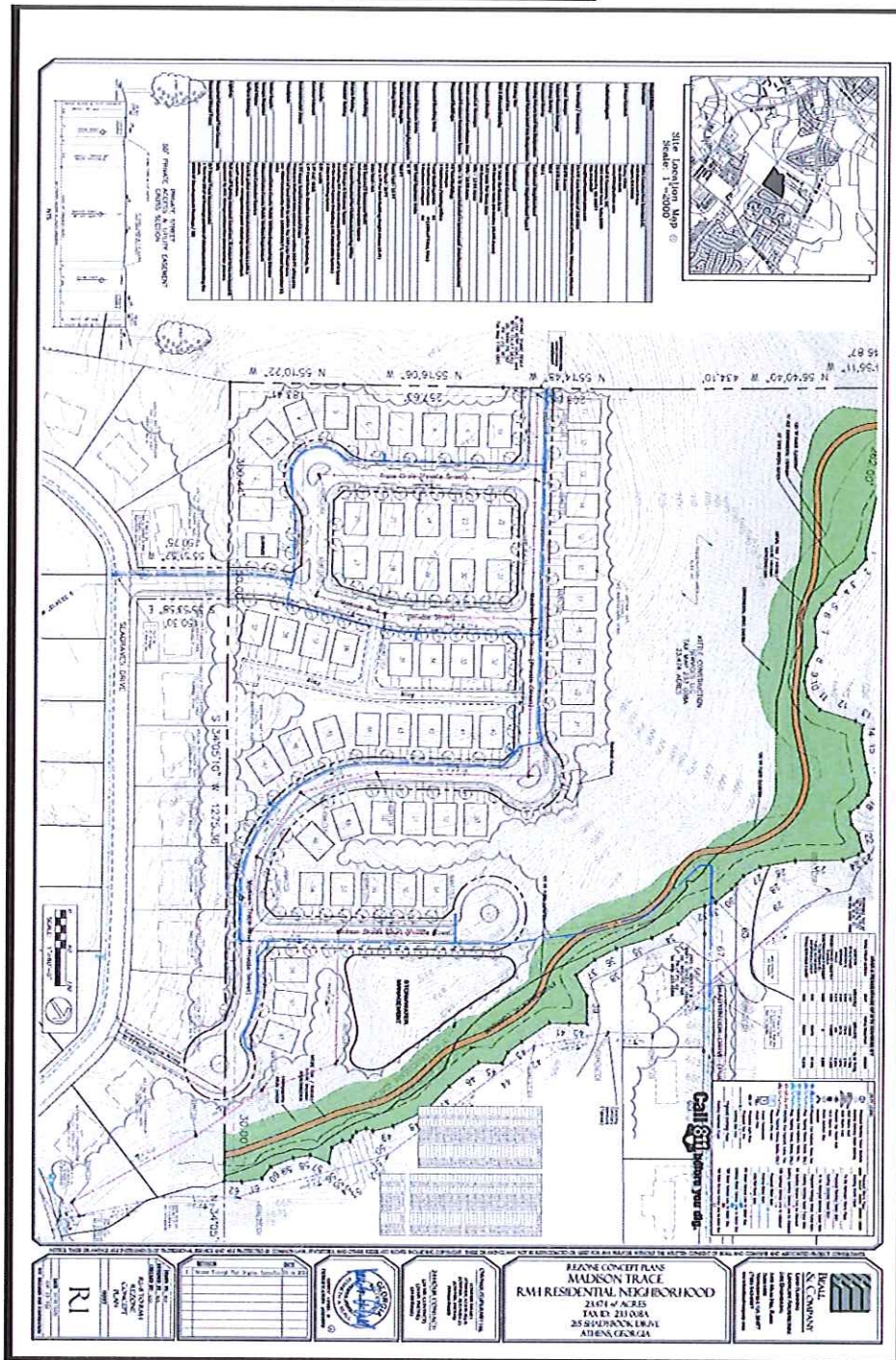
JN: 1-23-0508

FN:

Sheet No. **FIGURE 1**



**FIGURE 2  
CONCEPT PLAN**



1586 Mars Hill Road, Suite A  
Athens, Georgia 30677  
Phone: (706) 310-1551  
Fax: (706) 310-1789  
www.travispruitt.com

Contact Person:  
Michael Greenlee  
Mgreenlee@travispruitt.com

**CONCEPT PLAN**

**MADISON TRACE S/D**

215 SHADYBROOK DRIVE  
CLARKE COUNTY GEORGIA

DATE: 05/02/2024

SCALE: NTS

CN: 230508TRAFFIC

JN: 1-23-0508

FN:

Sheet No. **FIGURE 2**





### ACC Traffic Impact Analysis Thresholds

Per Athens-Clarke County Code Sec. 9-25-5(A), "Transportation impact analysis shall be required for any proposed site development that can be reasonably expected to generate more than 1,000 vehicle trip ends during a single day and/or more than 100 vehicle trip ends during a single hour".

### Analysis

The proposed residential development is expected to generate 414 average daily trips, 26 AM peak hour trips, and 33 PM peak hour trips based on the ITE Trip Generation Manual as shown in Table 1 above. Per the Athens-Clarke County Code the proposed values are less than the Athens-Clarke County thresholds.

### Conclusion

Based on above analysis, a traffic impact analysis is not warranted because the proposed development does not exceed the standards listed by Athens-Clarke County Code.

### **SIGNAL WARRANT ANALYSIS THRESHOLDS**

### Methodology

The existing conditions were studied to determine the amount of vehicle trips generated from the existing infrastructure located along Seagraves Drive. Seagraves Drive consists of 8-Single-Family Detached dwelling units, 98-Single-Family Attached dwelling units and 1-Medical Clinic. The results of the trip generation for Seagraves Drive are given in Table 2.

**Table 2. Trip Generation Results Seagraves Drive**

Trip Generation Seagraves									
Land Use (ITE Code)	Intensity	Independent Variable	ADT	AM Peak Hour			PM Peak Hour		
			2-Way	Enter	Exit	Total	Enter	Exit	Total
Single-Family Detached Housing (210) - Seagraves	8	Dwelling Units	75	1	5	6	5	3	8
Single-Family Attached Housing (215) - Seagraves	98	Dwelling Units	706	12	35	47	33	23	56
Medical Clinic (630) - Seagraves	16.86	1000 Sq. Ft. GFA	24	1	0	1	0	2	2
Total			805	14	40	54	38	28	66

Traffic from the proposed development will be combined with the existing traffic from Seagraves Drive. The results for the combined existing and proposed Seagraves Drive are given in Table 3.



**Table 3. Trip Generation Results Seagraves Drive**

Trip Generation Seagraves Total			
Land Use (ITE Code)	Intensity	Independent Variable	ADT 2-Way
Single-Family Detached Housing (210) - Seagraves	69	Dwelling Units	717
Single-Family Attached Housing (215) - Seagraves	98	Dwelling Units	706
Medical Clinic (630) - Seagraves	16.86	1000 Sq. Ft. GFA	24
Total			1,446

The average daily traffic (ADT) data located in Table 3 was then used in the Vehicle Time-of-Day distribution data for Land Use ITE Codes 210, 215, and 630 from the ITE Trip Generation Manual, 11<sup>th</sup> Edition. The raw data is located in Figures 3, 4 and 5 respectively. From this data we were able to determine the Northbound "Total", "Entering", and "Exiting" trips based on the time period from 7:00am to 6:15pm for Seagraves Drive.

For the Eastbound and Westbound traffic, traffic counts were used from the Traffic Impact Study for 2400 Lexington Road Mixed-Use Development or now known as the "Atlas Athens" apartment complex. The proposed condition was used in order to account for the new development as well as the existing traffic. These counts are located in Figure 6.

All of the above data was compiled into a chart and shown in Figure 7.

### Analysis

The project intersection, Lexington/Seagraves, has been analyzed for signal warrants as outlined in the U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices and signal spacing as outlined in the Georgia Department of Transportation (GDOT) Regulations for Driveway and Encroachment Control Manual. This intersection was evaluated to see if it met the requirements outlined in Warrant 1 and Warrant 2 in the MUTCD and signal spacing requirements in the GDOT Driveway Manual .

### **Warrant 1**

Warrant 1 criteria are outlined in MUTCD Table 4C-1 below and the number of lanes that fits both intersections are outlined in yellow below.

**Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume**

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>
1.....	1.....	500	400	350	280	150	120	105	84
2 or more.....	1.....	600	480	420	336	150	120	105	84
2 or more.....	2 or more.....	600	480	420	336	200	160	140	112
1.....	2 or more.....	500	400	350	280	200	160	140	112



Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use										
Source: ITE Trip Generation Manual, 11th Edition										
Land Use Code	210			210			210			
Land Use	Single Family Detached Housing			Single Family Detached Housing			Single Family Detached Housing			
Activity	General Urban/Suburban			General Urban/Suburban			General Urban/Suburban			
Time Period	Weekday			Saturday			Sunday			
# Data Sites	7			1			2			
Time	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			
	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting	
12:00-1:00 AM	0.3%	0.3%	0.2%	0.8%	0.6%	1.0%	0.6%	0.6%	0.6%	
1:00-2:00 AM	0.2%	0.2%	0.1%	0.4%	0.2%	0.2%	0.6%	0.6%	0.6%	
2:00-3:00 AM	0.2%	0.3%	0.1%	0.3%	0.4%	0.2%	0.6%	0.6%	0.6%	
3:00-4:00 AM	0.2%	0.2%	0.2%	0.5%	0.4%	0.5%	0.3%	0.0%	0.6%	
4:00-5:00 AM	0.1%	0.3%	0.8%	0.5%	0.6%	0.4%	0.0%	0.0%	0.0%	
5:00-6:00 AM	1.2%	0.5%	2.0%	1.0%	0.5%	1.2%	1.8%	1.8%	1.8%	
6:00-7:00 AM	3.7%	1.6%	5.8%	3.8%	1.5%	6.1%	5.5%	5.5%	5.5%	
7:00-8:00 AM	6.5%	3.1%	10.0%	2.0%	0.8%	3.3%	1.8%	1.8%	1.8%	
8:00-9:00 AM	8.2%	3.8%	8.5%	3.8%	2.5%	5.2%	4.7%	0.0%	9.0%	
9:00-10:00 AM	4.6%	3.3%	5.8%	5.5%	5.0%	6.0%	4.7%	3.5%	6.0%	
10:00-11:00 AM	4.9%	4.2%	5.4%	8.2%	6.2%	10.2%	11.5%	8.8%	14.4%	
11:00-12:00 PM	5.3%	5.4%	5.1%	8.7%	5.1%	7.7%	7.7%	8.2%	7.2%	
12:00-1:00 PM	5.7%	5.7%	5.7%	7.7%	7.3%	8.1%	9.2%	10.5%	7.8%	
1:00-2:00 PM	6.1%	6.1%	6.0%	8.1%	7.1%	9.0%	9.8%	10.5%	9.0%	
2:00-3:00 PM	6.8%	7.1%	6.1%	8.0%	8.7%	7.3%	5.9%	5.8%	6.0%	
3:00-4:00 PM	7.5%	8.7%	6.2%	9.2%	9.8%	8.7%	4.4%	5.8%	3.0%	
4:00-5:00 PM	8.2%	10.5%	7.4%	6.2%	6.9%	5.4%	3.8%	8.2%	8.4%	
5:00-6:00 PM	8.7%	10.0%	7.3%	8.4%	9.8%	7.1%	8.8%	11.1%	8.4%	
6:00-7:00 PM	7.2%	8.5%	5.9%	6.0%	7.3%	4.6%	6.2%	5.8%	6.6%	
7:00-8:00 PM	5.1%	6.1%	4.2%	5.1%	4.8%	5.4%	5.3%	7.0%	3.1%	
8:00-9:00 PM	4.4%	4.1%	3.1%	4.8%	6.0%	3.7%	4.1%	5.8%	2.4%	
9:00-10:00 PM	3.3%	4.4%	2.7%	2.7%	2.1%	2.1%	0.3%	0.6%	0.0%	
10:00-11:00 PM	1.6%	2.1%	1.0%	1.7%	1.5%	1.9%	1.5%	1.8%	1.2%	
11:00-12:00 AM	1.0%	1.3%	0.6%	1.4%	1.5%	1.3%	0.0%	0.0%	0.0%	

12:00-1:00 AM	0.3%	0.5%	0.2%	0.8%	0.6%	1.0%	0.6%	0.6%	0.6%
12:15-1:15 AM	0.3%	0.4%	0.2%	0.6%	0.5%	0.8%	0.6%	0.6%	0.6%
12:30-1:30 AM	0.2%	0.3%	0.1%	0.5%	0.8%	0.2%	0.3%	0.6%	0.0%
12:45-1:45 AM	0.2%	0.3%	0.1%	0.6%	1.0%	0.2%	0.6%	1.2%	0.0%
1:00-2:00 AM	0.2%	0.2%	0.1%	0.4%	0.6%	0.2%	0.6%	1.2%	0.0%
1:15-2:15 AM	0.2%	0.2%	0.1%	0.4%	0.6%	0.2%	0.6%	1.2%	0.0%
1:30-2:30 AM	0.2%	0.2%	0.1%	0.4%	0.4%	0.2%	0.3%	0.6%	0.0%
1:45-2:45 AM	0.1%	0.2%	0.1%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%
2:00-3:00 AM	0.2%	0.3%	0.1%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%
2:15-3:15 AM	0.2%	0.2%	0.1%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%
2:30-3:30 AM	0.2%	0.2%	0.1%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%
2:45-3:45 AM	0.2%	0.2%	0.1%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%
3:00-4:00 AM	0.2%	0.2%	0.2%	0.5%	0.4%	0.6%	0.0%	0.0%	0.0%
3:15-4:15 AM	0.2%	0.1%	0.2%	0.8%	1.0%	0.6%	0.3%	0.0%	0.6%
3:30-4:30 AM	0.3%	0.2%	0.4%	0.7%	0.6%	0.8%	0.3%	0.0%	0.6%
3:45-4:45 AM	0.5%	0.3%	0.6%	0.7%	0.6%	0.8%	0.3%	0.0%	0.6%
4:00-5:00 AM	0.6%	0.3%	0.8%	0.6%	0.6%	0.4%	0.0%	0.0%	0.6%
4:15-5:15 AM	0.7%	0.4%	1.0%	0.2%	0.0%	0.4%	0.0%	0.0%	0.6%
4:30-5:30 AM	0.9%	0.4%	1.5%	0.5%	0.6%	0.4%	1.2%	1.8%	0.6%
4:45-5:45 AM	1.0%	0.3%	1.6%	0.7%	0.6%	0.8%	1.8%	1.8%	1.8%
5:00-6:00 AM	1.2%	0.5%	2.0%	1.0%	0.8%	1.2%	1.8%	1.8%	1.8%
5:15-6:15 AM	1.6%	1.0%	2.5%	1.1%	1.0%	1.2%	1.5%	1.8%	1.2%
5:30-6:30 AM	1.9%	0.8%	3.0%	0.9%	0.4%	1.3%	0.9%	0.6%	1.2%
5:45-6:45 AM	2.8%	1.2%	4.4%	0.8%	1.2%	0.9%	1.2%	1.2%	0.6%
6:00-7:00 AM	3.7%	1.6%	5.8%	1.0%	0.4%	1.5%	1.5%	1.8%	1.2%
6:15-7:15 AM	4.4%	1.8%	7.0%	1.3%	0.4%	2.1%	1.8%	1.2%	2.4%
6:30-7:30 AM	5.7%	2.3%	8.9%	1.6%	0.6%	2.7%	2.1%	1.2%	3.0%
6:45-7:45 AM	6.0%	2.7%	9.3%	1.9%	0.6%	3.1%	2.1%	1.2%	3.0%
7:00-8:00 AM	6.5%	3.1%	10.0%	2.0%	0.8%	3.3%	1.8%	0.6%	3.0%
7:15-8:15 AM	7.1%	3.5%	10.7%	2.3%	1.0%	3.7%	3.0%	1.2%	4.8%
7:30-8:30 AM	7.0%	3.5%	10.5%	3.2%	2.1%	4.2%	2.8%	1.2%	6.6%
7:45-8:45 AM	6.5%	3.5%	9.5%	3.6%	2.3%	4.8%	4.7%	0.6%	9.0%
8:00-9:00 AM	6.2%	3.8%	8.5%	3.8%	3.5%	5.2%	4.7%	0.6%	9.0%
8:15-9:15 AM	5.8%	3.9%	7.4%	4.3%	3.1%	5.6%	4.1%	1.2%	7.2%
8:30-9:30 AM	5.2%	3.8%	6.7%	4.0%	2.7%	5.4%	4.4%	2.3%	6.6%
8:45-9:45 AM	5.0%	3.8%	6.2%	4.7%	3.8%	5.6%	3.3%	2.3%	3.6%
9:00-10:00 AM	4.6%	3.3%	5.8%	5.5%	5.0%	6.0%	4.7%	3.5%	6.0%
9:15-10:15 AM	4.8%	3.8%	5.4%	6.1%	5.8%	6.3%	5.3%	3.5%	7.2%
9:30-10:30 AM	4.6%	3.6%	5.6%	6.7%	6.2%	7.0%	5.9%	3.5%	8.4%
9:45-10:45 AM	4.6%	3.7%	5.5%	8.2%	7.1%	9.2%	10.1%	7.0%	11.2%
10:00-11:00 AM	4.9%	4.2%	5.6%	8.7%	6.2%	10.2%	11.5%	8.8%	14.4%
10:15-11:15 AM	5.3%	4.6%	5.5%	10.0%	6.7%	9.2%	12.4%	9.4%	15.6%
10:30-11:30 AM	5.1%	4.7%	5.1%	7.5%	6.9%	7.1%	11.5%	9.9%	11.2%
10:45-11:45 AM	5.3%	5.1%	5.4%	6.2%	6.5%	5.8%	9.2%	8.2%	10.2%
11:00-12:00 PM	5.3%	5.4%	5.1%	7.2%	8.7%	5.8%	7.7%	8.2%	7.2%
11:15-12:15 PM	5.4%	5.4%	5.3%	7.3%	8.1%	6.5%	8.0%	9.9%	6.0%
11:30-12:30 PM	5.5%	5.8%	5.2%	7.9%	8.3%	7.5%	8.3%	9.9%	6.6%
11:45-12:45 PM	5.5%	5.8%	5.3%	8.4%	8.3%	7.5%	9.5%	10.5%	8.4%
12:00-1:00 PM	5.7%	5.7%	5.7%	7.7%	7.3%	8.1%	9.2%	10.5%	7.8%
12:15-1:15 PM	5.7%	5.9%	5.6%	8.1%	8.1%	10.2%	10.7%	10.5%	10.8%
12:30-1:30 PM	6.0%	6.1%	5.8%	9.7%	8.5%	11.0%	10.9%	12.3%	9.6%
12:45-1:45 PM	6.2%	6.2%	6.1%	8.7%	7.5%	9.8%	8.8%	9.9%	7.2%
1:00-2:00 PM	6.1%	6.1%	6.0%	8.1%	7.1%	9.0%	9.8%	10.5%	9.0%
1:15-2:15 PM	6.2%	6.0%	6.1%	6.9%	6.1%	7.8%	6.5%	7.0%	6.0%
1:30-2:30 PM	6.2%	6.3%	6.1%	6.0%	5.8%	6.2%	6.5%	6.4%	6.0%
1:45-2:45 PM	6.2%	6.4%	6.0%	7.4%	7.9%	6.9%	7.1%	7.6%	6.6%
2:00-3:00 PM	6.6%	7.1%	6.1%	8.0%	8.7%	7.3%	5.9%	5.8%	6.0%
2:15-3:15 PM	6.8%	7.7%	6.0%	8.0%	10.2%	6.9%	5.9%	6.4%	5.4%
2:30-3:30 PM	6.9%	7.5%	5.5%	6.7%	10.0%	7.3%	4.7%	4.7%	4.8%
2:45-3:45 PM	7.3%	8.4%	6.1%	8.7%	9.4%	7.9%	4.1%	4.7%	3.6%
3:00-4:00 PM	7.5%	8.7%	6.2%	9.2%	9.8%	8.7%	4.4%	5.8%	3.0%
3:15-4:15 PM	7.9%	9.5%	6.3%	8.0%	7.3%	8.7%	6.5%	8.8%	4.2%
3:30-4:30 PM	8.5%	10.3%	6.9%	8.1%	8.5%	7.7%	8.0%	9.4%	6.6%
3:45-4:45 PM	8.8%	10.6%	7.1%	8.1%	7.1%	6.5%	9.1%	10.5%	8.4%
4:00-5:00 PM	8.7%	10.5%	7.4%	6.2%	6.9%	5.4%	8.3%	9.2%	7.4%
4:15-5:15 PM	8.9%	10.3%	7.6%	6.9%	8.1%	5.8%	6.8%	6.4%	7.2%
4:30-5:30 PM	8.8%	10.4%	7.3%	7.6%	8.5%	6.7%	7.4%	8.2%	6.6%
4:45-5:45 PM	8.7%	10.3%	7.2%	7.9%	9.6%	6.7%	8.6%	9.9%	7.2%
5:00-6:00 PM	8.7%	10.0%	7.3%	8.4%	9.6%	7.1%	8.6%	9.9%	7.2%
5:15-6:15 PM	8.4%	9.8%	7.1%	7.9%	10.6%	5.2%	9.8%	11.1%	8.4%
5:30-6:30 PM	8.2%	9.3%	7.1%	7.0%	8.7%	5.4%	9.2%	9.9%	8.4%
5:45-6:45 PM	7.8%	8.8%	6.7%	6.8%	8.5%	5.2%	6.5%	6.4%	6.6%
6:00-7:00 PM	7.2%	8.5%	5.9%	6.0%	7.3%	4.6%	6.2%	5.8%	6.6%
6:15-7:15 PM	6.7%	7.8%	5.5%	5.8%	5.8%	5.0%	5.9%	6.4%	5.6%
6:30-7:30 PM	6.0%	7.0%	5.0%	5.2%	5.4%	5.0%	6.1%	6.4%	4.8%
6:45-7:45 PM	5.6%	6.7%	4.5%	5.5%	5.6%	5.4%	6.5%	8.2%	4.8%
7:00-8:00 PM	5.1%	6.1%	4.2%	5.1%	4.8%	5.4%	5.3%	7.0%	3.6%
7:15-8:15 PM	5.0%	6.0%	3.9%	5.5%	5.6%	5.4%	5.3%	6.4%	4.2%
7:30-8:30 PM	4.7%	6.0%	3.5%	5.8%	6.2%	5.0%	4.4%	5.8%	3.0%
7:45-8:45 PM	4.6%	5.7%	3.5%	5.2%	6.0%	4.6%	4.0%	4.1%	3.9%
8:00-9:00 PM	4.6%	6.1%	3.1%	4.8%	6.0%	3.7%	4.1%	5.8%	2.4%
8:15-9:15 PM	4.4%	5.9%	2.9%	3.8%	4.8%	2.9%	2.7%	4.1%	1.2%
8:30-9:30 PM	4.2%	5.5%	2.8%	3.4%	4.0%	2.7%	2.1%	2.9%	1.2%
8:45-9:45 PM	3.7%	5.0%	2.4%	2.9%	3.5%	2.3%	1.5%	2.3%	0.6%
9:00-10:00 PM	3.3%	4.4%	2.3%	2.4%	2.7%	2.1%	0.3%	0.6%	0.0%
9:15-10:15 PM	2.8%	3.6%	2.0%	2.3%	2.9%	1.7%	0.2%	1.2%	0.0%
9:30-10:30 PM	2.3%	2.9%	1.6%	2.3%	2.5%	2.1%	0.6%	0.6%	0.6%
9:45-10:45 PM	1.9%	2.5%	1.3%	2.0%	1.9%	1.2%	1.2%	1.2%	1.2%
10:00-11:00 PM	1.6%	2.1%	1.0%	1.7%	1.5%	1.9%	1.5%	1.8%	1.2%
10:15-11:15 PM	1.3%	1.8%	0.8%	1.2%	1.0%	1.5%	1.2%	1.2%	0.6%
10:30-11:30 PM	1.2%	1.7%	0.7%	1.3%	1.2%	1.3%	0.5%	1.2%	0.5%
10:45-11:45 PM	1.2%	1.6%	0.8%	1.0%	1.0%	1.0%	0.3%	0.6%	0.0%
11:00-12:00 AM	1.0%	1.3%	0.6%	1.4%	1.5%	1.3%	0.0%	0.0%	0.0%
11:15-12:15 AM	0.8%	1.1%	0.5%	1.4%	1.7%	1.0%	0.0%	0.0%	0.0%
11:30-12:30 AM	0.6%	0.8%	0.4%	1.2%	1.6%	1.3%	0.0%	0.0%	0.0%
11:45-12:45 AM	0.4%	0.5%	0.2%	1.1%	0.9%	1.0%	0.0%	0.0%	0.0%

Figure 4

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE Trip Generation Manual, 11th Edition			
Land Use Code	215		
Land Use	Single-Family Attached Housing		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	7		
	% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting
12:00 - 1:00 AM	0.5%	0.7%	0.3%
1:00 - 2:00 AM	0.2%	0.4%	0.1%
2:00 - 3:00 AM	0.3%	0.2%	0.3%
3:00 - 4:00 AM	0.3%	0.3%	0.4%
4:00 - 5:00 AM	0.7%	0.4%	1.0%
5:00 - 6:00 AM	1.4%	0.1%	2.6%
6:00 - 7:00 AM	3.5%	1.1%	5.8%
7:00 - 8:00 AM	7.5%	2.7%	11.2%
8:00 - 9:00 AM	6.6%	3.8%	9.3%
9:00 - 10:00 AM	5.3%	3.7%	6.5%
10:00 - 11:00 AM	4.1%	4.0%	4.3%
11:00 - 12:00 PM	5.3%	4.8%	5.7%
12:00 - 1:00 PM	5.2%	5.4%	5.1%
1:00 - 2:00 PM	4.7%	4.5%	4.8%
2:00 - 3:00 PM	5.8%	5.5%	6.0%
3:00 - 4:00 PM	6.5%	8.2%	4.8%
4:00 - 5:00 PM	7.5%	9.8%	5.1%
5:00 - 6:00 PM	9.4%	12.1%	6.8%
6:00 - 7:00 PM	8.2%	9.8%	6.4%
7:00 - 8:00 PM	5.9%	7.3%	4.5%
8:00 - 9:00 PM	4.7%	3.9%	3.5%
9:00 - 10:00 PM	3.0%	4.8%	1.3%
10:00 - 11:00 PM	2.0%	3.0%	1.1%
11:00 - 12:00 AM	0.9%	1.5%	0.4%

12:00 - 1:00 AM	0.5%	0.7%	0.3%
12:15 - 1:15 AM	0.5%	0.7%	0.3%
12:30 - 1:30 AM	0.4%	0.5%	0.2%
12:45 - 1:45 AM	0.4%	0.5%	0.2%
1:00 - 2:00 AM	0.2%	0.4%	0.1%
1:15 - 2:15 AM	0.2%	0.2%	0.1%
1:30 - 2:30 AM	0.2%	0.1%	0.2%
1:45 - 2:45 AM	0.2%	0.2%	0.3%
2:00 - 3:00 AM	0.3%	0.2%	0.3%
2:15 - 3:15 AM	0.4%	0.3%	0.5%
2:30 - 3:30 AM	0.4%	0.4%	0.5%
2:45 - 3:45 AM	0.3%	0.3%	0.4%
3:00 - 4:00 AM	0.3%	0.3%	0.4%
3:15 - 4:15 AM	0.3%	0.2%	0.4%
3:30 - 4:30 AM	0.4%	0.3%	0.5%
3:45 - 4:45 AM	0.5%	0.3%	0.6%
4:00 - 5:00 AM	0.7%	0.4%	1.0%
4:15 - 5:15 AM	0.8%	0.4%	1.2%
4:30 - 5:30 AM	0.9%	0.2%	1.6%
4:45 - 5:45 AM	1.0%	0.2%	1.9%
5:00 - 6:00 AM	1.4%	0.1%	2.6%
5:15 - 6:15 AM	1.8%	0.1%	3.3%
5:30 - 6:30 AM	2.3%	0.5%	4.0%
5:45 - 6:45 AM	2.8%	0.6%	4.9%
6:00 - 7:00 AM	3.5%	1.1%	5.8%
6:15 - 7:15 AM	4.8%	1.3%	7.2%
6:30 - 7:30 AM	5.3%	1.5%	8.8%
6:45 - 7:45 AM	6.8%	2.2%	11.4%
7:00 - 8:00 AM	7.5%	2.7%	13.2%
7:15 - 8:15 AM	8.2%	3.0%	13.4%
7:30 - 8:30 AM	7.8%	2.9%	12.8%
7:45 - 8:45 AM	7.1%	3.1%	11.0%
8:00 - 9:00 AM	6.6%	3.8%	9.3%
8:15 - 9:15 AM	6.3%	3.7%	8.9%
8:30 - 9:30 AM	6.1%	4.2%	8.1%
8:45 - 9:45 AM	5.1%	4.3%	7.3%
9:00 - 10:00 AM	5.1%	3.7%	6.9%
9:15 - 10:15 AM	4.8%	3.8%	5.7%
9:30 - 10:30 AM	4.4%	3.0%	5.1%
9:45 - 10:45 AM	4.0%	3.4%	4.6%
10:00 - 11:00 AM	4.1%	4.0%	4.3%
10:15 - 11:15 AM	4.5%	4.2%	4.7%
10:30 - 11:30 AM	4.8%	4.4%	5.2%
10:45 - 11:45 AM	5.3%	4.7%	5.9%
11:00 - 12:00 PM	5.3%	4.8%	5.7%
11:15 - 12:15 PM	5.2%	4.8%	5.6%
11:30 - 12:30 PM	5.1%	5.3%	5.0%
11:45 - 12:45 PM	5.0%	5.3%	4.6%
12:00 - 1:00 PM	5.2%	5.4%	5.1%
12:15 - 1:15 PM	5.2%	5.1%	5.2%
12:30 - 1:30 PM	5.2%	5.0%	5.5%
12:45 - 1:45 PM	5.1%	5.1%	5.2%
1:00 - 2:00 PM	4.7%	4.5%	4.8%
1:15 - 2:15 PM	5.2%	5.4%	5.0%
1:30 - 2:30 PM	5.2%	5.3%	5.2%
1:45 - 2:45 PM	5.6%	5.4%	5.8%
2:00 - 3:00 PM	5.8%	5.5%	6.0%
2:15 - 3:15 PM	5.8%	5.8%	5.6%
2:30 - 3:30 PM	6.3%	6.7%	6.0%
2:45 - 3:45 PM	6.0%	7.0%	5.0%
3:00 - 4:00 PM	6.5%	8.2%	4.8%
3:15 - 4:15 PM	6.7%	8.7%	4.8%
3:30 - 4:30 PM	6.5%	8.7%	4.2%
3:45 - 4:45 PM	7.2%	9.3%	4.8%
4:00 - 5:00 PM	7.5%	9.8%	5.1%
4:15 - 5:15 PM	8.1%	10.8%	5.4%
4:30 - 5:30 PM	9.0%	11.9%	6.1%
4:45 - 5:45 PM	9.2%	12.2%	6.3%
5:00 - 6:00 PM	9.4%	12.1%	6.8%
5:15 - 6:15 PM	9.6%	11.8%	7.4%
5:30 - 6:30 PM	9.3%	11.0%	7.6%
5:45 - 6:45 PM	8.7%	10.2%	7.3%
6:00 - 7:00 PM	8.2%	9.8%	6.6%
6:15 - 7:15 PM	7.4%	8.7%	6.1%
6:30 - 7:30 PM	6.6%	8.1%	5.2%
6:45 - 7:45 PM	6.6%	8.2%	5.0%
7:00 - 8:00 PM	5.9%	7.3%	4.5%
7:15 - 8:15 PM	5.3%	7.0%	3.6%
7:30 - 8:30 PM	5.4%	7.1%	3.6%
7:45 - 8:45 PM	4.8%	6.0%	3.6%
8:00 - 9:00 PM	4.7%	5.9%	3.5%
8:15 - 9:15 PM	4.4%	5.7%	3.1%
8:30 - 9:30 PM	3.7%	5.1%	2.3%
8:45 - 9:45 PM	3.5%	5.2%	1.7%
9:00 - 10:00 PM	3.0%	4.8%	1.3%
9:15 - 10:15 PM	2.9%	4.6%	1.3%
9:30 - 10:30 PM	2.6%	4.1%	1.1%
9:45 - 10:45 PM	2.3%	3.3%	1.3%
10:00 - 11:00 PM	2.0%	3.0%	1.1%
10:15 - 11:15 PM	1.5%	2.2%	0.8%
10:30 - 11:30 PM	1.4%	1.9%	0.6%
10:45 - 11:45 PM	1.1%	1.8%	0.5%
11:00 - 12:00 AM	0.9%	1.5%	0.4%
11:15 - 12:15 AM	0.8%	1.3%	0.4%
11:30 - 12:30 AM	0.6%	0.8%	0.4%
11:45 - 12:45 AM	0.5%	0.6%	0.3%



Figure 5

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE Trip Generation Manual, 11th Edition			
Land Use Code	630		
Land Use	Clinic		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	1		
	% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting
12:00 - 1:00 AM	0.0%	0.0%	0.1%
1:00 - 2:00 AM	0.0%	0.0%	0.0%
2:00 - 3:00 AM	0.0%	0.0%	0.0%
3:00 - 4:00 AM	0.0%	0.0%	0.0%
4:00 - 5:00 AM	0.0%	0.0%	0.0%
5:00 - 6:00 AM	0.1%	0.2%	0.1%
6:00 - 7:00 AM	0.6%	1.2%	0.0%
7:00 - 8:00 AM	6.1%	10.5%	1.7%
8:00 - 9:00 AM	9.8%	14.5%	5.0%
9:00 - 10:00 AM	9.9%	10.7%	9.1%
10:00 - 11:00 AM	10.2%	10.6%	9.7%
11:00 - 12:00 PM	9.9%	7.4%	11.4%
12:00 - 1:00 PM	8.2%	6.8%	9.4%
1:00 - 2:00 PM	7.9%	10.1%	5.7%
2:00 - 3:00 PM	8.6%	8.5%	8.6%
3:00 - 4:00 PM	9.7%	9.7%	9.8%
4:00 - 5:00 PM	9.1%	5.9%	12.4%
5:00 - 6:00 PM	7.0%	3.0%	11.0%
6:00 - 7:00 PM	1.7%	0.3%	3.2%
7:00 - 8:00 PM	0.6%	0.4%	0.8%
8:00 - 9:00 PM	0.5%	0.1%	0.8%
9:00 - 10:00 PM	0.0%	0.0%	0.1%
10:00 - 11:00 PM	0.0%	0.0%	0.0%
11:00 - 12:00 AM	0.0%	0.0%	0.0%

12:00 - 1:00 AM	0.0%	0.0%	0.1%
12:15 - 1:15 AM	0.0%	0.0%	0.1%
12:30 - 1:30 AM	0.0%	0.0%	0.1%
12:45 - 1:45 AM	0.0%	0.0%	0.1%
1:00 - 2:00 AM	0.0%	0.0%	0.0%
1:15 - 2:15 AM	0.0%	0.0%	0.0%
1:30 - 2:30 AM	0.0%	0.0%	0.0%
1:45 - 2:45 AM	0.0%	0.0%	0.0%
2:00 - 3:00 AM	0.0%	0.0%	0.0%
2:15 - 3:15 AM	0.0%	0.0%	0.0%
2:30 - 3:30 AM	0.0%	0.0%	0.0%
2:45 - 3:45 AM	0.0%	0.0%	0.0%
3:00 - 4:00 AM	0.0%	0.0%	0.0%
3:15 - 4:15 AM	0.0%	0.0%	0.0%
3:30 - 4:30 AM	0.0%	0.0%	0.0%
3:45 - 4:45 AM	0.0%	0.0%	0.0%
4:00 - 5:00 AM	0.0%	0.0%	0.0%
4:15 - 5:15 AM	0.1%	0.1%	0.1%
4:30 - 5:30 AM	0.1%	0.1%	0.1%
4:45 - 5:45 AM	0.1%	0.2%	0.1%
5:00 - 6:00 AM	0.1%	0.2%	0.1%
5:15 - 6:15 AM	0.1%	0.3%	0.0%
5:30 - 6:30 AM	0.2%	0.4%	0.0%
5:45 - 6:45 AM	0.4%	0.8%	0.0%
6:00 - 7:00 AM	0.6%	1.2%	0.0%
6:15 - 7:15 AM	1.0%	1.9%	0.0%
6:30 - 7:30 AM	1.3%	2.5%	0.3%
6:45 - 7:45 AM	1.5%	4.1%	0.3%
7:00 - 8:00 AM	6.1%	10.5%	1.7%
7:15 - 8:15 AM	8.1%	13.9%	2.3%
7:30 - 8:30 AM	9.9%	16.6%	3.2%
7:45 - 8:45 AM	8.8%	15.4%	4.1%
8:00 - 9:00 AM	9.8%	14.5%	5.0%
8:15 - 9:15 AM	9.9%	11.1%	6.0%
8:30 - 9:30 AM	9.4%	11.0%	7.9%
8:45 - 9:45 AM	9.3%	11.1%	8.6%
9:00 - 10:00 AM	9.7%	10.7%	9.1%
9:15 - 10:15 AM	9.7%	10.6%	9.4%
9:30 - 10:30 AM	9.6%	10.1%	9.0%
9:45 - 10:45 AM	10.1%	10.5%	9.7%
10:00 - 11:00 AM	10.2%	10.6%	9.7%
10:15 - 11:15 AM	10.4%	10.5%	10.1%
10:30 - 11:30 AM	10.2%	10.9%	11.0%
10:45 - 11:45 AM	10.4%	9.2%	11.6%
11:00 - 12:00 PM	9.9%	7.4%	12.4%
11:15 - 12:15 PM	9.8%	6.4%	13.3%
11:30 - 12:30 PM	8.8%	4.9%	12.7%
11:45 - 12:45 PM	8.5%	6.0%	11.1%
12:00 - 1:00 PM	8.2%	6.8%	9.4%
12:15 - 1:15 PM	7.5%	7.5%	7.5%
12:30 - 1:30 PM	8.0%	9.2%	6.7%
12:45 - 1:45 PM	7.3%	8.6%	5.9%
1:00 - 2:00 PM	7.9%	10.1%	5.7%
1:15 - 2:15 PM	8.1%	10.4%	6.1%
1:30 - 2:30 PM	8.2%	9.1%	7.1%
1:45 - 2:45 PM	8.5%	9.3%	7.7%
2:00 - 3:00 PM	8.6%	8.5%	8.6%
2:15 - 3:15 PM	9.0%	8.9%	9.1%
2:30 - 3:30 PM	8.9%	9.1%	8.7%
2:45 - 3:45 PM	8.7%	9.8%	9.0%
3:00 - 4:00 PM	9.7%	9.7%	9.8%
3:15 - 4:15 PM	9.7%	9.0%	10.5%
3:30 - 4:30 PM	9.8%	8.3%	11.3%
3:45 - 4:45 PM	9.4%	7.4%	11.8%
4:00 - 5:00 PM	9.1%	5.9%	12.4%
4:15 - 5:15 PM	8.7%	5.3%	12.2%
4:30 - 5:30 PM	8.8%	4.4%	13.3%
4:45 - 5:45 PM	7.7%	3.6%	11.8%
5:00 - 6:00 PM	7.0%	3.0%	11.0%
5:15 - 6:15 PM	5.5%	2.1%	9.0%
5:30 - 6:30 PM	3.7%	1.5%	5.9%
5:45 - 6:45 PM	3.0%	0.9%	5.1%
6:00 - 7:00 PM	1.7%	0.3%	3.2%
6:15 - 7:15 PM	1.3%	0.3%	2.3%
6:30 - 7:30 PM	0.9%	0.3%	1.4%
6:45 - 7:45 PM	0.7%	0.4%	0.9%
7:00 - 8:00 PM	0.6%	0.4%	0.8%
7:15 - 8:15 PM	0.4%	0.3%	0.5%
7:30 - 8:30 PM	0.4%	0.2%	0.6%
7:45 - 8:45 PM	0.5%	0.1%	0.8%
8:00 - 9:00 PM	0.5%	0.1%	0.8%
8:15 - 9:15 PM	0.4%	0.0%	0.8%
8:30 - 9:30 PM	0.3%	0.0%	0.6%
8:45 - 9:45 PM	0.2%	0.0%	0.3%
9:00 - 10:00 PM	0.0%	0.0%	0.1%
9:15 - 10:15 PM	0.0%	0.0%	0.1%
9:30 - 10:30 PM	0.0%	0.0%	0.1%
9:45 - 10:45 PM	0.0%	0.0%	0.0%
10:00 - 11:00 PM	0.0%	0.0%	0.0%
10:15 - 11:15 PM	0.0%	0.0%	0.0%
10:30 - 11:30 PM	0.0%	0.0%	0.0%
10:45 - 11:45 PM	0.0%	0.0%	0.0%
11:00 - 12:00 AM	0.0%	0.0%	0.0%
11:15 - 12:15 AM	0.0%	0.0%	0.0%
11:30 - 12:30 AM	0.0%	0.0%	0.0%
11:45 - 12:45 AM	0.0%	0.0%	0.0%

Figure 6

**A & R Engineering, Inc.**2160 Kingston Court, Suite 'O',  
Marietta, GA 30067TMC DATA  
US 78 (SR 10) Lexington Rd @  
Mini U Storage Drwy  
7 am - 7 pmFile Name : 20200122  
Site Code : 20200122  
Start Date : 8/26/2020  
Page No : 1

## Groups Printed- Cars, Buses &amp; Trucks

Start Time	Northbound				Mini U Storage Drwy Southbound				US 78 (SR 10) Lexington Rd Eastbound				US 78 (SR 10) Lexington Rd Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	114	0	114	0	221	0	221	335
07:15 AM	0	0	0	0	0	0	0	0	0	117	0	117	0	250	0	250	367
07:30 AM	0	0	0	0	0	0	0	0	0	133	0	133	0	304	0	304	437
07:45 AM	0	0	0	0	0	0	0	0	3	208	0	211	0	303	0	303	514
Total	0	0	0	0	0	0	0	0	3	572	0	575	0	1078	0	1078	1653
08:00 AM	0	0	0	0	1	0	0	1	0	140	0	140	0	260	0	260	401
08:15 AM	0	0	0	0	0	0	0	0	0	177	0	177	0	257	0	257	434
08:30 AM	0	0	0	0	0	0	1	1	1	147	0	148	0	247	0	247	396
08:45 AM	0	0	0	0	0	0	0	0	0	186	0	186	0	206	1	207	393
Total	0	0	0	0	1	0	1	2	1	650	0	651	0	970	1	971	1624
09:00 AM	0	0	0	0	0	0	1	1	0	159	0	159	0	173	0	173	333
09:15 AM	0	0	0	0	0	0	0	0	0	182	0	182	0	213	1	214	396
09:30 AM	0	0	0	0	0	0	1	1	0	150	0	150	0	198	0	198	349
09:45 AM	0	0	0	0	0	0	1	1	0	197	0	197	0	190	0	190	388
Total	0	0	0	0	0	0	3	3	0	688	0	688	0	774	1	775	1466
10:00 AM	0	0	0	0	0	0	0	0	1	194	0	195	0	167	0	167	362
10:15 AM	0	0	0	0	1	0	0	1	0	207	0	207	0	218	0	218	426
10:30 AM	0	0	0	0	0	0	0	0	1	199	0	200	0	211	0	211	411
10:45 AM	0	0	0	0	1	0	1	2	1	194	0	195	0	201	0	201	398
Total	0	0	0	0	2	0	1	3	3	794	0	797	0	797	0	797	1597
11:00 AM	0	0	0	0	1	0	0	1	1	218	0	219	0	208	0	208	428
11:15 AM	0	0	0	0	0	0	0	0	0	204	0	204	0	216	0	216	420
11:30 AM	0	0	0	0	0	0	2	2	2	253	0	255	0	212	1	213	470
11:45 AM	0	0	0	0	0	0	1	1	0	235	0	235	0	187	0	187	423
Total	0	0	0	0	1	0	3	4	3	910	0	913	0	823	1	824	1741
12:00 PM	0	0	0	0	0	0	1	1	0	232	0	232	0	207	2	209	442
12:15 PM	0	0	0	0	1	0	1	2	1	248	0	249	0	204	1	205	456
12:30 PM	0	0	0	0	2	0	0	2	1	205	0	206	0	284	0	284	492
12:45 PM	0	0	0	0	0	0	0	0	0	254	0	254	0	239	1	240	494
Total	0	0	0	0	3	0	2	5	2	939	0	941	0	934	4	938	1884
01:00 PM	0	0	0	0	1	0	2	3	1	225	0	226	0	241	1	242	471
01:15 PM	0	0	0	0	1	0	1	2	1	235	0	236	0	229	1	230	468
01:30 PM	0	0	0	0	1	0	0	1	0	224	0	224	0	214	0	214	439
01:45 PM	0	0	0	0	0	0	0	0	2	222	0	224	0	219	2	221	445
Total	0	0	0	0	3	0	3	6	4	906	0	910	0	903	4	907	1823
02:00 PM	0	0	0	0	0	0	2	2	2	248	0	250	0	234	1	235	487
02:15 PM	0	0	0	0	0	0	3	3	1	244	0	245	0	233	0	233	481
02:30 PM	0	0	0	0	0	0	1	1	2	282	0	284	0	228	0	228	513
02:45 PM	0	0	0	0	0	0	5	5	2	252	0	254	0	219	1	220	479
Total	0	0	0	0	0	0	11	11	7	1026	0	1033	0	914	2	916	1960
03:00 PM	0	0	0	0	0	0	0	0	1	283	0	284	0	234	0	234	518
03:15 PM	0	0	0	0	0	0	4	4	1	283	0	284	0	255	3	258	546
03:30 PM	0	0	0	0	1	0	2	3	1	283	0	284	0	231	0	231	518



Figure 6

**A & R Engineering, Inc.**2160 Kingston Court, Suite 'O',  
Marietta, GA 30067TMC DATA  
US 78 (SR 10) Lexington Rd @  
Mini U Storage Drwy  
7 am - 7 pm

File Name : 20200122

Site Code : 20200122

Start Date : 8/26/2020

Page No : 2

## Groups Printed- Cars, Buses &amp; Trucks

Start Time	Northbound				Mini U Storage Drwy Southbound				US 78 (SR 10) Lexington Rd Eastbound				US 78 (SR 10) Lexington Rd Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
03:45 PM	0	0	0	0	1	0	0	1	3	251	0	254	0	254	1	255	510
Total	0	0	0	0	2	0	6	8	6	1100	0	1106	0	974	4	978	2092
04:00 PM	0	0	0	0	0	0	2	2	1	259	0	260	0	227	0	227	489
04:15 PM	0	0	0	0	0	0	0	0	0	299	0	299	0	224	0	224	523
04:30 PM	0	0	0	0	1	0	2	3	2	277	0	279	0	240	0	240	522
04:45 PM	0	0	0	0	0	0	0	0	0	283	0	283	0	230	1	231	514
Total	0	0	0	0	1	0	4	5	3	1118	0	1121	0	921	1	922	2048
05:00 PM	0	0	0	0	2	0	1	3	1	315	0	316	0	228	0	228	547
05:15 PM	0	0	0	0	0	0	0	0	0	309	0	309	0	192	0	192	501
05:30 PM	0	0	0	0	0	0	1	1	0	287	0	287	0	210	0	210	498
05:45 PM	0	0	0	0	0	0	0	0	2	278	0	280	0	197	0	197	477
Total	0	0	0	0	2	0	2	4	3	1189	0	1192	0	827	0	827	2023
06:00 PM	0	0	0	0	1	0	0	1	0	247	0	247	0	184	0	184	432
06:15 PM	0	0	0	0	1	0	0	1	0	245	0	245	0	166	1	167	413
06:30 PM	0	0	0	0	0	0	0	0	0	215	0	215	0	151	0	151	366
06:45 PM	0	0	0	0	1	0	0	1	2	236	0	238	0	175	0	175	414
Total	0	0	0	0	3	0	0	3	2	943	0	945	0	676	1	677	1625
Grand Total	0	0	0	0	18	0	36	54	37	10835	0	10872	0	10591	19	10610	21536
Apprch %	0	0	0		33.3	0	66.7		0.3	99.7	0		0	99.8	0.2		
Total %	0	0	0	0	0.1	0	0.2	0.3	0.2	50.3	0	50.5	0	49.2	0.1	49.3	

SEAGRAVES DRIVE																																							
	Single Family Detached			Single Family Attached			Medical			Northbound			US 78 (SR 10) Lexington Road Eastbound			US 78 (SR 10) Lexington Road Westbound			US 78 (SR 10) Lexington Road Eastbound			US 78 (SR 10) Lexington Road Westbound			Approach Totals		Warrant 1 Condition A - 100%		Warrant 1 Condition B - 100%		Warrant 1 Condition A - 80%		Warrant 1 Condition B - 80%		Warrant 2				
Time	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor				
7:00 - 8:00 AM	47	11	36	58	9	47	1	1	0	50	0	33	50	0	114	0	114	0	221	0	221	0	572	13	572	8	1078	0	1086	1658	50	YES	NO	YES	NO	YES	NO		
7:15 - 8:15 AM	51	12	38	58	11	47	2	2	0	51	0	34	51	0	117	0	117	0	250	0	250	0	606	15	606	10	1117	0	1127	1725	51	YES	NO	YES	NO	YES	NO		
7:30 - 8:30 AM	50	12	38	55	10	45	2	2	0	50	0	33	50	0	133	0	133	0	304	0	304	0	658	14	658	13	1134	0	1134	1752	50	YES	NO	YES	NO	YES	NO		
7:45 - 8:45 AM	47	13	34	50	11	39	2	2	0	44	0	29	44	0	258	0	258	0	303	0	303	0	672	16	672	10	1067	0	1077	1743	44	YES	NO	YES	NO	YES	NO		
8:00 - 9:00 AM	44	14	31	45	13	33	2	2	1	39	0	26	39	0	140	0	140	0	260	0	260	0	650	17	650	12	973	0	982	1632	39	YES	NO	YES	NO	YES	NO		
8:15 - 9:15 AM	41	14	27	44	13	31	2	2	1	35	0	24	35	0	177	0	177	0	357	0	357	0	609	17	609	12	893	0	895	1594	35	YES	NO	YES	NO	YES	NO		
8:30 - 9:30 AM	38	13	24	43	15	29	2	1	1	32	0	22	32	0	147	0	147	0	247	0	247	0	674	17	674	12	839	0	851	1525	32	YES	NO	YES	NO	YES	NO		
8:45 - 9:45 AM	36	14	22	41	15	26	2	1	1	29	0	20	29	0	186	0	186	0	206	0	206	0	677	18	677	12	790	0	832	1479	29	YES	NO	YES	NO	YES	NO		
9:00 - 10:00 AM	33	12	21	38	13	24	2	1	1	26	0	18	26	0	109	0	109	0	173	0	173	0	688	18	688	10	774	0	794	1472	28	YES	NO	YES	NO	YES	NO		
9:15 - 10:15 AM	31	12	19	34	14	20	2	1	1	24	0	16	24	0	152	0	152	0	213	0	213	0	723	18	723	11	768	0	779	1502	24	YES	NO	YES	NO	YES	NO		
9:30 - 10:30 AM	33	13	20	31	13	18	2	1	1	23	0	15	23	0	150	0	150	0	198	0	198	0	748	18	748	11	773	0	784	1532	23	YES	NO	YES	NO	YES	NO		
9:45 - 10:45 AM	33	13	20	29	12	16	2	1	1	22	0	15	22	0	137	0	137	0	190	0	190	0	797	18	797	10	788	0	798	1593	22	YES	NO	YES	NO	YES	NO		
10:00 - 11:00 AM	26	15	20	29	14	15	2	1	1	22	0	14	22	0	104	0	104	0	167	0	167	0	794	18	794	12	797	0	809	1603	22	YES	NO	YES	NO	YES	NO		
10:15 - 11:15 AM	26	17	20	31	15	17	2	1	1	23	0	15	23	0	207	0	207	0	218	0	218	0	818	20	818	13	838	0	851	1669	23	YES	NO	YES	NO	YES	NO		
10:30 - 11:30 AM	27	17	20	34	16	18	3	1	1	25	0	16	25	0	199	0	199	0	211	0	211	0	815	20	815	14	836	0	850	1665	23	YES	NO	YES	NO	YES	NO		
10:45 - 11:45 AM	28	18	19	37	16	21	2	1	1	23	0	16	25	0	194	0	194	0	201	0	201	0	809	21	809	14	837	0	851	1720	25	YES	NO	YES	NO	YES	NO		
11:00 - 12:00 PM	28	19	13	37	17	20	2	1	1	23	0	16	23	0	218	0	218	0	258	0	258	0	910	22	910	15	823	0	838	1745	23	YES	NO	YES	NO	YES	NO		
11:15 - 12:15 PM	28	19	12	37	17	20	2	1	2	25	0	16	25	0	204	0	204	0	215	0	215	0	924	22	924	15	822	0	837	1751	25	YES	NO	YES	NO	YES	NO		
11:30 - 12:30 PM	40	21	19	30	19	18	3	1	2	23	0	18	23	0	253	0	253	0	212	0	212	0	958	25	958	16	810	0	826	1798	23	YES	NO	YES	NO	YES	NO		
11:45 - 12:45 PM	40	21	19	36	19	16	2	1	1	22	0	14	22	0	235	0	235	0	235	0	235	0	932	24	932	16	868	0	884	1818	22	YES	NO	YES	NO	YES	NO		
12:00 - 1:00 PM	41	21	20	37	19	18	2	1	1	23	0	16	23	0	232	0	232	0	267	0	267	0	939	25	939	16	924	0	950	1829	23	YES	NO	YES	NO	YES	NO		
12:15 - 1:15 PM	41	21	20	36	18	18	2	1	1	23	0	16	23	0	248	0	248	0	264	0	264	0	934	24	934	16	868	0	884	1818	22	YES	NO	YES	NO	YES	NO		
12:30 - 1:30 PM	43	22	21	37	18	19	2	1	1	25	0	16	25	0	205	0	205	0	284	0	284	0	919	26	919	16	993	0	1009	1928	25	YES	NO	YES	NO	YES	NO		
12:45 - 1:45 PM	44	22	22	36	18	18	2	1	1	25	0	16	25	0	254	0	254	0	239	0	239	0	938	26	938	16	923	0	938	1877	25	YES	NO	YES	NO	YES	NO		
1:00 - 2:00 PM	43	22	22	33	18	17	2	1	1	24	0	16	24	0	225	0	225	0	241	0	241	0	906	23	906	16	903	0	918	1828	24	YES	NO	YES	NO	YES	NO		
1:15 - 2:15 PM	44	22	23	37	19	18	2	1	1	25	0	17	25	0	225	0	225	0	229	0	229	0	909	25	909	17	896	0	913	1842	25	YES	NO	YES	NO	YES	NO		
1:30 - 2:30 PM	45	23	22	37	19	18	2	1	1	25	0	18	25	0	224	0	224	0	214	0	214	0	908	26	908	17	900	0	917	1855	25	YES	NO	YES	NO	YES	NO		
1:45 - 2:45 PM	45	23	22	40	19	21	2	1	1	25	0	18	26	0	222	0	222	0	219	0	219	0	896	26	896	17	914	0	931	1827	25	YES	NO	YES	NO	YES	NO		
2:00 - 3:00 PM	47	25	22	41	20	21	2	1	1	25	0	18	26	0	248	0	248	0	234	0	234	0	1005	28	1005	19	914	0	933	1959	26	YES	NO	YES	NO	YES	NO		
2:15 - 3:15 PM	49	28	21	41	21	21	2	1	1	25	0	17	26	0	244	0	244	0	233	0	233	0	1061	30	1061	20	914	0	934	1995	26	YES	NO	YES	NO	YES	NO		
2:30 - 3:30 PM	49	28	21	45	24	21	2	1	1	25	0	17	26	0	282	0	282	0	228	0	228	0	1100	32	1100	21	936	0	957	2057	26	YES	NO	YES	NO	YES	NO		
2:45 - 3:45 PM	52	30	22	42	25	18	2	1	1	25	0	16	25	0	252	0	252	0	219	0	219	0	1121	34	1121	22	939	0	961	2062	25	YES	NO	YES	NO	YES	NO		
3:00 - 4:00 PM	54	31	22	46	29	17	2	1	1	24	0	16	24	0	263	0	263	0	234	0	234	0	1120	37	1120	24	974	0	998	2098	24	YES	NO	YES	NO	YES	NO		
3:15 - 4:15 PM	57	34	23	47	31	17	2	1	1	25	0	16	25	0	263	0	263	0	256	0	256	0	1078	40	1078	25	967	0	993	2089	25	YES	NO	YES	NO	YES	NO		
3:30 - 4:30 PM	61	37	25	48	31	18	2	1	1	25	0	16	25	0	263	0	263	0	231	0	231	0	1062	41	1062	28	936	0	964	2056	25	YES	NO	YES	NO	YES	NO		
3:45 - 4:45 PM	63	38	25	51	34	17	2	1	1	25	0	17	26	0	251	0	251	0	254	0	254	0	1066	44	1066	29	945	0	974	2060	25	YES	NO	YES	NO	YES	NO		
4:00 - 5:00 PM	64	38	26	53	35	18	2	1	1	27	0	18	27	0	259	0	259	0	227	0	227	0	1118	48	1118	30	921	0	951	2069	27	YES	NO	YES	NO	YES	NO		
4:15 - 5:15 PM	64	37	27	57	38	19	2	1	1	28	0	19	28	0	299	0	299	0	224	0	224	0	1174	48	1174	30	921	0	951	2125	30	YES	NO	YES	NO	YES	NO		
4:30 - 5:30 PM	63	37	26	63	42	22	2	1	2	30	0	20	30	0	277	0	277	0	240	0	240	0	1134	48	1134	32	896	0	922	2159	30	YES	NO	YES	NO	YES	NO		
4:45 - 5:45 PM	63	37	26	65	43	22	2	0	1	29	0	20	29	0	283	0	283	0	230	0	230	0	957	48	957	32	820	0	852	2159	30	YES	NO	YES	NO	YES	NO		
5:00 - 6:00 PM	62	36	26	67	43	24	2	0	1	31	0	20	31	0	315	0	315	0	228	0	228	0	924	47	924	32	820	0	852	2178	31	YES	NO	YES	NO	YES</			





Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>
1.....	1.....	750	600	525	420	75	60	53	42
2 or more....	1.....	900	720	630	504	75	60	53	42
2 or more....	2 or more....	900	720	630	504	100	80	70	56
1.....	2 or more....	750	600	525	420	100	80	70	56

In order for a traffic signal to be warranted one of the following conditions must exist for each of any 8 hours on an average day:

- The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.
- The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

Or, both of the following conditions exist for each of any 8 hours on an average day:

- The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.
- The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

When calculating the number of hours that meet the above criteria, we selected the same hour period with each study hour beginning at the same 15-minute interval and ending at the same 15-minute interval.

For the intersection of Lexington Road and Seagraves Drive, Figure 7 shows the approach totals for both the major and minor streets. For Condition A (100% and 80%) and Condition B (100% and 80%) there are no hours in which the major street and minor street conditions are met. Therefore, under Warrant 1 Condition A and B (100% and 80%) a signal is not warranted.

## Warrant 2

Warrant 2 criteria are outlined in MUTCD Table for Figure 4C-1 below and the number of lanes that fits both intersections are outlined in yellow below.

Table for Figure 4C-1					
One lane and one lane		Two or more lanes and one lane		Two or more lanes and two or more lanes	
VPH on the major street (Total of both approaches)	VPH on the minor street (Higher volume approach)	VPH on the major street (Total of both approaches)	VPH on the minor street (Higher volume approach)	VPH on the major street (Total of both approaches)	VPH on the minor street (Higher volume approach)
100	8	100	80 or 115*	100	115
130	8	130	80 or 115*	130	115
170	8	170	80 or 115*	170	115
210	8	210	80 or 115*	210	115
250	10	250	100	250	115
300	10	300	100	300	115
350	10	350	100	350	115
400	10	400	100	400	115
450	10	450	100	450	115
500	10	500	100	500	115
550	10	550	100	550	115
600	10	600	100	600	115
650	10	650	100	650	115
700	10	700	100	700	115
750	10	750	100	750	115
800	10	800	100	800	115
850	10	850	100	850	115
900	10	900	100	900	115
950	10	950	100	950	115
1000	10	1000	100	1000	115
1050	10	1050	100	1050	115
1100	10	1100	100	1100	115
1150	10	1150	100	1150	115
1200	10	1200	100	1200	115
1250	10	1250	100	1250	115
1300	10	1300	100	1300	115
1350	10	1350	100	1350	115
1400	10	1400	100	1400	115
1450	10	1450	100	1450	115
1500	10	1500	100	1500	115
1550	10	1550	100	1550	115
1600	10	1600	100	1600	115
1650	10	1650	100	1650	115
1700	10	1700	100	1700	115
1750	10	1750	100	1750	115
1800	10	1800	100	1800	115
1850	10	1850	100	1850	115
1900	10	1900	100	1900	115
1950	10	1950	100	1950	115
2000	10	2000	100	2000	115
2050	10	2050	100	2050	115
2100	10	2100	100	2100	115
2150	10	2150	100	2150	115
2200	10	2200	100	2200	115
2250	10	2250	100	2250	115
2300	10	2300	100	2300	115
2350	10	2350	100	2350	115
2400	10	2400	100	2400	115
2450	10	2450	100	2450	115
2500	10	2500	100	2500	115
2550	10	2550	100	2550	115
2600	10	2600	100	2600	115
2650	10	2650	100	2650	115
2700	10	2700	100	2700	115
2750	10	2750	100	2750	115
2800	10	2800	100	2800	115
2850	10	2850	100	2850	115
2900	10	2900	100	2900	115
2950	10	2950	100	2950	115
3000	10	3000	100	3000	115
3050	10	3050	100	3050	115
3100	10	3100	100	3100	115
3150	10	3150	100	3150	115
3200	10	3200	100	3200	115
3250	10	3250	100	3250	115
3300	10	3300	100	3300	115
3350	10	3350	100	3350	115
3400	10	3400	100	3400	115
3450	10	3450	100	3450	115
3500	10	3500	100	3500	115
3550	10	3550	100	3550	115
3600	10	3600	100	3600	115
3650	10	3650	100	3650	115
3700	10	3700	100	3700	115
3750	10	3750	100	3750	115
3800	10	3800	100	3800	115
3850	10	3850	100	3850	115
3900	10	3900	100	3900	115
3950	10	3950	100	3950	115
4000	10	4000	100	4000	115
4050	10	4050	100	4050	115
4100	10	4100	100	4100	115
4150	10	4150	100	4150	115
4200	10	4200	100	4200	115
4250	10	4250	100	4250	115
4300	10	4300	100	4300	115
4350	10	4350	100	4350	115
4400	10	4400	100	4400	115
4450	10	4450	100	4450	115
4500	10	4500	100	4500	115
4550	10	4550	100	4550	115
4600	10	4600	100	4600	115
4650	10	4650	100	4650	115
4700	10	4700	100	4700	115
4750	10	4750	100	4750	115
4800	10	4800	100	4800	115
4850	10	4850	100	4850	115
4900	10	4900	100	4900	115
4950	10	4950	100	4950	115
5000	10	5000	100	5000	115
5050	10	5050	100	5050	115
5100	10	5100	100	5100	115
5150	10	5150	100	5150	115
5200	10	5200	100	5200	115
5250	10	5250	100	5250	115
5300	10	5300	100	5300	115
5350	10	5350	100	5350	115
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5900	10	5900	100	5900	115
5950	10	5950	100	5950	115
6000	10	6000	100	6000	115
6050	10	6050	100	6050	115
6100	10	6100	100	6100	115
6150	10	6150	100	6150	115
6200	10	6200	100	6200	115
6250	10	6250	100	6250	115
6300	10	6300	100	6300	115
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6500	10	6500	100	6500	115
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6750	10	6750	100	6750	115
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6850	10	6850	100	6850	115
6900	10	6900	100	6900	115
6950	10	6950	100	6950	115
7000	10	7000	100	7000	115
7050	10	7050	100	7050	115
7100	10	7100	100	7100	115
7150	10	7150	100	7150	115
7200	10	7200	100	7200	115
7250	10	7250	100	7250	115
7300	10	7300	100	7300	115
7350	10	7350	100	7350	115
7400	10	7400	100	7400	115
7450	10	7450	100	7450	115
7500	10	7500	100	7500	115
7550	10	7550	100	7550	115
7600	10	7600	100	7600	115
7650	10	7650	100	7650	115
7700	10	7700	100	7700	115
7750	10	7750	100	7750	115
7800	10	7800	100	7800	115
7850	10	7850	100	7850	115
7900	10	7900	100	7900	115
7950	10	7950	100	7950	115
8000	10	8000	100	8000	115
8050	10	8050	100	8050	115
8100	10	8100	100	8100	115
8150	10	8150	100	8150	115
8200	10	8200	100	8200	115
8250	10	8250	100	8250	115
8300	10	8300	100	8300	115
8350	10	8350	100	8350	115
8400	10	8400	100	8400	115
8450	10	8450	100	8450	115
8500	10	8500	100	8500	115
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8600	10	8600	100	8600	115
8650	10	8650	100	8650	115
8700	10	8700	100	8700	115
8750	10	8750	100	8750	115
8800	10	8800	100	8800	115
8850	10	8850	100	8850	115
8900	10	8900	100	8900	115
8950	10	8950	100	8950	115
9000	10	9000	100	9000	115
9050	10	9050	100	9050	115
9100	10	9100	100	9100	115
9150	10	9150	100	9150	115
9200	10	9200	100	9200	115
9250	10	9250	100	9250	115
9300	10	9300	100	9300	115
9350	10	9350	100	9350	11



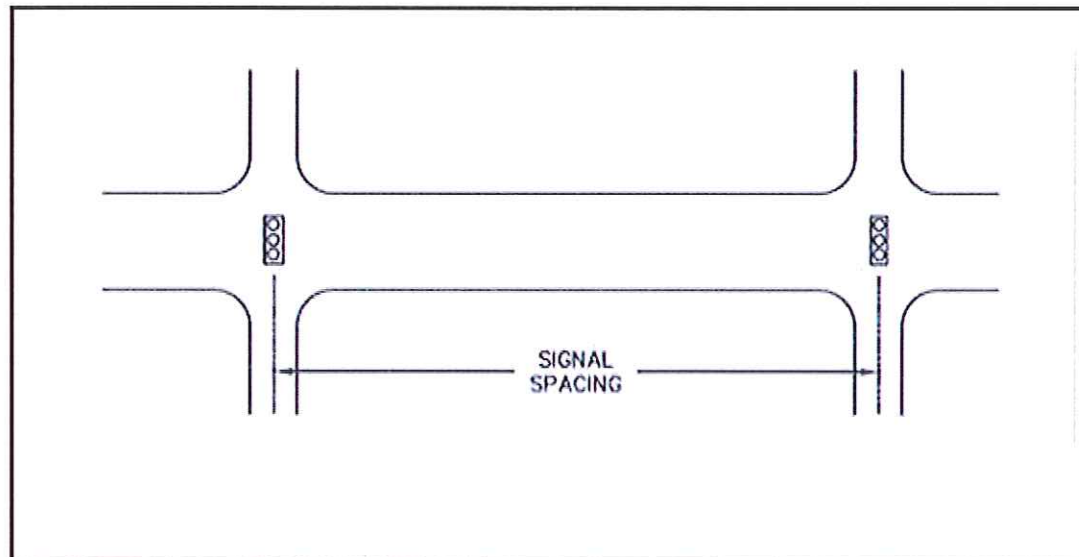
- The plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

When calculating the number of hours that meet the above criteria, we selected the same hour period with each study hour beginning at the same 15-minute interval and ending at the same 15-minute interval.

For the intersection of Lexington Road and Seagraves Drive, Figure 7 shows the approach totals for both the major and minor streets. There are no hours (starting at 5:15-6:15 and ending at 7:15-8:15) in which the major street and minor street conditions are both met. Therefore, under Warrant 2 a signal is not warranted.

### Signal Spacing

Signal spacing criteria are outlined in GDOT Regulations for Driveway and Encroachment Control Manual Table 3-3 below and the roadway that fits both intersections are outlined in yellow below.



ROADWAY TYPE	SIGNAL SPACING, FT.	
	DESIRABLE	MINIMUM
RURAL	2,640	1,320
URBAN	1,320	1,000

**Table 3-3 Spacing of Signalized Intersections**

For the intersection of Lexington Road and Seagraves Drive the distance to the nearest eastbound signal at Lexington Road and Gaines School Road is 3168 feet. This exceeds both the desirable and minimum values outlined in Table 3-3. The distance to the nearest westbound signal at Lexington Road and Atlas Way is 1584 feet, resulting in Seagraves drive being less than the desirable but greater than the minimum spacing outlined in Table 3-3.





### **Conclusion**

Based on above analysis, a signal warrant analysis is not warranted for the intersection of Lexington/Seagraves because the proposed development does not meet any of the requirements outlined in the U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices. In addition, based on the spacing requirements in the GDOT Regulations for Driveway and Encroachment Control Manual, neither of the study intersections should be considered for signalization.

### **Recommendations**

As traffic develops along this roadway network, we recommend that the developer of the facility and roadway network address the following items as outlined below:

#### **Intersection: Lexington Road / Seagraves Drive**

1. A traffic impact analysis is not warranted because the proposed development does not exceed the standards listed by Athens-Clarke County Code.
2. A signal warrant analysis is not warranted because the proposed development does not meet any of the requirements outlined in the U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices.
3. The intersection of State Route 10 and Seagraves Drive should include the addition of a dedicated right turn lane for the eastbound traffic on SR 10. The existing two-way left-turn lane on SR 10 will serve as a left turn lane for the westbound traffic. Below are the recommended improvements in accordance with GDOT and ACC Standards. The recommended right turn lane must be permitted through GDOT and ACC.
  - a. State Route 10 (Lexington Road) will continue to be free-flowing and Seagraves Drive continue to be stop-controlled at its intersection with SR 10.
  - b. The intersection will have signage and marking in accordance with the MUTCD, current edition.
  - c. With the posted 45-mph speed limit on SR 10, the eastbound right turn lane is required to have a minimum of 175 feet of full width storage length with a taper of 100 feet. The proposed right turn lane must have a minimum width of 12 feet and have curb and gutter.
  - d. The intersection shall have minimum 25-foot radii and the lane widths on Seagraves Drive will remain unchanged.
  - e. All design and construction must meet GDOT and Athens-Clarke County standards and specifications, as appropriate.