

**TRAFFIC IMPACT STUDY
FOR
MOSSY CREEK RESIDENTIAL DEVELOPMENT AT
2500 AND 2508 ATHENS HIGHWAY
HALL COUNTY, GEORGIA**



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1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed 330-unit multi-family residential development that will be located at 2500 and 2508 Athens Highway (SR 11/US 129) in Hall County, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development.



The development proposes access at the following locations on SR 11/US 129 (Athens Highway):

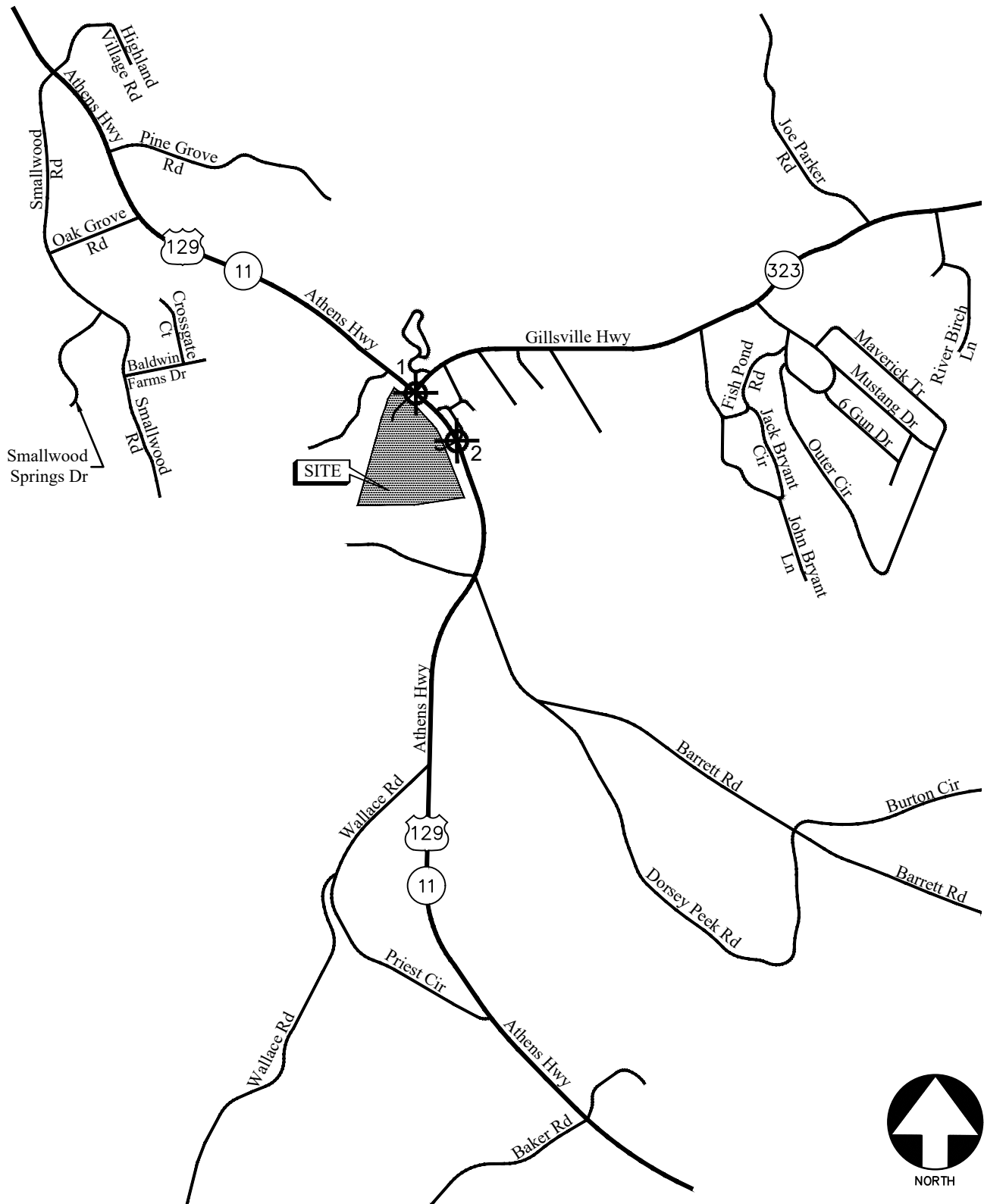
- Site Driveway 1: Northern full-access driveway will align with SR 323 (Gillsville Highway)
- Site Driveway 2: Southern full-access driveway will align with the southern driveway to the existing GDOT facilities

This study includes the evaluation of traffic operations for the AM and PM peak hours at the intersections of:

- SR 11/US 129 (Athens Highway) at SR 323 (Gillsville Highway)/Proposed Site Driveway 1
- SR 11/US 129 (Athens Highway) at GDOT Facilities' southern driveway/Proposed Site Driveway 2

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 is shown in Figure 1.

 Study Intersections



LOCATION MAP

FIGURE 1
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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 11/US 129 (*Athens Highway*)

SR 11/US 129 (Athens Highway) is a north-south, two-lane, undivided roadway with a posted speed limit of 55 mph in the vicinity of the site. To the north of SR 323 (Gillsville Highway), SR 11/US 129 (Athens Highway) is a four-lane, median-divided roadway. Georgia Department of Transportation (GDOT) traffic counts (Station ID's 139-0114 & 139-0116) indicate that the daily traffic volume on SR 11/US 129 (Athens Highway) in 2019 was 12,800 vehicles per day northwest of Bluffton Drive/Bob Byrant Road and 31,500 vehicles per day north of Gaines Mill Road. GDOT classifies SR 11/US 129 (Athens Highway) as an Urban Principal Arterial roadway.

GDOT Project ID #122150 includes widening of SR 11/US 129 (Athens Highway) from two lanes to four lanes, median divided highway from the south of SR 323 (Gillsville Highway) to the town of Talmo in Jackson County. Construction began in 2016 and will be complete in 2022.

2.1.2 SR 323 (*Gillsville Highway*)

SR 323 (Gillsville Highway) is an east-west, two-lane, undivided roadway with a posted speed limit of 40 mph in the vicinity of the site. GDOT traffic counts (Station ID 139-0387) indicate that the daily traffic volume on SR 323 (Gillsville Highway) in 2019 was 11,900 vehicles per day west of Joe Parker Road. GDOT classifies SR 323 (Gillsville Highway) as an Urban Minor Collector roadway.

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, 6th 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 at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the level-of-service (LOS) for the turning movements at the intersection and the level-of-service for the overall intersection. Level-of-service is based on the control delay incurred at the intersection. Control delay for unsignalized intersections includes 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 safely, resulting in extremely long total delays and long queues. The level-of-service criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections are given in Table 1.

TABLE 1 — LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
Level-of-service	Control Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: Highway Capacity Manual

3.2 Signalized Intersections

For signalized intersections, it is necessary to evaluate both capacity and level-of-service in order to evaluate the overall operation of the intersection. The capacity analysis of an intersection is performed by comparing the volume of traffic using the various lane groups at the intersection to the capacity of those lane groups. This results in a volume/capacity (v/c) ratio for each lane group. A v/c ratio greater than 1.0 indicates that the volume of traffic has exceeded the capacity available, resulting in a temporary excess of demand. Although the capacity of the entire intersection is not defined, a composite v/c ratio for the sum of the critical lane groups within the intersection is computed. This composite v/c ratio is an indication of the overall intersection sufficiency.

Level-of-service for a signalized intersection is defined in terms of control delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for signalized intersections, based on control delay, are shown in Table 2. Level-of-service “A” indicates operations with very low control delay, while level-of-service “F” describes operations with extremely high control delay. Level-of-service “E” is typically considered to be the limit of acceptable delay, and level-of-service “F” is considered unacceptable by most drivers.

TABLE 2 — LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
Level-of-service	Control Delay (sec)
A	≤ 10
B	$> 10 \text{ and } \leq 20$
C	$> 20 \text{ and } \leq 35$
D	$> 35 \text{ and } \leq 55$
E	$> 55 \text{ and } \leq 80$
F	> 80

Source: Highway Capacity Manual

4.0 EXISTING 2021 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersection:

- SR 11/US 129 (Athens Highway) at SR 323 (Gillsville Highway)

Turning movement counts were collected on Tuesday, October 12, 2021 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 intersection were then determined. These volumes make up the peak hour traffic volumes for the intersection counted and are shown in Figure 2.

4.2 Existing GDOT Facilities' Trips

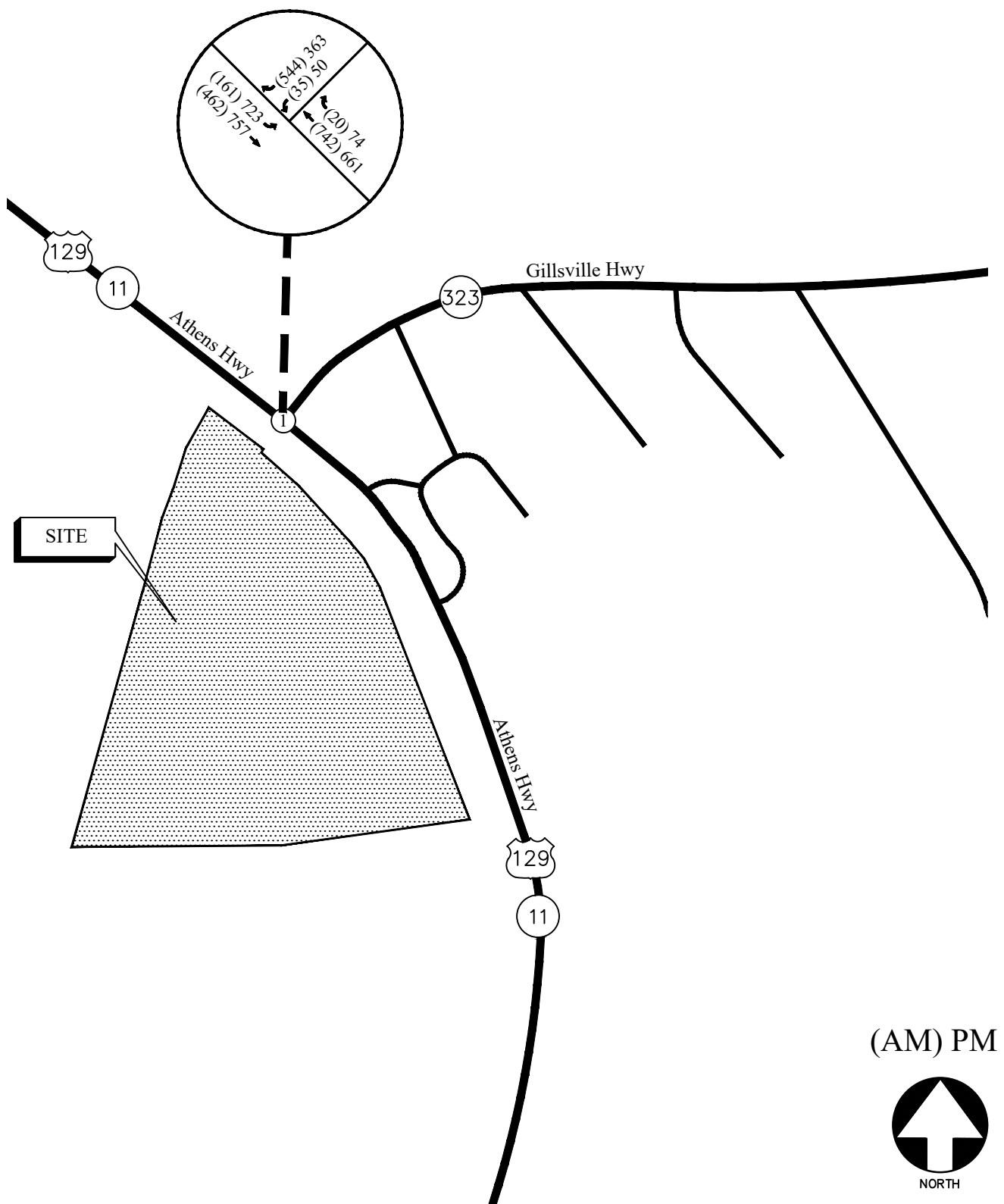
At the time of data collection, the driveways to the existing GDOT facilities on SR 11/US 129 (Athens Highway) were closed because of the construction activity happening on SR 11/US 129 (Athens Highway). SR 11/US 129 (Athens Highway) is being widened from a two-lane roadway to a median-divided four-lane roadway as part of GDOT project ID #122150. Hence, counts could not be collected at the intersection of SR 11/US 129 (Athens Highway) at GDOT facilities' southern driveway across which the proposed development will have its southern driveway aligned.

To account for the trips from the existing Athens Highway GDOT facilities, ITE trip generation (11th edition) was used to project traffic volumes based on the square footages of the GDOT facilities obtained from Google images using land use 730 – Government Office Building. The estimated trip generation for the Athens Highway GDOT facilities is shown in Table 3.

TABLE 3 — TRIP GENERATION (EXISTING GDOT FACILITIES ON ATHENS HIGHWAY)

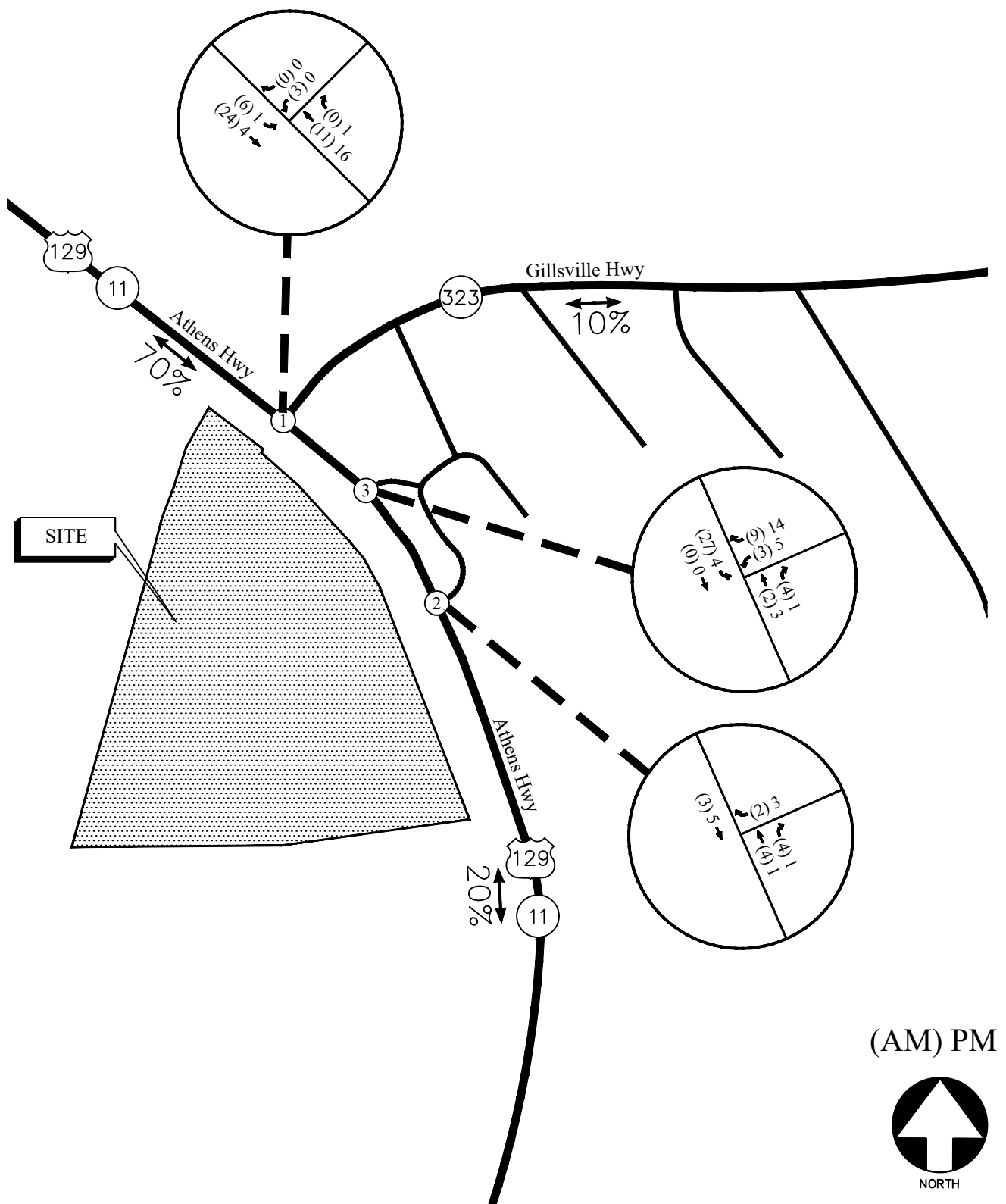
Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 730 – Government Office Building	17,500 sf	43	15	58	7	23	30	395

The existing GDOT facilities' trips in Table 3 were assigned to their driveways using the outer leg distribution described in section 5.2 – Trip Distribution and are shown in Figure 3. These trips were added to the existing volumes in Figure 2 to obtain the total existing volumes. These total existing peak hour volumes at the study intersections are shown in Figure 4 and were used in the existing traffic operations analysis.



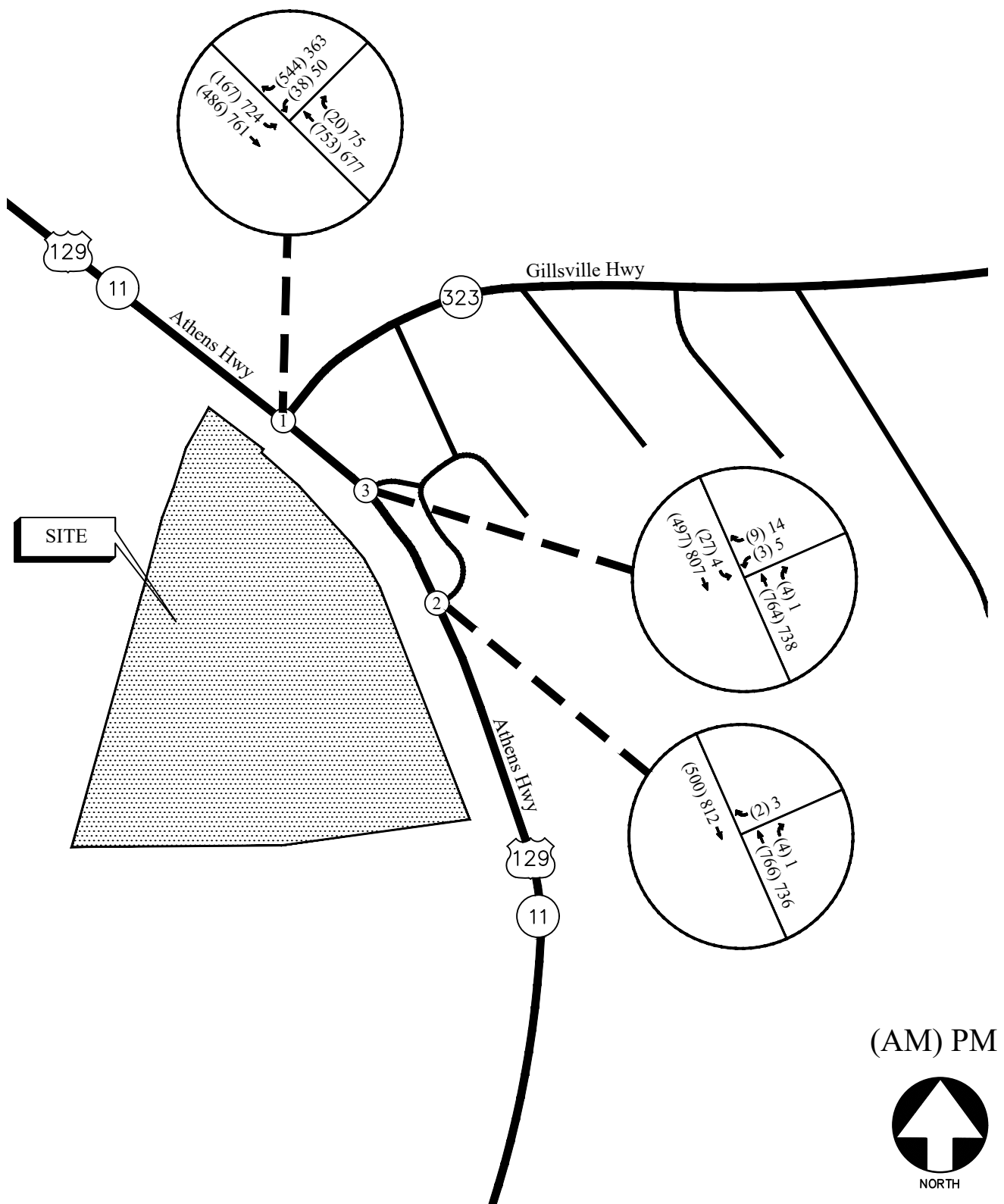
EXISTING WEEKDAY PEAK-HOUR VOLUMES
(WITHOUT ATHENS HIGHWAY GDOT OFFICES' TRIPS)

FIGURE 2
A&R Engineering Inc.



ESTIMATED ATHENS HIGHWAY GDOT OFFICES'
PEAK-HOUR VOLUMES (IN EXISTING CONDITIONS)

FIGURE 3
A&R Engineering Inc.



TOTAL EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 4

A&R Engineering Inc.

4.3 Existing Traffic Operations

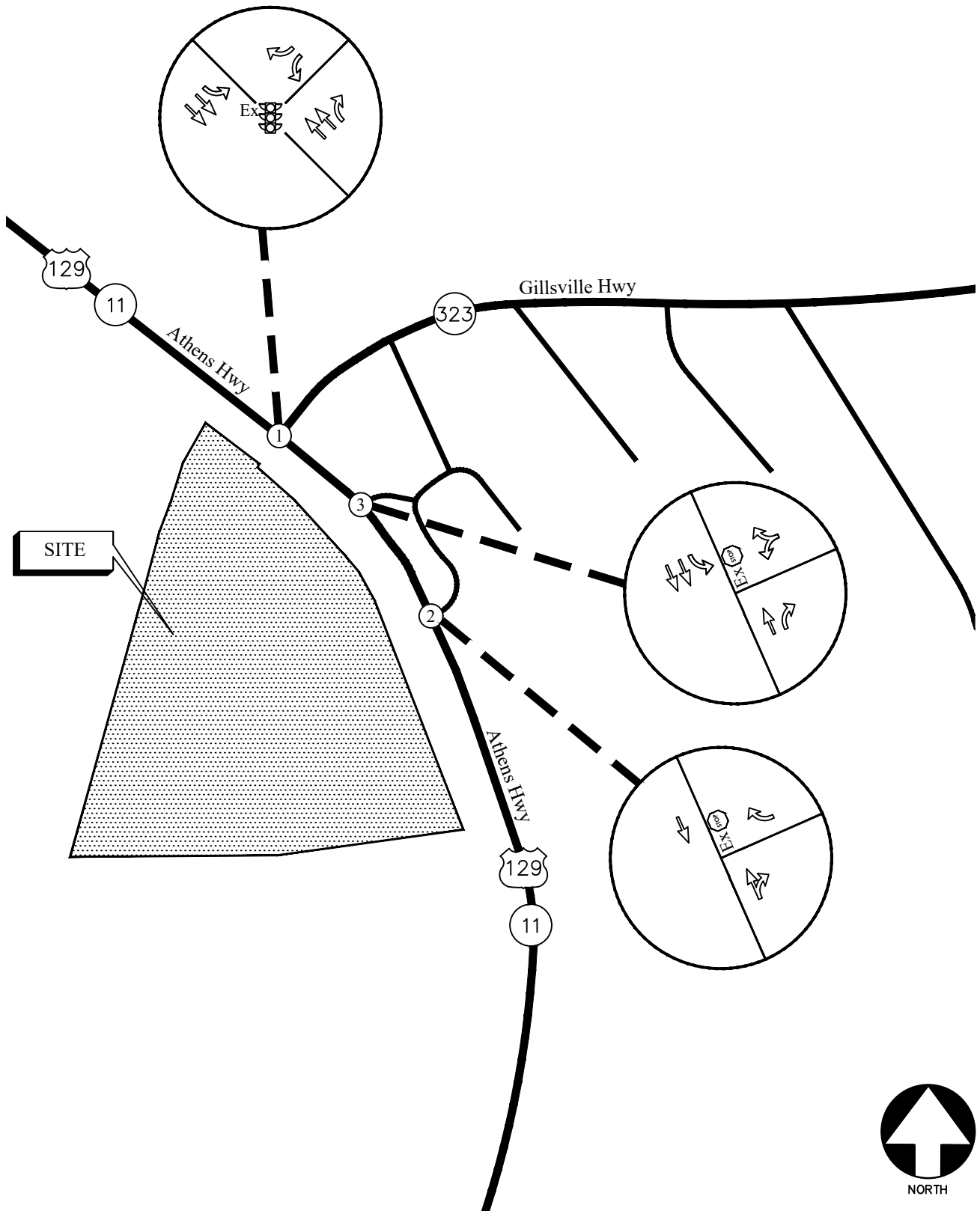
Existing 2021 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analyses are shown in Table 4. Note that the GDOT improvement project lane geometry changes are already completed in the existing condition. Construction is underway to install the median on the roadway.

TABLE 4 — EXISTING INTERSECTION OPERATIONS				
Intersection		Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	<u>SR 11/US 129 (Athens Highway) @ SR 323 (Gillsville Highway)</u>	Signalized		
	-Westbound Approach		<u>A (4.8)</u>	<u>B (11.9)</u>
	-Northbound Approach		E (61.2)	E (63.7)
	-Southbound Approach		A (4.6)	B (10.1)
2	<u>SR 11/US 129 (Athens Highway) @ GDOT Facilities' southern driveway</u>	Stop Controlled on EB and WB Approaches		
	-Westbound Approach		A (17.5)	C (17.5)
	-Southbound Left		A (0.0)	A (0.0)

The results of existing traffic operations analysis indicate that both the study intersections are operating at satisfactory levels of service in both the AM and PM peak hours. The existing traffic control and lane geometry for the intersections are shown in Figure 5.

LEGEND

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



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 5

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5.0 PROPOSED DEVELOPMENT

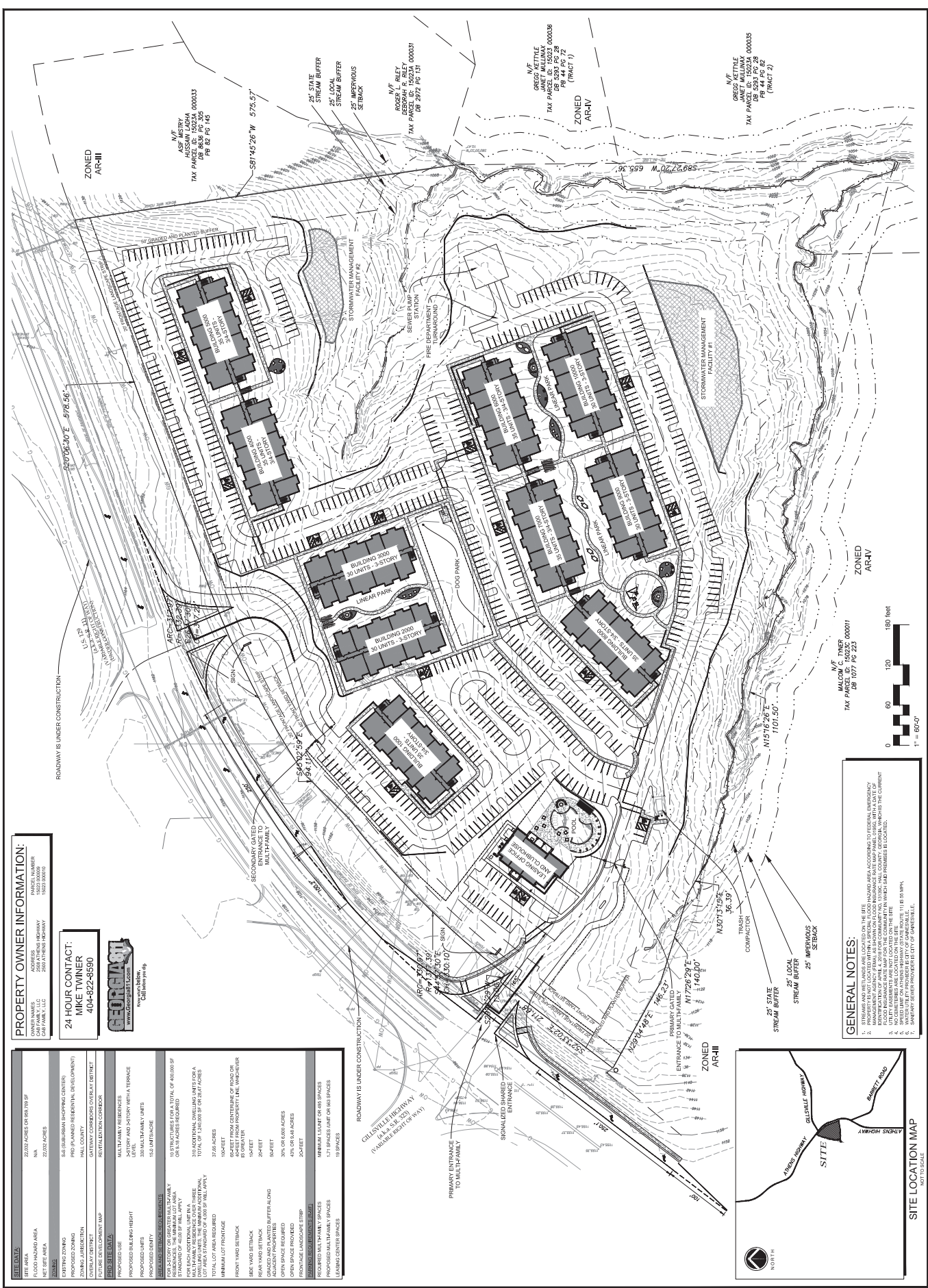
The proposed 330-unit multi-family residential development will be located at 2500 and 2508 Athens Highway (SR 11/US 129) in Hall County, Georgia.



The development proposes access at the following locations on SR 11/US 129 (Athens Highway):

- Site Driveway 1: Northern full-access driveway that will align with SR 323 (Gillsville Highway)
- Site Driveway 2: Southern full-access driveway that will align with the southern driveway to the existing GDOT facilities

A site plan is shown in Figure 6 and a graphic is shown above.



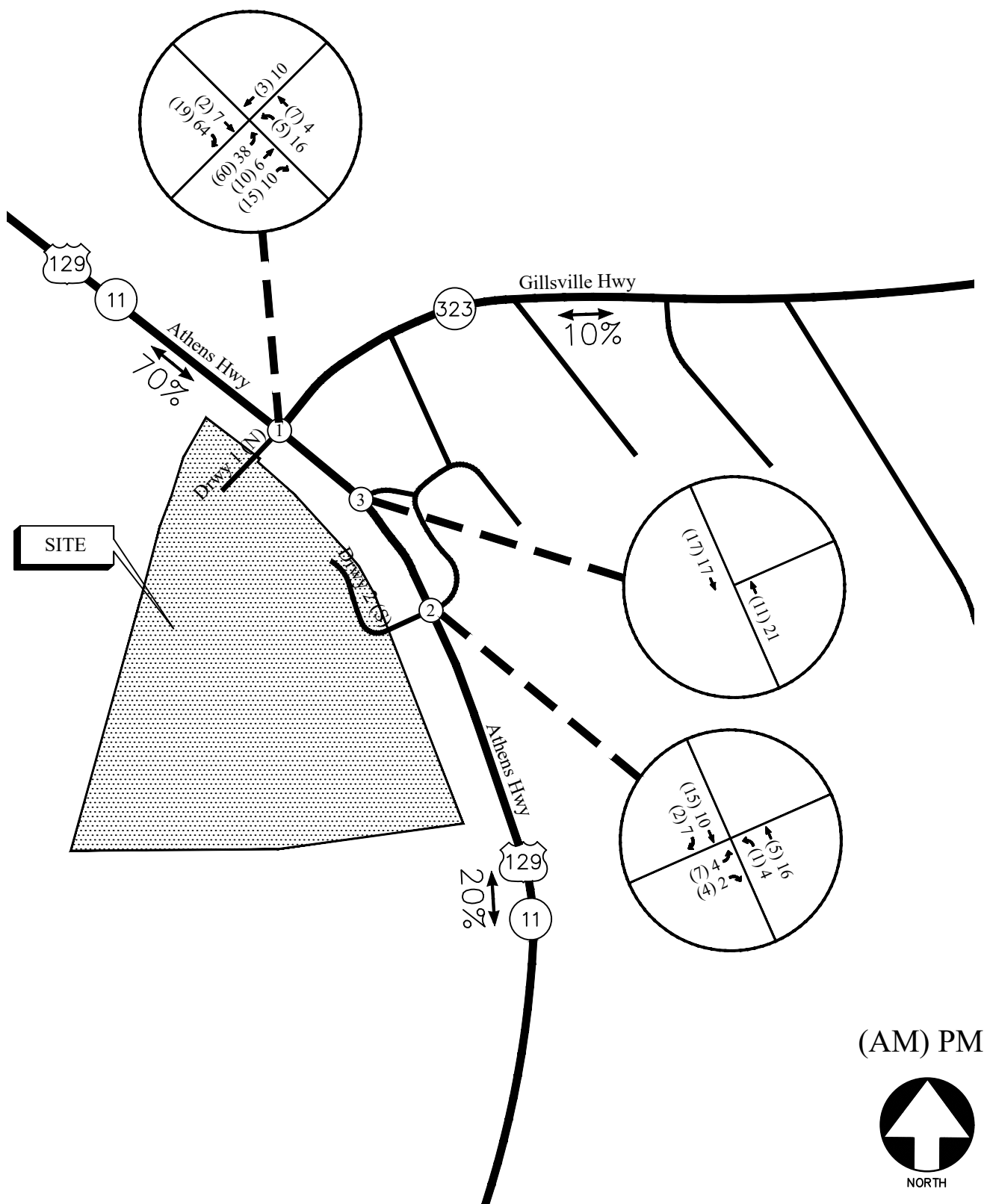
5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 11th 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 following ITE Land Use: 220 – *Multifamily Housing (Low-Rise) - Not Close to Rail Transit*. The calculated total trip generation for the proposed development is shown in Table 5.

TABLE 5 — TRIP GENERATION (PROPOSED RESIDENTIAL DEVELOPMENT)								
Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 220 – Multifamily Housing (Low-Rise) - Not Close to Rail Transit	330 units	30	95	125	102	60	162	2,191

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 5, 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 7.



TRIP DISTRIBUTION AND SITE-GENERATED
WEEKDAY PEAK HOUR VOLUMES

FIGURE 7
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6.0 FUTURE 2023 TRAFFIC ANALYSIS

The future 2023 traffic operations are analyzed 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 plus increases for annual growth of through traffic.

6.1.1 Annual Traffic Growth

In order 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 growth of approximately 1.2% in the area. This growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic.

6.1.2 Planned Improvement Projects

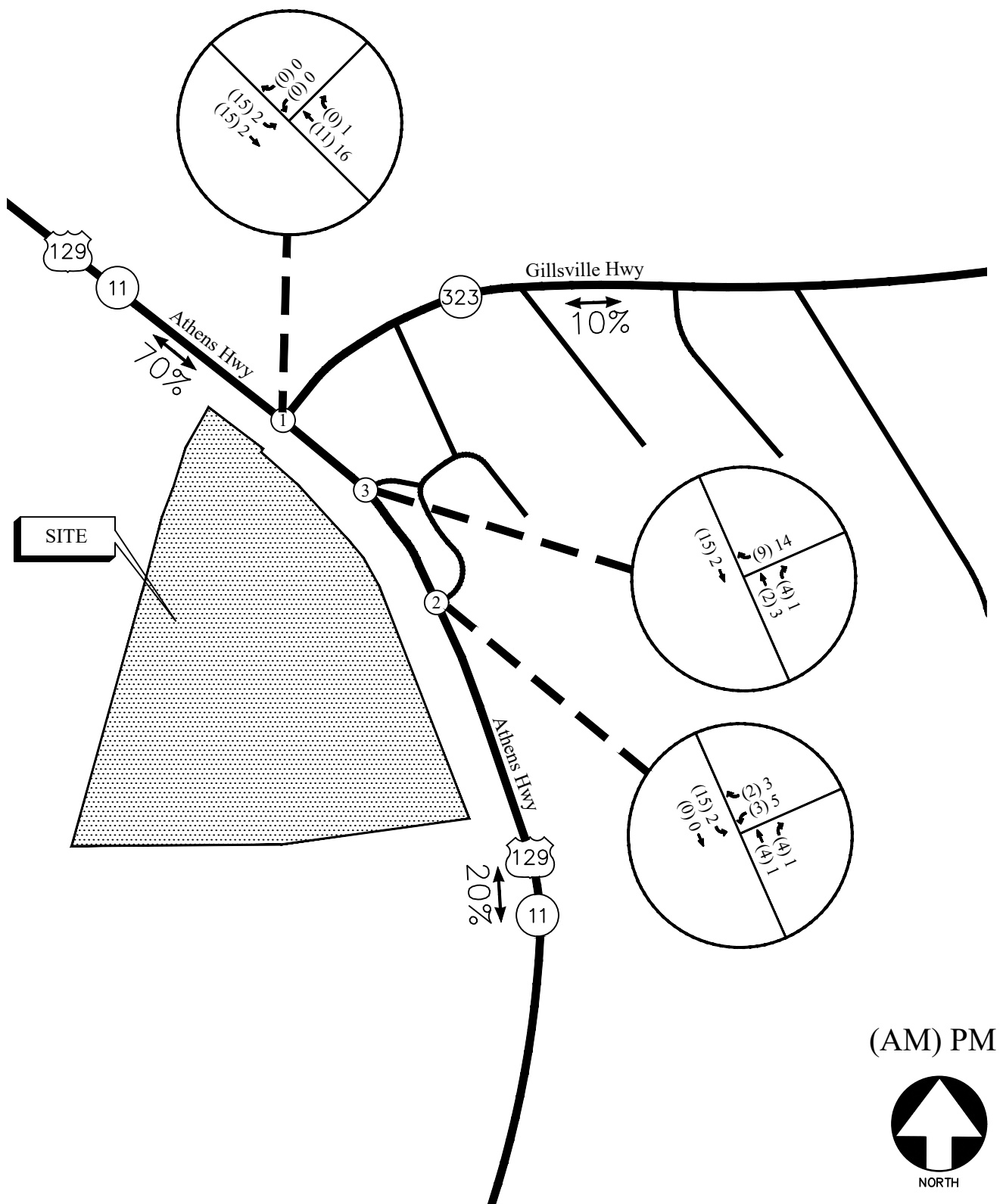
GDOT Project ID #122150 includes widening of SR 11/US 129 (Athens Highway) from two lanes to four lanes, median divided highway from the south of SR 323 (Gillsville Highway) to the town of Talmo in Jackson County. Construction began in 2016 and will be complete in 2022. The lane geometry changes at the study intersection have already been completed. Construction is underway to install the median.

As part of the project, the GDOT facilities’ northern driveway will be converted to a right-in/right-out driveway and a median break will be provided at the southern driveway allowing all turning movements at the southern driveway. We have re-assigned the GDOT facilities’ trips based on these changes for the future conditions. These trips are shown in Figure 8.

These trips were added to the existing volumes (Figure 1). The resulting total existing volumes were increased for 2 years using 1.2% growth factor to obtain the Future “No-Build” volumes. The Future “No-Build” volumes on the roadway are shown in Figure 9.

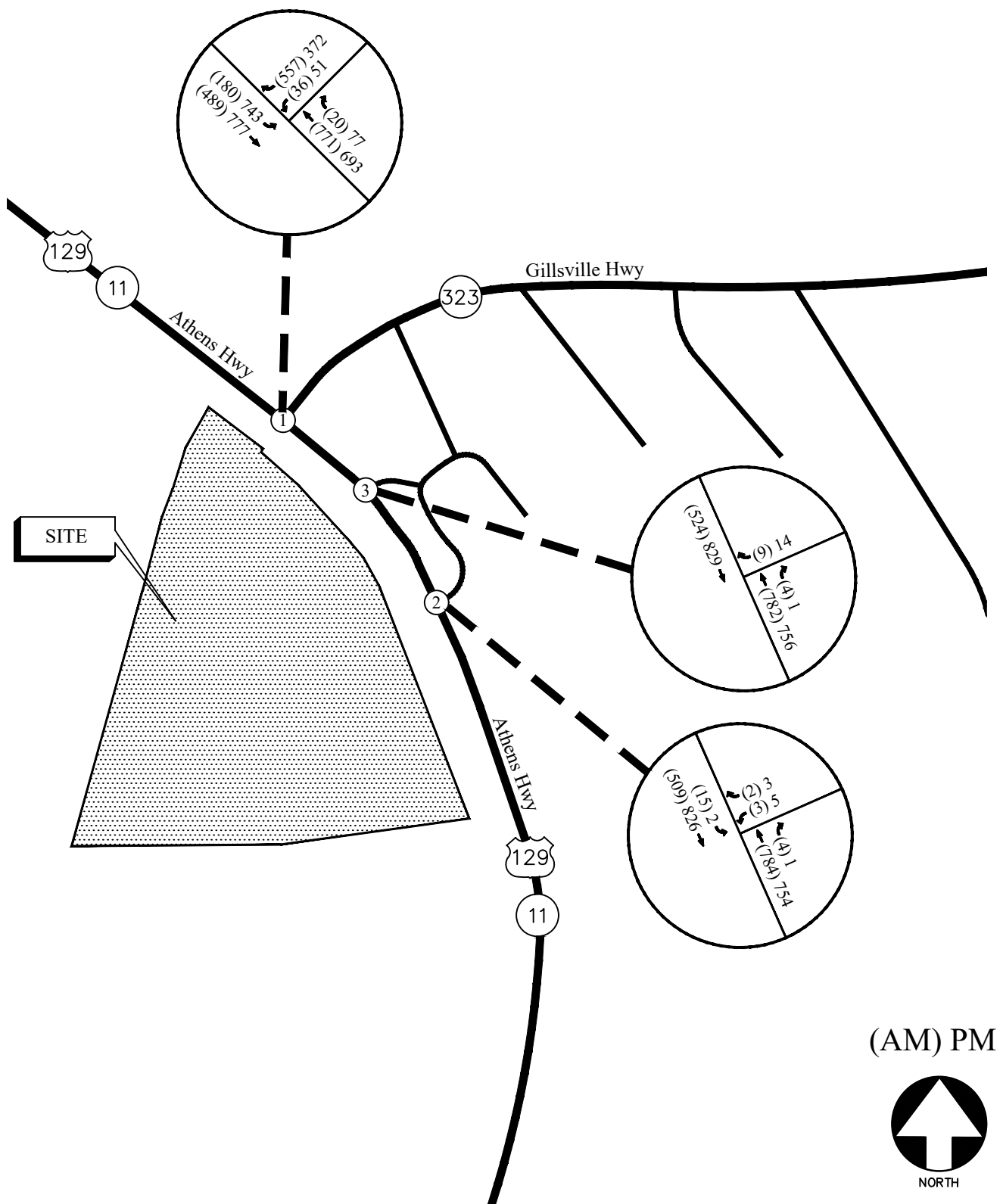
6.2 Future “Build” Conditions

The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 7) were added to base traffic volumes (Figure 9) to calculate the future traffic volumes after the construction of the development. These total future “Build” traffic volumes are shown in Figure 10.



ESTIMATED ATHENS HIGHWAY GDOT OFFICES'
PEAK-HOUR VOLUMES (IN FUTURE CONDITIONS)

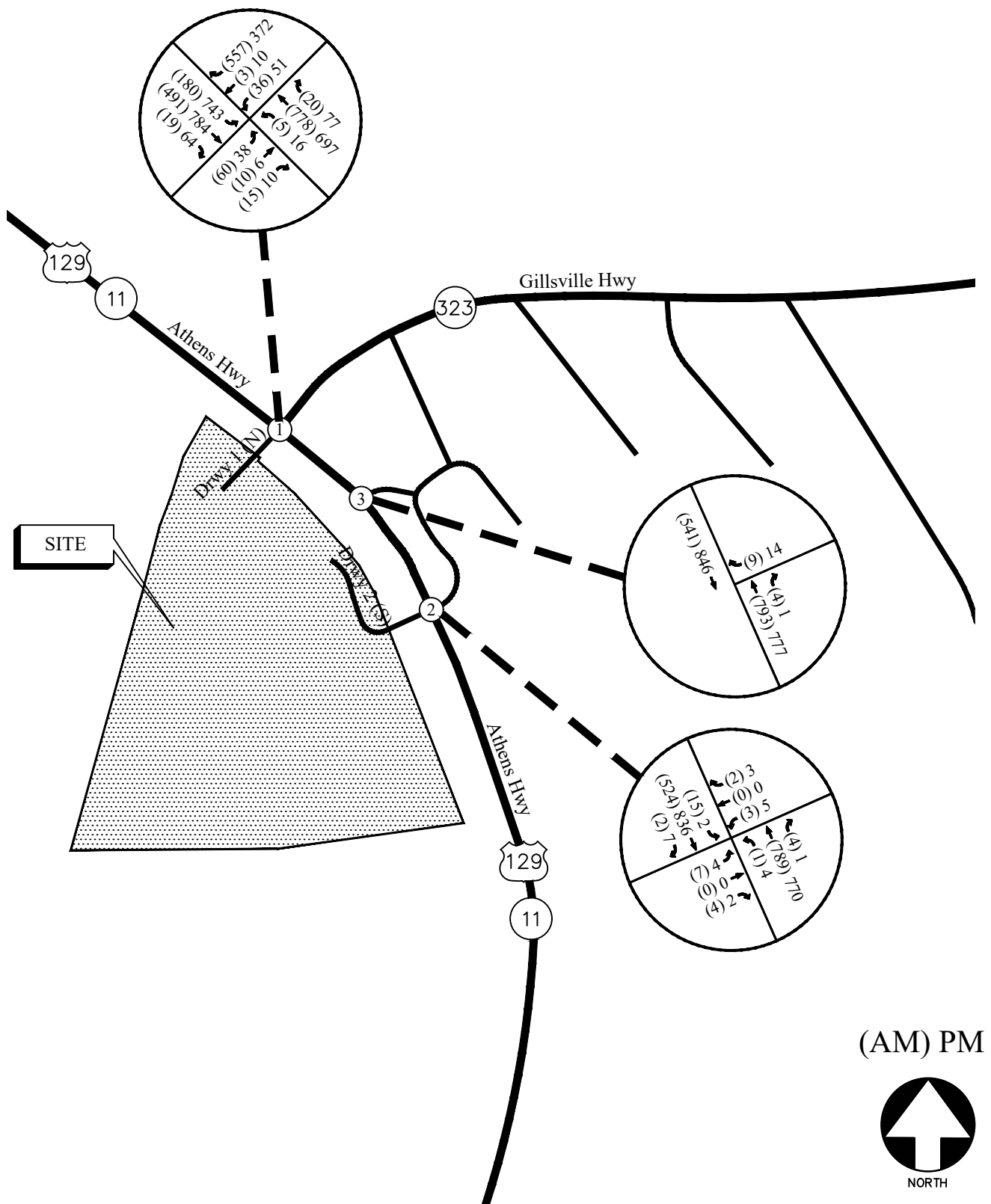
FIGURE 8
A&R Engineering Inc.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 9

A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 10

A&R Engineering Inc.

6.3 Auxiliary Lane Analysis

Included below are analyses for left-turn lanes and deceleration lanes for all site driveways per GDOT standards. The analyses below are based off the trip distribution included in Section 5.2. According to the trip distribution, the 24-hour two-way volume entering and exiting the site is 2,191 vehicles.

6.3.1.1 Left Turn Lane Analysis

Left turn lanes are provided in the GDOT improvement project at both site driveways on SR11/US 129 (Athens Highway). The southern driveway (driveway 2) is included as a u-turn lane and is recommended to be re-stripped as a left turn lane.

6.3.1.2 Deceleration Turn Lane Analysis

For two lane roadways with AADT's less than 6,000 vehicles and a posted speed limit of 50 mph, the daily site generated traffic right-turn movements threshold to warrant a deceleration lane is 150 right turning vehicles a day. The projected right-turn volumes per day for each driveway is included in Table 7.

TABLE 7 — GDOT REQUIREMENTS FOR DECELERATION LANES				
Intersection	Right-turn traffic (% total entering)	Right-turn Volume (vehicles/day)	Roadway Speed/ # lanes / ADT	GDOT Threshold (vehicles/day)
SR 11/US 129 (Athens Hwy) @ SR 323 (Gillsville Hwy) / Site Driveway 1 (N)	63%	690 $(\text{total trips}) \div 2 \times 0.63 =$ $(2191) \div 2 \times 0.63 = 690$	55 mph / 4-Lane / > 10,000	50
SR 11/US 129 (Athens Hwy) @ GDOT Facilities' Southern Driveway / Site Driveway 2 (S)	7%	77 $(\text{total trips}) \div 2 \times 0.07 =$ $(2191) \div 2 \times 0.07 = 77$	55 mph / 4-Lane / > 10,000	50

Deceleration lanes are warranted at Site Driveway 1 and Site Driveway 2 on SR 11/US 129 (Athens Highway) per GDOT standards.

6.4 Future Traffic Operations

The future “No-Build” and “Build” traffic operations were analyzed using the volumes in Figure 9 and Figure 10, respectively. The results of the analysis are shown in Table 8 below.

TABLE 8 — FUTURE INTERSECTION OPERATIONS					
Intersection		Future Condition: LOS (Delay)			
		NO-BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
1	<u>SR 11/US 129 (Athens Highway) @ SR 323 (Gillsville Highway) / Site Driveway 1 (North)</u>	<u>A (4.6)</u>	<u>B (14.5)</u>	<u>A (7.9)</u>	<u>B (16.4)</u>
	-Eastbound Approach	-	-	E (55.1)	D (54.4)
	-Westbound Approach	E (71.7)	E (78.7)	D (57.3)	E (57.0)
	-Northbound Approach	A (4.0)	B (10.6)	A (5.4)	B (14.5)
	-Southbound Approach	A (1.7)	B (14.1)	A (2.5)	B (14.4)
2	<u>SR 11/US 129 (Athens Highway) @ GDOT Facilities' southern driveway / Site Driveway 2 (South)</u>				
	-Eastbound Approach	-	-	C (18.0)	D (27.6)
	-Westbound Approach	C (19.5)	B (20.2)	C (20.8)	D (25.6)
	-Northbound Left	-	-	A (8.6)	A (9.9)
	-Southbound Left	A (9.5)	A (9.5)	A (0.3)	A (9.6)

The results of the “No-Build” traffic operations analysis show the signalized intersection of Athens Highway and Gillsville Highway will operate at a level-of-service “B” or better during the AM and PM peak hours. After addition of the site generated volumes, the intersection will continue to operate at a level-of-service “B” or better in the “Build” scenario analysis during the AM and PM peak hour. Therefore, the impact of site generated traffic on traffic operations at the study intersections is minimal. Recommendations for future traffic control and lane geometry is shown in Figure 11.

The following site mitigation improvements were accounted for in the Build Scenario Synchro model and are recommended.

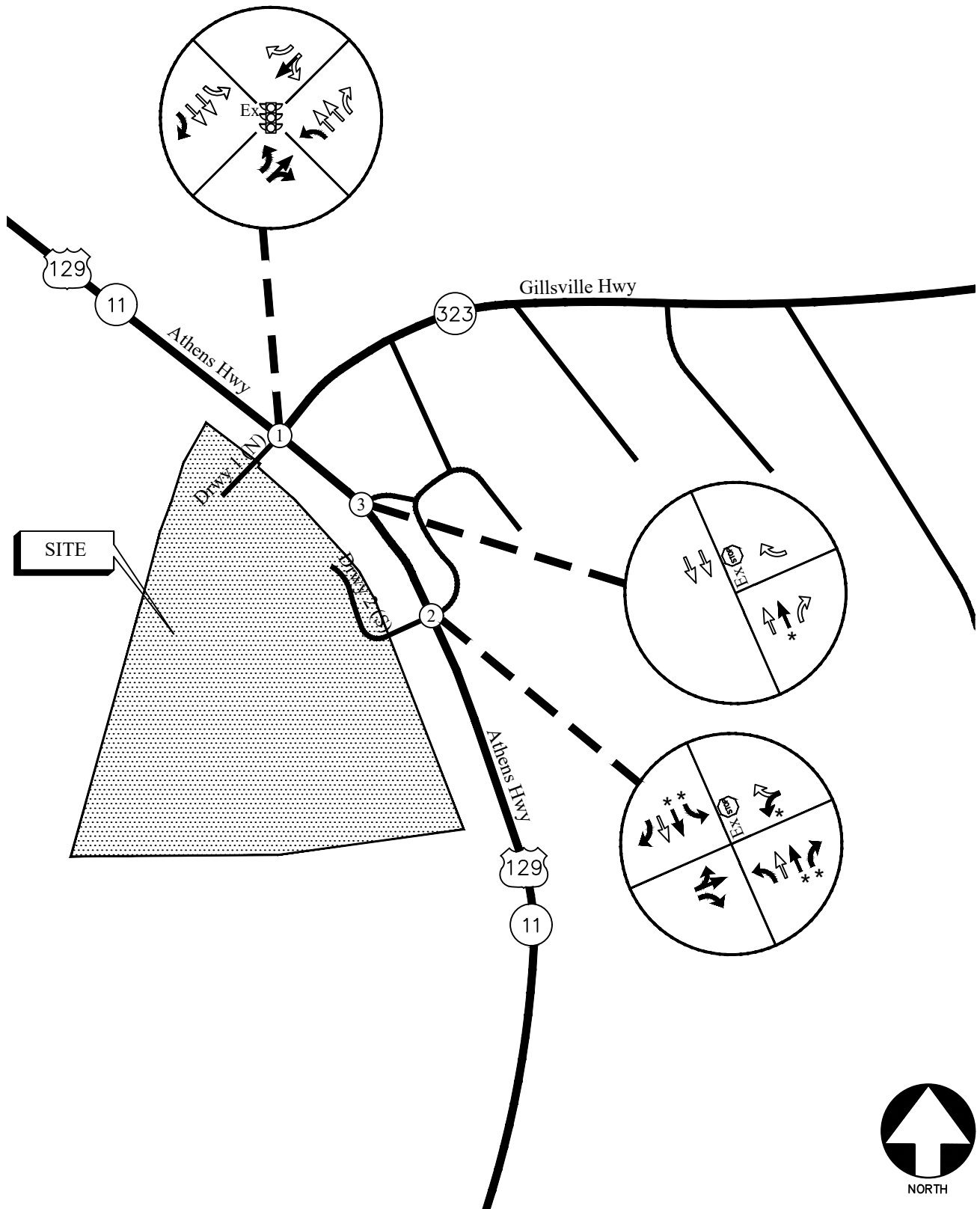
Site Mitigation Improvement Recommendations:

- **SR 11/US 129 (Athens Highway) and SR 323 (Gillsville Highway) / Site Driveway 1 (Northern)**
 - Driveway approach is to be the eastbound approach and 4th leg to the existing signalized intersection.
 - Driveway approach is to include a dedicated left turn lane and a shared through/right turn lane.
 - Addition of a westbound left turn lane on Gillsville Highway at the intersection, existing asphalt is available to restripe a left turn lane.
 - Restriping of existing westbound left turn lane to a through lane on Gillsville Highway at the intersection.
 - Eastbound left turn is to include a permissive phase only.
 - A southbound deceleration lane is recommended on Athens Highway at Driveway 1.

- SR 11/US 129 (Athens Highway) and GDOT Facility southern driveway / Site Driveway 2 (Southern)
 - The GDOT improvement plans include a northbound u-turn lane on Athens Highway. It is recommended that the u-turn lane is restriped to a left turn lane.
 - A southbound deceleration lane is recommended on Athens Highway at Driveway 2.
 - Site Driveway 2 approach is to include a shared left-turn through lane and a channelized right turn lane.
 - Driveway approach is to be stop-sign controlled.

LEGEND

- | | | | |
|--|--------------------------|--|--------------------------|
| Ex  | Existing Signed Approach |  STOP | Proposed Signed Approach |
|  | Existing Lane Geometry |  | Proposed Lane Geometry |
| Ex  | Existing Traffic Signal | * | GDOT Improvement |



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 11

A&R Engineering
Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine the traffic impact that will result from the proposed 330-unit multi-family residential development that will be located at 2500 and 2508 Athens Highway (SR 11/US 129) in Hall County, Georgia. The traffic analysis evaluated the current operations compared to the future conditions with the traffic generated by the development.

The development proposes access at the following locations on SR 11/US 129 (Athens Highway):

- Site Driveway 1: Northern full-access driveway that will align with SR 323 (Gillsville Highway)
- Site Driveway 2: Southern full-access driveway that will align with the southern driveway to the existing GDOT facilities

This study included the evaluation of traffic operations for the AM and PM peak hours at the intersections of:

- SR 11/US 129 (Athens Highway) at SR 323 (Gillsville Highway)/Proposed Site Driveway 1
- SR 11/US 129 (Athens Highway) at GDOT Facilities' southern driveway/Proposed Site Driveway 2

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic. The results of the "No-Build" traffic operations analysis show that the study intersection of SR 11/US 129 (Athens Highway) as SR 323 (Gillsville Highway) will operate at level-of-service "A" during the AM peak hour and "B" during the PM peak hour. After site generated traffic is added to the study network, the level-of-service will continue to be "A" during the AM peak hour and "B" during the PM peak hour. Therefore, the impact of site generated traffic on traffic operations at the study intersections is minimal.

7.1 Site Mitigation Improvements and Site Access Configuration Recommendations

- SR 11/US 129 (Athens Highway) and SR 323 (Gillsville Highway) / Site Driveway 1 (Northern)
 - Driveway approach is to be the eastbound approach and 4th leg to the existing signalized intersection
 - Driveway approach is to include a dedicated left turn lane and a shared through/right turn lane
 - Addition of a westbound left turn lane on Gillsville Highway at the intersection, existing asphalt is available to restripe a left turn lane
 - Restriping of existing westbound left turn lane to a through lane on Gillsville Highway at the intersection
 - Eastbound left turn is to include a permissive phase only
 - A southbound deceleration lane is recommended on Athens Highway at Driveway 1

- SR 11/US 129 (Athens Highway) and GDOT Facility southern driveway / Site Driveway 2 (Southern)
 - The GDOT improvement plans include a northbound u-turn lane on Athens Highway. It is recommended that the u-turn lane is restriped to a left turn lane
 - A southbound deceleration lane is recommended on Athens Highway at Driveway 2
 - Driveway 2 approach is to include a shared left-turn through lane and a channelized right turn lane
 - Driveway approach is to be stop-sign controlled

It is recommended that adequate sight distance is verified at the site driveways per AASHTO standards during driveway design for both driveways.

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

Gillsville Hwy SR 323 @ Athens Hwy -
SR 11
7-9 am | 4-6 pm

File Name : 20210328
Site Code : 20210328
Start Date : 10/12/2021
Page No : 1

Groups Printed- Cars,Buses & Trucks

Start Time	SR 11(Athens Hwy) Northbound				SR 11(Athens Hwy) Southbound				Eastbound				SR 323(Gillsville Hwy) 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	146	4	150	33	120	0	153	0	0	0	0	10	0	120	130	433
07:15 AM	0	197	6	203	39	125	0	164	0	0	0	0	7	0	118	125	492
07:30 AM	0	219	5	224	41	130	0	171	0	0	0	0	7	0	177	184	579
07:45 AM	0	180	5	185	48	87	0	135	0	0	0	0	11	0	129	140	460
Total	0	742	20	762	161	462	0	623	0	0	0	0	35	0	544	579	1964
08:00 AM	0	166	7	173	34	103	0	137	0	0	0	0	6	0	85	91	401
08:15 AM	0	156	5	161	37	86	0	123	0	0	0	0	10	0	105	115	399
08:30 AM	0	138	7	145	28	74	0	102	0	0	0	0	4	0	98	102	349
08:45 AM	0	139	1	140	33	83	0	116	0	0	0	0	6	0	91	97	353
Total	0	599	20	619	132	346	0	478	0	0	0	0	26	0	379	405	1502
*** BREAK ***																	
04:00 PM	0	135	15	150	138	164	0	302	0	0	0	0	15	0	101	116	568
04:15 PM	0	128	16	144	152	187	0	339	0	0	0	0	11	0	98	109	592
04:30 PM	0	137	16	153	179	225	0	404	0	0	0	0	5	0	100	105	662
04:45 PM	0	146	23	169	146	204	0	350	0	0	0	0	8	0	86	94	613
Total	0	546	70	616	615	780	0	1395	0	0	0	0	39	0	385	424	2435
05:00 PM	0	159	19	178	166	219	0	385	0	0	0	0	9	0	99	108	671
05:15 PM	0	164	12	176	190	215	0	405	0	0	0	0	6	0	88	94	675
05:30 PM	0	172	23	195	200	166	0	366	0	0	0	0	13	0	92	105	666
05:45 PM	0	166	20	186	167	157	0	324	0	0	0	0	22	0	84	106	616
Total	0	661	74	735	723	757	0	1480	0	0	0	0	50	0	363	413	2628
Grand Total	0	2548	184	2732	1631	2345	0	3976	0	0	0	0	150	0	1671	1821	8529
Apprch %	0	93.3	6.7		41	59	0		0	0	0		8.2	0	91.8		
Total %	0	29.9	2.2	32	19.1	27.5	0	46.6	0	0	0	0	1.8	0	19.6	21.4	

A & R Engineering, Inc.

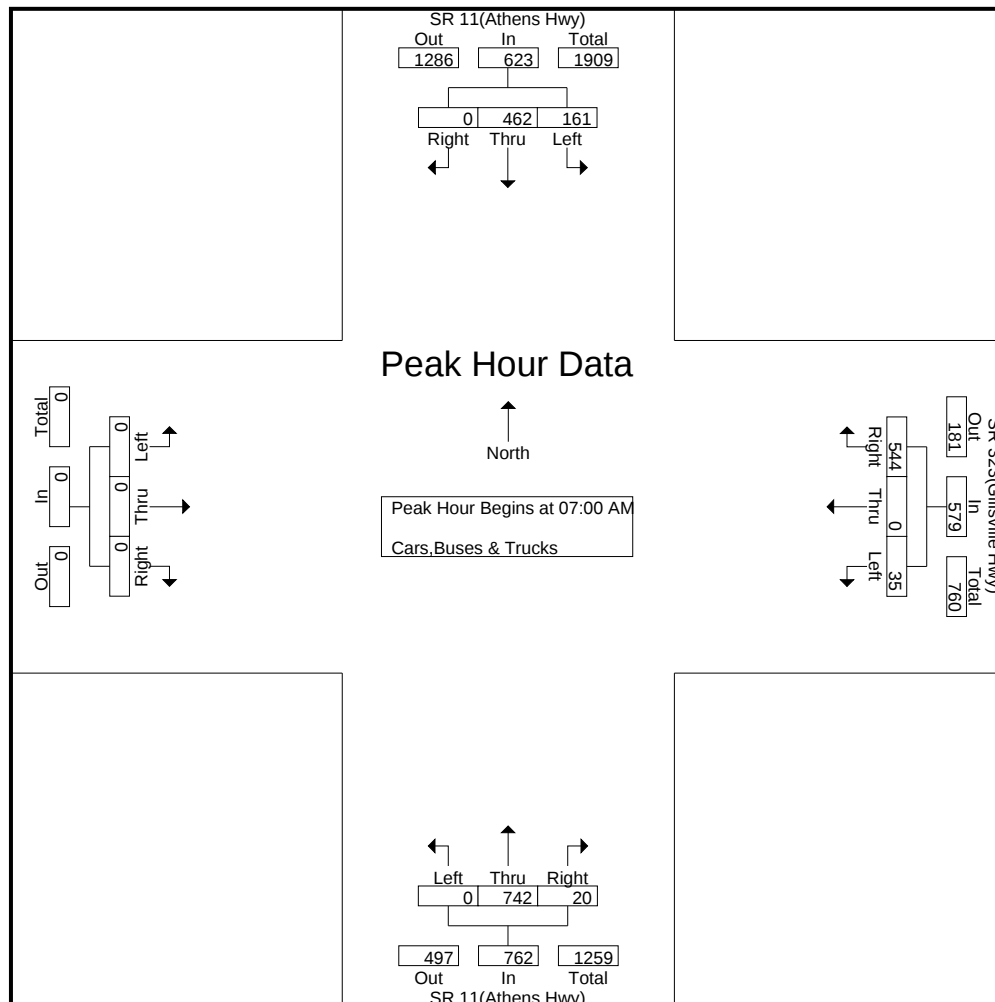
2160 Kingston Court, Suite 'O'
Marietta, GA 30067

TMC DATA

Gillsville Hwy SR 323 @ Athens Hwy -
SR 11
7-9 am | 4-6 pm

File Name : 20210328
Site Code : 20210328
Start Date : 10/12/2021
Page No : 2

	SR 11(Athens Hwy) Northbound				SR 11(Athens Hwy) Southbound				Eastbound				SR 323(Gillsville Hwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	146	4	150	33	120	0	153	0	0	0	0	10	0	120	130	433
07:15 AM	0	197	6	203	39	125	0	164	0	0	0	0	7	0	118	125	492
07:30 AM	0	219	5	224	41	130	0	171	0	0	0	0	7	0	177	184	579
07:45 AM	0	180	5	185	48	87	0	135	0	0	0	0	11	0	129	140	460
Total Volume	0	742	20	762	161	462	0	623	0	0	0	0	35	0	544	579	1964
% App. Total	0	97.4	2.6		25.8	74.2	0		0	0	0		6	0	94		
PHF	.000	.847	.833	.850	.839	.888	.000	.911	.000	.000	.000	.000	.795	.000	.768	.787	.848



A & R Engineering, Inc.

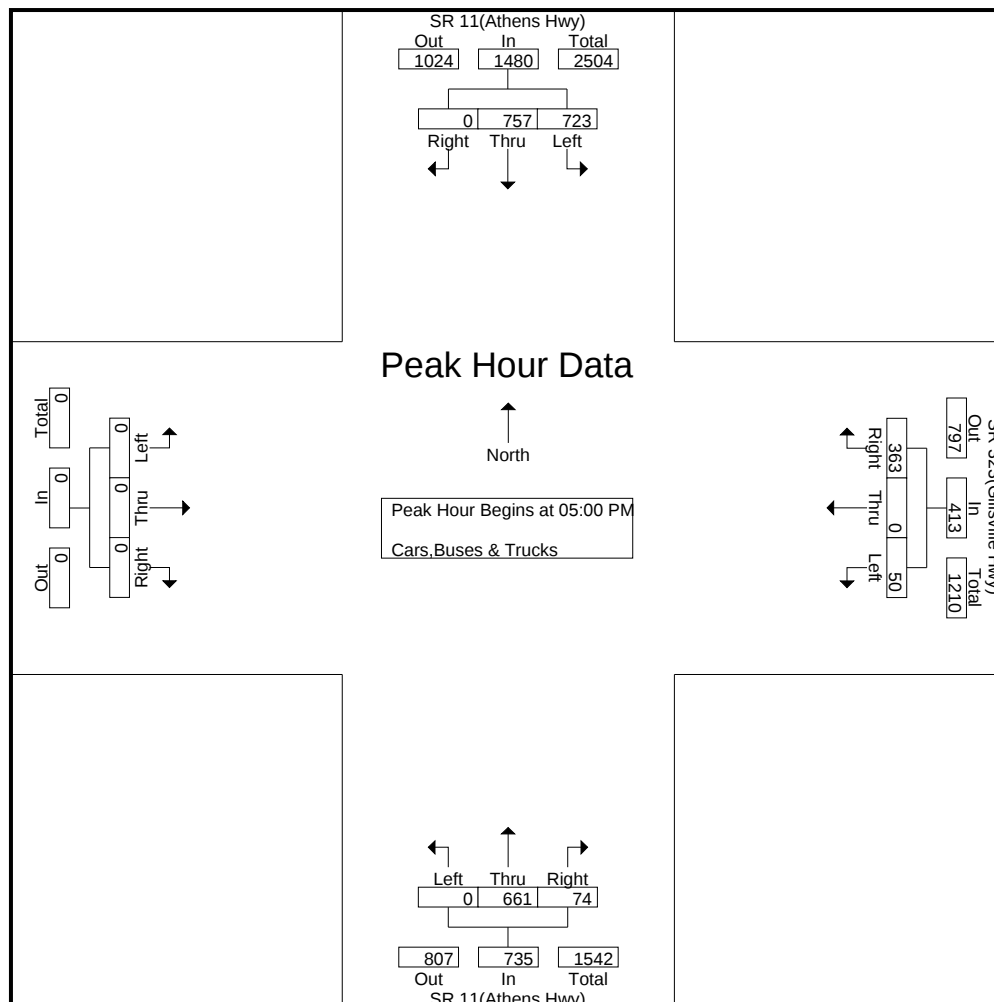
2160 Kingston Court, Suite 'O'
Marietta, GA 30067

TMC DATA

Gillsville Hwy SR 323 @ Athens Hwy -
SR 11
7-9 am | 4-6 pm

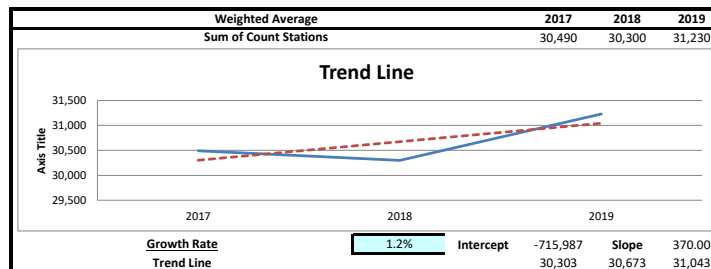
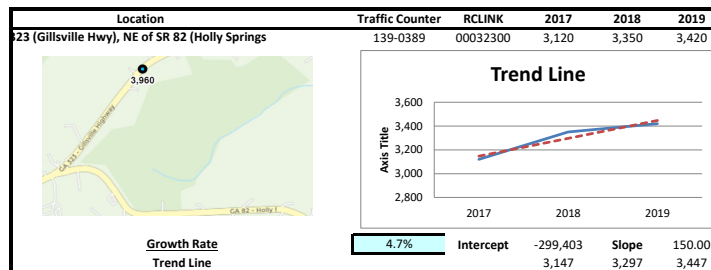
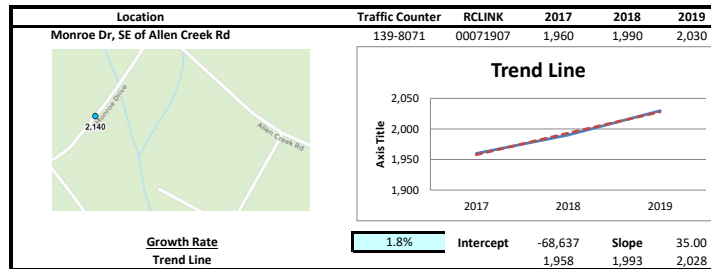
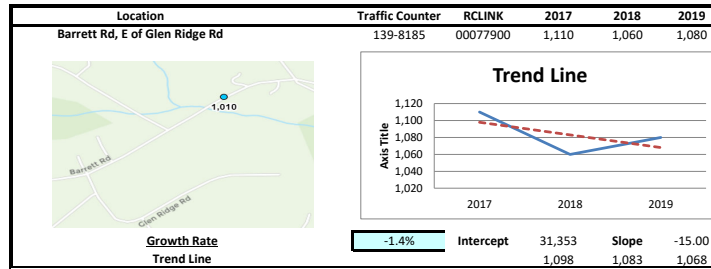
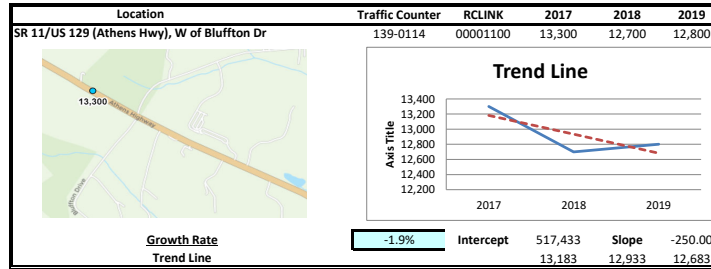
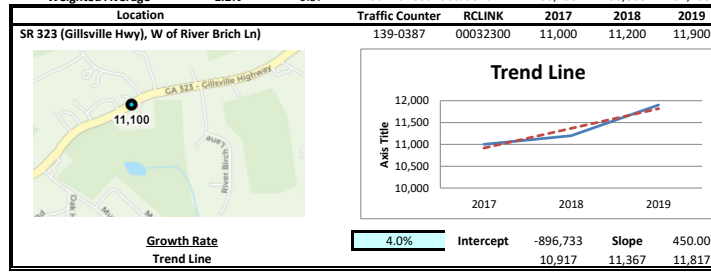
File Name : 20210328
Site Code : 20210328
Start Date : 10/12/2021
Page No : 3

	SR 11(Athens Hwy) Northbound				SR 11(Athens Hwy) Southbound				Eastbound				SR 323(Gillsville Hwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. 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	0	159	19	178	166	219	0	385	0	0	0	0	9	0	99	108	671
05:15 PM	0	164	12	176	190	215	0	405	0	0	0	0	6	0	88	94	675
05:30 PM	0	172	23	195	200	166	0	366	0	0	0	0	13	0	92	105	666
05:45 PM	0	166	20	186	167	157	0	324	0	0	0	0	22	0	84	106	616
Total Volume	0	661	74	735	723	757	0	1480	0	0	0	0	50	0	363	413	2628
% App. Total	0	89.9	10.1		48.9	51.1	0		0	0	0		12.1	0	87.9		
PHF	.000	.961	.804	.942	.904	.864	.000	.914	.000	.000	.000	.000	.568	.000	.917	.956	.973



LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
SR 323 (Gillsville Hwy), W of Riv	4.0%	0.91	139-0387	00032300	11,000	11,200	11,900
SR 11/US 129 (Athens Hwy), W	-1.9%	0.60	139-0114	00001100	13,300	12,700	12,800
Barrett Rd, E of Glen Ridge Rd	-1.4%	0.36	139-8185	00077900	1,110	1,060	1,080
Monroe Dr, SE of Allen Creek Rd	1.8%	0.99	139-8071	00071907	1,960	1,990	2,030
SR 323 (Gillsville Hwy), NE of SR	4.7%	0.91	139-0389	00032300	3,120	3,350	3,420
Weighted Average	1.2%	0.57	Sum of Count Stations =		30,490	30,300	31,230



EXISTING INTERSECTION ANALYSIS

HCM 6th Signalized Intersection Summary
 1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1a. Existing AM
 10/29/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	38	544	753	20	167	486
Future Volume (veh/h)	38	544	753	20	167	486
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	0	886	0	196	572
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	64		2664		579	3036
Arrive On Green	0.04	0.00	0.75	0.00	0.05	0.85
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	45	0	886	0	196	572
Grp Sat Flow(s), veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.5	0.0	8.3	0.0	2.2	2.8
Cycle Q Clear(g_c), s	2.5	0.0	8.3	0.0	2.2	2.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	64		2664		579	3036
V/C Ratio(X)	0.71		0.33		0.34	0.19
Avail Cap(c_a), veh/h	686		2664		677	3036
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	0.0	4.2	0.0	2.6	1.3
Incr Delay (d2), s/veh	13.5	0.0	0.3	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.9	0.0	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	61.2	0.0	4.5	0.0	3.0	1.4
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	45	A	886	A		768
Approach Delay, s/veh	61.2		4.5			1.8
Approach LOS	E		A			A
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.5	80.5		9.1		90.9
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5
Max Green Setting (Gmax), s	10.5	34.5		38.5		50.5
Max Q Clear Time (g_c+I1), s	4.2	10.3		4.5		4.8
Green Ext Time (p_c), s	0.2	10.4		0.1		7.6
Intersection Summary						
HCM 6th Ctrl Delay			4.8			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1a. Existing AM
10/29/2021

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	38	544	753	20	167	486			
Future Volume (veh/h)	38	544	753	20	167	486			
Number	7	14	2	12	1	6			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00				
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No		No			No			
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	45	0	886	0	196	572			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	64		2664		579	3036			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.04	0.00	0.75	0.00	0.05	0.85			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	61.2	0.0	4.5	0.0	3.0	1.4			
Ln Grp LOS	E		A		A	A			
Approach Vol, veh/h	45		886			768			
Approach Delay, s/veh	61.2		4.5			1.8			
Approach LOS	E		A			A			
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		1	2		4		6		
Case No		1.2	7.0		9.0		4.0		
Phs Duration (G+Y+Rc), s		10.5	80.5		9.1		90.9		
Change Period (Y+Rc), s		5.5	5.5		5.5		5.5		
Max Green (Gmax), s		10.5	34.5		38.5		50.5		
Max Allow Headway (MAH), s		3.6	6.7		3.7		6.7		
Max Q Clear (g_c+1), s		4.2	10.3		4.5		4.8		
Green Ext Time (g_e), s		0.2	10.4		0.1		7.6		
Prob of Phs Call (p_c)		1.00	1.00		0.71		1.00		
Prob of Max Out (p_x)		0.11	0.26		0.00		0.00		
Left-Turn Movement Data									
Assigned Mvmt		1	5		7				
Mvmt Sat Flow, veh/h		1781	0		1781				
Through Movement Data									
Assigned Mvmt			2		4		6		
Mvmt Sat Flow, veh/h			3647		0		3647		
Right-Turn Movement Data									
Assigned Mvmt			12		14		16		
Mvmt Sat Flow, veh/h			1585		1585		0		
Left Lane Group Data									
Assigned Mvmt		1	5	0	7	0	0	0	0
Lane Assignment		L (Pr/Pm)			L				

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1a. Existing AM

10/29/2021

Lanes in Grp	1	0	0	1	0	0	0	0
Grp Vol (v), veh/h	196	0	0	45	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	0	1781	0	0	0	0
Q Serve Time (g_s), s	2.2	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	2.2	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	627	0	0	1781	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	66.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	579	0	0	64	0	0	0	0
V/C Ratio (X)	0.34	0.00	0.00	0.71	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	677	0	0	686	0	0	0	0
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	2.6	0.0	0.0	47.7	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	13.5	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	3.0	0.0	0.0	61.2	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	0.0	1.1	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment	T			T				
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	886	0	0	0	572	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	8.3	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	8.3	0.0	0.0	0.0	2.8	0.0	0.0
Lane Grp Cap (c), veh/h	0	2664	0	0	0	3036	0	0
V/C Ratio (X)	0.00	0.33	0.00	0.00	0.00	0.19	0.00	0.00
Avail Cap (c_a), veh/h	0	2664	0	0	0	3036	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	4.2	0.0	0.0	0.0	1.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.5	0.0	0.0	0.0	1.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1a. Existing AM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	1.9	0.0	0.0	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment	R		R					
Lanes in Grp	0	1	0	1	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1188	0	57	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1188	0	610	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	766	4	0	500
Future Vol, veh/h	0	2	766	4	0	500
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	833	4	0	543
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1378	835	0	0	837	0
Stage 1	835	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	160	368	-	-	797	-
Stage 1	426	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	160	368	-	-	797	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.8	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	368	797	-	
HCM Lane V/C Ratio	-	-	0.006	-	-	
HCM Control Delay (s)	-	-	14.8	0	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	9	764	4	27	497
Future Vol, veh/h	3	9	764	4	27	497
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	-	-	195	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	10	830	4	29	540
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1158	830	0	0	834	0
Stage 1	830	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	203	369	-	-	797	-
Stage 1	427	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	196	369	-	-	797	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	17.5	0	0.5			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	302	797	-	
HCM Lane V/C Ratio	-	-	0.043	0.037	-	
HCM Control Delay (s)	-	-	17.5	9.7	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

HCM 6th Signalized Intersection Summary
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1b. Existing PM
10/29/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	363	677	75	724	761
Future Volume (veh/h)	50	363	677	75	724	761
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	0	698	0	746	785
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	67		2343		785	3093
Arrive On Green	0.04	0.00	0.66	0.00	0.17	0.87
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	52	0	698	0	746	785
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.5	0.0	10.0	0.0	15.3	4.4
Cycle Q Clear(g_c), s	3.5	0.0	10.0	0.0	15.3	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	67		2343		785	3093
V/C Ratio(X)	0.77		0.30		0.95	0.25
Avail Cap(c_a), veh/h	215		2343		1107	3093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	8.7	0.0	10.7	1.3
Incr Delay (d2), s/veh	16.7	0.0	0.3	0.0	13.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	3.3	0.0	5.3	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	73.9	0.0	9.0	0.0	24.1	1.5
LnGrp LOS	E		A		C	A
Approach Vol, veh/h	52	A	698	A		1531
Approach Delay, s/veh	73.9		9.0			12.5
Approach LOS	E		A			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	25.3	84.6			110.0	10.0
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	41.5	27.5			74.5	14.5
Max Q Clear Time (g_c+I1), s	17.3	12.0			6.4	5.5
Green Ext Time (p_c), s	2.5	6.3			12.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			12.8			
HCM 6th LOS			B			
Notes						
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1b. Existing PM
10/29/2021

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	50	363	677	75	724	761			
Future Volume (veh/h)	50	363	677	75	724	761			
Number	3	18	2	12	1	6			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00				
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No		No			No			
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	52	0	698	0	746	785			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	67		2343		785	3093			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.04	0.00	0.66	0.00	0.17	0.87			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	73.9	0.0	9.0	0.0	24.1	1.5			
Ln Grp LOS	E		A		C	A			
Approach Vol, veh/h	52		698			1531			
Approach Delay, s/veh	73.9		9.0			12.5			
Approach LOS	E		A			B			
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		1	2	8			6		
Case No		1.2	7.0	9.0			4.0		
Phs Duration (G+Y+Rc), s		25.3	84.6	10.0			110.0		
Change Period (Y+Rc), s		5.5	5.5	5.5			5.5		
Max Green (Gmax), s		41.5	27.5	14.5			74.5		
Max Allow Headway (MAH), s		3.6	6.7	3.7			6.7		
Max Q Clear (g_c+1), s		17.3	12.0	5.5			6.4		
Green Ext Time (g_e), s		2.5	6.3	0.0			12.1		
Prob of Phs Call (p_c)		1.00	1.00	0.82			1.00		
Prob of Max Out (p_x)		0.00	0.38	0.00			0.00		
Left-Turn Movement Data									
Assigned Mvmt		1	5	3					
Mvmt Sat Flow, veh/h		1781	0	1781					
Through Movement Data									
Assigned Mvmt			2	8			6		
Mvmt Sat Flow, veh/h			3647	0			3647		
Right-Turn Movement Data									
Assigned Mvmt			12	18			16		
Mvmt Sat Flow, veh/h			1585	1585			0		
Left Lane Group Data									
Assigned Mvmt		1	5	3	0	0	0	0	0
Lane Assignment		L (Pr/Pm)		L					

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1b. Existing PM
10/29/2021

Lanes in Grp	1	0	1	0	0	0	0	0
Grp Vol (v), veh/h	746	0	52	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	0	0	0	0
Q Serve Time (g_s), s	15.3	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	15.3	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	748	0	1781	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	81.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	69.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	69.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	79.1	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	785	0	67	0	0	0	0	0
V/C Ratio (X)	0.95	0.00	0.77	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	1107	0	215	0	0	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	10.7	0.0	57.2	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	13.4	0.0	16.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	24.1	0.0	73.9	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	2.4	0.0	1.5	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	2.9	0.0	0.3	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	5.3	0.0	1.9	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.26	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment	T			T				
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	698	0	0	0	785	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	10.0	0.0	0.0	0.0	4.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	10.0	0.0	0.0	0.0	4.4	0.0	0.0
Lane Grp Cap (c), veh/h	0	2343	0	0	0	3093	0	0
V/C Ratio (X)	0.00	0.30	0.00	0.00	0.00	0.25	0.00	0.00
Avail Cap (c_a), veh/h	0	2343	0	0	0	3093	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.7	0.0	0.0	0.0	1.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.0	0.0	0.0	0.0	1.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.2	0.0	0.0	0.0	0.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

1b. Existing PM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	3.3	0.0	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.26	0.00	0.00	0.00	0.01	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		R	R					
Lanes in Grp	0	1	1	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1045	60	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1045	192	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	736	1	0	812
Future Vol, veh/h	0	3	736	1	0	812
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	800	1	0	883
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1684	801	0	0	801	0
Stage 1	801	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	104	384	-	-	822	-
Stage 1	442	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	104	384	-	-	822	-
Mov Cap-2 Maneuver	104	-	-	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.5	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	384	822	-	
HCM Lane V/C Ratio	-	-	0.008	-	-	
HCM Control Delay (s)	-	-	14.5	0	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗	↘	↗↘
Traffic Vol, veh/h	5	14	738	1	4	807
Future Vol, veh/h	5	14	738	1	4	807
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	-	-	195	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	15	802	1	4	877
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1249	802	0	0	803	0
Stage 1	802	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.219	-
Pot Cap-1 Maneuver	178	383	-	-	819	-
Stage 1	440	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	177	383	-	-	819	-
Mov Cap-2 Maneuver	177	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.2	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	293	819	-	
HCM Lane V/C Ratio	-	-	0.07	0.005	-	
HCM Control Delay (s)	-	-	18.2	9.4	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

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

HCM 6th Signalized Intersection Summary
 1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2a. No-Build AM
 10/29/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	36	557	771	20	180	489
Future Volume (veh/h)	36	557	771	20	180	489
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	0	907	0	212	575
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	57		2775		574	3100
Arrive On Green	0.03	0.00	0.78	0.00	0.04	0.87
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	42	0	907	0	212	575
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.7	0.0	8.6	0.0	2.5	2.8
Cycle Q Clear(g_c), s	2.7	0.0	8.6	0.0	2.5	2.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	57		2775		574	3100
V/C Ratio(X)	0.73		0.33		0.37	0.19
Avail Cap(c_a), veh/h	147		2775		659	3100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	0.0	3.7	0.0	2.4	1.1
Incr Delay (d2), s/veh	16.5	0.0	0.3	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.9	0.0	0.3	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.7	0.0	4.0	0.0	2.8	1.3
LnGrp LOS	E		A		A	A
Approach Vol, veh/h	42	A	907	A		787
Approach Delay, s/veh	71.7		4.0			1.7
Approach LOS	E		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.5	95.3			105.8	9.2
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	10.5	33.5			49.5	9.5
Max Q Clear Time (g_c+I1), s	4.5	10.6			4.8	4.7
Green Ext Time (p_c), s	0.3	10.4			7.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			4.6			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2a. No-Build AM

10/29/2021

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	36	557	771	20	180	489			
Future Volume (veh/h)	36	557	771	20	180	489			
Number	3	18	2	12	1	6			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00				
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No		No			No			
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	42	0	907	0	212	575			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	57		2775		574	3100			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.03	0.00	0.78	0.00	0.04	0.87			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	71.7	0.0	4.0	0.0	2.8	1.3			
Ln Grp LOS	E		A		A	A			
Approach Vol, veh/h	42		907			787			
Approach Delay, s/veh	71.7		4.0			1.7			
Approach LOS	E		A			A			
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		1	2	8			6		
Case No		1.2	7.0	9.0			4.0		
Phs Duration (G+Y+Rc), s		10.5	95.3	9.2			105.8		
Change Period (Y+Rc), s		5.5	5.5	5.5			5.5		
Max Green (Gmax), s		10.5	33.5	9.5			49.5		
Max Allow Headway (MAH), s		3.6	6.7	3.7			6.7		
Max Q Clear (g_c+I1), s		4.5	10.6	4.7			4.8		
Green Ext Time (g_e), s		0.3	10.4	0.0			7.6		
Prob of Phs Call (p_c)		1.00	1.00	0.74			1.00		
Prob of Max Out (p_x)		0.15	0.31	0.21			0.00		
Left-Turn Movement Data									
Assigned Mvmt		1	5	3					
Mvmt Sat Flow, veh/h		1781	0	1781					
Through Movement Data									
Assigned Mvmt			2	8			6		
Mvmt Sat Flow, veh/h			3647	0			3647		
Right-Turn Movement Data									
Assigned Mvmt			12	18			16		
Mvmt Sat Flow, veh/h			1585	1585			0		
Left Lane Group Data									
Assigned Mvmt		1	5	3	0	0	0	0	0
Lane Assignment		L (Pr/Pm)		L					

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2a. No-Build AM

10/29/2021

Lanes in Grp	1	0	1	0	0	0	0	0
Grp Vol (v), veh/h	212	0	42	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	0	0	0	0
Q Serve Time (g_s), s	2.5	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	2.5	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	615	0	1781	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	91.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	81.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	89.8	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	574	0	57	0	0	0	0	0
V/C Ratio (X)	0.37	0.00	0.73	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	659	0	147	0	0	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	2.4	0.0	55.2	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	16.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	2.8	0.0	71.7	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	1.2	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.3	0.0	1.4	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.01	0.00	0.06	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment	T			T				
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	907	0	0	0	575	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	8.6	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	8.6	0.0	0.0	0.0	2.8	0.0	0.0
Lane Grp Cap (c), veh/h	0	2775	0	0	0	3100	0	0
V/C Ratio (X)	0.00	0.33	0.00	0.00	0.00	0.19	0.00	0.00
Avail Cap (c_a), veh/h	0	2775	0	0	0	3100	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.7	0.0	0.0	0.0	1.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.0	0.0	0.0	0.0	1.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2a. No-Build AM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	1.9	0.0	0.0	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		R	R					
Lanes in Grp	0	1	1	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1238	51	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1238	131	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↙		↑↑	↑	↘	↑↑
Traffic Vol, veh/h	3	2	784	4	15	509
Future Vol, veh/h	3	2	784	4	15	509
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	-	-	250	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	852	4	16	553
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1161	426	0	0	856	0
Stage 1	852	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	188	577	-	-	780	-
Stage 1	378	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	184	577	-	-	780	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	378	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	19.5	0		0.3		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	253	780	-	
HCM Lane V/C Ratio	-	-	0.021	0.021	-	
HCM Control Delay (s)	-	-	19.5	9.7	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	9	782	4	0	524
Future Vol, veh/h	0	9	782	4	0	524
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	195	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	850	4	0	570
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	425	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	578	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	578	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.3	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 578		-			
HCM Lane V/C Ratio	- 0.017		-			
HCM Control Delay (s)	- 11.3		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.1		-			

HCM 6th Signalized Intersection Summary
 1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2b. No-Build PM
 10/29/2021

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	372	693	77	743	777
Future Volume (veh/h)	51	372	693	77	743	777
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	0	714	0	766	801
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	68		2292		802	3117
Arrive On Green	0.04	0.00	0.65	0.00	0.19	0.88
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	53	0	714	0	766	801
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.8	0.0	11.6	0.0	20.0	4.7
Cycle Q Clear(g_c), s	3.8	0.0	11.6	0.0	20.0	4.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	68		2292		802	3117
V/C Ratio(X)	0.77		0.31		0.95	0.26
Avail Cap(c_a), veh/h	130		2292		1143	3117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	0.0	10.2	0.0	13.6	1.3
Incr Delay (d2), s/veh	16.8	0.0	0.4	0.0	13.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	4.0	0.0	14.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	78.7	0.0	10.6	0.0	27.2	1.5
LnGrp LOS	E		B		C	A
Approach Vol, veh/h	53	A	714	A		1567
Approach Delay, s/veh	78.7		10.6			14.1
Approach LOS	E		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	30.2	89.4			119.5	10.5
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	49.5	30.3			85.3	9.5
Max Q Clear Time (g_c+I1), s	22.0	13.6			6.7	5.8
Green Ext Time (p_c), s	2.7	6.8			12.6	0.0

Intersection Summary

HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2b. No-Build PM

10/29/2021

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	51	372	693	77	743	777			
Future Volume (veh/h)	51	372	693	77	743	777			
Number	3	18	2	12	1	6			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00				
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No		No			No			
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	53	0	714	0	766	801			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	68		2292		802	3117			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.04	0.00	0.65	0.00	0.19	0.88			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	78.7	0.0	10.6	0.0	27.2	1.5			
Ln Grp LOS	E		B		C	A			
Approach Vol, veh/h	53		714			1567			
Approach Delay, s/veh	78.7		10.6			14.1			
Approach LOS	E		B			B			
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		1	2	8			6		
Case No		1.2	7.0	9.0			4.0		
Phs Duration (G+Y+Rc), s		30.2	89.4	10.5			119.5		
Change Period (Y+Rc), s		5.5	5.5	5.5			5.5		
Max Green (Gmax), s		49.5	30.3	9.5			85.3		
Max Allow Headway (MAH), s		3.6	6.7	3.7			6.7		
Max Q Clear (g_c+I1), s		22.0	13.6	5.8			6.7		
Green Ext Time (g_e), s		2.7	6.8	0.0			12.6		
Prob of Phs Call (p_c)		1.00	1.00	0.85			1.00		
Prob of Max Out (p_x)		0.00	0.34	1.00			0.00		
Left-Turn Movement Data									
Assigned Mvmt		1	5	3					
Mvmt Sat Flow, veh/h		1781	0	1781					
Through Movement Data									
Assigned Mvmt			2	8			6		
Mvmt Sat Flow, veh/h			3647	0			3647		
Right-Turn Movement Data									
Assigned Mvmt			12	18			16		
Mvmt Sat Flow, veh/h			1585	1585			0		
Left Lane Group Data									
Assigned Mvmt		1	5	3	0	0	0	0	0
Lane Assignment		L (Pr/Pm)		L					

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2b. No-Build PM

10/29/2021

Lanes in Grp	1	0	1	0	0	0	0	0
Grp Vol (v), veh/h	766	0	53	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	0	0	0	0
Q Serve Time (g_s), s	20.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	20.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	736	0	1781	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	85.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	72.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	72.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	83.9	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	802	0	68	0	0	0	0	0
V/C Ratio (X)	0.95	0.00	0.77	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	1143	0	130	0	0	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	13.6	0.0	61.9	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	13.6	0.0	16.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	27.2	0.0	78.7	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	11.5	0.0	1.7	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	3.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	14.5	0.0	2.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.70	0.00	0.08	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment	T			T				
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	714	0	0	0	801	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	11.6	0.0	0.0	0.0	4.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.6	0.0	0.0	0.0	4.7	0.0	0.0
Lane Grp Cap (c), veh/h	0	2292	0	0	0	3117	0	0
V/C Ratio (X)	0.00	0.31	0.00	0.00	0.00	0.26	0.00	0.00
Avail Cap (c_a), veh/h	0	2292	0	0	0	3117	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.2	0.0	0.0	0.0	1.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.6	0.0	0.0	0.0	1.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.9	0.0	0.0	0.0	0.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & SR 323 (Gillsville Hwy)

2b. No-Build PM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	4.0	0.0	0.0	0.0	0.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.31	0.00	0.00	0.00	0.01	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		R	R					
Lanes in Grp	0	1	1	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1022	61	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1022	116	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	3	754	1	2	826
Future Vol, veh/h	5	3	754	1	2	826
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	-	-	250	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	3	820	1	2	898
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1273	410	0	0	821	0
Stage 1	820	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	159	591	-	-	804	-
Stage 1	393	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	159	591	-	-	804	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	393	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	219	804	-	
HCM Lane V/C Ratio	-	-	0.04	0.003	-	
HCM Control Delay (s)	-	-	22.1	9.5	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	14	756	1	0	829
Future Vol, veh/h	0	14	756	1	0	829
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	195	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	822	1	0	901
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	411	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	590	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	590	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.3	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 590		-			
HCM Lane V/C Ratio	- 0.026		-			
HCM Control Delay (s)	- 11.3		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.1		-			

FUTURE “BUILD” INTERSECTION ANALYSIS

HCM 6th Signalized Intersection Summary

3a. Build AM

1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

10/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	10	15	36	3	557	5	778	20	180	491	19
Future Volume (veh/h)	60	10	15	36	3	557	5	778	20	180	491	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	41	0	42	4	0	6	915	0	212	578	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	127		124	127		686	2663		545	2986	
Arrive On Green	0.07	0.07	0.00	0.07	0.07	0.00	0.75	0.75	0.00	0.05	0.84	0.00
Sat Flow, veh/h	1412	1870	0	1366	1870	1585	836	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	50	41	0	42	4	0	6	915	0	212	578	0
Grp Sat Flow(s),veh/h/ln	1412	1870	0	1366	1870	1585	836	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.1	2.5	0.0	3.6	0.2	0.0	0.2	10.4	0.0	3.1	3.7	0.0
Cycle Q Clear(g_c), s	4.4	2.5	0.0	6.1	0.2	0.0	0.2	10.4	0.0	3.1	3.7	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	127		124	127		686	2663		545	2986	
V/C Ratio(X)	0.33	0.32		0.34	0.03		0.01	0.34		0.39	0.19	
Avail Cap(c_a), veh/h	628	756		584	756		686	2663		679	2986	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.3	53.3	0.0	56.2	52.2	0.0	3.8	5.1	0.0	3.4	1.8	0.0
Incr Delay (d2), s/veh	1.2	1.4	0.0	1.6	0.1	0.0	0.0	0.4	0.0	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.2	0.0	1.3	0.1	0.0	0.0	2.8	0.0	0.6	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	54.7	0.0	57.8	52.3	0.0	3.8	5.4	0.0	3.9	2.0	0.0
LnGrp LOS	E	D		E	D		A	A		A	A	
Approach Vol, veh/h	91		A	46		A	921		A	790		A
Approach Delay, s/veh	55.1			57.3			5.4			2.5		
Approach LOS	E			E			A			A		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.9	95.4		13.7		106.3		13.7				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	14.5	40.5		48.5		60.5		48.5				
Max Q Clear Time (g_c+I1), s	5.1	12.4		6.4		5.7		8.1				
Green Ext Time (p_c), s	0.4	11.7		0.4		7.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay 7.9

HCM 6th LOS A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3a. Build AM

10/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	10	15	36	3	557	5	778	20	180	491	19
Future Volume (veh/h)	60	10	15	36	3	557	5	778	20	180	491	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	41	0	42	4	0	6	915	0	212	578	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	153	127		124	127		686	2663		545	2986	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.07	0.00	0.07	0.07	0.00	0.75	0.75	0.00	0.05	0.84	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	55.5	54.7	0.0	57.8	52.3	0.0	3.8	5.4	0.0	3.9	2.0	0.0
Ln Grp LOS	E	D		E	D		A	A		A	A	
Approach Vol, veh/h	91			46			921			790		
Approach Delay, s/veh	55.1			57.3			5.4			2.5		
Approach LOS	E			E			A			A		
Timer:	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Case No	1.2	5.3		6.0		3.0		5.0				
Phs Duration (G+Y+Rc), s	10.9	95.4		13.7		106.3		13.7				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green (Gmax), s	14.5	40.5		48.5		60.5		48.5				
Max Allow Headway (MAH), s	3.6	6.7		4.5		6.7		3.9				
Max Q Clear (g_c+I1), s	5.1	12.4		6.4		5.7		8.1				
Green Ext Time (g_e), s	0.4	11.7		0.4		7.9		0.1				
Prob of Phs Call (p_c)	1.00	1.00		0.99		1.00		0.99				
Prob of Max Out (p_x)	0.01	0.22		0.00		0.00		0.00				
Left-Turn Movement Data												
Assigned Mvmt	1	5		7		3						
Mvmt Sat Flow, veh/h	1781	836		1412		1366						
Through Movement Data												
Assigned Mvmt		2		4		6		8				
Mvmt Sat Flow, veh/h		3554		1870		3554		1870				
Right-Turn Movement Data												
Assigned Mvmt		12		14		16		18				
Mvmt Sat Flow, veh/h		1585		0		1585		1585				
Left Lane Group Data												
Assigned Mvmt	1	5	0	7	0	0	0	3				
Lane Assignment	L (Pr/Pm)	L		L				L				

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3a. Build AM

10/29/2021

Lanes in Grp	1	1	0	1	0	0	0	1
Grp Vol (v), veh/h	212	6	0	50	0	0	0	42
Grp Sat Flow (s), veh/h/ln	1781	836	0	1412	0	0	0	1366
Q Serve Time (g_s), s	3.1	0.2	0.0	4.1	0.0	0.0	0.0	3.6
Cycle Q Clear Time (g_c), s	3.1	0.2	0.0	4.4	0.0	0.0	0.0	6.1
Perm LT Sat Flow (s_l), veh/h/ln	610	836	0	1412	0	0	0	1366
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	91.9	89.9	0.0	8.2	0.0	0.0	0.0	8.2
Perm LT Serve Time (g_u), s	79.5	89.9	0.0	7.9	0.0	0.0	0.0	5.7
Perm LT Q Serve Time (g_ps), s	6.6	0.2	0.0	4.1	0.0	0.0	0.0	3.6
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	545	686	0	153	0	0	0	124
V/C Ratio (X)	0.39	0.01	0.00	0.33	0.00	0.00	0.00	0.34
Avail Cap (c_a), veh/h	679	686	0	628	0	0	0	584
Upstream Filter (I)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	3.4	3.8	0.0	54.3	0.0	0.0	0.0	56.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.2	0.0	0.0	0.0	1.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	3.9	3.8	0.0	55.5	0.0	0.0	0.0	57.8
1st-Term Q (Q1), veh/ln	0.5	0.0	0.0	1.5	0.0	0.0	0.0	1.2
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.6	0.0	0.0	1.5	0.0	0.0	0.0	1.3
%ile Storage Ratio (RQ%)	0.03	0.01	0.00	0.15	0.00	0.00	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	915	0	41	0	578	0	4
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	10.4	0.0	2.5	0.0	3.7	0.0	0.2
Cycle Q Clear Time (g_c), s	0.0	10.4	0.0	2.5	0.0	3.7	0.0	0.2
Lane Grp Cap (c), veh/h	0	2663	0	127	0	2986	0	127
V/C Ratio (X)	0.00	0.34	0.00	0.32	0.00	0.19	0.00	0.03
Avail Cap (c_a), veh/h	0	2663	0	756	0	2986	0	756
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	5.1	0.0	53.3	0.0	1.8	0.0	52.2
Incr Delay (d2), s/veh	0.0	0.4	0.0	1.4	0.0	0.1	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	5.4	0.0	54.7	0.0	2.0	0.0	52.3
1st-Term Q (Q1), veh/ln	0.0	2.7	0.0	1.2	0.0	0.4	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3a. Build AM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.8	0.0	1.2	0.0	0.5	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.22	0.00	0.12	0.00	0.01	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment	R			R			R	
Lanes in Grp	0	1	0	0	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	0	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	1188	0	0	0	1332	0	108
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1188	0	0	0	1332	0	641
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	7	0	4	3	0	2	1	789	4	15	524	2
Future Vol, veh/h	7	0	4	3	0	2	1	789	4	15	524	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	100	-	250	300	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	4	3	0	2	1	858	4	16	570	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1033	1466	285	1177	1462	429	570	0	0	862	0	0
Stage 1	602	602	-	860	860	-	-	-	-	-	-	-
Stage 2	431	864	-	317	602	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	187	127	712	146	128	574	999	-	-	776	-	-
Stage 1	453	487	-	317	371	-	-	-	-	-	-	-
Stage 2	573	369	-	669	487	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	183	124	712	143	125	574	999	-	-	776	-	-
Mov Cap-2 Maneuver	183	124	-	143	125	-	-	-	-	-	-	-
Stage 1	453	477	-	317	371	-	-	-	-	-	-	-
Stage 2	570	369	-	651	477	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	23.1	0	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	999	-	-	288 204	776	-	-
HCM Lane V/C Ratio	0.001	-	-	0.042 0.027	0.021	-	-
HCM Control Delay (s)	8.6	-	-	18 23.1	9.7	-	-
HCM Lane LOS	A	-	-	C C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	9	793	4	0	541
Future Vol, veh/h	0	9	793	4	0	541
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	195	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	862	4	0	588
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	431	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	573	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	573	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 573		-			
HCM Lane V/C Ratio	- 0.017		-			
HCM Control Delay (s)	- 11.4		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.1		-			

HCM 6th Signalized Intersection Summary

3b. Build PM

1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

10/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	6	10	51	10	372	16	697	77	743	784	64
Future Volume (veh/h)	38	6	10	51	10	372	16	697	77	743	784	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	22	0	53	10	0	16	719	0	766	808	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	121		134	121		443	2019		806	2999	
Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.00	0.57	0.57	0.00	0.23	0.84	0.00
Sat Flow, veh/h	1405	1870	0	1390	1870	1585	675	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	28	22	0	53	10	0	16	719	0	766	808	0
Grp Sat Flow(s),veh/h/ln	1405	1870	0	1390	1870	1585	675	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.3	1.3	0.0	4.5	0.6	0.0	1.3	13.1	0.0	22.9	5.5	0.0
Cycle Q Clear(g_c), s	2.9	1.3	0.0	5.8	0.6	0.0	1.3	13.1	0.0	22.9	5.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	121		134	121		443	2019		806	2999	
V/C Ratio(X)	0.20	0.18		0.40	0.08		0.04	0.36		0.95	0.27	
Avail Cap(c_a), veh/h	274	295		263	295		443	2019		1176	2999	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.2	53.1	0.0	55.9	52.8	0.0	11.5	14.0	0.0	14.9	1.9	0.0
Incr Delay (d2), s/veh	0.7	0.7	0.0	1.9	0.3	0.0	0.2	0.5	0.0	12.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.7	0.0	1.6	0.3	0.0	0.2	4.8	0.0	14.7	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	53.9	0.0	57.8	53.1	0.0	11.6	14.5	0.0	27.4	2.1	0.0
LnGrp LOS	D	D		E	D		B	B		C	A	
Approach Vol, veh/h	50		A	63		A	735		A	1574		A
Approach Delay, s/veh	54.4			57.0			14.5			14.4		
Approach LOS	D			E			B			B		
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	33.1	73.7		13.2		106.8		13.2				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	52.5	32.1		18.9		90.1		18.9				
Max Q Clear Time (g_c+I1), s	24.9	15.1		4.9		7.5		7.8				
Green Ext Time (p_c), s	2.7	7.0		0.1		12.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay 16.4

HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Capacity Analysis
 1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3b. Build PM

10/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	6	10	51	10	372	16	697	77	743	784	64
Future Volume (veh/h)	38	6	10	51	10	372	16	697	77	743	784	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	22	0	53	10	0	16	719	0	766	808	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	144	121		134	121		443	2019		806	2999	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.00	0.57	0.57	0.00	0.23	0.84	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	54.8	53.9	0.0	57.8	53.1	0.0	11.6	14.5	0.0	27.4	2.1	0.0
Ln Grp LOS	D	D		E	D		B	B		C	A	
Approach Vol, veh/h	50			63			735			1574		
Approach Delay, s/veh	54.4			57.0			14.5			14.4		
Approach LOS	D			E			B			B		
Timer:	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4			6			8	
Case No	1.2	5.3			6.0			3.0			5.0	
Phs Duration (G+Y+Rc), s	33.1	73.7			13.2			106.8			13.2	
Change Period (Y+Rc), s	5.5	5.5			5.5			5.5			5.5	
Max Green (Gmax), s	52.5	32.1			18.9			90.1			18.9	
Max Allow Headway (MAH), s	3.6	6.8			4.5			6.7			3.9	
Max Q Clear (g_c+1), s	24.9	15.1			4.9			7.5			7.8	
Green Ext Time (g_e), s	2.7	7.0			0.1			12.8			0.1	
Prob of Phs Call (p_c)	1.00	1.00			0.98			1.00			0.98	
Prob of Max Out (p_x)	0.00	0.36			0.00			0.00			0.00	
Left-Turn Movement Data												
Assigned Mvmt	1	5			7					3		
Mvmt Sat Flow, veh/h	1781	675			1405					1390		
Through Movement Data												
Assigned Mvmt	2				4			6			8	
Mvmt Sat Flow, veh/h	3554				1870			3554			1870	
Right-Turn Movement Data												
Assigned Mvmt	12				14			16			18	
Mvmt Sat Flow, veh/h	1585				0			1585			1585	
Left Lane Group Data												
Assigned Mvmt	1	5	0	7	0	0	0	3				
Lane Assignment	L (Pr/Pm)		L	L				L				

HCM 6th Signalized Intersection Capacity Analysis
1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3b. Build PM

10/29/2021

Lanes in Grp	1	1	0	1	0	0	0	1
Grp Vol (v), veh/h	766	16	0	28	0	0	0	53
Grp Sat Flow (s), veh/h/ln	1781	675	0	1405	0	0	0	1390
Q Serve Time (g_s), s	22.9	1.3	0.0	2.3	0.0	0.0	0.0	4.5
Cycle Q Clear Time (g_c), s	22.9	1.3	0.0	2.9	0.0	0.0	0.0	5.8
Perm LT Sat Flow (s_l), veh/h/ln	733	675	0	1405	0	0	0	1390
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	70.2	68.2	0.0	7.7	0.0	0.0	0.0	7.7
Perm LT Serve Time (g_u), s	55.0	68.2	0.0	7.1	0.0	0.0	0.0	6.4
Perm LT Q Serve Time (g_ps), s	55.0	1.3	0.0	2.3	0.0	0.0	0.0	4.5
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	806	443	0	144	0	0	0	134
V/C Ratio (X)	0.95	0.04	0.00	0.20	0.00	0.00	0.00	0.40
Avail Cap (c_a), veh/h	1176	443	0	274	0	0	0	263
Upstream Filter (I)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	14.9	11.5	0.0	54.2	0.0	0.0	0.0	55.9
Incr Delay (d2), s/veh	12.5	0.2	0.0	0.7	0.0	0.0	0.0	1.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	27.4	11.6	0.0	54.8	0.0	0.0	0.0	57.8
1st-Term Q (Q1), veh/ln	11.9	0.2	0.0	0.8	0.0	0.0	0.0	1.6
2nd-Term Q (Q2), veh/ln	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	14.7	0.2	0.0	0.8	0.0	0.0	0.0	1.6
%ile Storage Ratio (RQ%)	0.70	0.03	0.00	0.08	0.00	0.00	0.00	0.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	719	0	22	0	808	0	10
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	13.1	0.0	1.3	0.0	5.5	0.0	0.6
Cycle Q Clear Time (g_c), s	0.0	13.1	0.0	1.3	0.0	5.5	0.0	0.6
Lane Grp Cap (c), veh/h	0	2019	0	121	0	2999	0	121
V/C Ratio (X)	0.00	0.36	0.00	0.18	0.00	0.27	0.00	0.08
Avail Cap (c_a), veh/h	0	2019	0	295	0	2999	0	295
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	14.0	0.0	53.1	0.0	1.9	0.0	52.8
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.7	0.0	0.2	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	14.5	0.0	53.9	0.0	2.1	0.0	53.1
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	0.6	0.0	0.6	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis

1: SR 11/US 129 (Athens Hwy) & Site Drwy 1 (N)/SR 323 (Gillsville Hwy)

3b. Build PM

10/29/2021

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	0.7	0.0	0.7	0.0	0.3
%ile Storage Ratio (RQ%)	0.00	0.37	0.00	0.06	0.00	0.02	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment	R			R			R	
Lanes in Grp	0	1	0	0	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	0	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	901	0	0	0	1338	0	102
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	901	0	0	0	1338	0	250
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
2: SR 11/US 129 (Athens Hwy) & Site Drwy 2 (S)/GDOT Offices Drwy (S)

3b. Build PM
10/29/2021

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	5	0	3	4	770	1	2	836	7
Future Vol, veh/h	4	0	2	5	0	3	4	770	1	2	836	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	100	-	250	300	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	2	5	0	3	4	837	1	2	909	8
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1340	1759	455	1304	1758	419	909	0	0	838	0	0
Stage 1	913	913	-	845	845	-	-	-	-	-	-	-
Stage 2	427	846	-	459	913	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	111	84	552	118	84	583	745	-	-	792	-	-
Stage 1	294	350	-	324	377	-	-	-	-	-	-	-
Stage 2	576	377	-	551	350	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	83	552	117	83	583	745	-	-	792	-	-
Mov Cap-2 Maneuver	110	83	-	117	83	-	-	-	-	-	-	-
Stage 1	293	349	-	322	375	-	-	-	-	-	-	-
Stage 2	570	375	-	547	349	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	27.7		27.7		0.1		0					
HCM LOS	D		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	745	-	-	165	167	792	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.04	0.052	0.003	-	-				
HCM Control Delay (s)	9.9	-	-	27.7	27.7	9.6	-	-				
HCM Lane LOS	A	-	-	D	D	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-				

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	14	777	1	0	846
Future Vol, veh/h	0	14	777	1	0	846
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Free	-	None
Storage Length	-	0	-	195	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	845	1	0	920
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	423	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	579	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	579	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 579		-			
HCM Lane V/C Ratio	- 0.026		-			
HCM Control Delay (s)	- 11.4		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.1		-			

T R A F F I C V O L U M E W O R K S H E E T S

21-163 Traffic Study for Residential Development at 2500 and 2508 Athens Hwy, Hall County, GA
Traffic Volumes

A&R Engineering
October 2021

1. SR 11 @ SR 323-Drwy 1 (N)

A.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				Site Driveway 1 (N)				SR 323 (Gillsville Highway)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	742	20	762	161	462	0	623	0	0	0	0	35	0	544	579
Estimated Existing GDOT Offices Trips:	0	11	0	11	6	24	0	30	0	0	0	0	3	0	0	3
Total Existing 2021 Volumes:	0	753	20	773	167	486	0	653	0	0	0	0	38	0	544	582
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	11	0	11	15	15	0	30	0	0	0	0	0	0	0	0
No-Build 2023 Volumes:	0	771	20	791	180	489	0	669	0	0	0	0	36	0	557	593
Total New Trips:	5	7	0	12	0	2	19	21	60	10	15	85	0	3	0	3
Future 2023 Traffic Volumes:	5	778	20	803	180	491	19	690	60	10	15	85	36	3	557	596

P.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				Site Driveway 1 (N)				SR 323 (Gillsville Highway)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	661	74	735	723	757	0	1480	0	0	0	0	50	0	363	413
Estimated Existing GDOT Offices Trips:	0	16	1	17	1	4	0	5	0	0	0	0	0	0	0	0
Total Existing 2021 Volumes:	0	677	75	752	724	761	0	1485	0	0	0	0	50	0	363	413
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	16	1	17	2	2	0	4	0	0	0	0	0	0	0	0
No-Build 2023 Volumes:	0	693	77	770	743	777	0	1520	0	0	0	0	51	0	372	423
Total New Trips:	16	4	0	20	0	7	64	71	38	6	10	54	0	10	0	10
Future 2023 Traffic Volumes:	16	697	77	790	743	784	64	1591	38	6	10	54	51	10	372	433

Number of Years = 2
Growth Factor (%) = 1.2

21-163 Traffic Study for Residential Development at 2500 and 2508 Athens Hwy, Hall County, GA
Traffic Volumes

A&R Engineering
October 2021

2. SR 11 @ GDOT-Drwy 2 (S)

A.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				Site Driveway 2 (S)				GDOT Office Driveway (S)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	762	0	762	0	497	0	497	0	0	0	0	0	0	0	0
Estimated Existing GDOT Offices Trips:	0	4	4	8	0	3	0	3	0	0	0	0	0	0	2	2
Total Existing 2021 Volumes:	0	766	4	770	0	500	0	500	0	0	0	0	0	0	2	2
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	4	4	8	15	0	0	15	0	0	0	0	3	0	2	5
No-Build 2023 Volumes:	0	784	4	788	15	509	0	524	0	0	0	0	3	0	2	5
Total New Trips:	1	5	0	6	0	15	2	17	7	0	4	11	0	0	0	0
Future 2023 Traffic Volumes:	1	789	4	794	15	524	2	541	7	0	4	11	3	0	2	5

P.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				Site Driveway 2 (S)				GDOT Office Driveway (S)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	735	0	735	0	807	0	807	0	0	0	0	0	0	0	0
Estimated Existing GDOT Offices Trips:	0	1	1	2	0	5	0	5	0	0	0	0	0	0	3	3
Total Existing 2021 Volumes:	0	736	1	737	0	812	0	812	0	0	0	0	0	0	3	3
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	1	1	2	2	0	0	2	0	0	0	0	5	0	3	8
No-Build 2023 Volumes:	0	754	1	755	2	826	0	828	0	0	0	0	5	0	3	8
Total New Trips:	4	16	0	20	0	10	7	17	4	0	2	6	0	0	0	0
Future 2023 Traffic Volumes:	4	770	1	775	2	836	7	845	4	0	2	6	5	0	3	8

Number of Years = 2
Growth Factor (%) = 1.2

21-163 Traffic Study for Residential Development at 2500 and 2508 Athens Hwy, Hall County, GA
Traffic Volumes

A&R Engineering
 October 2021

3. SR 11 @ GDOT Drwy S

A.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				-				GDOT Office Driveway (N)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	762	0	762	0	497	0	497	0	0	0	0	0	0	0	0
Estimated Existing GDOT Offices Trips:	0	2	4	6	27	0	0	27	0	0	0	0	3	0	9	12
Total Existing 2021 Volumes:	0	764	4	768	27	497	0	524	0	0	0	0	3	0	9	12
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	2	4	6	0	15	0	15	0	0	0	0	0	0	9	9
No-Build 2023 Volumes:	0	782	4	786	0	524	0	524	0	0	0	0	0	0	9	9
Total New Trips:	0	11	0	11	0	17	0	17	0	0	0	0	0	0	0	0
Future 2023 Traffic Volumes:	0	793	4	797	0	541	0	541	0	0	0	0	0	0	9	9

P.M. Peak Hour

Condition	SR 11/US 129 (Athens Highway)				SR 11/US 129 (Athens Highway)				-				GDOT Office Driveway (N)			
	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts (without GDOT Offices Trips):	0	735	0	735	0	807	0	807	0	0	0	0	0	0	0	0
Estimated Existing GDOT Offices Trips:	0	3	1	4	4	0	0	4	0	0	0	0	5	0	14	19
Total Existing 2021 Volumes:	0	738	1	739	4	807	0	811	0	0	0	0	5	0	14	19
Growth Factor (%):	1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	
GDOT Offices Trips in Future (with Median on Athens Hwy)	0	3	1	4	0	2	0	2	0	0	0	0	0	0	14	14
No-Build 2023 Volumes:	0	756	1	757	0	829	0	829	0	0	0	0	0	0	14	14
Total New Trips:	0	21	0	21	0	17	0	17	0	0	0	0	0	0	0	0
Future 2023 Traffic Volumes:	0	777	1	778	0	846	0	846	0	0	0	0	0	0	14	14

Number of Years = 2
 Growth Factor (%) = 1.2