

**TRAFFIC IMPACT STUDY  
FOR  
SOMERSET AT WALTON RESIDENTIAL DEVELOPMENT**

**CITY OF LOGANVILLE  
WALTON COUNTY, GEORGIA**



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December 06, 2023  
A & R Project # 23-209

# TABLE OF CONTENTS

<b>Item</b>	<b>Page</b>
<b>1.0 Introduction .....</b>	<b>1</b>
<b>2.0 Existing Facilities / Conditions .....</b>	<b>3</b>
2.1 Roadway Facilities.....	3
2.1.1 SR 20 (Loganville Highway) .....	3
2.1.2 Line Street .....	3
2.1.3 Fair Street.....	3
2.1.4 Rock Street.....	3
<b>3.0 Study Methodology .....</b>	<b>4</b>
3.1 Unsignalized Intersections.....	4
3.2 Signalized Intersections .....	5
<b>4.0 Existing 2023 Traffic Analysis.....</b>	<b>6</b>
4.1 Existing Traffic Volumes .....	6
4.2 Existing Traffic Operations.....	9
<b>5.0 Proposed Development.....</b>	<b>10</b>
5.1 Trip Generation.....	12
5.2 Trip Distribution .....	12
<b>6.0 Future 2025 Traffic Analysis .....</b>	<b>14</b>
6.1 Future “No-Build” Conditions .....	14
6.1.1 Annual Traffic Growth.....	14
6.2 Future “Build” Conditions .....	14
6.3 Auxiliary Lane Analysis .....	17
6.3.1 Left Turn Lane Analysis .....	17
6.3.2 Deceleration Turn Lane Analysis.....	17
6.4 Future Traffic Operations.....	18
<b>7.0 Conclusions and Recommendations.....</b>	<b>20</b>
7.1 Recommendations for Site Access Configuration .....	20
Appendix	

## LIST OF TABLES

<b>Item</b>	<b>Page</b>
Table 1 – Level-of-service Criteria for Unsignalized Intersections.....	4
Table 2 – Level-of-service Criteria for Signalized Intersections .....	5
Table 3 – Existing Intersection Operations .....	9
Table 4 – Trip Generation .....	12
Table 5 – GDOT Requirements for Left Turn Lanes .....	17
Table 6 – GDOT Requirements for Deceleration Lanes .....	17
Table 7 – Future Intersection Operations.....	18

## LIST OF FIGURES

<b>Item</b>	<b>Page</b>
Figure 1 – Location Map.....	2
Figure 2 – Existing Weekday Peak Hour Volumes.....	7
Figure 3 – Existing Traffic Control and Lane Geometry .....	8
Figure 4 – Site Plan.....	11
Figure 5 – Trip Distribution and Site Generated Peak Hour Volumes .....	13
Figure 6 – Future (No-Build) Peak Hour Volumes.....	15
Figure 7 – Future (Build) Peak Hour Volumes.....	16
Figure 8 – Future Traffic Control and Lane Geometry.....	19

# 1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact from the proposed residential development that will be located at 246 Line Street in the City of Loganville (Walton County), Georgia. The traffic analysis includes evaluation of the current operations and future conditions with the traffic generated by the development. The residential development will consist of 93 townhomes and proposes one full access driveway on Line Street.



The AM and PM peak hours have been analyzed in this study. In addition to the site access points, this study includes the evaluation of traffic operations at the intersections of:

- Line Street at Fair Street
- Line Street at Rock Street
- Line Street at SR 20 (Loganville Highway)

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report. The location of the development and the surrounding roadway network are shown in Figure 1.

Study Intersections



LOCATION MAP

FIGURE 1

A&R Engineering Inc.

## **2.0 EXISTING FACILITIES / CONDITIONS**

### **2.1 Roadway Facilities**

The following is a brief description of each of the roadway facilities located in proximity to the site:

#### **2.1.1 SR 20 (Loganville Highway)**

SR 20 (Loganville Highway) is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID: 297-0107) indicate that the daily traffic volume on SR 20 (Loganville Highway) in 2022 was 19,300 vehicles per day south of Line Street. GDOT classifies SR 20 (Loganville Highway) as an urban minor arterial roadway.

#### **2.1.2 Line Street**

Line Street is an east-west, two-lane, undivided roadway with a posted speed limit of 25 mph in the vicinity of the site.

#### **2.1.3 Fair Street**

Fair Street is a north-south, two-lane, undivided roadway with a posted speed limit of 25 mph in the vicinity of the site.

#### **2.1.4 Rock Street**

Fair Street is a north-south, two-lane, undivided roadway in the vicinity of the site.

## 3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board’s Highway Capacity Manual, 6<sup>th</sup> edition (HCM 6). Synchro software, which utilizes the HCM methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

### 3.1 Unsignalized Intersections

For unsignalized intersections controlled by a stop sign on minor streets, the level of service (LOS) for motor vehicles with controlled movements is determined by the computed control delay according to the thresholds stated in Table 1 below. LOS is determined for each minor street movement (or shared movement), as well as major street left turns. LOS is not defined for the intersection as a whole or for major street approaches. The LOS of any controlled movement which experiences a volume-to-capacity ratio greater than 1 is designated as “F” regardless of the control delay.

Control delay for unsignalized intersections includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the control delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level of service is assigned a letter designation from “A” through “F”. Level of service “A” indicates excellent operations with little delay to motorists, while level of service “F” exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross the main road without experiencing long delays.

TABLE 1 — LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS		
Control Delay (sec/vehicle)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

\*The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for Major-street approaches or for the intersection.

Source: Highway Capacity Manual, 6<sup>th</sup> edition, Exhibit 20-2 *LOS Criteria: Motorized Vehicle Mode*

### 3.2 Signalized Intersections

According to HCM procedures, LOS can be calculated for the entire intersection, each intersection approach, and each lane group. HCM uses control delay alone to characterize LOS for the entire intersection or an approach. Control delay per vehicle is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Both control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. A volume-to-capacity ratio greater than 1.0 for a lane group indicates failure from capacity perspective. Therefore, such a lane group is assigned LOS F regardless of the amount of control delay.

Table 2 below summarizes the LOS criteria from HCM for motorized vehicles at signalized intersection.

TABLE 2 — LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS		
Control Delay (sec/vehicle) *	LOS for Lane Group by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

\*For approach-based and intersection wide assessments, LOS is defined solely by control delay

Source: Highway Capacity Manual, 6<sup>th</sup> edition, Exhibit 19-8 *LOS Criteria: Motorized Vehicle Mode*

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual *cycle failures* (one or more queued vehicles are not able to depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.



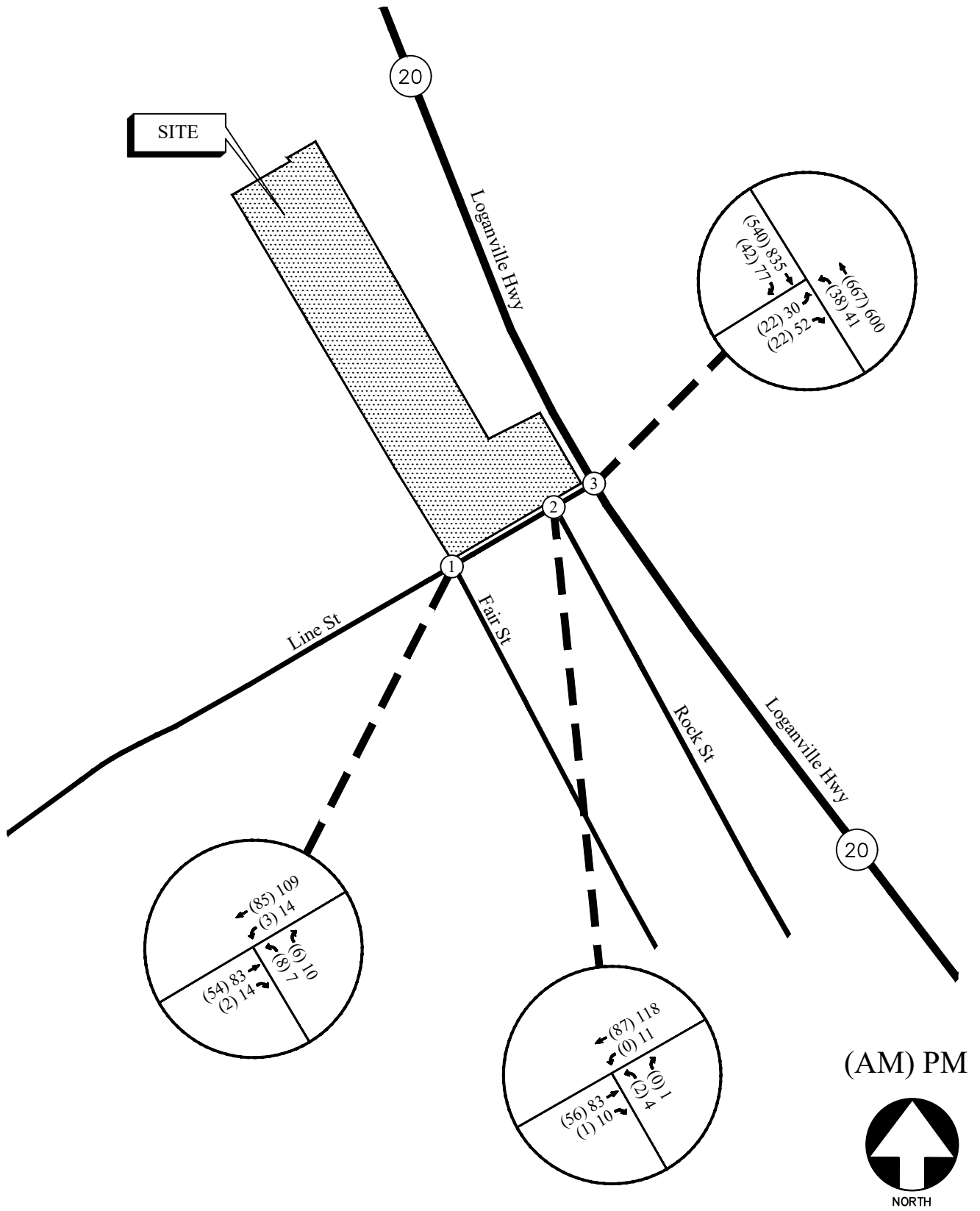
## **4.0 EXISTING 2023 TRAFFIC ANALYSIS**

### **4.1 Existing Traffic Volumes**

Existing traffic counts were obtained at the following study intersections:

- Line Street at Fair Street
- Line Street at Rock Street
- Line Street at SR 20 (Loganville Highway)




Turning movement counts were collected on Thursday, November 16, 2023. All turning movement counts were recorded during the AM and PM peak hours between 7:00 am to 9:00 am and 4:00 pm to 6:00 pm, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

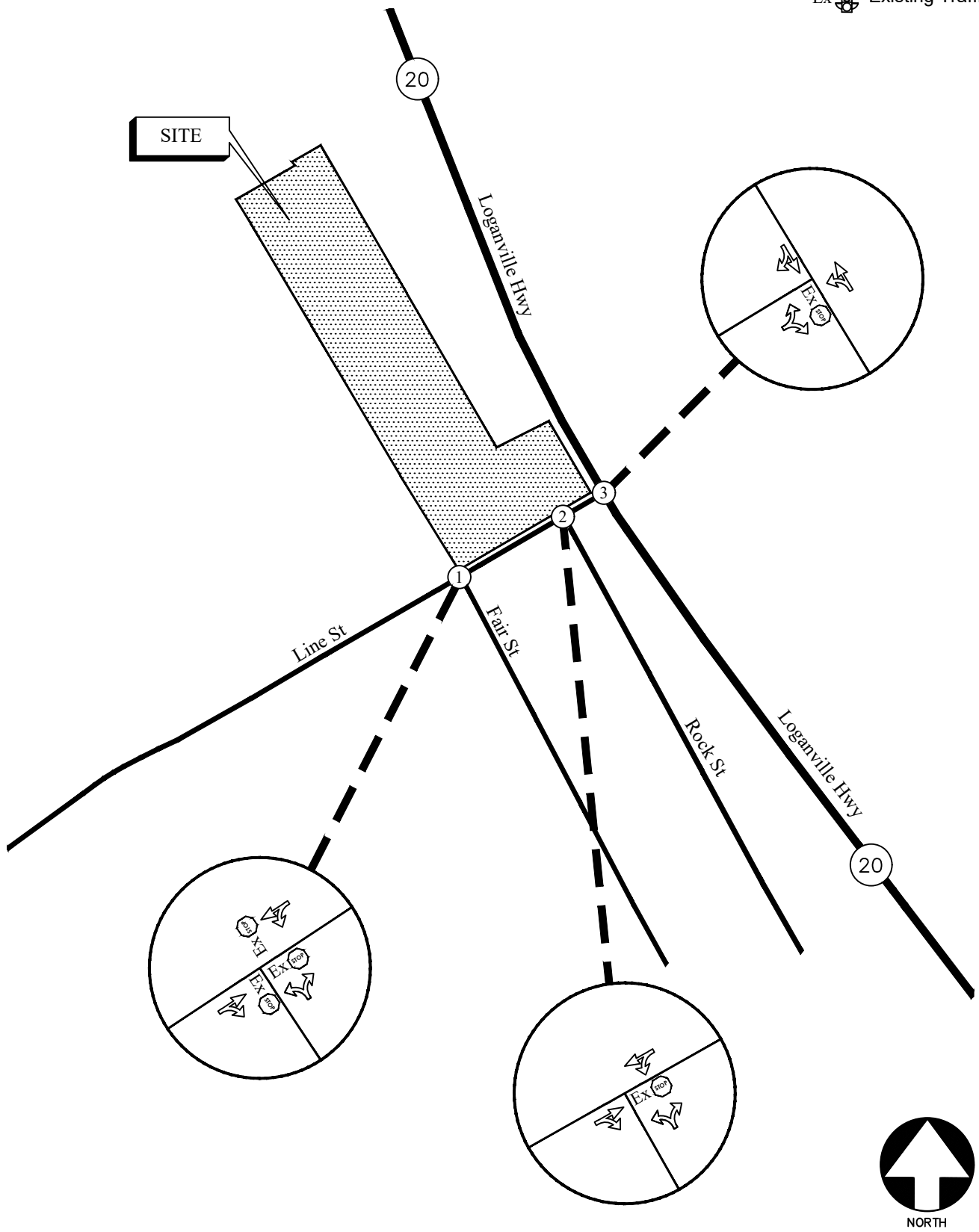


EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 2  
A&R Engineering Inc.

**LEGEND**

- Ex  Existing Signed Approach
-  Existing Lane Geometry
- Ex  Existing Traffic Signal



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

A&R Engineering Inc.

## 4.2 Existing Traffic Operations

Existing 2023 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analysis are shown in Table 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS				
Intersection		Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	<b><u>Line Street @ Fair Street</u></b>	All-Way Stop-Controlled	<b><u>A (7.4)</u></b>	<b><u>A (7.6)</u></b>
	-Eastbound Approach		A (7.3)	A (7.5)
	-Westbound Approach		A (7.5)	A (7.8)
	-Northbound Approach		A (7.2)	A (7.2)
2	<b><u>Line Street @ Rock Street</u></b>	Stop-Controlled on NB Approach	A (7.3)	A (7.4)
	-Westbound Left		A (9.4)	A (9.9)
	-Northbound Approach			
3	<b><u>Line Street @ SR 20 (Loganville Highway)</u></b>	Stop-Controlled on EB Approach	C (24.7)	E (41.4)
	-Eastbound Approach		A (8.9)	B (10.3)
	-Northbound Left			

The results of the existing traffic operations analysis indicate that the stop-controlled approaches at the study intersections are operating at a level of service “C” or better in both the AM and PM peak hours, except for the eastbound approach at the intersection of Line Street and SR 20 (Loganville Highway), which is performing at a level of service “E” during the PM peak hour.

## 5.0 PROPOSED DEVELOPMENT

The residential development will consist of 93 townhomes and proposes one full access driveway on Line Street.



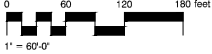
A site plan is shown in Figure 4.

**GENERAL NOTES:**

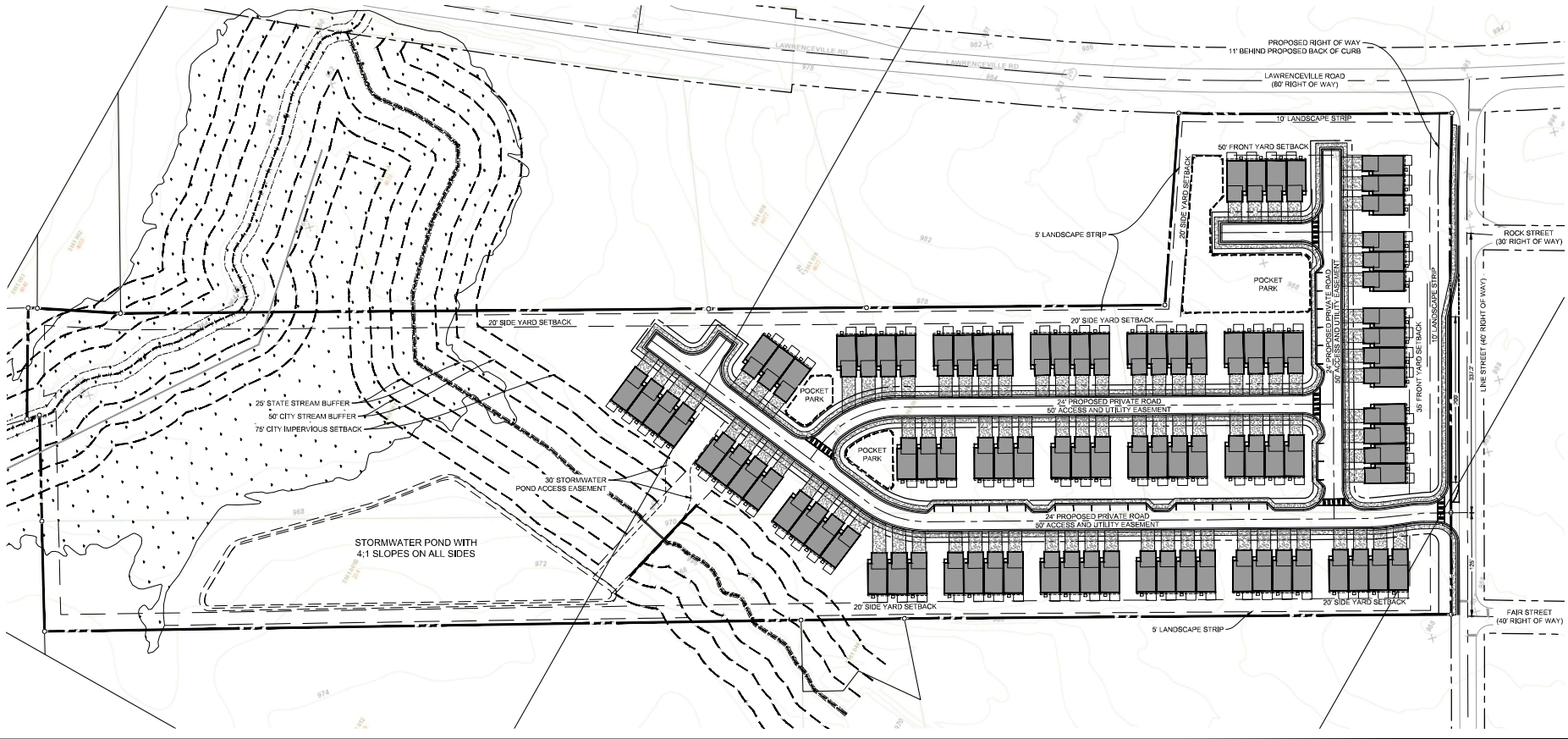
1. STREAMS AND WETLANDS ARE LOCATED ON THE SITE
2. TOODRAN IS LOCATED ON THE SITE
3. NO POWER OR GAS PIPING EASEMENTS ARE LOCATED ON THE SITE
4. NO COLETTES ARE LOCATED ON THE SITE
5. SEE AND LOCATION OF PROPOSED STRUCTURES AS INDICATED ON THE SITE PLAN
6. SPEED LIMIT ON LAWRENCEVILLE ROAD (STATE ROUTE 20) IS 40 MPH.
7. SPEED LIMIT ON LINE STREET IS 25 MPH.
8. WATER UTILITY PROVIDER IS CITY OF LOGANVILLE.
9. SANITARY SEWER PROVIDER IS CITY OF LOGANVILLE.



24 HOUR CONTACT:  
NEVILLE ALLISON  
678-223-8978



SITE DATA	
SITE AREA	17.09 ACRES
ZONING	MHP (MANUFACTURED HOME DISTRICT)
EXISTING ZONING	RM-S
PROPOSED ZONING	RM-S
ZONING JURISDICTION	CITY OF LOGANVILLE
RESIDENTIAL STRUCTURE INFORMATION	
# OF UNITS	60 UNITS
MINIMUM HEIGHT	30 FEET
NUMBER OF STORIES	TWO-STORY
MINIMUM UNIT SIZE	1,800 SF
PROPOSED DENSITY	3.44 UNITS PER ACRE
MINIMUM SETBACKS	
MAXIMUM DENSITY	6 UNITS PER ACRE
MINIMUM LOT WIDTH	N/A
MINIMUM FRONT YARD	50 FEET MAJOR COLLECTOR STREET
MINIMUM FRONT YARD	30 FEET MINOR COLLECTOR STREET
MINIMUM REAR YARD	20 FEET
MINIMUM SIDE YARD	20 FEET
MINIMUM BETWEEN BUILDINGS	20 FEET
MAXIMUM BUILDING HEIGHT	30 FEET
LANDSCAPING STRIP ADJACENT TO PUBLIC RIGHT OF WAY	10 FEET
LANDSCAPING STRIP ADJACENT TO SIDE LOTS	5 FEET
PARKING REQUIREMENTS	
REQUIRED RESIDENT SPACES	1 PER BEDROOM OR 275 SPACES
PROPOSED RESIDENT SPACES	1 PER BEDROOM OR 275 SPACES
GUEST SPACES	75 SPACES



THE REVIVE LAND GROUP  
Part of Peachtree Group

SOURCE, ENTITLE, REVIVE.

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SUITE 625  
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PROJECT:  
**SOMERSET AT WALTON**

A MASTER PLANNED  
RESIDENTIAL DEVELOPMENT

234 & 246 LINE STREET

CITY OF LOGANVILLE  
WINNETT COUNTY &  
WATSON COUNTY  
GEORGIA

LAND LOT:  
DISTRICT:

CLIENT:  
THE REVIVE LAND GROUP  
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THEREVIVELANDGROUP.COM

REVISION:

NO.	DATE	DESCRIPTION
1	11/10/23	

PROJECT NUMBER:  
**23019**



SCALE: SEE ONLY WHERE COUNTY BOUNDARIES AND SETBACKS ARE INDICATED OTHERWISE



DATE:  
**NOV 10, 2023**

TITLE:  
**CONCEPTUAL SITE PLAN**

SHEET:  
**Z-001**

Figure 4 – Site Plan

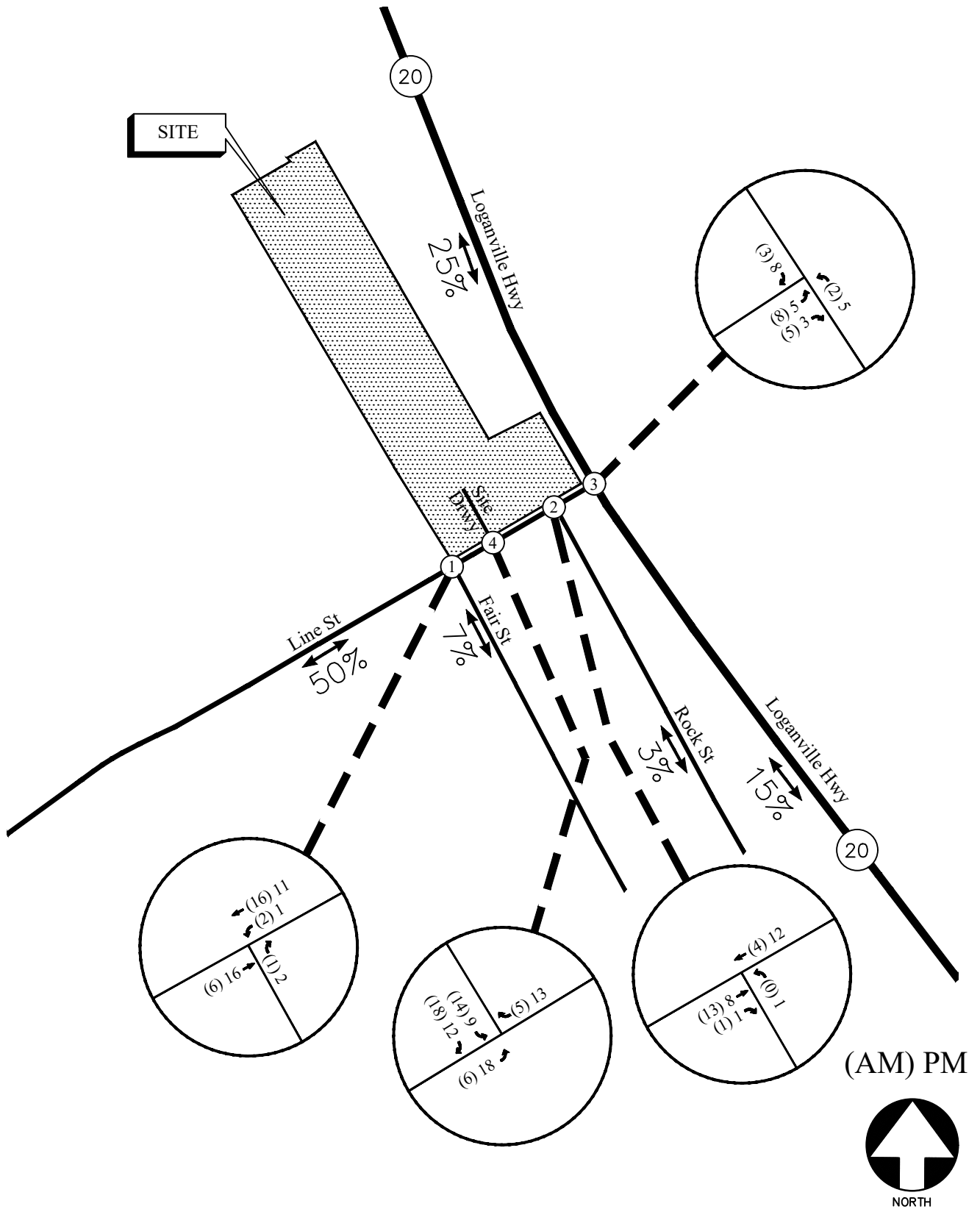
## 5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 11<sup>th</sup> edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category 215 – *Single-Family Attached Housing*. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION								
Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-Way
<b>ITE 215 – Single-Family Attached Housing</b>	93 Units	11	32	43	31	21	52	658

## 5.2 Trip Distribution

The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of the existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes, shown in Table 4, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 5.



TRIP DISTRIBUTION AND SITE-GENERATED  
WEEKDAY PEAK HOUR VOLUMES

FIGURE 5  
A&R Engineering Inc.



## **6.0 FUTURE 2025 TRAFFIC ANALYSIS**

The future 2025 traffic operations are analysed for the “Build” and “No-Build” conditions.

### **6.1 Future “No-Build” Conditions**

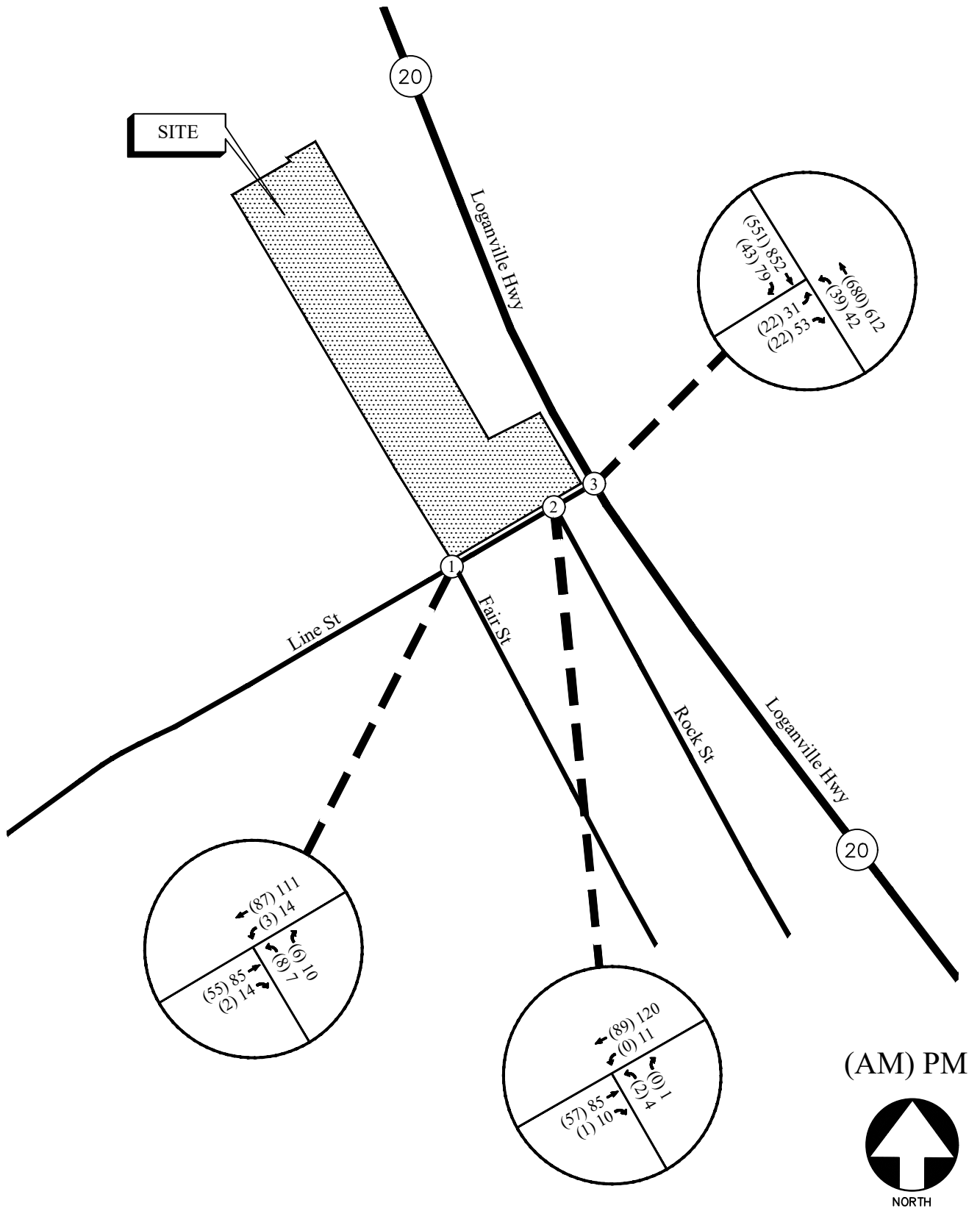
The “No-Build” (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The future “No-Build” volumes consist of the existing traffic volumes (Figure 2) plus increases for annual growth of through traffic.

#### **6.1.1 Annual Traffic Growth**

To evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last three years revealed a traffic volume increase of approximately 1% in the area. This growth factor was applied to the existing traffic volumes between collector and arterial roadways to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future “No-Build” volumes on the roadway are shown in Figure 6.

### **6.2 Future “Build” Conditions**

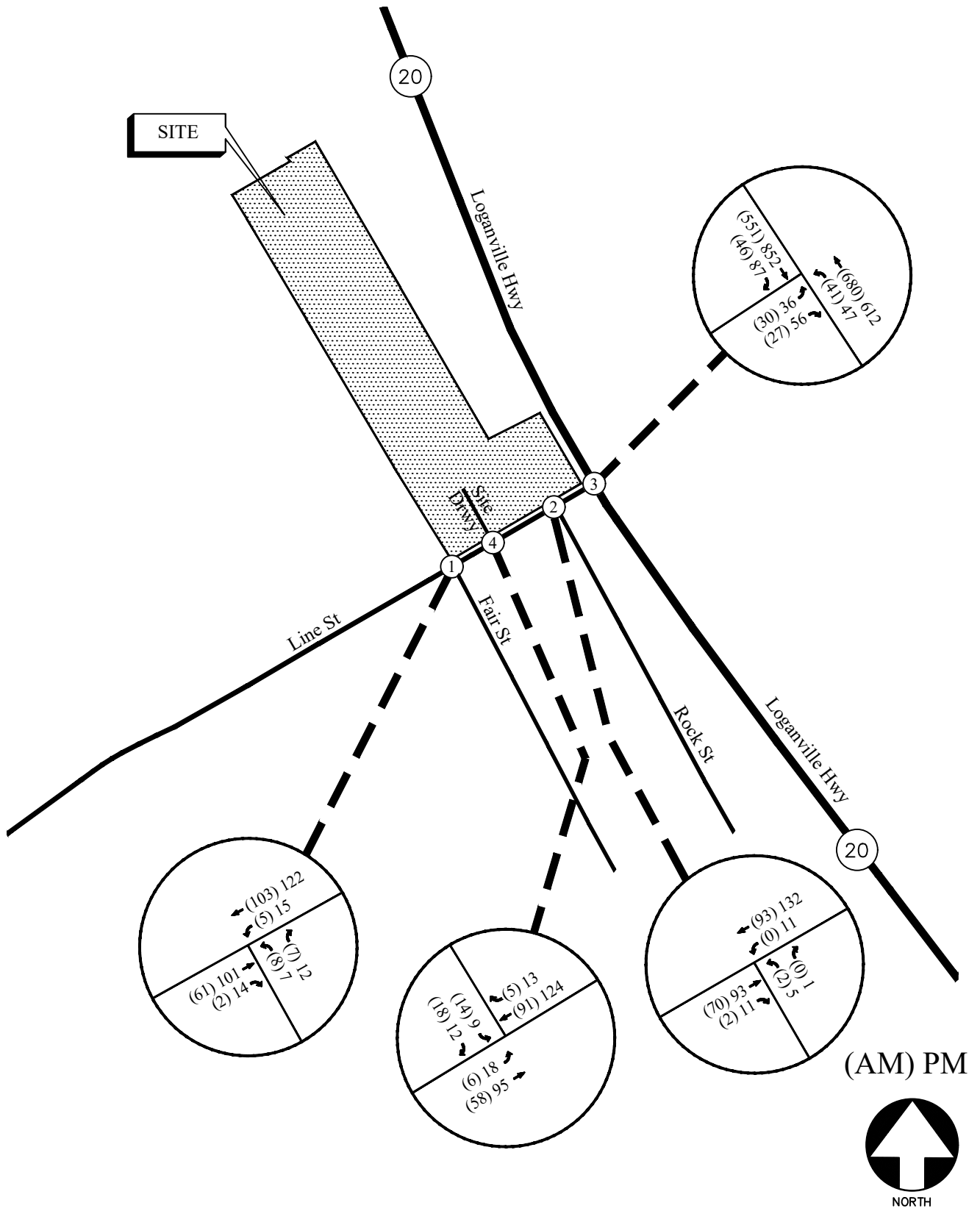
The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. To evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future “Build” traffic volumes are shown in Figure 7.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 6

A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.

### 6.3 Auxiliary Lane Analysis

Included below are analyses for a left turn lane and a right turn lane at the site driveway per GDOT standards. The analyses below are based off the trip distribution included in Section 5.2. According to the ITE trip generation, the 24-hour two-way volume for traffic entering and exiting the site is 658 vehicles. The ADT on Line Street was assumed to be less than 6,000 vehicles per day based on recorded GDOT volumes on the surrounding roadway network.

#### 6.3.1 Left Turn Lane Analysis

According to GDOT standards, for a two-lane roadway with an AADT of less than 6,000 vehicles and a posted speed limit of 25 mph, the daily site-generated traffic left turn movements threshold to warrant a turn lane is 300 left-turning vehicles a day. The projected left turn volumes per day for the proposed driveway is shown in Table 5.

TABLE 5 – GDOT REQUIREMENTS FOR LEFT TURN LANES					
Intersection	Left Turn Traffic (% total entering)	Left Turn Volume (vehicles/day)	Roadway Speed / # Lanes / ADT	GDOT Threshold (vehicles/day)	Warrants Met?
Line Street @ Site Driveway	57%	<b>188</b> (Total Trips) ÷ 2 × 0.57 = (658) ÷ 2 × 0.57 = 188	25 mph / 2-Lane / < 6,000	300	No

A left turn lane is not warranted at the site driveway per GDOT standards.

#### 6.3.2 Deceleration Turn Lane Analysis

For a two-lane roadway with an AADT of less than 6,000 vehicles and a posted speed limit of 25 mph, the daily site-generated traffic right turn movements threshold to warrant a deceleration lane is 200 right-turning vehicles a day. The projected right turn volumes per day for the proposed driveway is shown in Table 6.

TABLE 6 – GDOT REQUIREMENTS FOR DECELERATION LANES					
Intersection	Left Turn Traffic (% total entering)	Right Turn Volume (vehicles/day)	Roadway Speed / # Lanes / ADT	GDOT Threshold (vehicles/day)	Warrants Met?
Line Street @ Site Driveway	43%	<b>141</b> (Total Trips) ÷ 2 × 0.43 = (658) ÷ 2 × 0.43 = 141	25 mph / 2-Lane / < 6,000	200	No

A right turn lane is not warranted at the site driveway per GDOT standards.

## 6.4 Future Traffic Operations

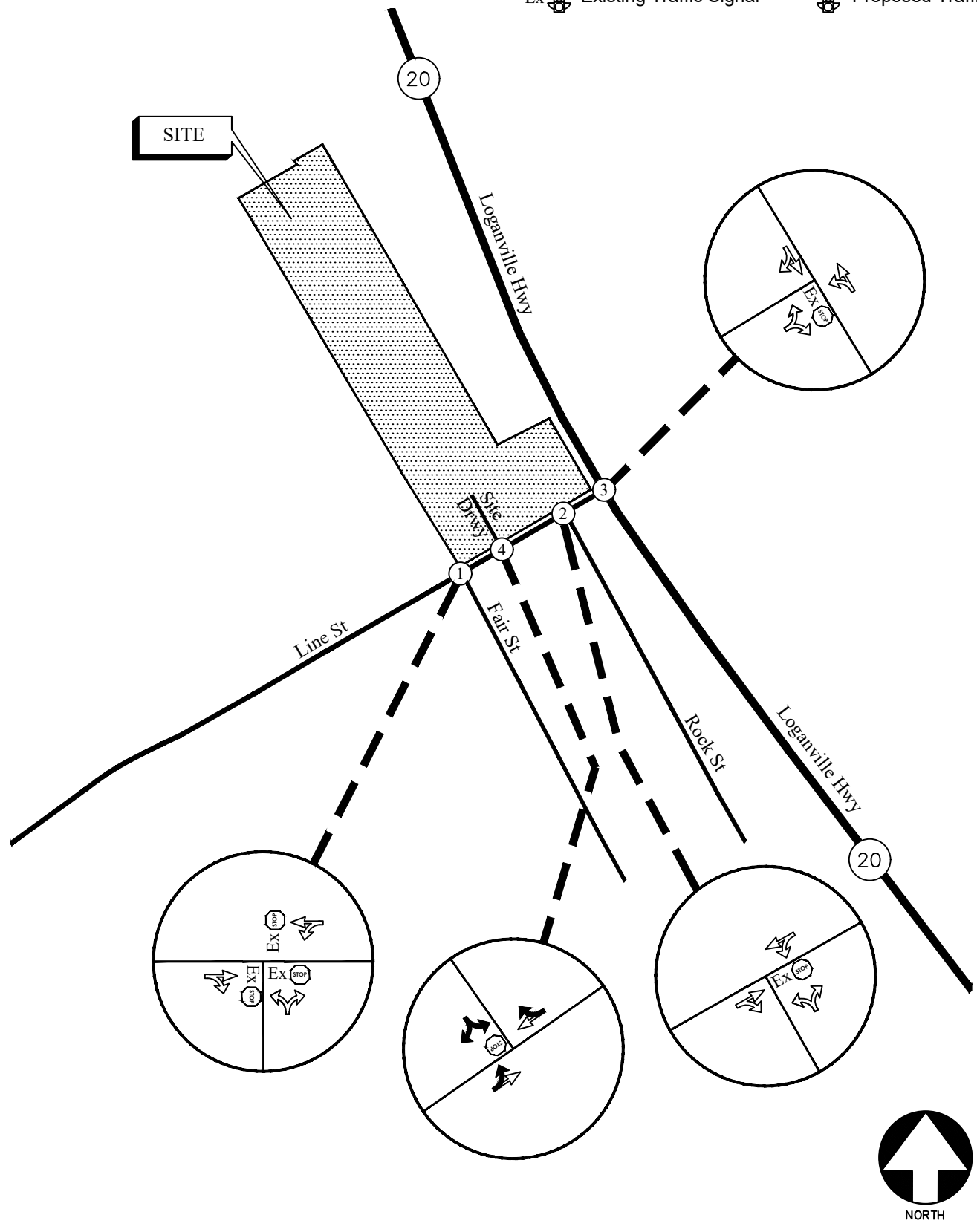
The future “No-Build” and “Build” traffic operations were analysed using the volumes in Figure 6 and Figure 7, respectively. The results of the future traffic operations analysis are shown below in Table 7. Recommendations on traffic control and lane geometry are shown in Figure 8.

TABLE 7 – FUTURE INTERSECTION OPERATIONS					
Intersection		LOS (Delay)			
		NO-BUILD		BUILD-OUT	
		AM Peak	PM Peak	AM Peak	PM Peak
1	<b><u>Line Street @ Fair Street</u></b>	<b><u>A (7.4)</u></b>	<b><u>A (7.6)</u></b>	<b><u>A (7.6)</u></b>	<b><u>A (7.7)</u></b>
	-Eastbound Approach	A (7.3)	A (7.5)	A (7.4)	A (7.6)
	-Westbound Approach	A (7.5)	A (7.8)	A (7.7)	A (7.9)
	-Northbound Approach	A (7.2)	A (7.2)	A (7.2)	A (7.3)
2	<b><u>Line Street @ Rock Street</u></b>				
	-Westbound Left	A (7.3)	A (7.5)	A (7.4)	A (7.5)
	-Northbound Approach	A (9.5)	A (9.9)	A (9.6)	B (10.1)
3	<b><u>Line Street @ SR 20 (Loganville Highway)</u></b>				
	-Eastbound Approach	D (25.6)	E (43.7)	D (28.6)	E (48.5)
	-Northbound Left	A (8.9)	B (10.3)	A (8.9)	B (10.4)
4	<b><u>Line Street @ Site Drwy</u></b>				
	-Eastbound Left	-	-	A (7.4)	A (7.5)
	-Southbound Approach			A (9.2)	A (9.6)

The results of the future conditions traffic analysis indicated that the stop-controlled approaches at the study intersections will continue to operate at a level of service “C” or better in both the AM and PM peak hours, except for the eastbound approach at the intersection of Line Street and SR 20 (Loganville Highway), which will perform at a level of service “E” during the PM peak hour under both “No-Build” and “Build” conditions. It is not unusual for side streets that are stop sign controlled to experience higher delays due to the time gap required to make turning movements on busy arterial roadways.

**LEGEND**

- |  |                          |   |                          |
|--|--------------------------|---|--------------------------|
| Ex    | Existing Signed Approach |    | Proposed Signed Approach |
|     | Existing Lane Geometry   |  | Proposed Lane Geometry   |
| Ex  | Existing Traffic Signal  |  | Proposed Traffic Signal  |



**FUTURE TRAFFIC CONTROL AND LANE GEOMETRY**

**FIGURE 8**

**A&R Engineering Inc.**

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the proposed residential development that will be located at 246 Line Street in the City of Loganville (Walton County), Georgia. The residential development will consist of 93 townhomes and proposes one full access driveway on Line Street.

Existing and future operations after completion of the project were analysed at the intersections of:

- Line Street at Fair Street
- Line Street at Rock Street
- Line Street at SR 20 (Loganville Highway)
- Line Street at Site Driveway

The results of the future conditions traffic analysis indicated that the stop-controlled approaches at the study intersections will continue to operate at a level of service “C” or better in both the AM and PM peak hours, except for the eastbound approach at the intersection of Line Street and SR 20 (Loganville Highway), which will perform at a level of service “E” during the PM peak hour under both “No-Build” and “Build” conditions. It is not unusual for side streets that are stop sign controlled to experience higher delays due to the time gap required to make turning movements on busy arterial roadways. Based on the analysis, the proposed development will have minimal impact on traffic operations in the study network.

### 7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full access driveway on Line Street
  - One entering lane and one exiting lane
  - Stop-sign controlled on the driveway with Line Street remaining free flow
  - Provide/confirm adequate sight distance per AASHTO standards

## **Appendix**

Existing Intersection Traffic Counts .....	
Linear Regression of Daily Traffic.....	
Existing Intersection Analysis.....	
Future “No-Build” Intersection Analysis .....	
Future “Build” Intersection Analysis.....	
Traffic Volume Worksheets .....	



## **EXISTING INTERSECTION TRAFFIC COUNTS**

# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
Line Street @ Fair Street  
7-9 am | 4-6 pm

File Name : 20230390  
Site Code : 20230390  
Start Date : 11-16-2023  
Page No : 1

## Groups Printed- Cars, Buses & Trucks

Start Time	Fair Street Northbound				Southbound				Line Street Eastbound				Line Street 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	1	0	2	3	0	0	0	0	0	5	0	5	1	18	0	19	27
07:15 AM	5	0	0	5	0	0	0	0	0	10	1	11	0	16	0	16	32
07:30 AM	1	0	0	1	0	0	0	0	0	23	0	23	1	23	0	24	48
07:45 AM	1	0	1	2	0	0	0	0	0	8	0	8	1	17	0	18	28
Total	8	0	3	11	0	0	0	0	0	46	1	47	3	74	0	77	135
08:00 AM	2	0	0	2	0	0	0	0	0	12	0	12	1	20	0	21	35
08:15 AM	1	0	1	2	0	0	0	0	0	19	1	20	0	19	0	19	41
08:30 AM	1	0	1	2	0	0	0	0	0	17	1	18	0	27	0	27	47
08:45 AM	4	0	4	8	0	0	0	0	0	6	0	6	2	19	0	21	35
Total	8	0	6	14	0	0	0	0	0	54	2	56	3	85	0	88	158
*** BREAK ***																	
04:00 PM	6	0	2	8	0	0	0	0	0	20	5	25	3	20	0	23	56
04:15 PM	0	0	1	1	0	0	0	0	0	18	2	20	2	33	0	35	56
04:30 PM	3	0	0	3	0	0	0	0	0	14	2	16	3	31	0	34	53
04:45 PM	4	0	0	4	0	0	0	0	0	22	5	27	1	24	0	25	56
Total	13	0	3	16	0	0	0	0	0	74	14	88	9	108	0	117	221
05:00 PM	1	0	1	2	0	0	0	0	0	29	3	32	4	24	0	28	62
05:15 PM	3	0	5	8	0	0	0	0	0	20	4	24	1	21	0	22	54
05:30 PM	2	0	1	3	0	0	0	0	0	13	6	19	1	35	0	36	58
05:45 PM	1	0	3	4	0	0	0	0	0	21	1	22	8	29	0	37	63
Total	7	0	10	17	0	0	0	0	0	83	14	97	14	109	0	123	237
Grand Total	36	0	22	58	0	0	0	0	0	257	31	288	29	376	0	405	751
Apprch %	62.1	0	37.9		0	0	0		0	89.2	10.8		7.2	92.8	0		
Total %	4.8	0	2.9	7.7	0	0	0	0	0	34.2	4.1	38.3	3.9	50.1	0	53.9	

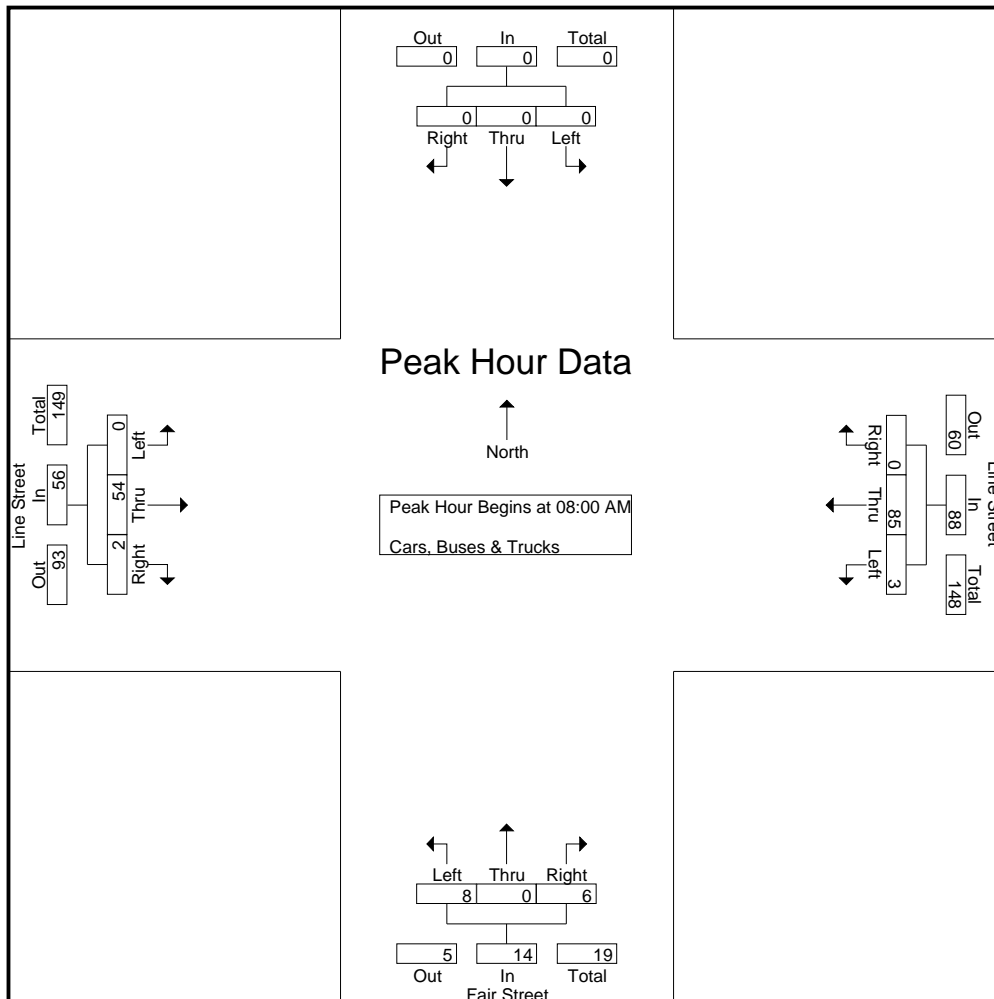
# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
Line Street @ Fair Street  
7-9 am | 4-6 pm

File Name : 20230390  
Site Code : 20230390  
Start Date : 11-16-2023  
Page No : 2

Start Time	Fair Street Northbound				Southbound				Line Street Eastbound				Line Street Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	0	0	2	0	0	0	0	0	12	0	12	1	20	0	21	35
08:15 AM	1	0	1	2	0	0	0	0	0	19	1	20	0	19	0	19	41
08:30 AM	1	0	1	2	0	0	0	0	0	17	1	18	0	27	0	27	47
08:45 AM	4	0	4	8	0	0	0	0	0	6	0	6	2	19	0	21	35
Total Volume	8	0	6	14	0	0	0	0	0	54	2	56	3	85	0	88	158
% App. Total	57.1	0	42.9		0	0	0		0	96.4	3.6		3.4	96.6	0		
PHF	.500	.000	.375	.438	.000	.000	.000	.000	.000	.711	.500	.700	.375	.787	.000	.815	.840



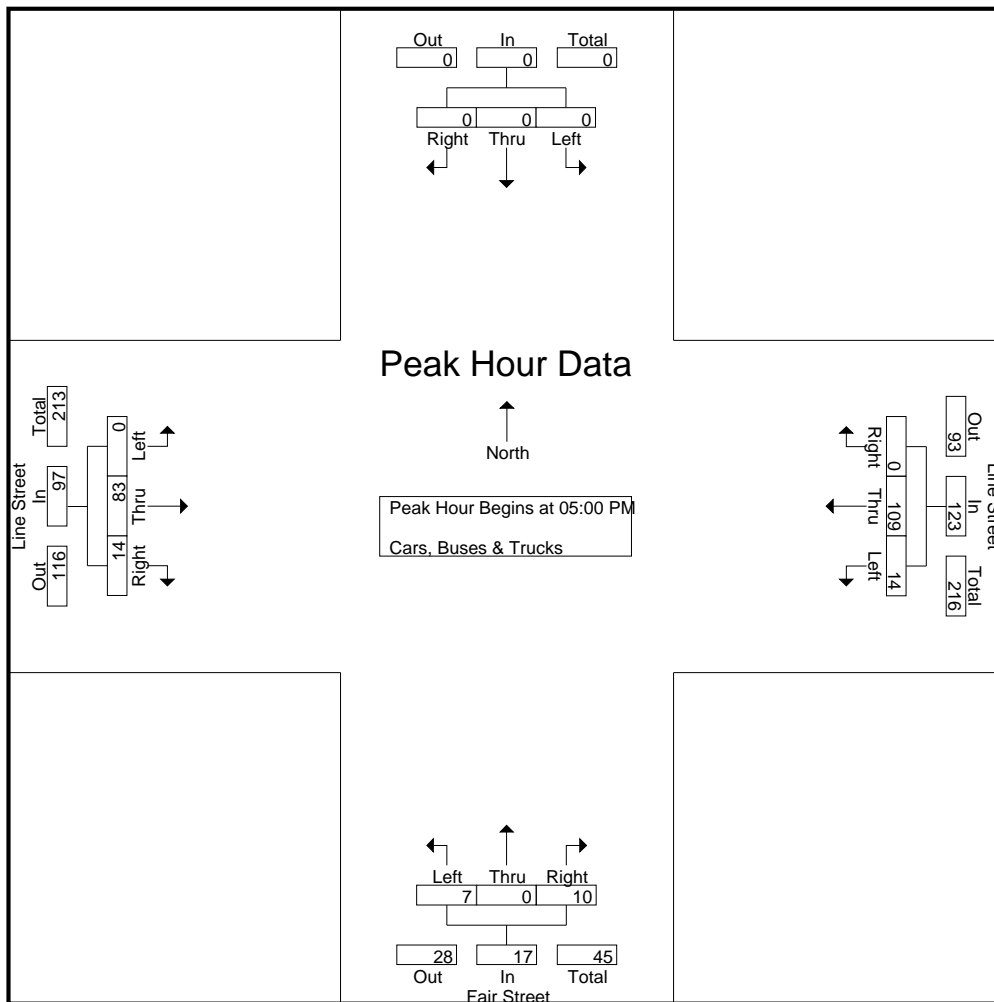
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2160 Kingston Court, Suite 'O'  
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TMC Data  
Line Street @ Fair Street  
7-9 am | 4-6 pm

File Name : 20230390  
Site Code : 20230390  
Start Date : 11-16-2023  
Page No : 3

Start Time	Fair Street Northbound				Southbound				Line Street Eastbound				Line Street Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	1	2	0	0	0	0	0	29	3	32	4	24	0	28	62
05:15 PM	3	0	5	8	0	0	0	0	0	20	4	24	1	21	0	22	54
05:30 PM	2	0	1	3	0	0	0	0	0	13	6	19	1	35	0	36	58
05:45 PM	1	0	3	4	0	0	0	0	0	21	1	22	8	29	0	37	63
Total Volume	7	0	10	17	0	0	0	0	0	83	14	97	14	109	0	123	237
% App. Total	41.2	0	58.8		0	0	0		0	85.6	14.4		11.4	88.6	0		
PHF	.583	.000	.500	.531	.000	.000	.000	.000	.000	.716	.583	.758	.438	.779	.000	.831	.940



# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
Line Street @ Rock Street  
7-9 am | 4-6 pm

File Name : 20230391  
Site Code : 20230391  
Start Date : 11-16-2023  
Page No : 1

## Groups Printed- Cars, Buses & Trucks

Start Time	Rock Street Northbound				Southbound				Line Street Eastbound				Line Street 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	7	0	7	0	19	0	19	26
07:15 AM	0	0	0	0	0	0	0	0	0	10	0	10	0	16	0	16	26
07:30 AM	1	0	0	1	0	0	0	0	0	8	1	9	0	22	0	22	32
07:45 AM	0	0	0	0	0	0	0	0	0	8	0	8	0	18	0	18	26
Total	1	0	0	1	0	0	0	0	0	33	1	34	0	75	0	75	110
08:00 AM	0	0	0	0	0	0	0	0	0	12	0	12	0	21	0	21	33
08:15 AM	1	0	0	1	0	0	0	0	0	16	1	17	0	19	0	19	37
08:30 AM	0	0	0	0	0	0	0	0	0	18	0	18	0	27	0	27	45
08:45 AM	1	0	0	1	0	0	0	0	0	10	0	10	0	20	0	20	31
Total	2	0	0	2	0	0	0	0	0	56	1	57	0	87	0	87	146
*** BREAK ***																	
04:00 PM	0	0	0	0	0	0	0	0	0	26	1	27	0	22	0	22	49
04:15 PM	0	0	1	1	0	0	0	0	0	19	0	19	0	35	0	35	55
04:30 PM	1	0	0	1	0	0	0	0	0	13	0	13	0	33	0	33	47
04:45 PM	0	0	0	0	0	0	0	0	0	22	0	22	0	25	0	25	47
Total	1	0	1	2	0	0	0	0	0	80	1	81	0	115	0	115	198
05:00 PM	3	0	0	3	0	0	0	0	0	27	3	30	0	25	0	25	58
05:15 PM	1	0	0	1	0	0	0	0	0	24	1	25	1	20	0	21	47
05:30 PM	0	0	0	0	0	0	0	0	0	13	1	14	1	36	0	37	51
05:45 PM	0	0	1	1	0	0	0	0	0	19	5	24	9	37	0	46	71
Total	4	0	1	5	0	0	0	0	0	83	10	93	11	118	0	129	227
Grand Total	8	0	2	10	0	0	0	0	0	252	13	265	11	395	0	406	681
Apprch %	80	0	20		0	0	0		0	95.1	4.9		2.7	97.3	0		
Total %	1.2	0	0.3	1.5	0	0	0	0	0	37	1.9	38.9	1.6	58	0	59.6	

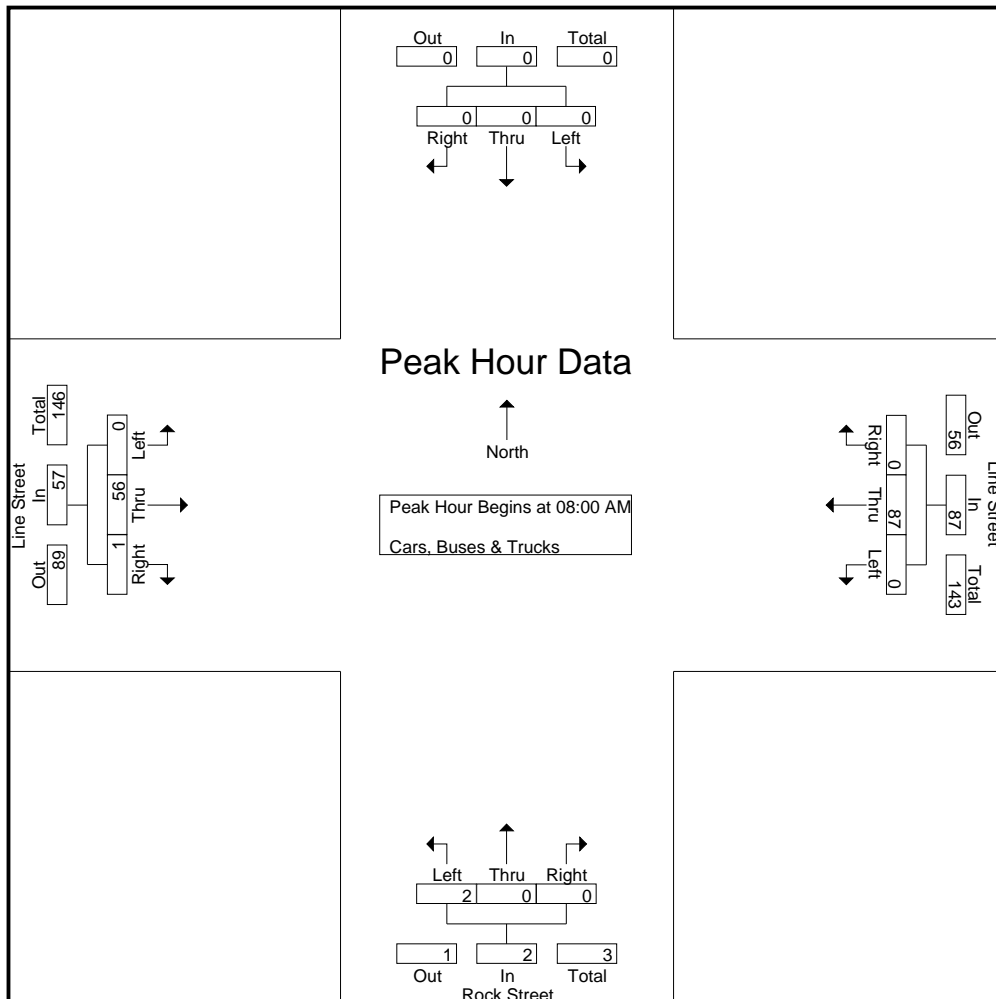
# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
Line Street @ Rock Street  
7-9 am | 4-6 pm

File Name : 20230391  
Site Code : 20230391  
Start Date : 11-16-2023  
Page No : 2

Start Time	Rock Street Northbound				Southbound				Line Street Eastbound				Line Street Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	12	0	12	0	21	0	21	33
08:15 AM	1	0	0	1	0	0	0	0	0	16	1	17	0	19	0	19	37
08:30 AM	0	0	0	0	0	0	0	0	0	18	0	18	0	27	0	27	45
08:45 AM	1	0	0	1	0	0	0	0	0	10	0	10	0	20	0	20	31
Total Volume	2	0	0	2	0	0	0	0	0	56	1	57	0	87	0	87	146
% App. Total	100	0	0	0	0	0	0	0	0	98.2	1.8	0	0	100	0	0	
PHF	.500	.000	.000	.500	.000	.000	.000	.000	.000	.778	.250	.792	.000	.806	.000	.806	.811



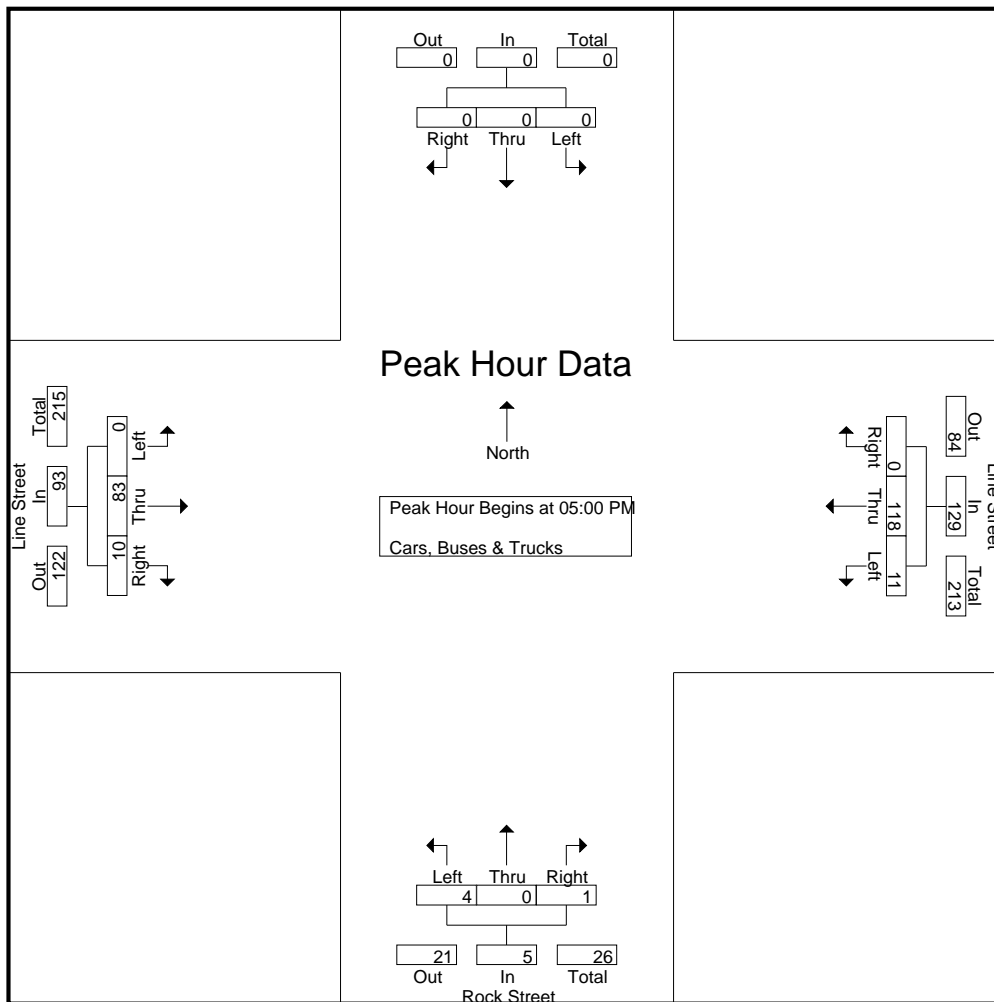
# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
Line Street @ Rock Street  
7-9 am | 4-6 pm

File Name : 20230391  
Site Code : 20230391  
Start Date : 11-16-2023  
Page No : 3

Start Time	Rock Street Northbound				Southbound				Line Street Eastbound				Line Street Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	3	0	0	3	0	0	0	0	0	27	3	30	0	25	0	25	58
05:15 PM	1	0	0	1	0	0	0	0	0	24	1	25	1	20	0	21	47
05:30 PM	0	0	0	0	0	0	0	0	0	13	1	14	1	36	0	37	51
05:45 PM	0	0	1	1	0	0	0	0	0	19	5	24	9	37	0	46	71
Total Volume	4	0	1	5	0	0	0	0	0	83	10	93	11	118	0	129	227
% App. Total	80	0	20		0	0	0		0	89.2	10.8		8.5	91.5	0		
PHF	.333	.000	.250	.417	.000	.000	.000	.000	.000	.769	.500	.775	.306	.797	.000	.701	.799



# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
SR 20 (Loganville Hwy) @ Line Street  
7-9 am | 4-6 pm

File Name : 20230389  
Site Code : 20230389  
Start Date : 11-16-2023  
Page No : 1

Groups Printed- Cars, Buses & Trucks

Start Time	SR 20 (Loganville Hwy) Northbound				SR 20 (Loganville Hwy) Southbound				Line St Eastbound				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	9	197	0	206	0	125	10	135	2	0	5	7	0	0	0	0	348
07:15 AM	7	170	0	177	0	122	9	131	5	0	5	10	0	0	0	0	318
07:30 AM	10	147	0	157	0	143	12	155	5	0	3	8	0	0	0	0	320
07:45 AM	8	155	0	163	0	136	10	146	2	0	6	8	0	0	0	0	317
Total	34	669	0	703	0	526	41	567	14	0	19	33	0	0	0	0	1303
08:00 AM	10	184	0	194	0	123	11	134	6	0	6	12	0	0	0	0	340
08:15 AM	10	181	0	191	0	138	9	147	9	0	7	16	0	0	0	0	354
08:30 AM	10	167	0	177	0	99	17	116	10	0	8	18	0	0	0	0	311
08:45 AM	4	141	0	145	0	121	16	137	6	0	4	10	0	0	0	0	292
Total	34	673	0	707	0	481	53	534	31	0	25	56	0	0	0	0	1297
*** BREAK ***																	
04:00 PM	5	137	0	142	0	204	17	221	10	0	16	26	0	0	0	0	389
04:15 PM	7	154	0	161	0	221	28	249	11	0	9	20	0	0	0	0	430
04:30 PM	10	162	0	172	0	203	23	226	2	0	11	13	0	0	0	0	411
04:45 PM	14	143	0	157	0	207	11	218	6	0	16	22	0	0	0	0	397
Total	36	596	0	632	0	835	79	914	29	0	52	81	0	0	0	0	1627
05:00 PM	10	141	0	151	0	204	15	219	11	0	16	27	0	0	0	0	397
05:15 PM	9	153	0	162	0	190	12	202	3	0	21	24	0	0	0	0	388
05:30 PM	7	146	0	153	0	207	30	237	8	0	5	13	0	0	0	0	403
05:45 PM	11	134	0	145	0	189	35	224	8	0	12	20	0	0	0	0	389
Total	37	574	0	611	0	790	92	882	30	0	54	84	0	0	0	0	1577
Grand Total	141	2512	0	2653	0	2632	265	2897	104	0	150	254	0	0	0	0	5804
Apprch %	5.3	94.7	0		0	90.9	9.1		40.9	0	59.1		0	0	0		
Total %	2.4	43.3	0	45.7	0	45.3	4.6	49.9	1.8	0	2.6	4.4	0	0	0	0	



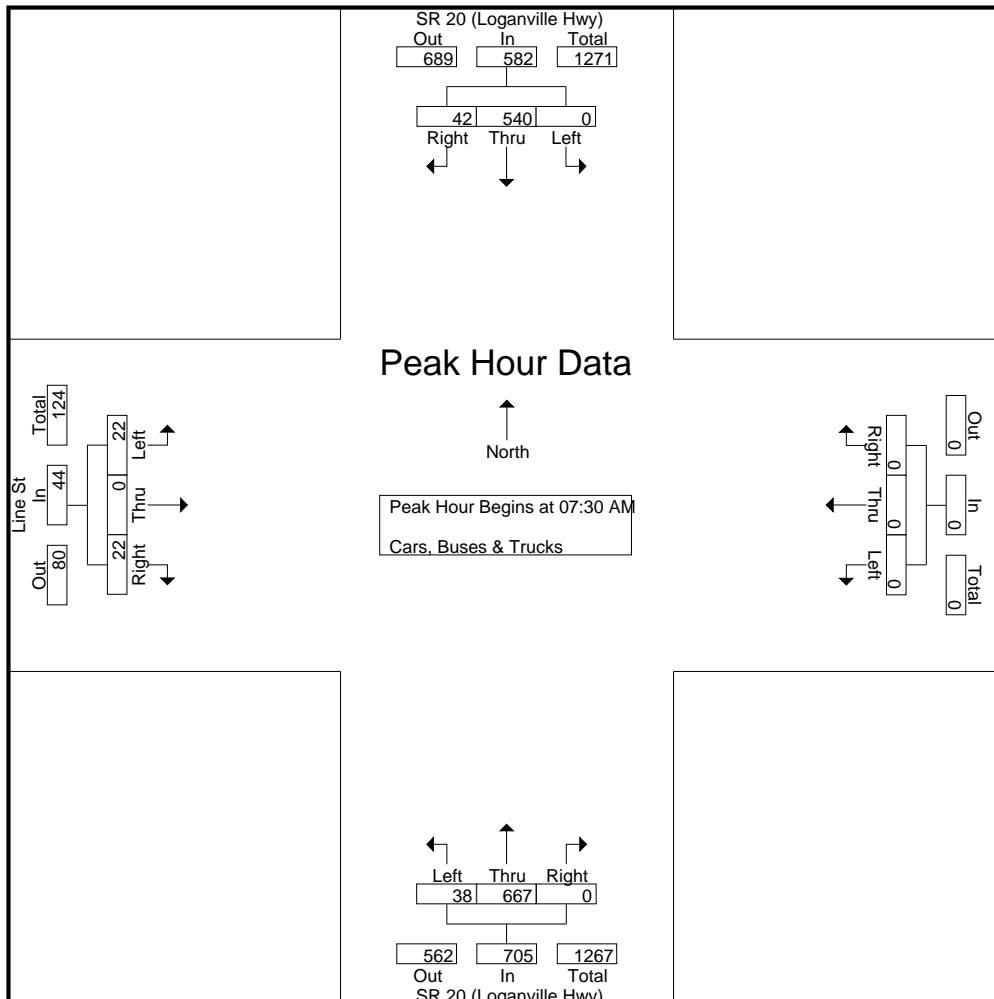
# A & R Engineering, Inc.

2160 Kingston Court, Suite 'O'  
Marietta, GA 30067

TMC Data  
SR 20 (Loganville Hwy) @ Line Street  
7-9 am | 4-6 pm

File Name : 20230389  
Site Code : 20230389  
Start Date : 11-16-2023  
Page No : 2

Start Time	SR 20 (Loganville Hwy) Northbound				SR 20 (Loganville Hwy) Southbound				Line St Eastbound				Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	10	147	0	157	0	143	12	155	5	0	3	8	0	0	0	0	320
07:45 AM	8	155	0	163	0	136	10	146	2	0	6	8	0	0	0	0	317
08:00 AM	10	184	0	194	0	123	11	134	6	0	6	12	0	0	0	0	340
08:15 AM	10	181	0	191	0	138	9	147	9	0	7	16	0	0	0	0	354
Total Volume	38	667	0	705	0	540	42	582	22	0	22	44	0	0	0	0	1331
% App. Total	5.4	94.6	0		0	92.8	7.2		50	0	50		0	0	0		
PHF	.950	.906	.000	.909	.000	.944	.875	.939	.611	.000	.786	.688	.000	.000	.000	.000	.940



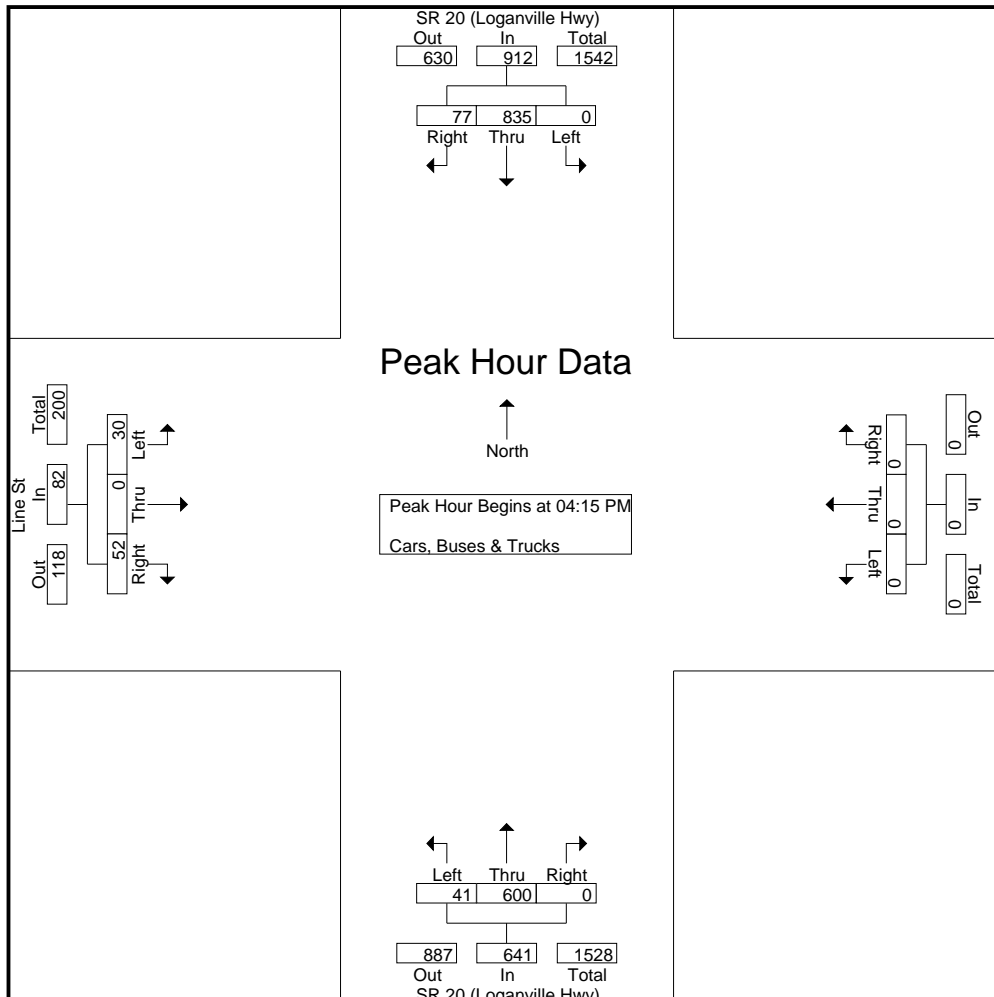
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7-9 am | 4-6 pm

File Name : 20230389  
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Page No : 3


Start Time	SR 20 (Loganville Hwy) Northbound				SR 20 (Loganville Hwy) Southbound				Line St Eastbound				Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	7	154	0	161	0	221	28	249	11	0	9	20	0	0	0	0	430
04:30 PM	10	162	0	172	0	203	23	226	2	0	11	13	0	0	0	0	411
04:45 PM	14	143	0	157	0	207	11	218	6	0	16	22	0	0	0	0	397
05:00 PM	10	141	0	151	0	204	15	219	11	0	16	27	0	0	0	0	397
Total Volume	41	600	0	641	0	835	77	912	30	0	52	82	0	0	0	0	1635
% App. Total	6.4	93.6	0		0	91.6	8.4		36.6	0	63.4		0	0	0		
PHF	.732	.926	.000	.932	.000	.945	.688	.916	.682	.000	.813	.759	.000	.000	.000	.000	.951



# **LINEAR REGRESSION OF DAILY TRAFFIC**

Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
Loganville Hwy (SE of Line St)	0.5%	0.75	297-0107	00002000	19,300	19,300	19,500
Logan Dr ( NW of Cross St)	3.0%	0.96	297-0441	00053413	1,980	2,060	2,100
CS Floyd Rd (SW of Fair St)	1.8%	1.00	297-0109	00053313	4,910	4,990	5,090
Old Loganville Rd (W of Chase Ct)	1.8%	0.99	135-8053	00031000	7,190	7,300	7,450
SR 20 (Lawrenceville Hwy ) (N of Ray Rd)	1.4%	0.75	297-0124	00002000	18,400	18,400	18,900
<b>Weighted Average</b>	<b>1.2%</b>	<b>0.90</b>	<b>Sum of Count Stations =</b>		<b>51,780</b>	<b>52,050</b>	<b>53,040</b>

Location	Traffic Counter	RCLINK	2017	2018	2019
Loganville Hwy (SE of Line St)	297-0107	00002000	19,300	19,300	19,500




**Growth Rate**  
Trend Line

**0.5%**

**Intercept** -182,433    **Slope** 100.00

19,267    19,367    19,467

Location	Traffic Counter	RCLINK	2017	2018	2019
Logan Dr ( NW of Cross St)	297-0441	00053413	1,980	2,060	2,100




**Growth Rate**  
Trend Line

**3.0%**

**Intercept** -119,033    **Slope** 60.00

1,987    2,047    2,107

Location	Traffic Counter	RCLINK	2017	2018	2019
CS Floyd Rd (SW of Fair St)	297-0109	00053313	4,910	4,990	5,090




**Growth Rate**  
Trend Line

**1.8%**

**Intercept** -176,623    **Slope** 90.00

4,907    4,997    5,087

Location	Traffic Counter	RCLINK	2017	2018	2019
Old Loganville Rd (W of Chase Ct)	135-8053	00031000	7,190	7,300	7,450



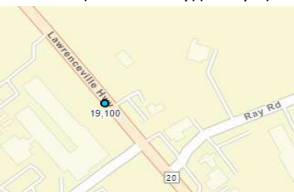
**Growth Rate**  
Trend Line

**1.8%**

**Intercept** -255,027    **Slope** 130.00

7,183    7,313    7,443

Location	Traffic Counter	RCLINK	2017	2018	2019
SR 20 (Lawrenceville Hwy ) (N of Ray Rd)	297-0124	00002000	18,400	18,400	18,900



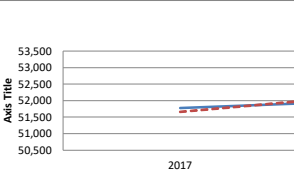
**Growth Rate**  
Trend Line

**1.4%**

**Intercept** -485,933    **Slope** 250.00

18,317    18,567    18,817

Weighted Average	2017	2018	2019
Sum of Count Stations	51,780	52,050	53,040



**Growth Rate**  
Trend Line




**1.2%**

**Intercept** -1,219,050    **Slope** 630.00

51,660    52,290    52,920

## **EXISTING INTERSECTION ANALYSIS**

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	2	3	85	8	6
Future Vol, veh/h	54	2	3	85	8	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	64	2	4	101	10	7
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.5	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	57%	0%	3%
Vol Thru, %	0%	96%	97%
Vol Right, %	43%	4%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	14	56	88
LT Vol	8	0	3
Through Vol	0	54	85
RT Vol	6	2	0
Lane Flow Rate	17	67	105
Geometry Grp	1	1	1
Degree of Util (X)	0.019	0.074	0.116
Departure Headway (Hd)	4.05	3.986	3.986
Convergence, Y/N	Yes	Yes	Yes
Cap	874	898	900
Service Time	2.122	2.014	2.006
HCM Lane V/C Ratio	0.019	0.075	0.117
HCM Control Delay	7.2	7.3	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.4

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	1	1	87	2	0
Future Vol, veh/h	56	1	1	87	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	69	1	1	107	2	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	70	179
Stage 1	-	-	-	70
Stage 2	-	-	-	109
Critical Hdwy	-	-	4.1	6.4
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	3.5
Pot Cap-1 Maneuver	-	-	1544	815
Stage 1	-	-	-	958
Stage 2	-	-	-	921
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1544	814
Mov Cap-2 Maneuver	-	-	-	814
Stage 1	-	-	-	958
Stage 2	-	-	-	920

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	814	-	-	1544	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.4	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	22	22	38	667	540	42
Future Vol, veh/h	22	22	38	667	540	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	23	23	40	710	574	45

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1387	597	619	0	-	0
Stage 1	597	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	159	507	971	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	507	971	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.7	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	971	-	229	-	-
HCM Lane V/C Ratio	0.042	-	0.204	-	-
HCM Control Delay (s)	8.9	0	24.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-



Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	14	14	109	7	10
Future Vol, veh/h	83	14	14	109	7	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	88	15	15	116	7	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.8	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	41%	0%	11%
Vol Thru, %	0%	86%	89%
Vol Right, %	59%	14%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	17	97	123
LT Vol	7	0	14
Through Vol	0	83	109
RT Vol	10	14	0
Lane Flow Rate	18	103	131
Geometry Grp	1	1	1
Degree of Util (X)	0.02	0.113	0.147
Departure Headway (Hd)	4.027	3.942	4.032
Convergence, Y/N	Yes	Yes	Yes
Cap	873	907	890
Service Time	2.125	1.976	2.057
HCM Lane V/C Ratio	0.021	0.114	0.147
HCM Control Delay	7.2	7.5	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.4	0.5

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	10	11	118	4	1
Future Vol, veh/h	83	10	11	118	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	104	13	14	148	5	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	117	0	287
Stage 1	-	-	-	-	111
Stage 2	-	-	-	-	176
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1484	-	708
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	859
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1484	-	701
Mov Cap-2 Maneuver	-	-	-	-	701
Stage 1	-	-	-	-	919
Stage 2	-	-	-	-	850

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	740	-	-	1484	-
HCM Lane V/C Ratio	0.008	-	-	0.009	-
HCM Control Delay (s)	9.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	30	52	41	600	835	77
Future Vol, veh/h	30	52	41	600	835	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	32	55	43	632	879	81

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1638	920	960	0	-	0
Stage 1	920	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	112	331	725	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	487	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	331	725	-	-	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	487	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.4	0.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	725	-	182	-	-
HCM Lane V/C Ratio	0.06	-	0.474	-	-
HCM Control Delay (s)	10.3	0	41.4	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	-	-

**FUTURE “NO-BUILD” INTERSECTION  
ANALYSIS**

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	2	3	87	8	6
Future Vol, veh/h	55	2	3	87	8	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	65	2	4	104	10	7
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	7.5	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	57%	0%	3%
Vol Thru, %	0%	96%	97%
Vol Right, %	43%	4%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	14	57	90
LT Vol	8	0	3
Through Vol	0	55	87
RT Vol	6	2	0
Lane Flow Rate	17	68	107
Geometry Grp	1	1	1
Degree of Util (X)	0.019	0.075	0.119
Departure Headway (Hd)	4.056	3.988	3.987
Convergence, Y/N	Yes	Yes	Yes
Cap	872	898	900
Service Time	2.13	2.016	2.007
HCM Lane V/C Ratio	0.019	0.076	0.119
HCM Control Delay	7.2	7.3	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.4

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	1	1	89	2	0
Future Vol, veh/h	57	1	1	89	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	70	1	1	110	2	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	71	0	183
Stage 1	-	-	-	-	71
Stage 2	-	-	-	-	112
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1542	-	811
Stage 1	-	-	-	-	957
Stage 2	-	-	-	-	918
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1542	-	810
Mov Cap-2 Maneuver	-	-	-	-	810
Stage 1	-	-	-	-	957
Stage 2	-	-	-	-	917

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	810	-	-	1542	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	22	22	39	680	551	43
Future Vol, veh/h	22	22	39	680	551	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	23	23	41	723	586	46

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1414	609	632	0	-	0
Stage 1	609	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	153	499	960	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	499	960	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	443	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.6	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	960	-	221	-	-
HCM Lane V/C Ratio	0.043	-	0.212	-	-
HCM Control Delay (s)	8.9	0	25.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	14	14	111	7	10
Future Vol, veh/h	85	14	14	111	7	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	15	15	118	7	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.8	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	41%	0%	11%
Vol Thru, %	0%	86%	89%
Vol Right, %	59%	14%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	17	99	125
LT Vol	7	0	14
Through Vol	0	85	111
RT Vol	10	14	0
Lane Flow Rate	18	105	133
Geometry Grp	1	1	1
Degree of Util (X)	0.02	0.115	0.149
Departure Headway (Hd)	4.035	3.946	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	872	906	888
Service Time	2.132	1.98	2.059
HCM Lane V/C Ratio	0.021	0.116	0.15
HCM Control Delay	7.2	7.5	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.4	0.5



Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	10	11	120	4	1
Future Vol, veh/h	85	10	11	120	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	106	13	14	150	5	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	119	0	291
Stage 1	-	-	-	-	113
Stage 2	-	-	-	-	178
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1482	-	704
Stage 1	-	-	-	-	917
Stage 2	-	-	-	-	858
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1482	-	697
Mov Cap-2 Maneuver	-	-	-	-	697
Stage 1	-	-	-	-	917
Stage 2	-	-	-	-	849

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	736	-	-	1482	-
HCM Lane V/C Ratio	0.008	-	-	0.009	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	31	53	42	612	852	79
Future Vol, veh/h	31	53	42	612	852	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	32	55	44	638	888	82

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1655	929	970	0	-	0
Stage 1	929	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	109	327	719	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	99	327	719	-	-	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43.7	0.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	719	-	177	-	-
HCM Lane V/C Ratio	0.061	-	0.494	-	-
HCM Control Delay (s)	10.3	0	43.7	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	2.4	-	-

# **FUTURE "BUILD" INTERSECTION ANALYSIS**

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Vol, veh/h	61	2	5	103	8	7
Future Vol, veh/h	61	2	5	103	8	7
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	73	2	6	123	10	8
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.7	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	53%	0%	5%
Vol Thru, %	0%	97%	95%
Vol Right, %	47%	3%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	15	63	108
LT Vol	8	0	5
Through Vol	0	61	103
RT Vol	7	2	0
Lane Flow Rate	18	75	129
Geometry Grp	1	1	1
Degree of Util (X)	0.02	0.084	0.143
Departure Headway (Hd)	4.074	4.008	3.997
Convergence, Y/N	Yes	Yes	Yes
Cap	865	892	897
Service Time	2.161	2.041	2.019
HCM Lane V/C Ratio	0.021	0.084	0.144
HCM Control Delay	7.2	7.4	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.3	0.5

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	2	1	93	2	0
Future Vol, veh/h	70	2	1	93	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	86	2	1	115	2	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	88	0	204
Stage 1	-	-	-	-	87
Stage 2	-	-	-	-	117
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1520	-	789
Stage 1	-	-	-	-	941
Stage 2	-	-	-	-	913
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1520	-	788
Mov Cap-2 Maneuver	-	-	-	-	788
Stage 1	-	-	-	-	941
Stage 2	-	-	-	-	912

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	788	-	-	1520	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	9.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	30	27	41	680	551	46
Future Vol, veh/h	30	27	41	680	551	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	32	29	44	723	586	49

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1422	611	635	0	-	0
Stage 1	611	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	152	497	958	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	140	497	958	-	-	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.6	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	958	-	212	-	-
HCM Lane V/C Ratio	0.046	-	0.286	-	-
HCM Control Delay (s)	8.9	0	28.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	6	58	91	5	14	18
Future Vol, veh/h	6	58	91	5	14	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	7	63	99	5	15	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	104	0	-	0	179
Stage 1	-	-	-	-	102
Stage 2	-	-	-	-	77
Critical Hdwy	4.1	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1500	-	-	-	815
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	951
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1500	-	-	-	811
Mov Cap-2 Maneuver	-	-	-	-	811
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	951

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1500	-	-	-	888
HCM Lane V/C Ratio	0.004	-	-	-	0.039
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	14	15	122	7	12
Future Vol, veh/h	101	14	15	122	7	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	107	15	16	130	7	13
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.9	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	37%	0%	11%
Vol Thru, %	0%	88%	89%
Vol Right, %	63%	12%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	19	115	137
LT Vol	7	0	15
Through Vol	0	101	122
RT Vol	12	14	0
Lane Flow Rate	20	122	146
Geometry Grp	1	1	1
Degree of Util (X)	0.023	0.135	0.164
Departure Headway (Hd)	4.162	3.972	4.049
Convergence, Y/N	Yes	Yes	Yes
Cap	865	899	885
Service Time	2.162	2.01	2.081
HCM Lane V/C Ratio	0.023	0.136	0.165
HCM Control Delay	7.3	7.6	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.5	0.6



Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	93	11	11	132	5	1
Future Vol, veh/h	93	11	11	132	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	116	14	14	165	6	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	130	0	316
Stage 1	-	-	-	-	123
Stage 2	-	-	-	-	193
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1468	-	681
Stage 1	-	-	-	-	907
Stage 2	-	-	-	-	845
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1468	-	674
Mov Cap-2 Maneuver	-	-	-	-	674
Stage 1	-	-	-	-	907
Stage 2	-	-	-	-	837

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	707	-	-	1468	-
HCM Lane V/C Ratio	0.011	-	-	0.009	-
HCM Control Delay (s)	10.1	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	36	56	47	612	852	87
Future Vol, veh/h	36	56	47	612	852	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	37	58	48	631	878	90

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1650	923	968	0	-	0
Stage 1	923	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	110	330	720	-	-	-
Stage 1	390	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	99	330	720	-	-	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.5	0.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	173	-	-
HCM Lane V/C Ratio	0.067	-	0.548	-	-
HCM Control Delay (s)	10.4	0	48.5	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	2.8	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	18	95	124	13	9	12
Future Vol, veh/h	18	95	124	13	9	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	2
Mvmt Flow	20	103	135	14	10	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	149	0	-	0	285 142
Stage 1	-	-	-	-	142 -
Stage 2	-	-	-	-	143 -
Critical Hdwy	4.1	-	-	-	6.4 6.22
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.318
Pot Cap-1 Maneuver	1445	-	-	-	710 906
Stage 1	-	-	-	-	890 -
Stage 2	-	-	-	-	889 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1445	-	-	-	699 906
Mov Cap-2 Maneuver	-	-	-	-	699 -
Stage 1	-	-	-	-	877 -
Stage 2	-	-	-	-	889 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1445	-	-	-	804
HCM Lane V/C Ratio	0.014	-	-	-	0.028
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

# **TRAFFIC VOLUME WORKSHEETS**

**23-209 Somerset at Walton Residential Development - Loganville, GA - TIS**  
**Traffic Volumes**

**A&R Engineering**  
**December 2023**

**1.Line Street @ Fair Street**

**A.M. Peak Hour**

Condition	Fair Street Northbound				- Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	8	0	6	14	0	0	0	0	0	54	2	56	3	85	0	88
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	8	0	6	14	0	0	0	0	0	55	2	57	3	87	0	90
Total New Trips:	0	0	1	1	0	0	0	0	0	6	0	6	2	16	0	18
Future 2025 Traffic Volumes:	8	0	7	15	0	0	0	0	0	61	2	63	5	103	0	108

**P.M. Peak Hour**

Condition	Fair Street Northbound				- Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	7	0	10	17	0	0	0	0	0	83	14	97	14	109	0	123
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	7	0	10	17	0	0	0	0	0	85	14	99	14	111	0	125
Total New Trips:	0	0	2	2	0	0	0	0	0	16	0	16	1	11	0	12
Future 2025 Traffic Volumes:	7	0	12	19	0	0	0	0	0	101	14	115	15	122	0	137

**23-209 Somerset at Walton Residential Development - Loganville, GA - TIS**  
**Traffic Volumes**

**A&R Engineering**  
**December 2023**

**2.Line Street @ Rock Street**

**A.M. Peak Hour**

Condition	Rock Street Northbound				- Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	2	0	0	2	0	0	0	0	0	56	1	57	0	87	0	87
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	2	0	0	2	0	0	0	0	0	57	1	58	0	89	0	89
Total New Trips:	0	0	0	0	0	0	0	0	0	13	1	14	0	4	0	4
Future 2025 Traffic Volumes:	2	0	0	2	0	0	0	0	0	70	2	72	0	93	0	93

**P.M. Peak Hour**

Condition	Rock Street Northbound				- Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	4	0	1	5	0	0	0	0	0	83	10	93	11	118	0	129
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	4	0	1	5	0	0	0	0	0	85	10	95	11	120	0	131
Total New Trips:	1	0	0	1	0	0	0	0	0	8	1	9	0	12	0	12
Future 2025 Traffic Volumes:	5	0	1	6	0	0	0	0	0	93	11	104	11	132	0	143

**23-209 Somerset at Walton Residential Development - Loganville, GA - TIS**  
**Traffic Volumes**

**A&R Engineering**  
**December 2023**

**3.Line Street @ SR 20**

**A.M. Peak Hour**

Condition	SR 20 (Loganville Highway) Northbound				SR 20 (Loganville Highway) Southbound				Line Street Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	38	667	0	705	0	540	42	582	22	0	22	44	0	0	0	0
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	39	680	0	719	0	551	43	594	22	0	22	44	0	0	0	0
Total New Trips:	2	0	0	2	0	0	3	3	8	0	5	13	0	0	0	0
Future 2025 Traffic Volumes:	41	680	0	721	0	551	46	597	30	0	27	57	0	0	0	0

**P.M. Peak Hour**

Condition	SR 20 (Loganville Highway) Northbound				SR 20 (Loganville Highway) Southbound				Line Street Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	41	600	0	641	0	835	77	912	30	0	52	82	0	0	0	0
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	42	612	0	654	0	852	79	931	31	0	53	84	0	0	0	0
Total New Trips:	5	0	0	5	0	0	8	8	5	0	3	8	0	0	0	0
Future 2025 Traffic Volumes:	47	612	0	659	0	852	87	939	36	0	56	92	0	0	0	0

**23-209 Somerset at Walton Residential Development - Loganville, GA - TIS**  
**Traffic Volumes**

**A&R Engineering**  
**December 2023**

**4.Line Street @ Site Drwy**

**A.M. Peak Hour**

Condition	- Northbound				Site Driveway Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	0	0	0	0	0	0	0	0	0	57	0	57	0	89	0	89
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	58	0	58	0	91	0	91
Total New Trips:	0	0	0	0	14	0	18	32	6	0	0	6	0	0	5	5
Future 2025 Traffic Volumes:	0	0	0	0	14	0	18	32	6	58	0	64	0	91	5	96

**P.M. Peak Hour**

Condition	- Northbound				Site Driveway Southbound				Line Street Eastbound				Line Street Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2023 Traffic Counts:	0	0	0	0	0	0	0	0	0	93	0	93	0	122	0	122
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	95	0	95	0	124	0	124
Total New Trips:	0	0	0	0	9	0	12	21	18	0	0	18	0	0	13	13
Future 2025 Traffic Volumes:	0	0	0	0	9	0	12	21	18	95	0	113	0	124	13	137