

**TRAFFIC IMPACT STUDY
FOR
PROPOSED RESIDENTIAL & FITNESS CENTER
DEVELOPMENT ON WINDY HILL ROAD, SMYRNA**

COBB COUNTY, GEORGIA



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A & R Project # 24-164

TABLE OF CONTENTS

Item	Page
1.0 Introduction	1
2.0 Existing Facilities/Conditions	4
2.1 Roadway Facilities	4
2.1.1 Windy Hill Road	4
2.1.2 Atlanta Road	4
2.1.3 Dixie Avenue	4
2.1.4 Hillside Avenue	4
2.1.5 Park Drive	4
2.1.6 Davis Road	4
3.0 Study Methodology	5
3.1 Unsignalized Intersections.....	5
3.2 Signalized Intersections	6
4.0 Existing 2024 Traffic Analysis	7
4.1 Existing Traffic Volumes.....	7
4.2 Existing 2024 Traffic Operations.....	10
5.0 Proposed Development	11
5.1 Trip Generation	13
5.2 Trip Distribution.....	13
6.0 Future 2026 Traffic Analysis.....	15
6.1 Future “No-Build” Conditions.....	15
6.1.1 Annual Traffic Growth	15
6.1.2 Shifted Trips.....	15
6.2 Future “Build” Conditions.....	15
6.3 Future Traffic Operations	19
7.0 Conclusions and Recommendations.....	21
7.1 Recommendation for Site Improvements	21
7.2 Recommendations for Site Access Configuration	22
Appendix	

LIST OF TABLES

Item	Page
Table 1 – Level-of-service Criteria for Unsignalized Intersections.....	5
Table 2 – Level-of-service Criteria for Signalized Intersections	6
Table 3 – Existing Intersection Operations	10
Table 4 – Trip Generation	13
Table 5 – Future Intersection Operations.....	19

LIST OF FIGURES

Item	Page
Figure 1 – Location Map.....	3
Figure 2 – Existing Weekday Peak Hour Volumes.....	8
Figure 3 – Existing Traffic Control and Lane Geometry	9
Figure 4 – Site Plan.....	12
Figure 5 –Trip Distribution and Site Generated Weekday Peak Hour Volumes	14
Figure 6 – Future (No-Build) Peak Hour Volumes	16
Figure 7 – Shifted Traffic Volumes	17
Figure 8 – Future (Build) Peak Hour Volumes.....	18
Figure 9 – Future Traffic Control and Lane Geometry	20

1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed development consisting of residential housing and gym/aquatic center located on Windy Hill Road and Dixie Avenue in Smyrna, Georgia. The traffic analysis includes evaluation of the current operations and future conditions with the traffic generated by the development. The proposed development will consist of 246-units mid-rise apartment housing and 33,000 sf gym/aquatic center.



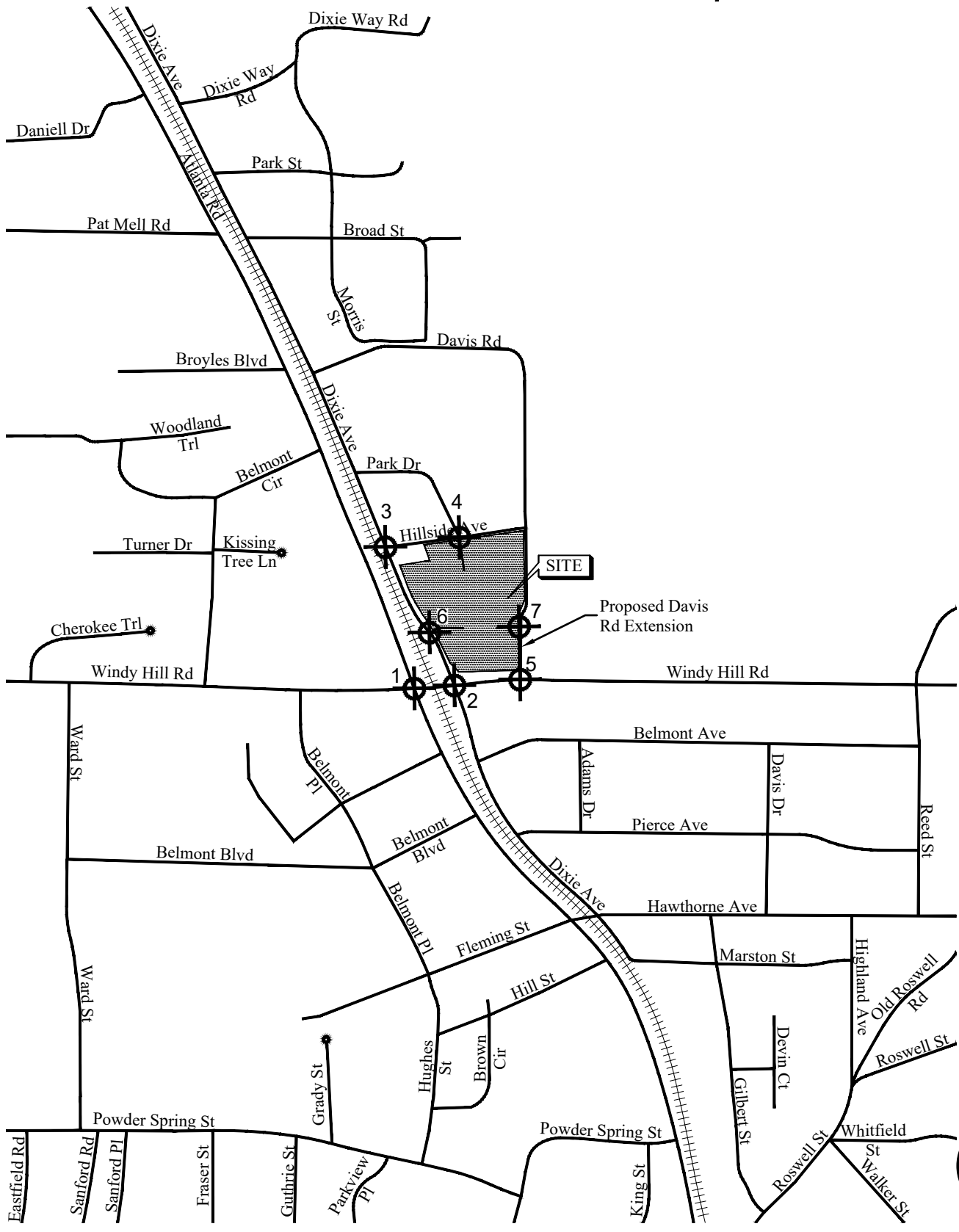
The development proposes to extend Davis Road from its intersection with Hillside Avenue to Windy Hill Road at its existing median break and signalize the Windy Hill Road intersection. The development will have access at the following locations:

- Site Driveway 1: Full-access driveway on Dixie Avenue
- Site Driveway 2: Full-access driveway on Hillside Avenue, aligned with Park Drive
- Site Driveway 3: Full-access driveway on Davis Road extension

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

1. Windy Hill Road at Atlanta Road
2. Windy Hill Road at Dixie Avenue
3. Dixie Avenue at Hillside Avenue
4. Hillside Avenue at Park Drive

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.



LOCATION MAP

FIGURE 1

A&R Engineering Inc.

2.0 EXISTING FACILITIES/CONDITIONS

2.1 Roadway Facilities

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

2.1.1 Windy Hill Road

Windy Hill Road is an east-west, four-lane, median-divided roadway with a posted speed limit of 30 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID's: 067-2112 & 067-2111) indicate that the daily traffic volume on Windy Hill Road in 2023 was 33,900 vehicles per day, west of Parkway Drive and 33,300 vehicles per day, east of Reed Street, respectively. GDOT classifies Windy Hill Road as a minor arterial urban roadway.

2.1.2 Atlanta Road

Atlanta Road is a north-south, four-lane, median-divided roadway to south of Windy Hill Road and two-way left turn lane north of Windy Hill Road and a posted speed limit of 45 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID: 067-2047) indicate that the daily traffic volume on Atlanta Road in 2023 was 19,000 vehicles per day, north of Powder Springs Street. GDOT classifies Atlanta Road as a minor arterial urban roadway.

2.1.3 Dixie Avenue

Dixie Avenue is a north-south, two-lane, un-divided roadway and posted with a speed limit of 25 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID: 067-8147) indicate that the daily traffic volume on Dixie Avenue in 2023 was 2,270 vehicles per day, south of Powder Springs Street. GDOT classifies Dixie Avenue as a local urban roadway.

2.1.4 Hillside Avenue

Hillside Avenue is an east-west, two-lane, un-divided roadway and posted with a speed limit of 25 mph in the vicinity of the site.

2.1.5 Park Drive

Park Drive is a north-south, two-lane, un-divided roadway and posted with a speed limit of 25 mph in the vicinity of the site.

2.1.6 Davis Road

Davis Road is a north-south, two-lane, un-divided roadway and posted with a speed limit of 25 mph in the vicinity of the site.

3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 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 controlled by a stop sign on minor streets, the level of service (LOS) for motor vehicles with controlled movements is determined by the computed control delay according to the thresholds stated in Table 1 below. LOS is determined for each minor street movement (or shared movement), as well as major street left turns. LOS is not defined for the intersection as a whole or for major street approaches. The LOS of any controlled movement which experiences a volume-to-capacity ratio greater than 1 is designated as "F" regardless of the control delay.

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

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

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

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

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

3.2 Signalized Intersections

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

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

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

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

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

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

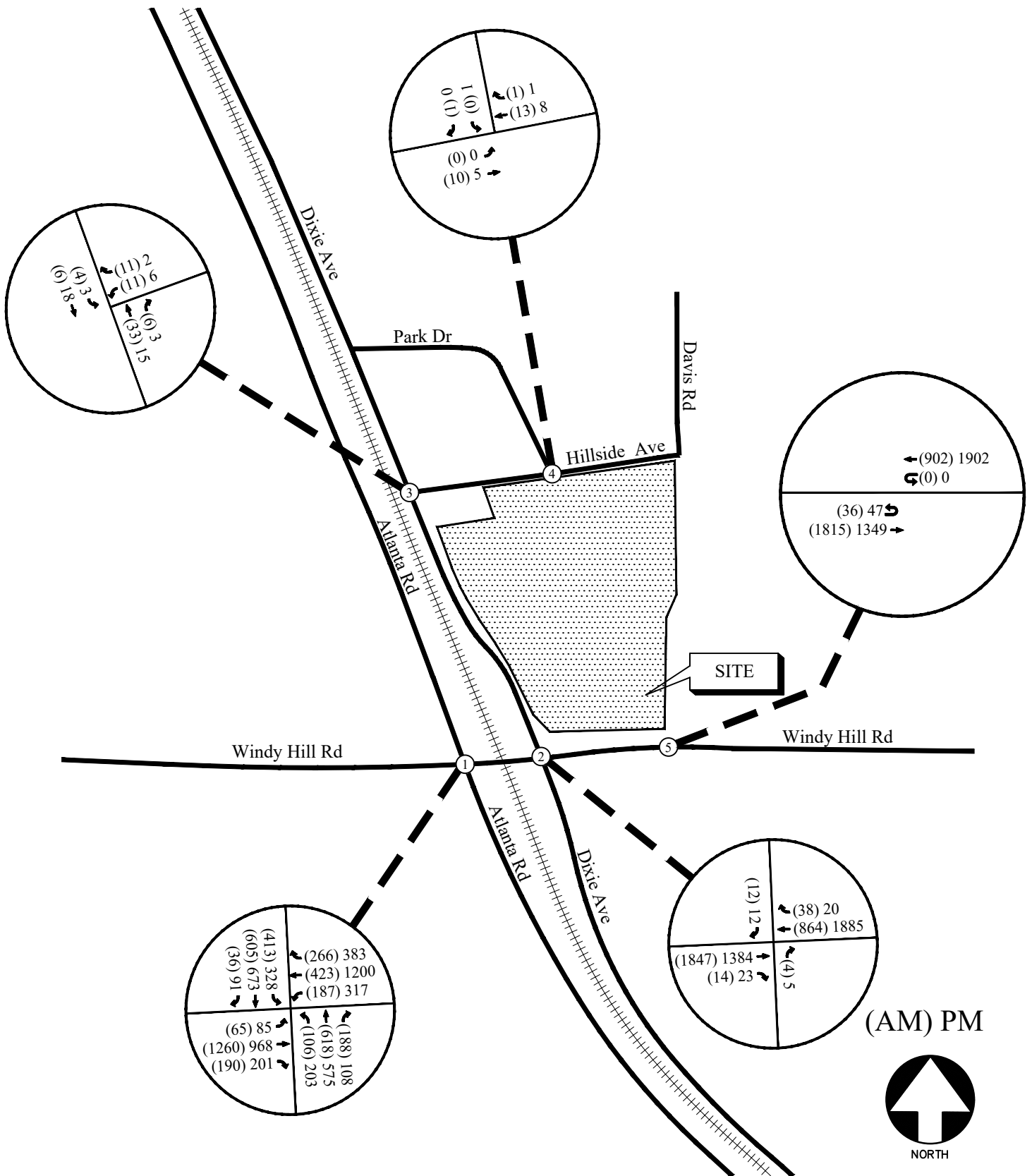
4.0 EXISTING 2024 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

1. Windy Hill Road at Atlanta Road
2. Windy Hill Road at Dixie Avenue
3. Dixie Avenue at Hillside Avenue
4. Hillside Avenue at Park Drive




Turning movement counts were collected on Thursday, September 05, 2024, and for the intersection of Hillside Avenue at Park Drive, the counts were collected on Wednesday, September 04, 2024. All turning movement counts were recorded during the AM and PM peak hours between 7:00am to 9:00am and 4:00pm to 6:00pm, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

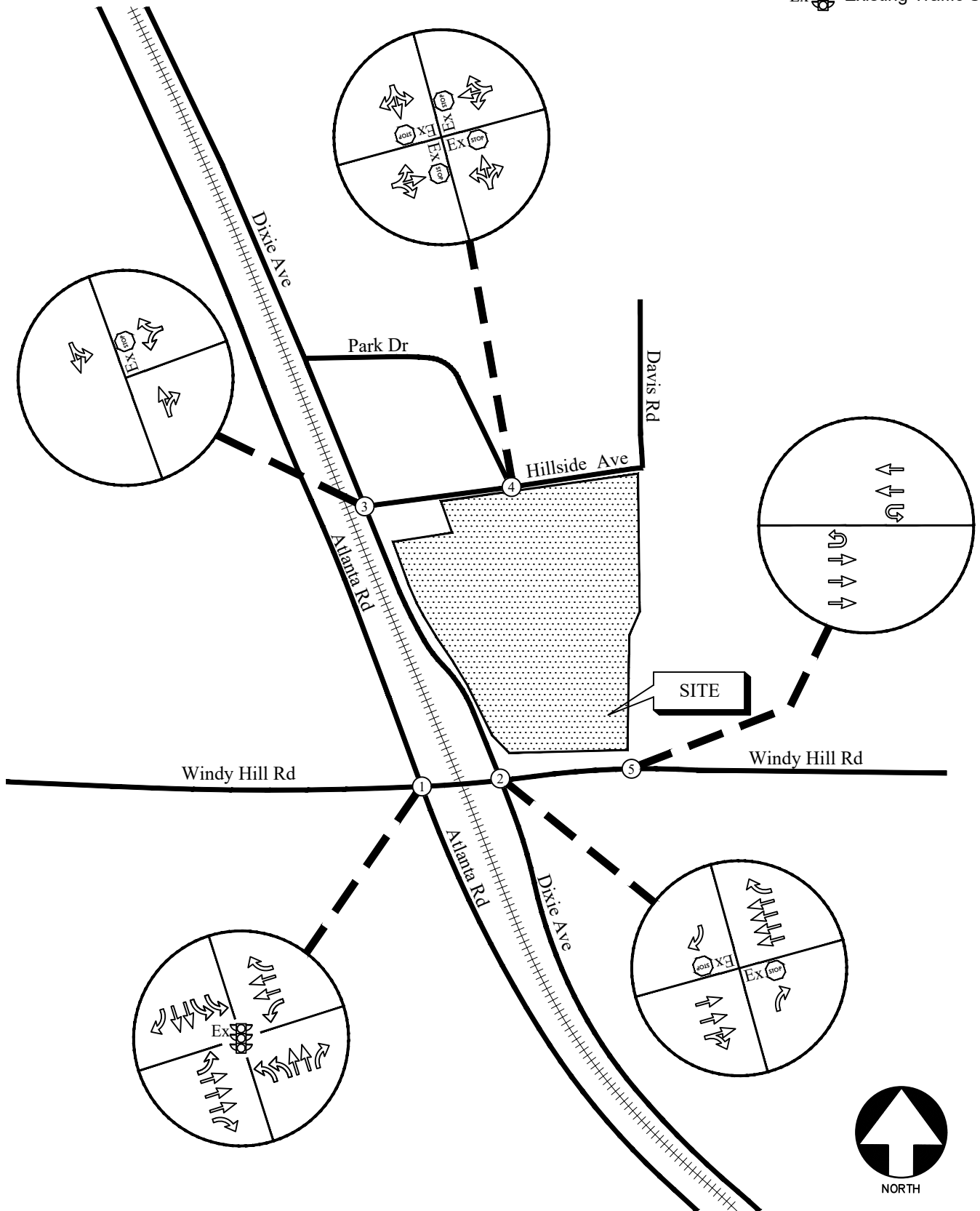


EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 2
A&R Engineering Inc.

LEGEND

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



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

A&R Engineering Inc.

4.2 Existing 2024 Traffic Operations

Existing 2024 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analyses are shown in Table 3.

TABLE 3 — EXISTING INTERSECTION OPERATIONS				
Intersection		Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	<u>Windy Hill Road at Atlanta Road</u>	Signalized	<u>D (39.3)</u>	<u>D (40.6)</u>
	-Eastbound Approach		C (32.4)	C (29.9)
	-Westbound Approach		C (27.1)	C (30.2)
	-Northbound Approach		D (49.6)	D (51.6)
	-Southbound Approach		D (50.9)	E (63.8)
2	<u>Windy Hill Road at Dixie Avenue</u>	Stop Controlled on NB and SB Approach		
	-Northbound Approach		C (21.7)	C (16.7)
3	-Southbound Approach	Stop Controlled on WB Approach	B (12.8)	C (23.2)
	-Westbound Approach		A (8.8)	A (8.7)
	-Southbound Left		A (7.3)	A (7.3)
4	<u>Hillside Avenue at Park Drive</u>	All-Way Stop Controlled	<u>A (7.0)</u>	<u>A (7.0)</u>
	-Eastbound Approach		A (7.0)	A (7.0)
	-Westbound Approach		A (7.0)	A (6.9)
	-Southbound Approach		A (6.4)	A (7.2)

The results of existing traffic operations analysis indicate that the signalized intersection of Windy Hill Road at Atlanta Road is operating at an overall level of service “D” in both the AM and PM peak hours. The stop-controlled approaches at other un-signalized study intersections are operating at levels-of-service “C” or better in both the AM and PM peak hours.

5.0 PROPOSED DEVELOPMENT

The development will be located on Windy Hill Road and Dixie Avenue in City of Smyrna, GA. The development will consist of 246-units mid-rise apartment housing and 33,000 sf gym/aquatic center.



The development proposes to extend Davis Road from its intersection with Hillside Avenue to Windy Hill Road at its existing median break and signalize the intersection. The development will have access at the following locations:

- Site Driveway 1: Full-access driveway on Dixie Avenue
- Site Driveway 2: Full-access driveway on Hillside Avenue, aligned with Park Drive
- Site Driveway 3: Full-access driveway on Davis Road extension

A site plan is shown in Figure 4.



Worthing Smyrna

Smyrna, Georgia



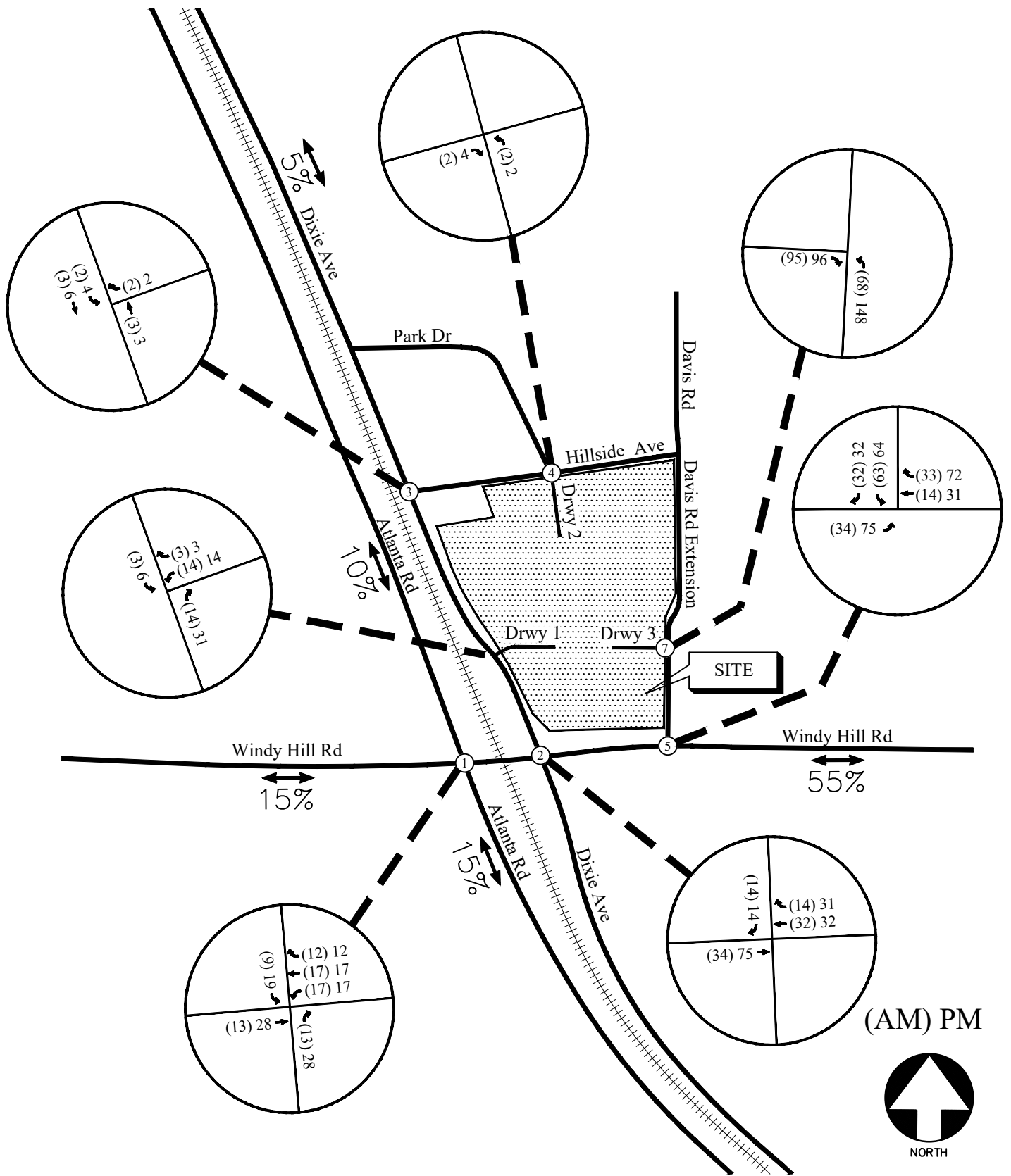
5.1 Trip Generation

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 Uses: 221 – *Multifamily Housing (Mid-Rise)* and 493 - *Athletic Club*. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION								
Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 221 – Multifamily Housing (Mid-Rise)	246 units	22	75	97	59	37	96	1,127
ITE 493 - Athletic Club	33,000 sf	64	40	104	129	79	208	2,076
New External Trips		86	115	201	188	116	304	3,203

5.2 Trip Distribution

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



TRIP DISTRIBUTION AND NEW SITE-GENERATED
WEEKDAY PEAK HOUR VOLUMES

FIGURE 5
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6.0 FUTURE 2026 TRAFFIC ANALYSIS

The future 2026 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 (Figure 3) 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 five (between 2018-2019 & 2021-2023) years revealed growth of approximately 1% in the area was used in the analysis. 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. The resulting Future “No-Build” volumes on the roadway are shown in Figure 6.

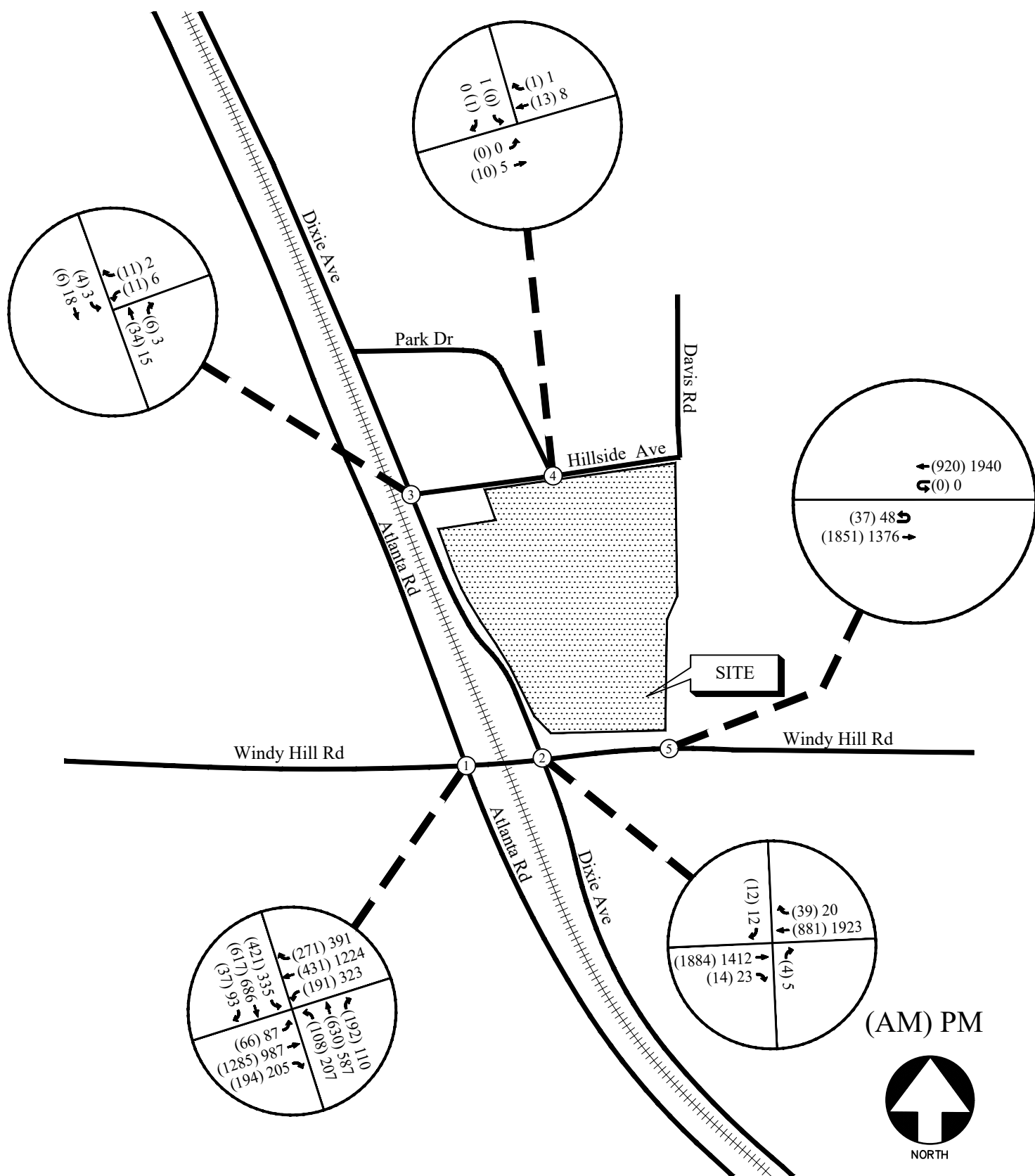
6.1.2 Shifted Trips

The development proposes to extend Davis Road from Hillside Avenue to the existing median opening on Windy Hill Road just east of Atlanta Road. The proposed southbound leg will be a continuation of Davis Road, and the intersection will be signalized by the development. The westbound traffic at the intersection of Hillside Avenue at Park Drive is shifted to the new signalized intersection and assigned 50% to both east and west on Windy Hill Road. The shifted trips are shown in Figure 7.

6.2 Future “Build” Conditions

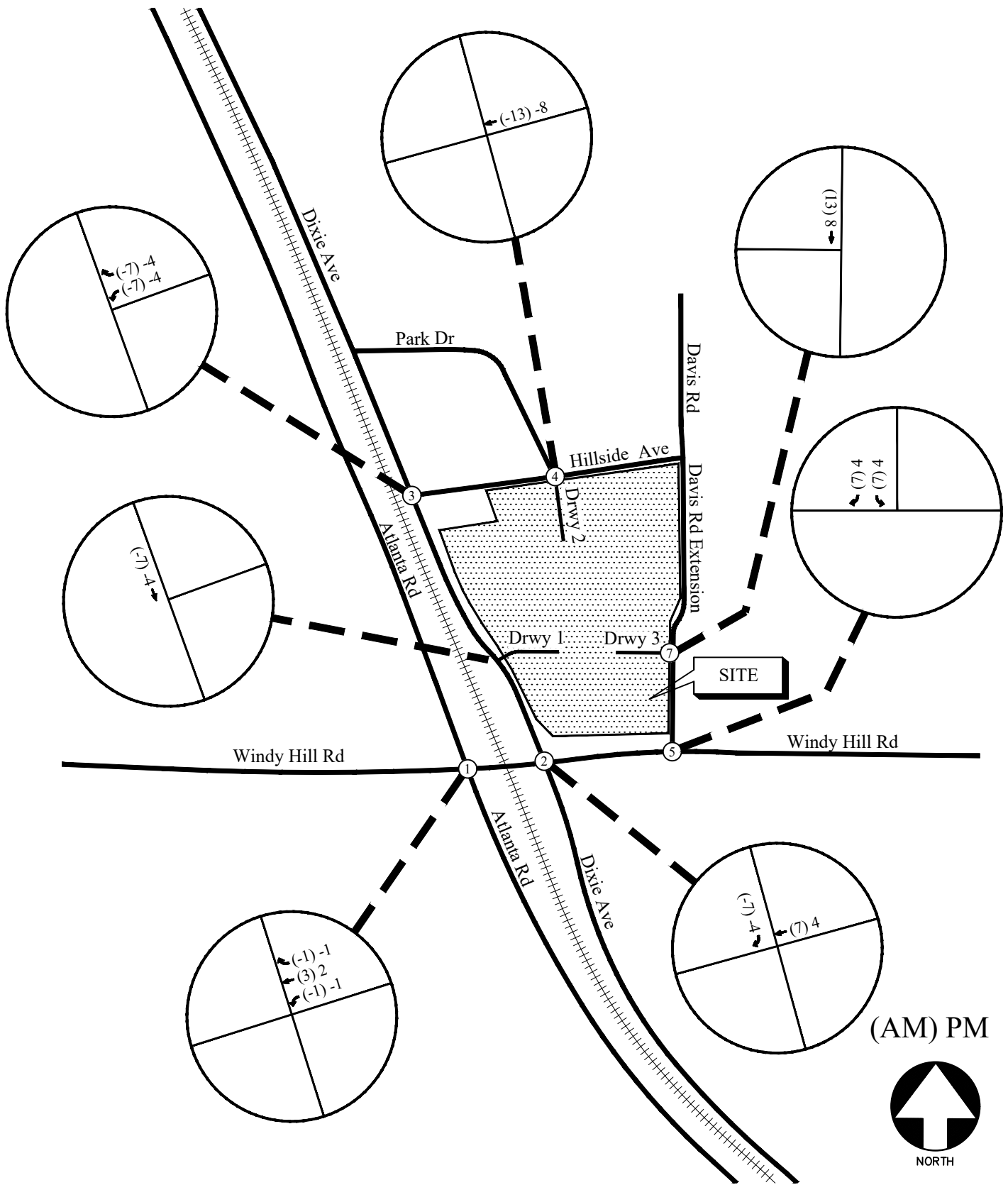
The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) and shifted trips (Figure 7) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future “Build” traffic volumes are shown in Figure 8.

Assuming that the intersection of Davis Road Extension at Windy Hill Road will be signalized in the future “Build” conditions, we have analyzed the intersection with a traffic signal. A detailed signal warrant analysis is prepared and the results of the signal warrant analysis indicate that future traffic volumes at the intersection of Windy Hill Road at Davis Road Extension meet the warrant 3 (using the major street and minor street volumes) and warrants 2 and 3 (using the major street left/U-turn volumes as minor street and the opposing approach major street volumes as major street), for installation of a signal at the study intersection of Windy Hill Road and Davis Road Extension.



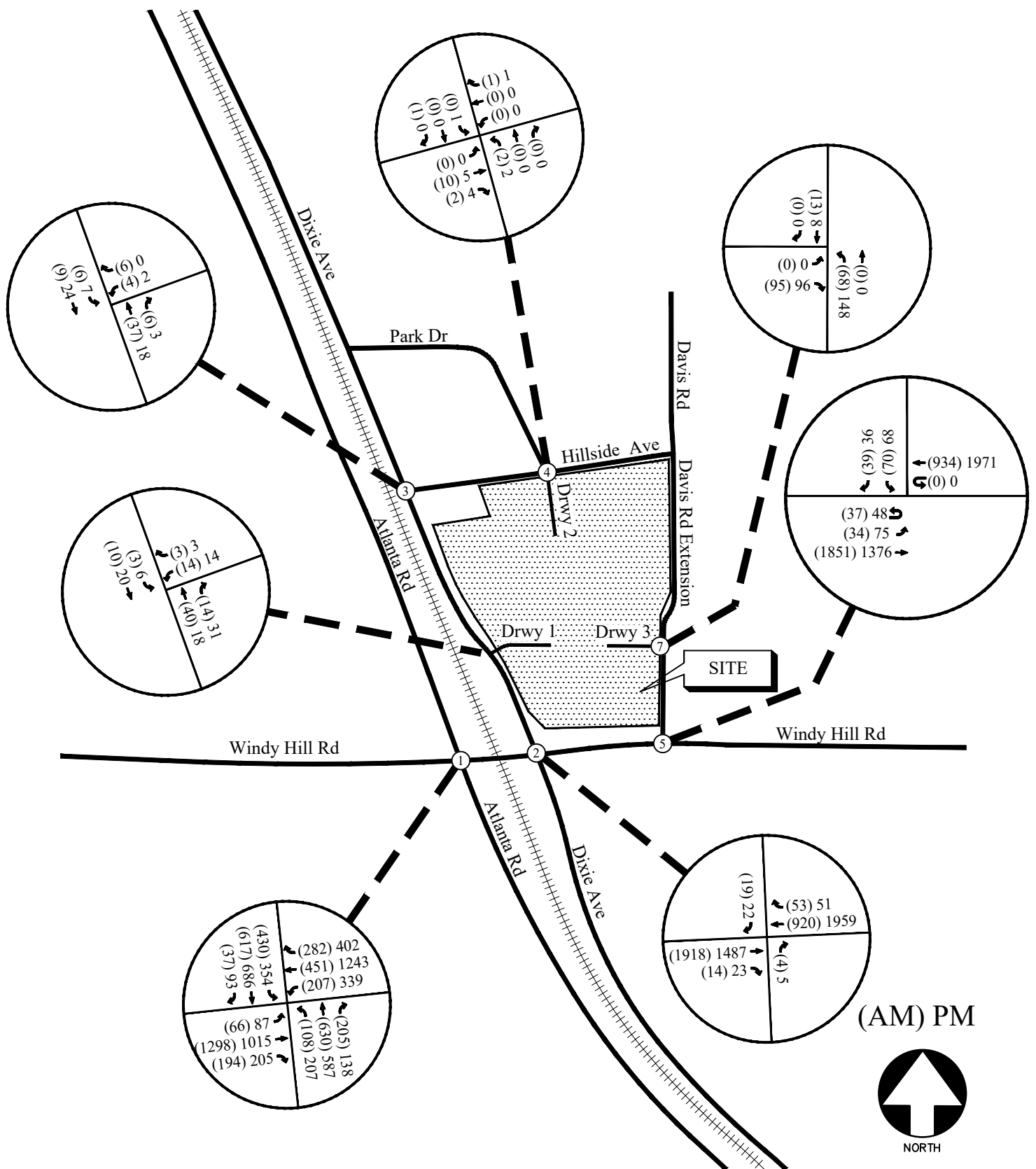
FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 6
A&R Engineering Inc.



SHIFTED TRIPS VOLUMES

FIGURE 7
A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

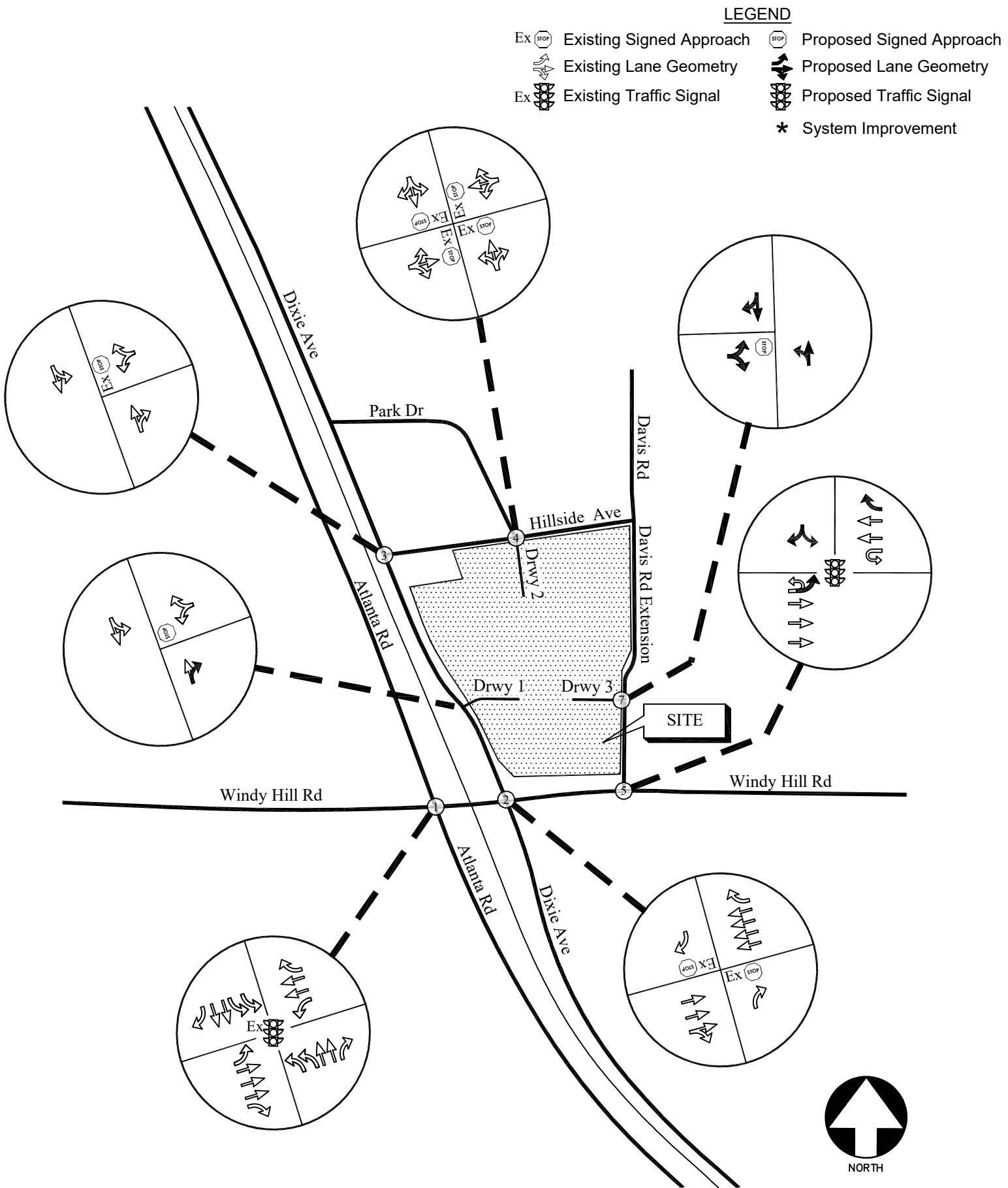
FIGURE 8
A&R Engineering Inc.

6.3 Future Traffic Operations

The future “No-Build” and “Build” traffic operations were analyzed using the volumes in Figure 6 and Figure 8, respectively. We have assumed a traffic signal at the new intersection of Davis Road Extension and Windy Hill Road in our analysis. The results of the future traffic operations analysis are shown below in Table 5. Recommendations on traffic control and lane geometry are shown in Figure 9.

TABLE 5 — FUTURE INTERSECTION OPERATIONS					
Intersection		Future Condition: LOS (Delay)			
		NO BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
1	<u>Windy Hill Road at Atlanta Road</u>	<u>D (40.1)</u>	<u>D (42.0)</u>	<u>D (41.1)</u>	<u>D (44.0)</u>
	-Eastbound Approach	C (33.3)	C (31.3)	C (33.9)	C (32.1)
	-Westbound Approach	C (28.1)	C (32.2)	C (30.0)	C (34.3)
	-Northbound Approach	D (49.5)	D (52.8)	D (49.5)	D (52.6)
	-Southbound Approach	D (52.1)	E (64.3)	D (54.1)	E (70.0)
2	<u>Windy Hill Road at Dixie Avenue</u>				
	-Northbound Approach	C (22.2)	C (16.9)	C (22.7)	C (17.7)
	-Southbound Approach	B (12.9)	C (23.8)	B (13.3)	D (25.6)
3	<u>Dixie Avenue at Hillside Avenue</u>				
	-Westbound Approach	A (8.8)	A (8.7)	A (8.7)	A (8.9)
	-Southbound Left	A (7.3)	A (7.3)	A (7.3)	A (7.3)
4	<u>Hillside Avenue at Park Drive/ Site Drwy 2</u>	<u>A (7.0)</u>	<u>A (7.0)</u>	<u>A (6.9)</u>	<u>A (6.8)</u>
	-Eastbound Approach	A (7.0)	A (7.0)	A (6.9)	A (6.7)
	-Westbound Approach	A (7.0)	A (6.9)	A (6.4)	A (6.4)
	-Northbound Approach	-	-	A (7.2)	A (7.2)
	-Southbound Approach	A (6.4)	A (7.2)	A (6.4)	A (7.2)
5	<u>Windy Hill Road at Davis Road Extension</u>			<u>A (6.3)</u>	<u>B (10.0)</u>
	-Eastbound Approach	-	-	A (3.3)	A (3.5)
	-Westbound Approach	-	-	A (5.5)	B (11.9)
	-Southbound Approach	-	-	E (64.6)	E (65.2)
6	<u>Dixie Avenue at Site Drwy 1</u>				
	-Westbound Approach	-	-	A (8.8)	A (8.8)
	-Southbound Left	-	-	A (7.3)	A (7.3)
7	<u>Davis Road Extension at Site Drwy 3</u>				
	-Eastbound Approach	-	-	A (8.7)	A (8.7)
	-Northbound Left	-	-	A (7.4)	A (7.5)

The results of future “No-Build” and “Build” conditions traffic analysis indicate that the signalized intersection of Windy Hill Road at Atlanta Road will continue to operate at an overall satisfactory level of service “D” in both the AM and PM peak hours. The new signalized intersection of Windy Hill Road at Davis Road Extension will operate at an overall level of service “A” in both AM and PM peak hours. The stop-controlled approaches at other un-signalized study intersections will also be operating at satisfactory levels-of-service “D” or better in both the AM and PM peak hours.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 9
A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the proposed residential development and gym/aquatic center located on Windy Hill Road and Dixie Avenue in Cobb County, Georgia. The proposed development will consist of 246-units mid-rise apartment housing and 33,000 sf gym/aquatic center.

The development proposes to extend Davis Road from its intersection of Hillside Avenue in the north to Windy Hill Road in the south at its existing median break and proposes to signalize the Windy Hill Road and Davis Road Extension. The development proposes access at the following locations:

- Site Driveway 1: Full-access driveway on Dixie Avenue
- Site Driveway 2: Full-access driveway on Hillside Avenue, aligned with Park Drive
- Site Driveway 3: Full-access driveway on Davis Road extension

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

1. Windy Hill Road at Atlanta Road
2. Windy Hill Road at Dixie Avenue
3. Dixie Avenue at Hillside Avenue
4. Hillside Avenue at Park Drive/ Site Driveway 2
5. Windy Hill Road at Davis Road Extension
6. Dixie Avenue at Site Driveway 1
7. Davis Road Extension at Site Driveway 3

The analysis included the evaluation of future operations for “No-Build” and “Build” conditions, with the differences between “No-Build” and “Build” accounting for an increase in traffic due to the proposed development.

The results of future “No-Build” and “Build” conditions traffic analysis indicate that the signalized intersection of Windy Hill Road at Atlanta Road will continue to operate at an overall satisfactory level of service “D” in both the AM and PM peak hours. The new signalized intersection of Windy Hill Road at Davis Road Extension will operate at an overall level of service “A” in both AM and PM peak hours. The stop-controlled approaches at other un-signalized study intersections will also be operating at satisfactory levels-of-service “D” or better in both the AM and PM peak hours. Based on the analysis, the proposed development will have minimal impact on traffic operations in the study network.

7.1 Recommendation for Site Improvements

The development proposes to extend Davis Road from Hillside Avenue to Windy Hill Road and signalizing the intersection.

- Intersection 5: Windy Hill Road at Davis Road Extension
 - Install a traffic signal with ‘protected-permissive’ phasing for eastbound left-turn movements.
 - Coordinate the signal with the traffic signal at Windy Hill Road and Atlanta Road.
 - Construct a westbound right-turn lane on Windy Hill Road
 - Southbound approach of Davis Road Extension to have a shared left/through lane.

7.2 Recommendations for Site Access Configuration

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

- Site Driveway 1: Full Access Driveway on Dixie Avenue
 - One entering lane and one exiting lane
 - Stop-sign controlled on the driveway approach with Dixie Avenue remaining free flow
 - Provide/confirm adequate sight distance per AASHTO standards
- Site Driveway 2: Full Access Driveway on Hillside Avenue, aligned with Park Drive
 - One entering lane and one exiting lane
 - Stop-sign controlled on the driveway approach
 - Provide/confirm adequate sight distance per AASHTO standards
- Site Driveway 3: Full Access Driveway on Davis Road Extension
 - One entering lane and one exiting lane
 - Stop-sign controlled on the driveway approach with Davis Road Extension remaining free flow
 - Provide/confirm adequate sight distance per AASHTO standards

Appendix

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

EXISTING INTERSECTION TRAFFIC COUNTS

A & R Engineering, Inc.

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

TMC Data
Median Break on Windy Hill Rd East of
Dixie Avenue
7am - 8pm

File Name : 20240348
Site Code : 20240348
Start Date : 09-05-2024
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Northbound				Southbound				Windy Hill Road Eastbound					Windy Hill Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	343	0	8	351	0	190	0	190	541
07:15 AM	0	0	0	0	0	0	0	0	0	429	0	11	440	0	223	0	223	663
07:30 AM	0	0	0	0	0	0	0	0	0	454	0	16	470	0	259	0	259	729
07:45 AM	0	0	0	0	0	0	0	0	0	392	0	12	404	0	226	0	226	630
Total	0	0	0	0	0	0	0	0	0	1618	0	47	1665	0	898	0	898	2563
08:00 AM	0	0	0	0	0	0	0	0	0	443	0	7	450	0	212	0	212	662
08:15 AM	0	0	0	0	0	0	0	0	0	462	0	9	471	0	234	0	234	705
08:30 AM	0	0	0	0	0	0	0	0	0	472	0	9	481	0	237	0	237	718
08:45 AM	0	0	0	0	0	0	0	0	0	438	0	11	449	0	219	0	219	668
Total	0	0	0	0	0	0	0	0	0	1815	0	36	1851	0	902	0	902	2753
09:00 AM	0	0	0	0	0	0	0	0	0	412	0	8	420	0	207	0	207	627
09:15 AM	0	0	0	0	0	0	0	0	0	406	0	4	410	0	213	0	213	623
09:30 AM	0	0	0	0	0	0	0	0	0	388	0	9	397	0	206	0	206	603
09:45 AM	0	0	0	0	0	0	0	0	0	374	0	7	381	0	198	0	198	579
Total	0	0	0	0	0	0	0	0	0	1580	0	28	1608	0	824	0	824	2432
10:00 AM	0	0	0	0	0	0	0	0	0	367	0	9	376	0	191	0	191	567
10:15 AM	0	0	0	0	0	0	0	0	0	341	0	6	347	0	183	0	183	530
10:30 AM	0	0	0	0	0	0	0	0	0	349	0	8	357	0	187	0	187	544
10:45 AM	0	0	0	0	0	0	0	0	0	340	0	5	345	0	165	0	165	510
Total	0	0	0	0	0	0	0	0	0	1397	0	28	1425	0	726	0	726	2151
11:00 AM	0	0	0	0	0	0	0	0	0	333	0	6	339	0	173	0	173	512
11:15 AM	0	0	0	0	0	0	0	0	0	315	0	4	319	0	166	0	166	485
11:30 AM	0	0	0	0	0	0	0	0	0	319	0	6	325	0	174	0	174	499
11:45 AM	0	0	0	0	0	0	0	0	0	320	0	6	326	0	181	0	181	507
Total	0	0	0	0	0	0	0	0	0	1287	0	22	1309	0	694	0	694	2003
12:00 PM	0	0	0	0	0	0	0	0	0	307	0	8	315	0	189	0	189	504
12:15 PM	0	0	0	0	0	0	0	0	0	318	0	7	325	0	193	0	193	518
12:30 PM	0	0	0	0	0	0	0	0	0	334	0	7	341	0	195	0	195	536
12:45 PM	0	0	0	0	0	0	0	0	0	341	0	5	346	0	205	0	205	551
Total	0	0	0	0	0	0	0	0	0	1300	0	27	1327	0	782	0	782	2109
01:00 PM	0	0	0	0	0	0	0	0	0	327	0	9	336	0	209	0	209	545
01:15 PM	0	0	0	0	0	0	0	0	0	319	0	5	324	0	213	0	213	537
01:30 PM	0	0	0	0	0	0	0	0	0	307	0	8	315	0	218	0	218	533
01:45 PM	0	0	0	0	0	0	0	0	0	297	0	5	302	0	220	0	220	522
Total	0	0	0	0	0	0	0	0	0	1250	0	27	1277	0	860	0	860	2137
02:00 PM	0	0	0	0	0	0	0	0	0	283	0	7	290	0	226	0	226	516
02:15 PM	0	0	0	0	0	0	0	0	0	262	0	9	271	0	247	0	247	518
02:30 PM	0	0	0	0	0	0	0	0	0	241	0	4	245	0	259	0	259	504
02:45 PM	0	0	0	0	0	0	0	0	0	258	0	5	263	0	281	0	281	544
Total	0	0	0	0	0	0	0	0	0	1044	0	25	1069	0	1013	0	1013	2082

A & R Engineering, Inc.

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

TMC Data
Median Break on Windy Hill Rd East of
Dixie Avenue
7am - 8pm

File Name : 20240348
Site Code : 20240348
Start Date : 09-05-2024
Page No : 2

Groups Printed- Cars, Buses & Trucks

Start Time	Northbound				Southbound				Windy Hill Road Eastbound					Windy Hill Road Westbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	
03:00 PM	0	0	0	0	0	0	0	0	0	254	0	4	258	0	307	0	307	565
03:15 PM	0	0	0	0	0	0	0	0	0	266	0	6	272	0	323	0	323	595
03:30 PM	0	0	0	0	0	0	0	0	0	271	0	8	279	0	315	0	315	594
03:45 PM	0	0	0	0	0	0	0	0	0	278	0	4	282	0	356	0	356	638
Total	0	0	0	0	0	0	0	0	0	1069	0	22	1091	0	1301	0	1301	2392
04:00 PM	0	0	0	0	0	0	0	0	0	282	0	6	288	0	392	0	392	680
04:15 PM	0	0	0	0	0	0	0	0	0	273	0	9	282	0	389	0	389	671
04:30 PM	0	0	0	0	0	0	0	0	0	289	0	5	294	0	410	0	410	704
04:45 PM	0	0	0	0	0	0	0	0	0	314	0	8	322	0	445	0	445	767
Total	0	0	0	0	0	0	0	0	0	1158	0	28	1186	0	1636	0	1636	2822
05:00 PM	0	0	0	0	0	0	0	0	0	345	0	13	358	0	464	0	464	822
05:15 PM	0	0	0	0	0	0	0	0	0	341	0	15	356	0	516	0	516	872
05:30 PM	0	0	0	0	0	0	0	0	0	349	0	11	360	0	477	0	477	837
05:45 PM	0	0	0	0	0	0	0	0	0	305	0	10	315	0	448	0	448	763
Total	0	0	0	0	0	0	0	0	0	1340	0	49	1389	0	1905	0	1905	3294
06:00 PM	0	0	0	0	0	0	0	0	0	299	0	8	307	0	421	0	421	728
06:15 PM	0	0	0	0	0	0	0	0	0	285	0	8	293	0	406	0	406	699
06:30 PM	0	0	0	0	0	0	0	0	0	273	0	6	279	0	392	0	392	671
06:45 PM	0	0	0	0	0	0	0	0	0	260	0	7	267	0	384	0	384	651
Total	0	0	0	0	0	0	0	0	0	1117	0	29	1146	0	1603	0	1603	2749
07:00 PM	0	0	0	0	0	0	0	0	0	245	0	8	253	0	339	0	339	592
07:15 PM	0	0	0	0	0	0	0	0	0	229	0	7	236	0	314	0	314	550
07:30 PM	0	0	0	0	0	0	0	0	0	215	0	6	221	0	296	0	296	517
07:45 PM	0	0	0	0	0	0	0	0	0	209	0	8	217	0	269	0	269	486
Total	0	0	0	0	0	0	0	0	0	898	0	29	927	0	1218	0	1218	2145
Grand Total	0	0	0	0	0	0	0	0	0	16873	0	397	17270	0	14362	0	14362	31632
Apprch %	0	0	0		0	0	0		0	97.7	0	2.3		0	100	0		
Total %	0	0	0	0	0	0	0	0	0	53.3	0	1.3	54.6	0	45.4	0	45.4	

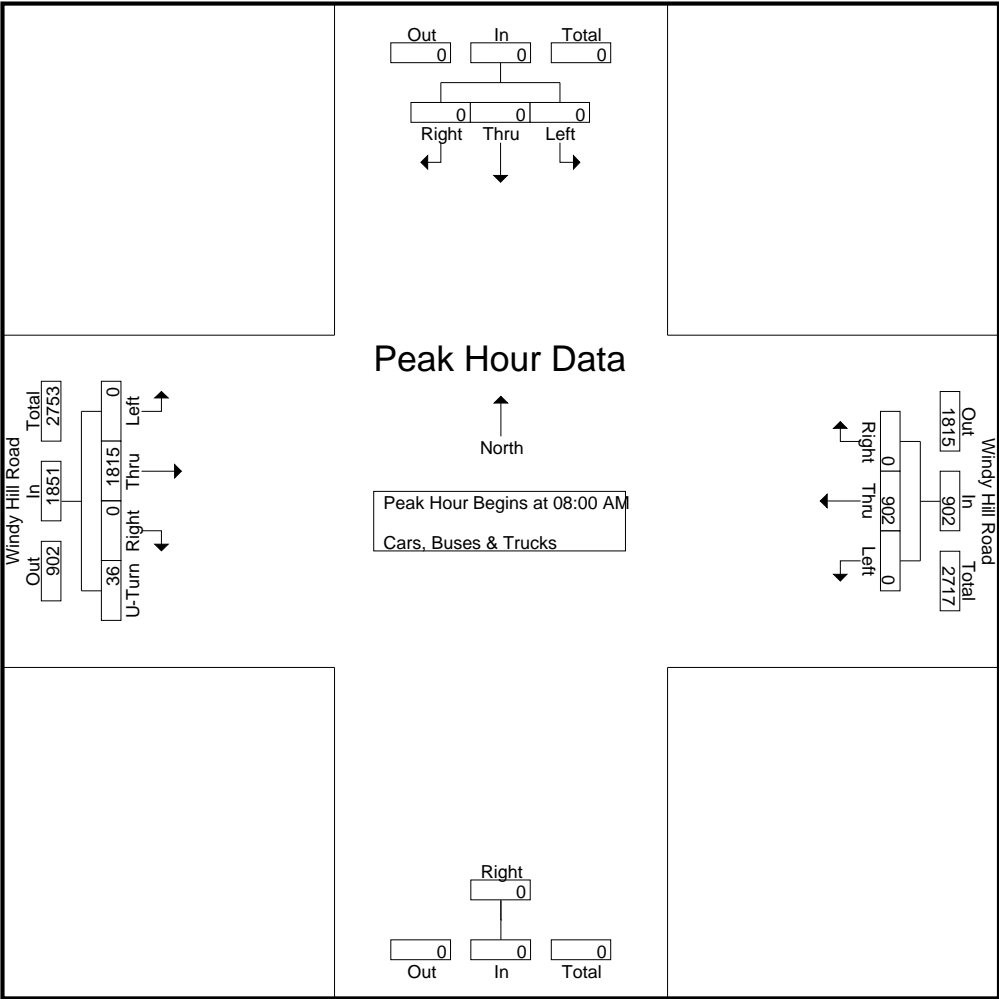
A & R Engineering, Inc.

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

TMC Data
Median Break on Windy Hill Rd East of
Dixie Avenue
7am - 8pm

File Name : 20240348
Site Code : 20240348
Start Date : 09-05-2024
Page No : 3

	Northbound				Southbound				Windy Hill Road Eastbound					Windy Hill Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	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 08:00 AM																		
08:00 AM	0	0	0	0	0	0	0	0	0	443	0	7	450	0	212	0	212	662
08:15 AM	0	0	0	0	0	0	0	0	0	462	0	9	471	0	234	0	234	705
08:30 AM	0	0	0	0	0	0	0	0	0	472	0	9	481	0	237	0	237	718
08:45 AM	0	0	0	0	0	0	0	0	0	438	0	11	449	0	219	0	219	668
Total Volume	0	0	0	0	0	0	0	0	0	1815	0	36	1851	0	902	0	902	2753
% App. Total	0	0	0		0	0	0		0	98.1	0	1.9		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.961	.000	.818	.962	.000	.951	.000	.951	.959



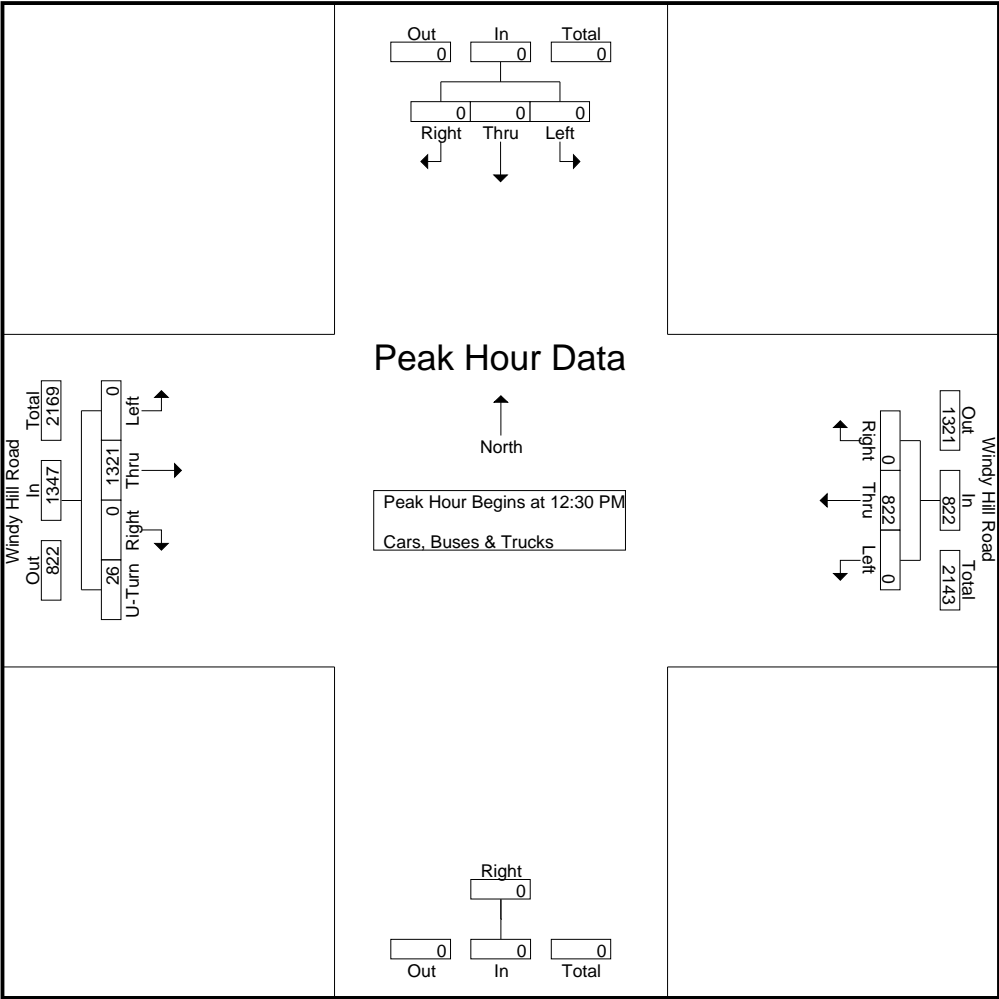
A & R Engineering, Inc.

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

TMC Data
Median Break on Windy Hill Rd East of
Dixie Avenue
7am - 8pm

File Name : 20240348
Site Code : 20240348
Start Date : 09-05-2024
Page No : 4

	Northbound				Southbound				Windy Hill Road Eastbound					Windy Hill Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:30 PM																		
12:30 PM	0	0	0	0	0	0	0	0	0	334	0	7	341	0	195	0	195	536
12:45 PM	0	0	0	0	0	0	0	0	0	341	0	5	346	0	205	0	205	551
01:00 PM	0	0	0	0	0	0	0	0	0	327	0	9	336	0	209	0	209	545
01:15 PM	0	0	0	0	0	0	0	0	0	319	0	5	324	0	213	0	213	537
Total Volume	0	0	0	0	0	0	0	0	0	1321	0	26	1347	0	822	0	822	2169
% App. Total	0	0	0		0	0	0		0	98.1	0	1.9		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.968	.000	.722	.973	.000	.965	.000	.965	.984



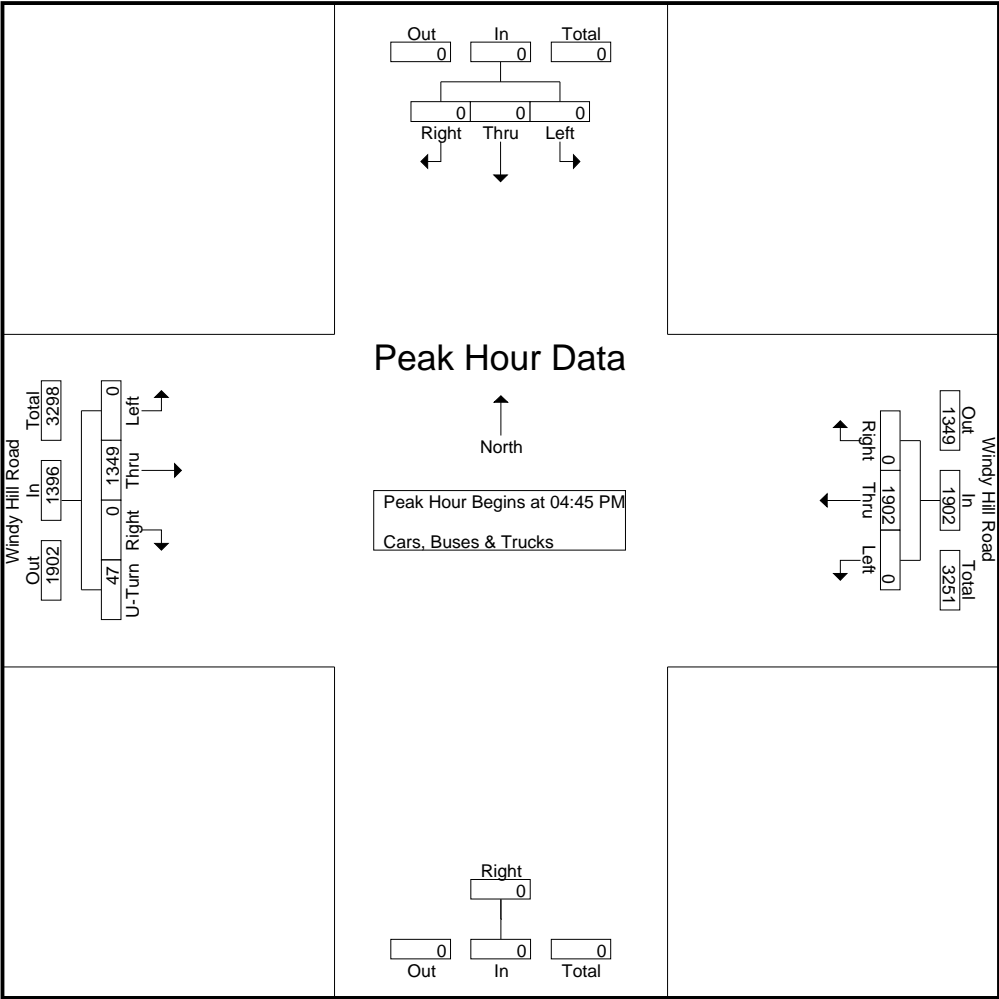
A & R Engineering, Inc.

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

TMC Data
Median Break on Windy Hill Rd East of
Dixie Avenue
7am - 8pm

File Name : 20240348
Site Code : 20240348
Start Date : 09-05-2024
Page No : 5

	Northbound				Southbound				Windy Hill Road Eastbound					Windy Hill Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	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 04:45 PM																		
04:45 PM	0	0	0	0	0	0	0	0	0	314	0	8	322	0	445	0	445	767
05:00 PM	0	0	0	0	0	0	0	0	0	345	0	13	358	0	464	0	464	822
05:15 PM	0	0	0	0	0	0	0	0	0	341	0	15	356	0	516	0	516	872
05:30 PM	0	0	0	0	0	0	0	0	0	349	0	11	360	0	477	0	477	837
Total Volume	0	0	0	0	0	0	0	0	0	1349	0	47	1396	0	1902	0	1902	3298
% App. Total	0	0	0		0	0	0		0	96.6	0	3.4		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.966	.000	.783	.969	.000	.922	.000	.922	.946



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Dixie Avenue

7-9 am | 4-6 pm

File Name : 20240347

Site Code : 20240347

Start Date : 09-05-2024

Page No : 1

Groups Printed- Cars, Buses & Trucks

	Dixie Ave Northbound				Dixie Ave Southbound				Windy Hill Road Eastbound				Windy Hill Road 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
07:00 AM	0	0	2	2	0	0	6	6	0	349	2	351	0	182	8	190	549
07:15 AM	0	0	6	6	0	0	2	2	0	434	3	437	0	214	9	223	668
07:30 AM	0	0	4	4	0	0	7	7	0	466	1	467	0	249	10	259	737
07:45 AM	0	0	2	2	0	0	3	3	0	402	5	407	0	215	11	226	638
Total	0	0	14	14	0	0	18	18	0	1651	11	1662	0	860	38	898	2592
08:00 AM	0	0	1	1	0	0	2	2	0	449	5	454	0	204	8	212	669
08:15 AM	0	0	1	1	0	0	3	3	0	470	5	475	0	223	11	234	713
08:30 AM	0	0	1	1	0	0	1	1	0	480	3	483	0	232	5	237	722
08:45 AM	0	0	1	1	0	0	6	6	0	448	1	449	0	205	14	219	675
Total	0	0	4	4	0	0	12	12	0	1847	14	1861	0	864	38	902	2779
*** BREAK ***																	
04:00 PM	0	0	1	1	0	0	2	2	0	287	0	287	0	387	5	392	682
04:15 PM	0	0	2	2	0	0	8	8	0	280	8	288	0	385	4	389	687
04:30 PM	0	0	0	0	0	0	5	5	0	294	6	300	0	406	4	410	715
04:45 PM	0	0	1	1	0	0	6	6	0	321	2	323	0	443	2	445	775
Total	0	0	4	4	0	0	21	21	0	1182	16	1198	0	1621	15	1636	2859
05:00 PM	0	0	1	1	0	0	2	2	0	357	4	361	0	463	1	464	828
05:15 PM	0	0	0	0	0	0	3	3	0	356	5	361	0	510	6	516	880
05:30 PM	0	0	3	3	0	0	5	5	0	357	2	359	0	468	9	477	844
05:45 PM	0	0	1	1	0	0	2	2	0	314	12	326	0	444	4	448	777
Total	0	0	5	5	0	0	12	12	0	1384	23	1407	0	1885	20	1905	3329
Grand Total	0	0	27	27	0	0	63	63	0	6064	64	6128	0	5230	111	5341	11559
Apprch %	0	0	100		0	0	100		0	99	1		0	97.9	2.1		
Total %	0	0	0.2	0.2	0	0	0.5	0.5	0	52.5	0.6	53	0	45.2	1	46.2	

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Dixie Avenue

7-9 am | 4-6 pm

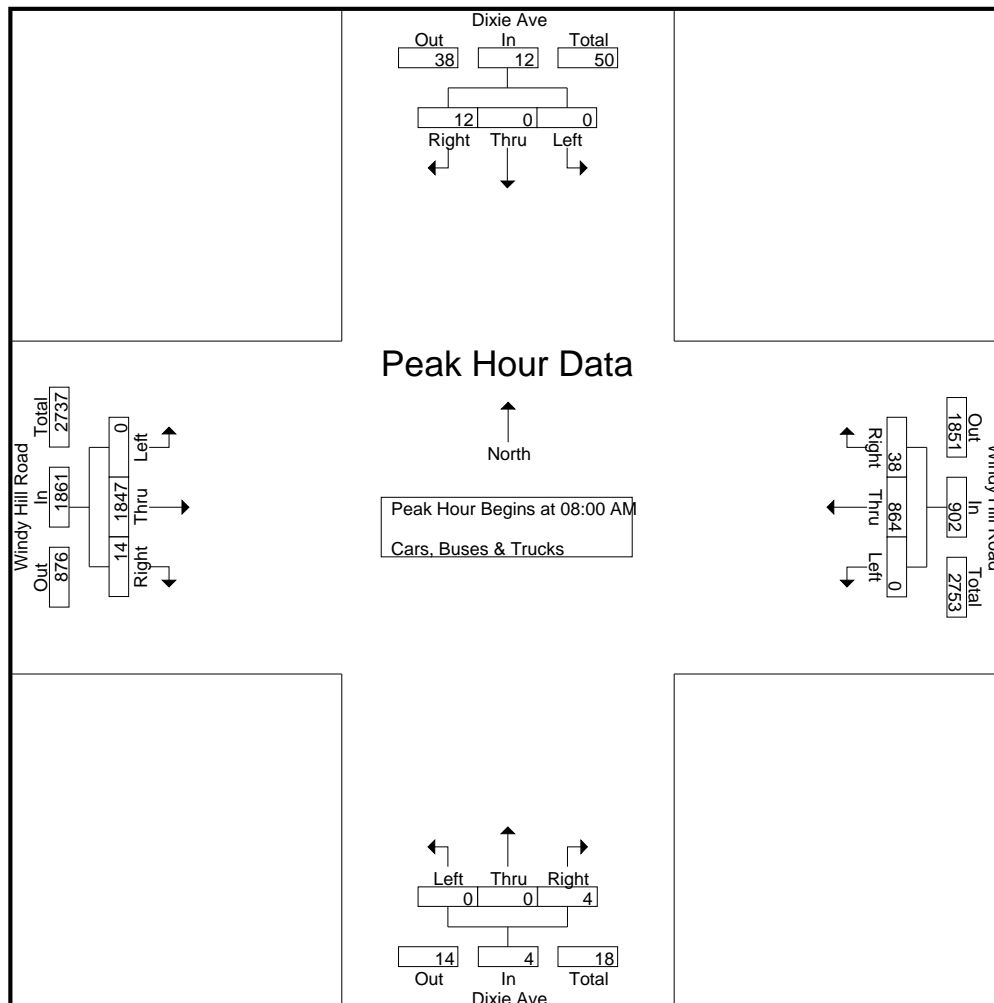
File Name : 20240347

Site Code : 20240347

Start Date : 09-05-2024

Page No : 2

	Dixie Ave Northbound				Dixie Ave Southbound				Windy Hill Road Eastbound				Windy Hill Road 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 08:00 AM																	
08:00 AM	0	0	1	1	0	0	2	2	0	449	5	454	0	204	8	212	669
08:15 AM	0	0	1	1	0	0	3	3	0	470	5	475	0	223	11	234	713
08:30 AM	0	0	1	1	0	0	1	1	0	480	3	483	0	232	5	237	722
08:45 AM	0	0	1	1	0	0	6	6	0	448	1	449	0	205	14	219	675
Total Volume	0	0	4	4	0	0	12	12	0	1847	14	1861	0	864	38	902	2779
% App. Total	0	0	100		0	0	100		0	99.2	0.8		0	95.8	4.2		
PHF	.000	.000	1.00	1.00	.000	.000	.500	.500	.000	.962	.700	.963	.000	.931	.679	.951	.962



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Dixie Avenue

7-9 am | 4-6 pm

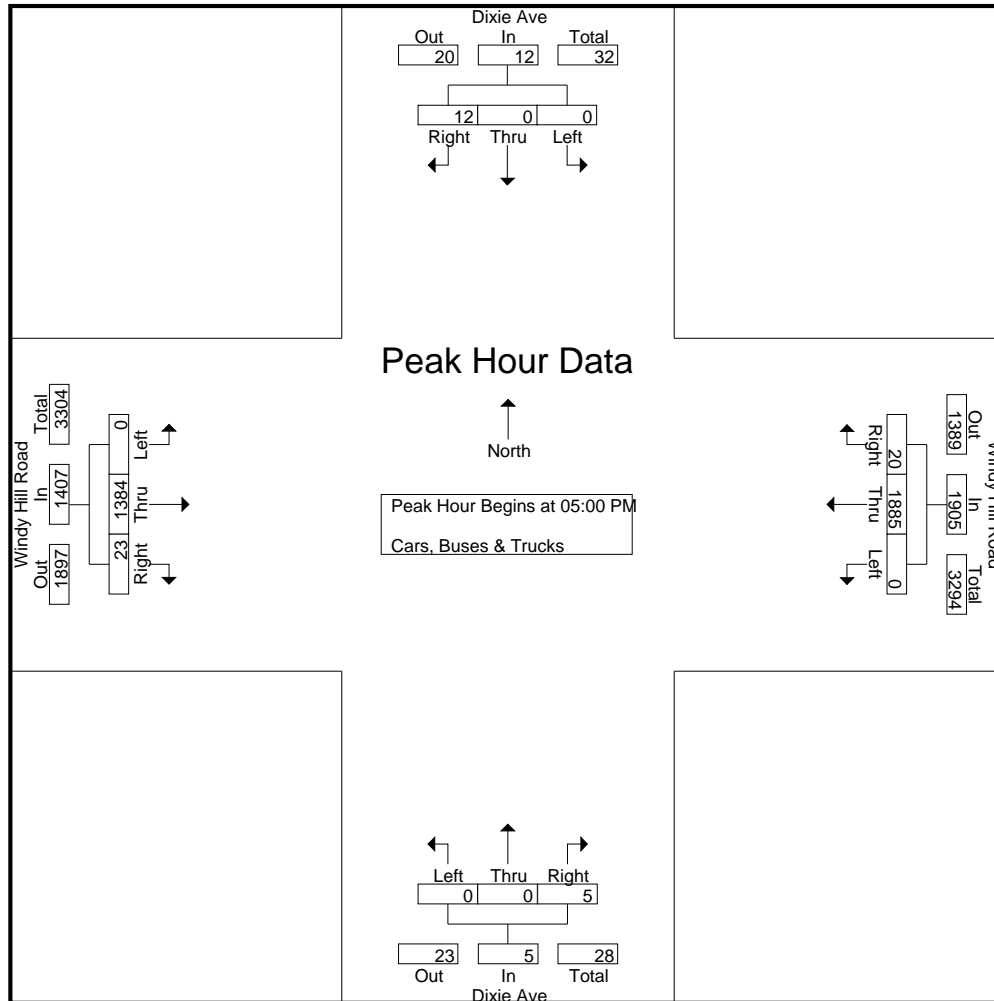
File Name : 20240347

Site Code : 20240347

Start Date : 09-05-2024

Page No : 3

	Dixie Ave Northbound				Dixie Ave Southbound				Windy Hill Road Eastbound				Windy Hill Road 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	0	1	1	0	0	2	2	0	357	4	361	0	463	1	464	828
05:15 PM	0	0	0	0	0	0	3	3	0	356	5	361	0	510	6	516	880
05:30 PM	0	0	3	3	0	0	5	5	0	357	2	359	0	468	9	477	844
05:45 PM	0	0	1	1	0	0	2	2	0	314	12	326	0	444	4	448	777
Total Volume	0	0	5	5	0	0	12	12	0	1384	23	1407	0	1885	20	1905	3329
% App. Total	0	0	100		0	0	100		0	98.4	1.6		0	99	1		
PHF	.000	.000	.417	.417	.000	.000	.600	.600	.000	.969	.479	.974	.000	.924	.556	.923	.946



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Atlanta Road

7-9 am | 4-6 pm

File Name : 20240346

Site Code : 20240346

Start Date : 09-05-2024

Page No : 1

Groups Printed- Cars, Buses & Trucks

	Atlanta Road Northbound				Atlanta Road Southbound				Windy Hill Road Eastbound				Windy Hill Road 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
07:00 AM	23	95	18	136	56	87	8	151	17	277	43	337	35	106	47	188	812
07:15 AM	29	128	27	184	88	131	8	227	18	322	51	391	33	122	61	216	1018
07:30 AM	22	108	22	152	90	140	9	239	19	355	62	436	44	146	66	256	1083
07:45 AM	28	124	27	179	64	159	6	229	18	316	49	383	45	114	59	218	1009
Total	102	455	94	651	298	517	31	846	72	1270	205	1547	157	488	233	878	3922
08:00 AM	24	141	43	208	97	149	8	254	14	314	44	372	44	100	62	206	1040
08:15 AM	29	157	49	235	103	153	11	267	19	323	51	393	51	109	66	226	1121
08:30 AM	26	169	52	247	115	161	7	283	15	316	53	384	49	111	73	233	1147
08:45 AM	27	151	44	222	98	142	10	250	17	307	42	366	43	103	65	211	1049
Total	106	618	188	912	413	605	36	1054	65	1260	190	1515	187	423	266	876	4357
*** BREAK ***																	
04:00 PM	53	123	14	190	70	166	25	261	17	203	35	255	67	250	72	389	1095
04:15 PM	49	131	19	199	73	173	18	264	23	196	31	250	58	256	79	393	1106
04:30 PM	56	128	13	197	79	159	21	259	18	208	43	269	61	267	83	411	1136
04:45 PM	52	137	23	212	64	166	26	256	20	236	39	295	73	288	88	449	1212
Total	210	519	69	798	286	664	90	1040	78	843	148	1069	259	1061	322	1642	4549
05:00 PM	44	140	27	211	82	164	17	263	19	252	52	323	82	291	92	465	1262
05:15 PM	49	145	31	225	89	173	22	284	26	241	59	326	88	319	106	513	1348
05:30 PM	58	153	27	238	93	170	26	289	20	239	51	310	74	302	97	473	1310
05:45 PM	51	131	23	205	81	152	19	252	22	222	49	293	63	292	91	446	1196
Total	202	569	108	879	345	659	84	1088	87	954	211	1252	307	1204	386	1897	5116
Grand Total	620	2161	459	3240	1342	2445	241	4028	302	4327	754	5383	910	3176	1207	5293	17944
Apprch %	19.1	66.7	14.2		33.3	60.7	6		5.6	80.4	14		17.2	60	22.8		
Total %	3.5	12	2.6	18.1	7.5	13.6	1.3	22.4	1.7	24.1	4.2	30	5.1	17.7	6.7	29.5	

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Atlanta Road

7-9 am | 4-6 pm

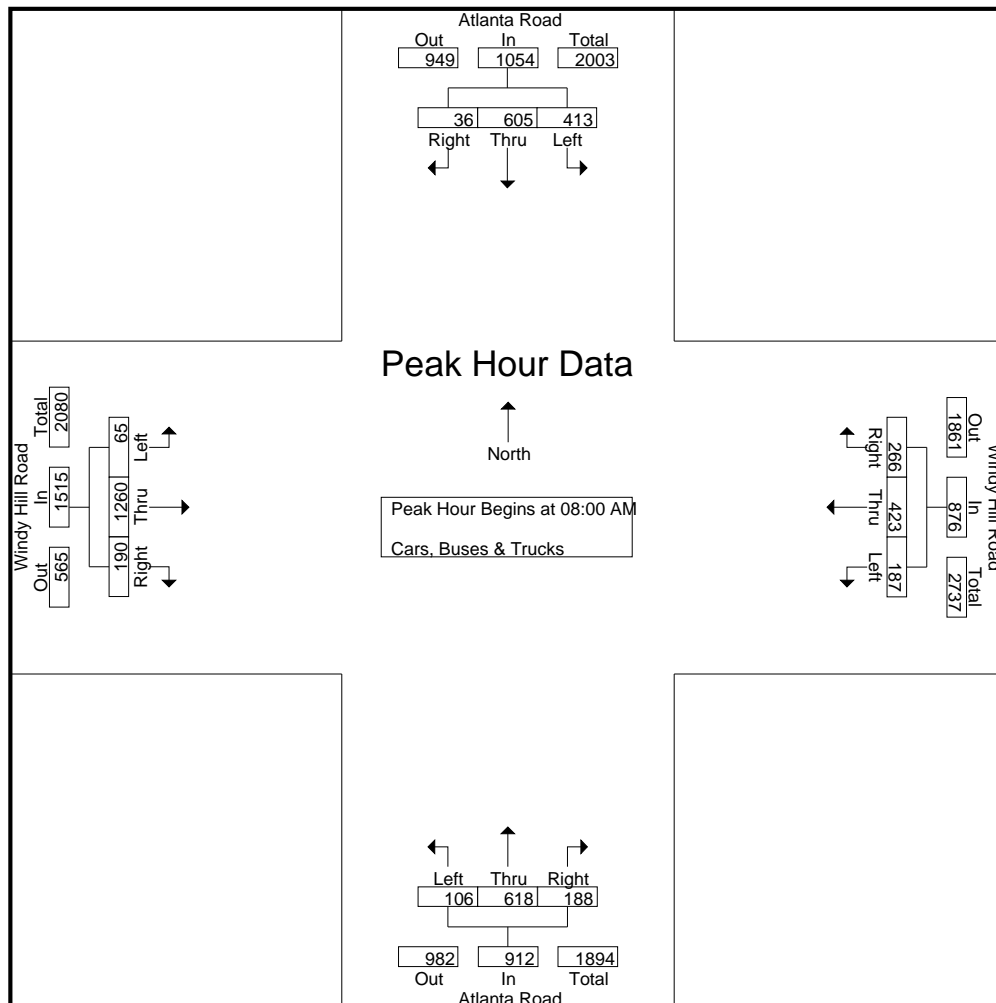
File Name : 20240346

Site Code : 20240346

Start Date : 09-05-2024

Page No : 2

	Atlanta Road Northbound				Atlanta Road Southbound				Windy Hill Road Eastbound				Windy Hill Road 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 08:00 AM																	
08:00 AM	24	141	43	208	97	149	8	254	14	314	44	372	44	100	62	206	1040
08:15 AM	29	157	49	235	103	153	11	267	19	323	51	393	51	109	66	226	1121
08:30 AM	26	169	52	247	115	161	7	283	15	316	53	384	49	111	73	233	1147
08:45 AM	27	151	44	222	98	142	10	250	17	307	42	366	43	103	65	211	1049
Total Volume	106	618	188	912	413	605	36	1054	65	1260	190	1515	187	423	266	876	4357
% App. Total	11.6	67.8	20.6		39.2	57.4	3.4		4.3	83.2	12.5		21.3	48.3	30.4		
PHF	.914	.914	.904	.923	.898	.939	.818	.931	.855	.975	.896	.964	.917	.953	.911	.940	.950



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2160 Kingston Court Suite 'O'

Marietta, GA 30067

TMC Data

Windy Hill Road @ Atlanta Road

7-9 am | 4-6 pm

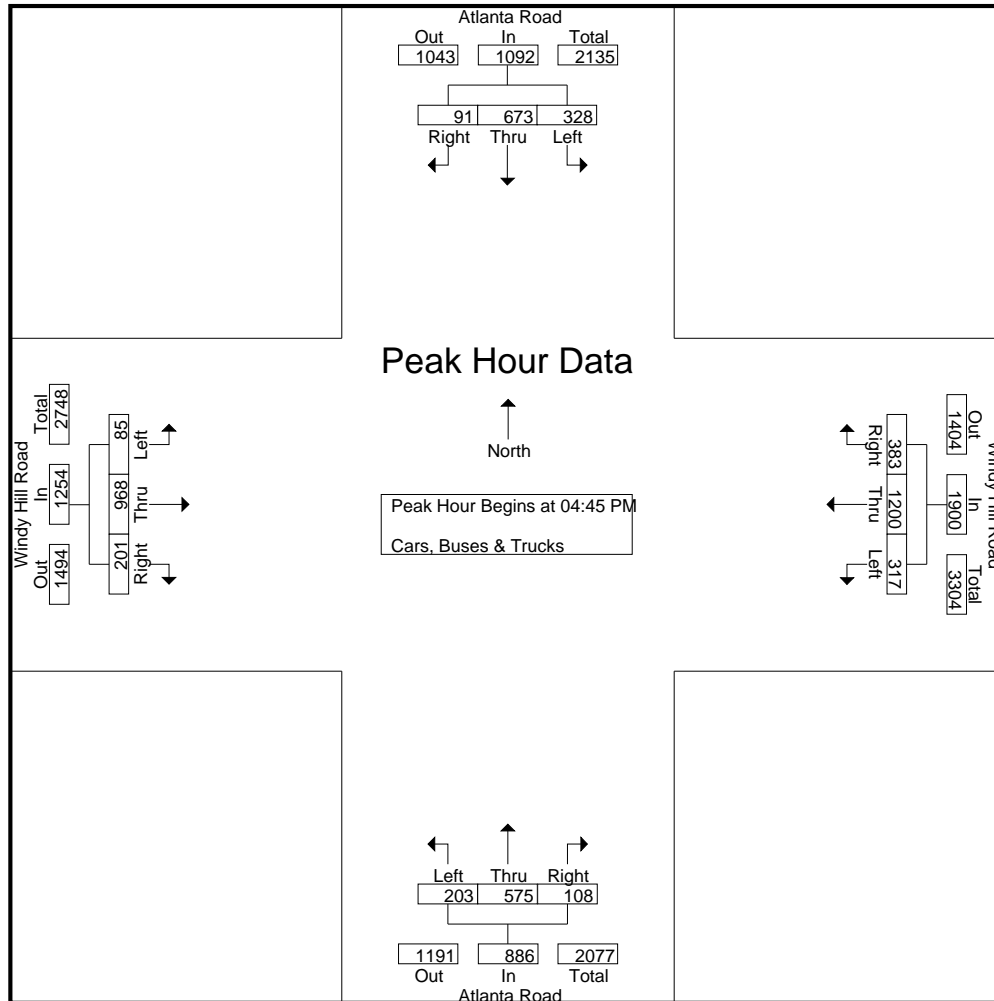
File Name : 20240346

Site Code : 20240346

Start Date : 09-05-2024

Page No : 3

	Atlanta Road Northbound				Atlanta Road Southbound				Windy Hill Road Eastbound				Windy Hill Road 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 04:45 PM																	
04:45 PM	52	137	23	212	64	166	26	256	20	236	39	295	73	288	88	449	1212
05:00 PM	44	140	27	211	82	164	17	263	19	252	52	323	82	291	92	465	1262
05:15 PM	49	145	31	225	89	173	22	284	26	241	59	326	88	319	106	513	1348
05:30 PM	58	153	27	238	93	170	26	289	20	239	51	310	74	302	97	473	1310
Total Volume	203	575	108	886	328	673	91	1092	85	968	201	1254	317	1200	383	1900	5132
% App. Total	22.9	64.9	12.2		30	61.6	8.3		6.8	77.2	16		16.7	63.2	20.2		
PHF	.875	.940	.871	.931	.882	.973	.875	.945	.817	.960	.852	.962	.901	.940	.903	.926	.952



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TMC Data
Hillside Avenue @ Park Drive
7-9 am | 4-6 pm

File Name : 20240346
Site Code : 20240346
Start Date : 09-04-2024
Page No : 1

Groups Printed- Cars, Buses & Trucks																	
	Park Drive Northbound				Park Drive Southbound				Hillside Avenue Eastbound				Hillside Avenue 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
07:00 AM	0	0	0	0	0	0	0	0	1	5	0	6	0	2	0	2	8
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	6	0	6	9
07:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	6	7
*** BREAK ***																	
Total	0	0	0	0	0	0	1	1	1	8	0	9	0	14	0	14	24
08:00 AM	0	0	0	0	0	0	0	0	0	7	0	7	0	1	1	2	9
08:15 AM	0	0	0	0	0	0	1	1	0	4	0	4	0	1	0	1	6
08:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
Total	0	0	0	0	0	0	1	1	0	14	0	14	0	3	2	5	20
*** BREAK ***																	
04:00 PM	0	0	0	0	1	0	0	1	0	2	0	2	0	2	1	3	6
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
*** BREAK ***																	
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	5	0	5	6
Total	0	0	0	0	1	0	0	1	0	5	0	5	0	8	1	9	15
05:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
Total	0	0	0	0	0	0	1	1	1	3	0	4	0	3	0	3	8
Grand Total	0	0	0	0	1	0	3	4	2	30	0	32	0	28	3	31	67
Apprch %	0	0	0		25	0	75		6.2	93.8	0		0	90.3	9.7		
Total %	0	0	0	0	1.5	0	4.5	6	3	44.8	0	47.8	0	41.8	4.5	46.3	

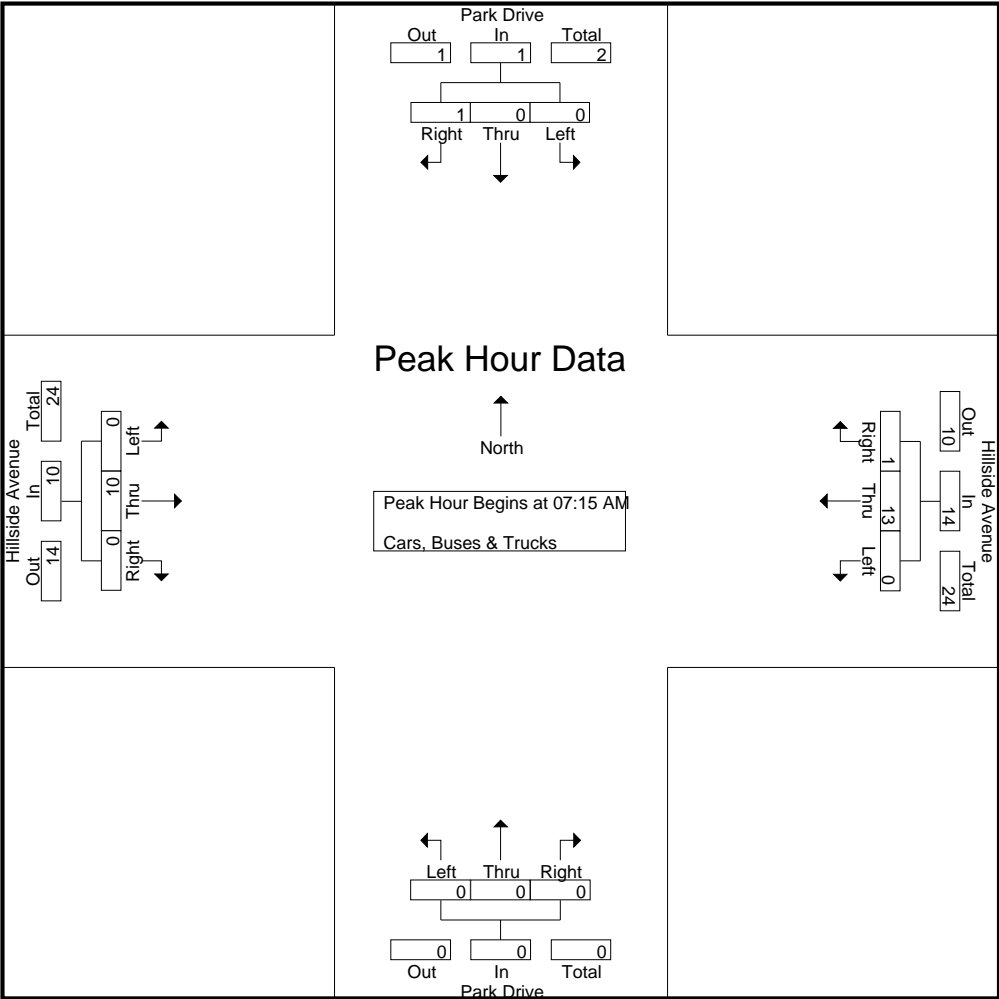
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TMC Data
Hillside Avenue @ Park Drive
7-9 am | 4-6 pm

File Name : 20240346
Site Code : 20240346
Start Date : 09-04-2024
Page No : 2

	Park Drive Northbound				Park Drive Southbound				Hillside Avenue Eastbound				Hillside Avenue 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 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	6	0	6	9
07:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	6	7
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	7	0	7	0	1	1	2	9
Total Volume	0	0	0	0	0	0	1	1	0	10	0	10	0	13	1	14	25
% App. Total	0	0	0		0	0	100		0	100	0		0	92.9	7.1		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.357	.000	.357	.000	.542	.250	.583	.694



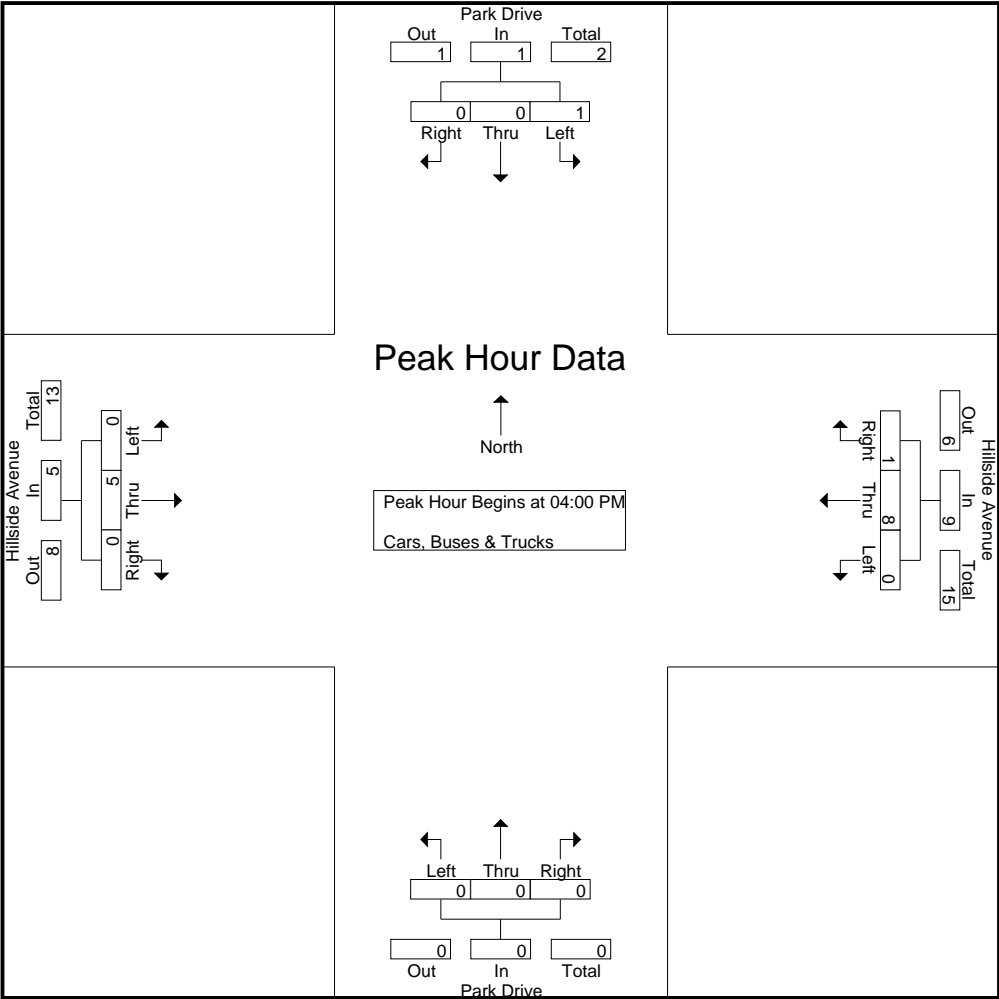
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TMC Data
Hillside Avenue @ Park Drive
7-9 am | 4-6 pm

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	Park Drive Northbound				Park Drive Southbound				Hillside Avenue Eastbound				Hillside Avenue 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 04:00 PM																	
04:00 PM	0	0	0	0	1	0	0	1	0	2	0	2	0	2	1	3	6
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	5	0	5	6
Total Volume	0	0	0	0	1	0	0	1	0	5	0	5	0	8	1	9	15
% App. Total	0	0	0		100	0	0		0	100	0		0	88.9	11.1		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.625	.000	.625	.000	.400	.250	.450	.625



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TMC Data
Dixie Avenue and Hillside Avenue
7-9 am | 4-6 pm

File Name : 20240345
Site Code : 20240345
Start Date : 09-05-2024
Page No : 1

Groups Printed- Cars, Buses & Trucks																	
	Dixie Avenue Northbound				Dixie Avenue Southbound				Eastbound				Hillside Avenue 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
07:00 AM	0	5	4	9	3	2	0	5	0	0	0	0	2	0	3	5	19
07:15 AM	0	6	2	8	1	1	0	2	0	0	0	0	3	0	8	11	21
07:30 AM	0	8	0	8	0	1	0	1	0	0	0	0	6	0	0	6	15
07:45 AM	0	14	0	14	0	2	0	2	0	0	0	0	0	0	0	0	16
Total	0	33	6	39	4	6	0	10	0	0	0	0	11	0	11	22	71
08:00 AM	0	4	3	7	4	1	0	5	0	0	0	0	1	0	2	3	15
08:15 AM	0	7	1	8	3	1	0	4	0	0	0	0	2	0	0	2	14
08:30 AM	0	12	1	13	1	0	0	1	0	0	0	0	0	0	0	0	14
08:45 AM	0	8	1	9	0	4	0	4	0	0	0	0	0	0	1	1	14
Total	0	31	6	37	8	6	0	14	0	0	0	0	3	0	3	6	57
*** BREAK ***																	
04:00 PM	0	2	1	3	1	2	0	3	0	0	0	0	1	0	0	1	7
04:15 PM	0	5	2	7	1	7	0	8	0	0	0	0	1	0	0	1	16
04:30 PM	0	4	0	4	1	6	0	7	0	0	0	0	0	0	0	0	11
04:45 PM	0	4	0	4	0	3	0	3	0	0	0	0	4	0	2	6	13
Total	0	15	3	18	3	18	0	21	0	0	0	0	6	0	2	8	47
05:00 PM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	2	2	5
05:15 PM	0	2	1	3	1	3	0	4	0	0	0	0	0	0	0	0	7
05:30 PM	0	3	9	12	1	4	0	5	0	0	0	0	1	0	0	1	18
05:45 PM	0	1	4	5	1	2	0	3	0	0	0	0	2	0	6	8	16
Total	0	7	14	21	4	10	0	14	0	0	0	0	3	0	8	11	46
Grand Total	0	86	29	115	19	40	0	59	0	0	0	0	23	0	24	47	221
Apprch %	0	74.8	25.2		32.2	67.8	0		0	0	0		48.9	0	51.1		
Total %	0	38.9	13.1	52	8.6	18.1	0	26.7	0	0	0	0	10.4	0	10.9	21.3	

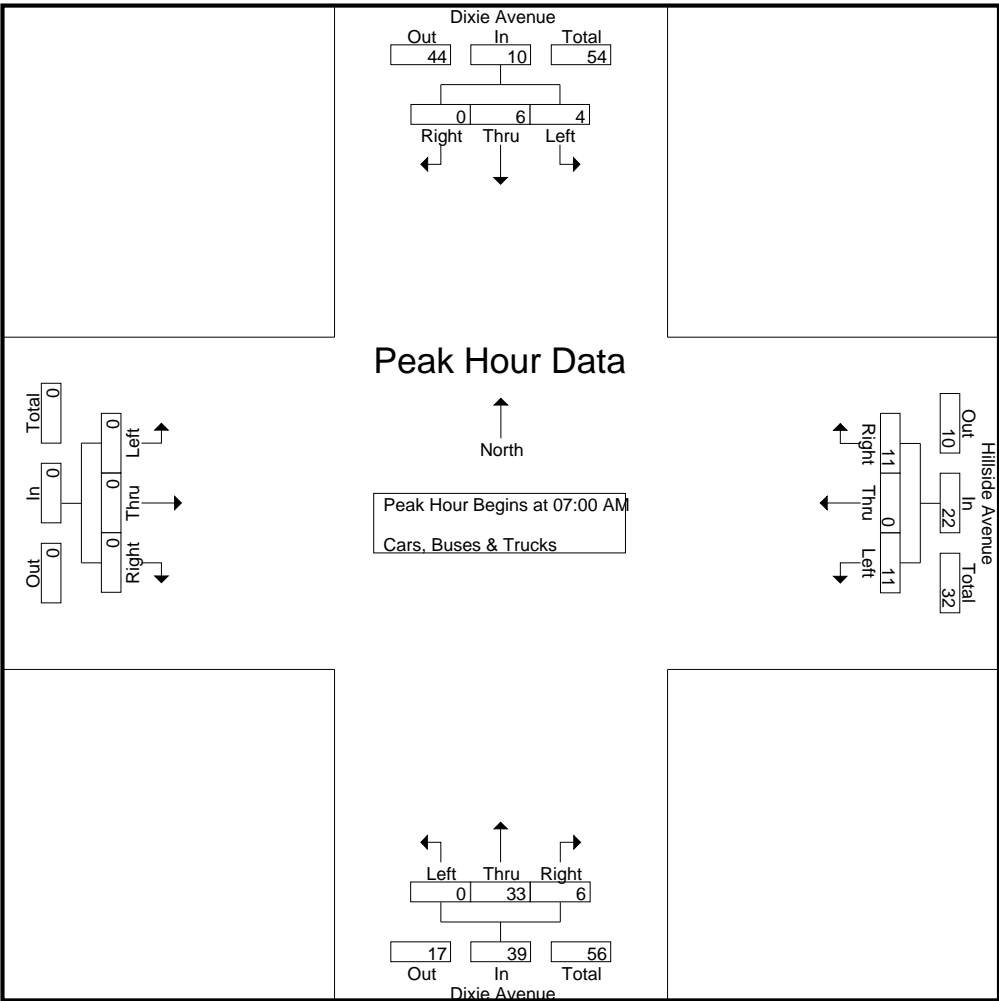
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TMC Data
Dixie Avenue and Hillside Avenue
7-9 am | 4-6 pm

File Name : 20240345
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Start Date : 09-05-2024
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	Dixie Avenue Northbound				Dixie Avenue Southbound				Eastbound				Hillside Avenue 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	5	4	9	3	2	0	5	0	0	0	0	2	0	3	5	19
07:15 AM	0	6	2	8	1	1	0	2	0	0	0	0	3	0	8	11	21
07:30 AM	0	8	0	8	0	1	0	1	0	0	0	0	6	0	0	6	15
07:45 AM	0	14	0	14	0	2	0	2	0	0	0	0	0	0	0	0	16
Total Volume	0	33	6	39	4	6	0	10	0	0	0	0	11	0	11	22	71
% App. Total	0	84.6	15.4		40	60	0		0	0	0		50	0	50		
PHF	.000	.589	.375	.696	.333	.750	.000	.500	.000	.000	.000	.000	.458	.000	.344	.500	.845



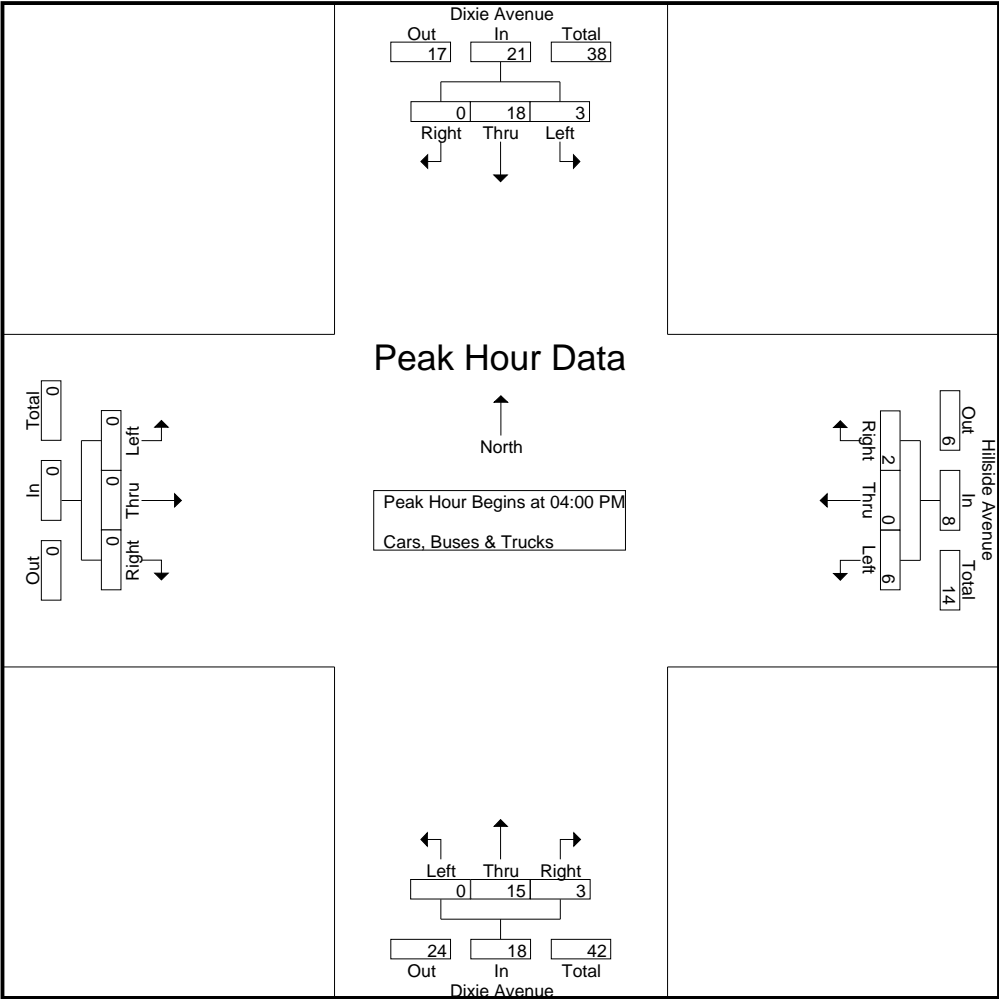
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7-9 am | 4-6 pm

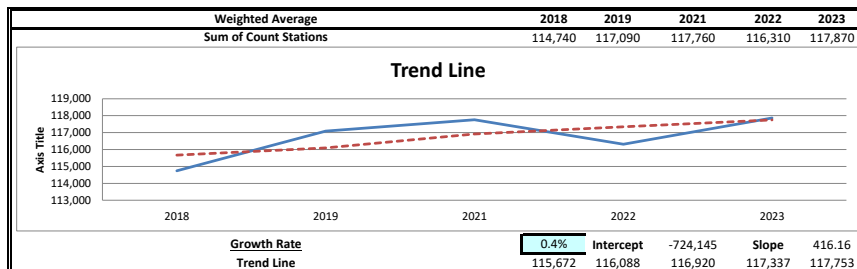
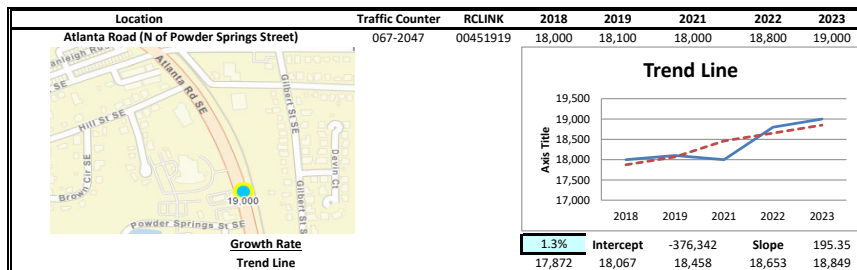
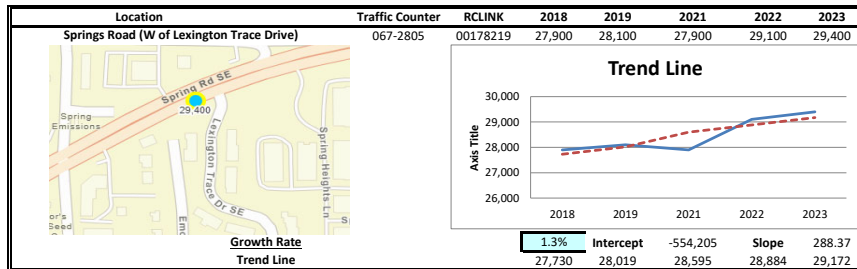
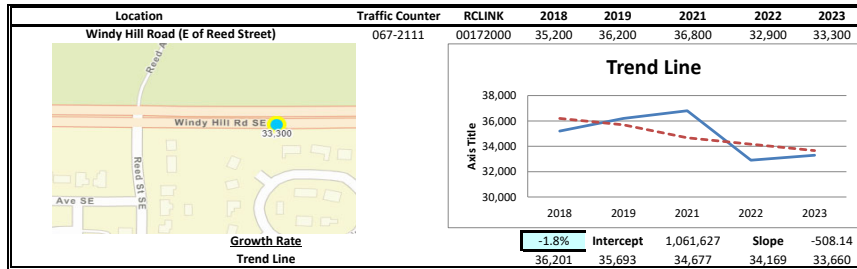
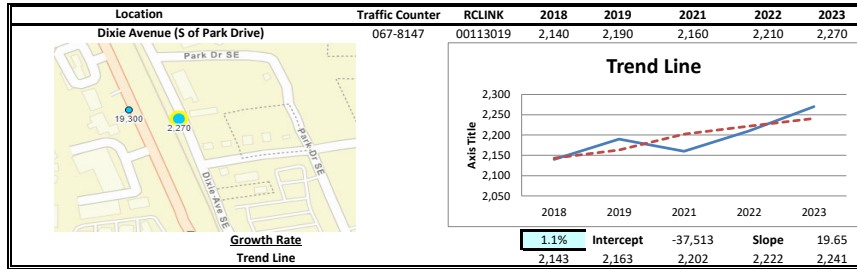
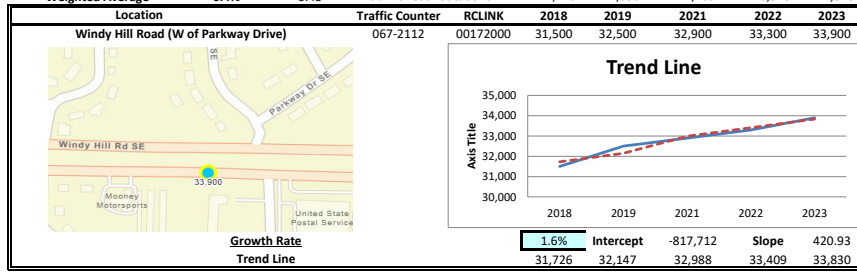
File Name : 20240345
Site Code : 20240345
Start Date : 09-05-2024
Page No : 3

	Dixie Avenue Northbound				Dixie Avenue Southbound				Eastbound				Hillside Avenue 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 04:00 PM																	
04:00 PM	0	2	1	3	1	2	0	3	0	0	0	0	1	0	0	1	7
04:15 PM	0	5	2	7	1	7	0	8	0	0	0	0	1	0	0	1	16
04:30 PM	0	4	0	4	1	6	0	7	0	0	0	0	0	0	0	0	11
04:45 PM	0	4	0	4	0	3	0	3	0	0	0	0	4	0	2	6	13
Total Volume	0	15	3	18	3	18	0	21	0	0	0	0	6	0	2	8	47
% App. Total	0	83.3	16.7		14.3	85.7	0		0	0	0		75	0	25		
PHF	.000	.750	.375	.643	.750	.643	.000	.656	.000	.000	.000	.000	.375	.000	.250	.333	.734



LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2018	2019	2021	2022	2023
Windy Hill Road (W of Parkway)	1.6%	0.94	067-2112	00172000	31,500	32,500	32,900	33,300	33,900
Dixie Avenue (S of Park Drive)	1.1%	0.66	067-8147	00113019	2,140	2,190	2,160	2,210	2,270
Windy Hill Road (E of Reed Street)	-1.8%	0.37	067-2111	00172000	35,200	36,200	36,800	32,900	33,300
Springs Road (W of Lexington Tr	1.3%	0.70	067-2805	00178219	27,900	28,100	27,900	29,100	29,400
Atlanta Road (N of Powder Sprin	1.3%	0.71	067-2047	00451919	18,000	18,100	18,000	18,800	19,000
Weighted Average	0.4%	0.45	Sum of Count Stations =		114,740	117,090	117,760	116,310	117,870



























EXISTING INTERSECTION ANALYSIS

Timings
1: Atlanta Rd & Windy Hill Rd

1a. Existing AM 2024

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	1260	190	187	423	266	106	618	188	413	605	36
Future Volume (vph)	65	1260	190	187	423	266	106	618	188	413	605	36
Lane Group Flow (vph)	68	1326	200	197	445	280	112	651	198	435	637	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	43.0	43.0	16.0	44.0	44.0	15.0	39.0	39.0	22.0	46.0	46.0
Total Split (%)	12.5%	35.8%	35.8%	13.3%	36.7%	36.7%	12.5%	32.5%	32.5%	18.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.16	0.78	0.31	0.80	0.32	0.35	0.45	0.78	0.39	0.92	0.60	0.07
Control Delay	19.2	40.2	8.0	52.0	28.3	5.2	59.3	49.4	8.5	77.3	37.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	40.2	8.0	52.0	28.3	5.2	59.3	49.4	8.5	77.3	37.8	0.2
Queue Length 50th (ft)	28	349	15	99	129	3	43	248	9	173	221	0
Queue Length 95th (ft)	58	409	70	m#260	188	m62	73	300	66	#270	267	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	449	1710	647	247	1401	795	271	987	573	472	1194	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.78	0.31	0.80	0.32	0.35	0.41	0.66	0.35	0.92	0.53	0.06

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

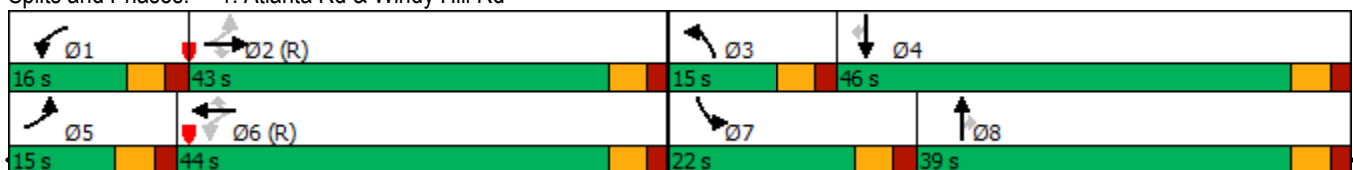
Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Atlanta Rd & Windy Hill Rd


































HCM 6th Signalized Intersection Summary




1: Atlanta Rd & Windy Hill Rd

1a. Existing AM 2024

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (veh/h)	65	1260	190	187	423	266	106	618	188	413	605	36
Future Volume (veh/h)	65	1260	190	187	423	266	106	618	188	413	605	36
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	68	1326	200	197	445	280	112	651	198	435	637	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	1923	597	260	1498	668	166	783	349	475	1101	
Arrive On Green	0.04	0.38	0.38	0.08	0.42	0.42	0.05	0.22	0.22	0.14	0.31	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	1326	200	197	445	280	112	651	198	435	637	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.8	26.2	10.8	7.8	9.9	14.9	3.8	21.0	13.4	14.9	18.1	0.0
Cycle Q Clear(g_c), s	2.8	26.2	10.8	7.8	9.9	14.9	3.8	21.0	13.4	14.9	18.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	1923	597	260	1498	668	166	783	349	475	1101	
V/C Ratio(X)	0.18	0.69	0.34	0.76	0.30	0.42	0.67	0.83	0.57	0.92	0.58	
Avail Cap(c_a), veh/h	448	1923	597	270	1498	668	274	992	442	475	1199	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.5	31.5	26.7	25.3	23.0	24.4	56.2	44.7	41.7	51.1	34.8	0.0
Incr Delay (d2), s/veh	0.2	2.0	1.5	11.3	0.5	1.9	4.7	4.9	1.4	22.4	0.6	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	1.2	11.1	4.2	4.0	4.3	5.7	1.7	9.5	5.2	7.7	7.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	33.5	28.2	36.5	23.5	26.3	60.9	49.6	43.1	73.5	35.4	0.0
LnGrp LOS	C	C	C	D	C	C	E	D	D	E	D	
Approach Vol, veh/h	1594			922			961			1072		
Approach Delay, s/veh	32.4			27.1			49.6			50.9		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	50.7	11.3	42.7	10.0	56.1	22.0	31.9				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	10.5	37.5	9.5	40.5	9.5	38.5	16.5	33.5				
Max Q Clear Time (g_c+I1), s	9.8	28.2	5.8	20.1	4.8	16.9	16.9	23.0				
Green Ext Time (p_c), s	0.0	7.9	0.1	3.8	0.0	7.5	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay	39.3											
HCM 6th LOS	D											

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Vol, veh/h	0	1847	14	0	864	38	0	0	4	0	0	12
Future Vol, veh/h	0	1847	14	0	864	38	0	0	4	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	-	-	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1924	15	0	900	40	0	0	4	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	962	-	-	450
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	0	0	-	0	0	0	220	0	0	476
Stage 1	0	-	0	0	-	0	0	0	-	0	0	-
Stage 2	0	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %	-			-			-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	220	-	-	476
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			21.7			12.8		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1			EBT			WBT			SBLn1		
Capacity (veh/h)	220			-			-			476		
HCM Lane V/C Ratio	0.019			-			-			0.026		
HCM Control Delay (s)	21.7			-			-			12.8		
HCM Lane LOS	C			-			-			B		
HCM 95th %tile Q(veh)	0.1			-			-			0.1		

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	11	33	6	4	6
Future Vol, veh/h	11	11	33	6	4	6
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	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	39	7	5	7
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	60	43	0	0	46	0
Stage 1	43	-	-	-	-	-
Stage 2	17	-	-	-	-	-
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	947	1027	-	-	1562	-
Stage 1	979	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	944	1027	-	-	1562	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.8	0		2.9		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	984	1562	-	
HCM Lane V/C Ratio	-	-	0.027	0.003	-	
HCM Control Delay (s)	-	-	8.8	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	10	0	0	13	1	0	0	0	0	0	1
Future Vol, veh/h	0	10	0	0	13	1	0	0	0	0	0	1
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	0	0	19	1	0	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	7	0	6.4
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	93%	0%
Vol Right, %	0%	0%	7%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	10	14	1
LT Vol	0	0	0	0
Through Vol	0	10	13	0
RT Vol	0	0	1	1
Lane Flow Rate	0	14	20	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.016	0.022	0.001
Departure Headway (Hd)	3.995	3.951	3.904	3.394
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	911	922	1056
Service Time	2.009	1.954	1.906	1.408
HCM Lane V/C Ratio	0	0.015	0.022	0.001
HCM Control Delay	7	7	7	6.4
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0.1	0

Timings
1: Atlanta Rd & Windy Hill Rd

1b. Existing PM 2024
09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	968	201	317	1200	383	203	575	108	328	673	91
Future Volume (vph)	85	968	201	317	1200	383	203	575	108	328	673	91
Lane Group Flow (vph)	89	1019	212	334	1263	403	214	605	114	345	708	96
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	35.0	35.0	28.0	48.0	48.0	18.0	39.0	39.0	18.0	39.0	39.0
Total Split (%)	12.5%	29.2%	29.2%	23.3%	40.0%	40.0%	15.0%	32.5%	32.5%	15.0%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.48	0.67	0.36	0.85	0.88	0.49	0.65	0.72	0.22	0.97	0.81	0.18
Control Delay	30.1	41.2	9.9	48.7	43.3	9.8	61.6	46.5	1.9	93.6	50.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	41.2	9.9	48.7	43.3	9.8	61.6	46.5	1.9	93.6	50.4	0.8
Queue Length 50th (ft)	35	271	18	185	488	49	82	222	0	139	269	0
Queue Length 95th (ft)	77	328	84	#348	#680	144	124	277	9	#234	330	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	203	1511	597	414	1430	824	357	987	566	357	987	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.67	0.36	0.81	0.88	0.49	0.60	0.61	0.20	0.97	0.72	0.17

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

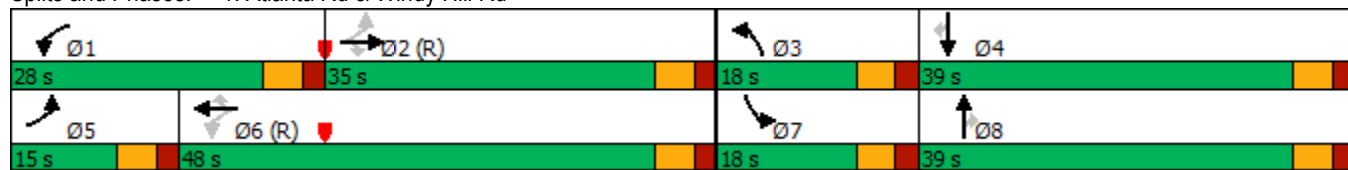
Natural Cycle: 115

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Atlanta Rd & Windy Hill Rd



























HCM 6th Signalized Intersection Summary




1: Atlanta Rd & Windy Hill Rd

1b. Existing PM 2024

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	968	201	317	1200	383	203	575	108	328	673	91
Future Volume (veh/h)	85	968	201	317	1200	383	203	575	108	328	673	91
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	89	1019	212	334	1263	403	214	605	114	345	708	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	1911	593	394	1638	731	273	733	327	360	822	
Arrive On Green	0.05	0.37	0.37	0.13	0.46	0.46	0.08	0.21	0.21	0.10	0.23	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	89	1019	212	334	1263	403	214	605	114	345	708	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.7	18.7	11.6	13.2	35.7	22.1	7.3	19.5	7.4	11.9	22.9	0.0
Cycle Q Clear(g_c), s	3.7	18.7	11.6	13.2	35.7	22.1	7.3	19.5	7.4	11.9	22.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	1911	593	394	1638	731	273	733	327	360	822	
V/C Ratio(X)	0.47	0.53	0.36	0.85	0.77	0.55	0.78	0.83	0.35	0.96	0.86	
Avail Cap(c_a), veh/h	250	1911	593	493	1638	731	360	992	442	360	992	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.1	29.4	27.1	22.1	27.0	23.4	54.2	45.6	40.7	53.5	44.3	0.0
Incr Delay (d2), s/veh	1.8	1.1	1.7	10.9	3.6	3.0	8.0	4.3	0.6	36.5	6.7	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	1.6	7.8	4.5	6.5	15.6	8.4	3.4	8.8	2.9	6.9	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	30.4	28.8	33.0	30.6	26.4	62.3	49.8	41.4	90.0	51.0	0.0
LnGrp LOS	C	C	C	C	C	C	E	D	D	F	D	
Approach Vol, veh/h	1320		2000				933		1053			
Approach Delay, s/veh	29.9		30.2				51.6		63.8			
Approach LOS	C		C				D		E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.3	50.4	15.0	33.3	10.9	60.8	18.0	30.3				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	22.5	29.5	12.5	33.5	9.5	42.5	12.5	33.5				
Max Q Clear Time (g_c+I1), s	15.2	20.7	9.3	24.9	5.7	37.7	13.9	21.5				
Green Ext Time (p_c), s	0.6	6.7	0.2	2.8	0.1	4.4	0.0	3.2				
Intersection Summary												
HCM 6th Ctrl Delay	40.6											
HCM 6th LOS	D											

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑↱			↑↑↑			↱			↱		
Traffic Vol, veh/h	0	1384	23	0	1885	20	0	0	5	0	0	12
Future Vol, veh/h	0	1384	23	0	1885	20	0	0	5	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	-	-	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1457	24	0	1984	21	0	0	5	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	729	-	-	992
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	0	0	-	0	0	0	313	0	0	210
Stage 1	0	-	0	0	-	0	0	0	-	0	0	-
Stage 2	0	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %	-			-								
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	313	-	-	210
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			16.7			23.2		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	SBLn1								
Capacity (veh/h)	313	-	-	210								
HCM Lane V/C Ratio	0.017	-	-	0.06								
HCM Control Delay (s)	16.7	-	-	23.2								
HCM Lane LOS	C	-	-	C								
HCM 95th %tile Q(veh)	0.1	-	-	0.2								

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	15	3	3	18
Future Vol, veh/h	6	2	15	3	3	18
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	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	21	4	4	25

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	56	23	0
Stage 1	23	-	-
Stage 2	33	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	952	1054	-
Stage 1	1000	-	-
Stage 2	989	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	949	1054	-
Mov Cap-2 Maneuver	949	-	-
Stage 1	1000	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1589
HCM Lane V/C Ratio	-	-	0.011	0.003
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	0	0	8	1	0	0	0	1	0	0
Future Vol, veh/h	0	5	0	0	8	1	0	0	0	1	0	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	13	2	0	0	0	2	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
































Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	6.9	0	7.2
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	100%
Vol Thru, %	100%	100%	89%	0%
Vol Right, %	0%	0%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	5	9	1
LT Vol	0	0	0	1
Through Vol	0	5	8	0
RT Vol	0	0	1	0
Lane Flow Rate	0	8	15	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.009	0.016	0.002
Departure Headway (Hd)	3.974	3.947	3.875	4.173
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	911	928	861
Service Time	1.985	1.951	1.879	2.183
HCM Lane V/C Ratio	0	0.009	0.016	0.002
HCM Control Delay	7	7	6.9	7.2
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0	0

FUTURE “NO-BUILD” INTERSECTION ANALYSIS

Timings
1: Atlanta Rd & Windy Hill Rd

2a. No Build AM 2026
09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (vph)	66	1285	194	191	431	271	108	630	192	421	617	37
Future Volume (vph)	66	1285	194	191	431	271	108	630	192	421	617	37
Lane Group Flow (vph)	69	1353	204	201	454	285	114	663	202	443	649	39
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	43.0	43.0	16.0	44.0	44.0	15.0	39.0	39.0	22.0	46.0	46.0
Total Split (%)	12.5%	35.8%	35.8%	13.3%	36.7%	36.7%	12.5%	32.5%	32.5%	18.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.16	0.80	0.32	0.81	0.33	0.36	0.46	0.78	0.39	0.94	0.60	0.07
Control Delay	19.3	41.3	8.3	53.2	28.7	5.2	59.4	49.5	8.9	80.2	37.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	41.3	8.3	53.2	28.7	5.2	59.4	49.5	8.9	80.2	37.8	0.2
Queue Length 50th (ft)	28	358	17	102	133	3	44	252	11	177	225	0
Queue Length 95th (ft)	59	420	74	m#267	m192	m62	74	307	69	#277	273	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	444	1693	642	249	1390	795	271	987	573	472	1194	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.80	0.32	0.81	0.33	0.36	0.42	0.67	0.35	0.94	0.54	0.06

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 105

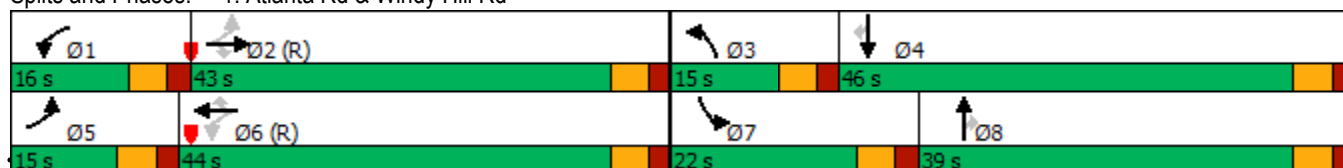
Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Atlanta Rd & Windy Hill Rd


































HCM 6th Signalized Intersection Summary

1: Atlanta Rd & Windy Hill Rd

2a. No Build AM 2026

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (veh/h)	66	1285	194	191	431	271	108	630	192	421	617	37
Future Volume (veh/h)	66	1285	194	191	431	271	108	630	192	421	617	37
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	69	1353	204	201	454	285	114	663	202	443	649	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	366	1898	589	258	1486	663	168	794	354	475	1110	
Arrive On Green	0.04	0.37	0.37	0.08	0.42	0.42	0.05	0.22	0.22	0.14	0.31	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	69	1353	204	201	454	285	114	663	202	443	649	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.9	27.2	11.1	8.1	10.2	15.3	3.9	21.4	13.6	15.2	18.4	0.0
Cycle Q Clear(g_c), s	2.9	27.2	11.1	8.1	10.2	15.3	3.9	21.4	13.6	15.2	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	1898	589	258	1486	663	168	794	354	475	1110	
V/C Ratio(X)	0.19	0.71	0.35	0.78	0.31	0.43	0.68	0.83	0.57	0.93	0.58	
Avail Cap(c_a), veh/h	441	1898	589	264	1486	663	274	992	442	475	1199	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	32.2	27.2	25.8	23.3	24.8	56.1	44.5	41.5	51.2	34.7	0.0
Incr Delay (d2), s/veh	0.2	2.3	1.6	13.7	0.5	2.0	4.7	5.1	1.4	25.4	0.6	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	1.2	11.5	4.3	4.3	4.4	5.9	1.8	9.7	5.3	8.1	7.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	34.5	28.8	39.5	23.8	26.8	60.8	49.6	42.9	76.6	35.4	0.0
LnGrp LOS	C	C	C	D	C	C	E	D	D	E	D	
Approach Vol, veh/h	1626			940			979			1092		
Approach Delay, s/veh	33.3			28.1			49.5			52.1		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	50.1	11.3	43.0	10.0	55.7	22.0	32.3				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	10.5	37.5	9.5	40.5	9.5	38.5	16.5	33.5				
Max Q Clear Time (g_c+I1), s	10.1	29.2	5.9	20.4	4.9	17.3	17.2	23.4				
Green Ext Time (p_c), s	0.0	7.2	0.1	3.9	0.0	7.6	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay	40.1											
HCM 6th LOS	D											

Notes




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

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Vol, veh/h	0	1884	14	0	881	39	0	0	4	0	0	12
Future Vol, veh/h	0	1884	14	0	881	39	0	0	4	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	-	-	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1963	15	0	918	41	0	0	4	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	982	-	-	459
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	0	0	-	0	0	0	213	0	0	470
Stage 1	0	-	0	0	-	0	0	0	-	0	0	-
Stage 2	0	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %	-			-			-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	213	-	-	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	22.2	12.9
HCM LOS	C			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT	SBLn1
Capacity (veh/h)	213	-	-	470
HCM Lane V/C Ratio	0.02	-	-	0.027
HCM Control Delay (s)	22.2	-	-	12.9
HCM Lane LOS	C	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0.1

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	11	34	6	4	6
Future Vol, veh/h	11	11	34	6	4	6
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	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	40	7	5	7

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	61	44	0
Stage 1	44	-	-
Stage 2	17	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	945	1026	-
Stage 1	978	-	-
Stage 2	1006	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	942	1026	-
Mov Cap-2 Maneuver	942	-	-
Stage 1	978	-	-
Stage 2	1003	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	982	1560
HCM Lane V/C Ratio	-	-	0.027	0.003
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	10	0	0	13	1	0	0	0	0	0	1
Future Vol, veh/h	0	10	0	0	13	1	0	0	0	0	0	1
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	0	0	19	1	0	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
































Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	7	0	6.4
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	93%	0%
Vol Right, %	0%	0%	7%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	10	14	1
LT Vol	0	0	0	0
Through Vol	0	10	13	0
RT Vol	0	0	1	1
Lane Flow Rate	0	14	20	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.016	0.022	0.001
Departure Headway (Hd)	3.995	3.951	3.904	3.394
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	911	922	1056
Service Time	2.009	1.954	1.906	1.408
HCM Lane V/C Ratio	0	0.015	0.022	0.001
HCM Control Delay	7	7	7	6.4
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0.1	0

Timings
1: Atlanta Rd & Windy Hill Rd

2b. No Build PM 2026

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (vph)	87	987	205	323	1224	391	207	587	110	335	686	93
Future Volume (vph)	87	987	205	323	1224	391	207	587	110	335	686	93
Lane Group Flow (vph)	92	1039	216	340	1288	412	218	618	116	353	722	98
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	35.0	35.0	28.0	48.0	48.0	15.0	39.0	39.0	18.0	42.0	42.0
Total Split (%)	12.5%	29.2%	29.2%	23.3%	40.0%	40.0%	12.5%	32.5%	32.5%	15.0%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.50	0.69	0.36	0.85	0.89	0.50	0.80	0.75	0.23	0.99	0.79	0.18
Control Delay	30.6	41.3	10.3	49.0	42.9	10.6	76.5	48.6	2.1	98.8	48.2	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	41.3	10.3	49.0	42.9	10.6	76.5	48.6	2.1	98.8	48.2	0.8
Queue Length 50th (ft)	35	271	21	189	484	57	87	234	0	142	274	0
Queue Length 95th (ft)	80	336	88	#361	#702	162	#149	283	11	#241	325	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	203	1516	598	418	1453	826	271	987	566	357	1076	601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.69	0.36	0.81	0.89	0.50	0.80	0.63	0.20	0.99	0.67	0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

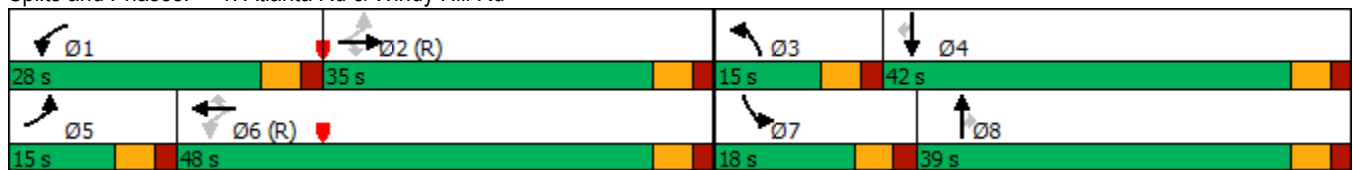
Natural Cycle: 115

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
































Splits and Phases: 1: Atlanta Rd & Windy Hill Rd



HCM 6th Signalized Intersection Summary
1: Atlanta Rd & Windy Hill Rd

2b. No Build PM 2026

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (veh/h)	87	987	205	323	1224	391	207	587	110	335	686	93
Future Volume (veh/h)	87	987	205	323	1224	391	207	587	110	335	686	93
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	92	1039	216	340	1288	412	218	618	116	353	722	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	1853	575	391	1606	716	272	759	339	360	849	
Arrive On Green	0.05	0.36	0.36	0.14	0.45	0.45	0.08	0.21	0.21	0.10	0.24	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	92	1039	216	340	1288	412	218	618	116	353	722	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.9	19.5	12.1	13.7	37.4	23.1	7.4	19.9	7.5	12.2	23.3	0.0
Cycle Q Clear(g_c), s	3.9	19.5	12.1	13.7	37.4	23.1	7.4	19.9	7.5	12.2	23.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	1853	575	391	1606	716	272	759	339	360	849	
V/C Ratio(X)	0.50	0.56	0.38	0.87	0.80	0.58	0.80	0.81	0.34	0.98	0.85	
Avail Cap(c_a), veh/h	242	1853	575	483	1606	716	274	992	442	360	1081	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	30.6	28.2	22.9	28.3	24.4	54.4	44.9	40.0	53.6	43.6	0.0
Incr Delay (d2), s/veh	2.1	1.2	1.9	13.4	4.3	3.3	15.5	4.1	0.6	42.1	5.3	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	1.7	8.2	4.7	7.0	16.5	8.9	3.7	8.9	0.1	7.3	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	31.8	30.1	36.4	32.6	27.7	69.9	49.0	40.6	95.7	48.9	0.0
LnGrp LOS	C	C	C	D	C	C	E	D	D	F	D	
Approach Vol, veh/h		1347			2040			952			1075	
Approach Delay, s/veh		31.3			32.2			52.8			64.3	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.8	49.0	14.9	34.2	11.1	59.7	18.0	31.1				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	22.5	29.5	9.5	36.5	9.5	42.5	12.5	33.5				
Max Q Clear Time (g_c+I1), s	15.7	21.5	9.4	25.3	5.9	39.4	14.2	21.9				
Green Ext Time (p_c), s	0.6	6.2	0.0	3.4	0.1	2.9	0.0	3.2				




Intersection Summary

HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

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

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑			↑↑↑			↑			↑		
Traffic Vol, veh/h	0	1412	23	0	1923	20	0	0	5	0	0	12
Future Vol, veh/h	0	1412	23	0	1923	20	0	0	5	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	-	-	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1486	24	0	2024	21	0	0	5	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	743	-	-	1012
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	0	-	0	0	-	0	0	0	307	0	0	204
Stage 1	0	-	0	0	-	0	0	0	-	0	0	-
Stage 2	0	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %	-			-			-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	307	-	-	204
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			16.9			23.8		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1			EBT			WBT			SBLn1		
Capacity (veh/h)	307			-			-			204		
HCM Lane V/C Ratio	0.017			-			-			0.062		
HCM Control Delay (s)	16.9			-			-			23.8		
HCM Lane LOS	C			-			-			C		
HCM 95th %tile Q(veh)	0.1			-			-			0.2		

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	15	3	3	18
Future Vol, veh/h	6	2	15	3	3	18
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	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	3	21	4	4	25

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	56	23	0
Stage 1	23	-	-
Stage 2	33	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	952	1054	-
Stage 1	1000	-	-
Stage 2	989	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	949	1054	-
Mov Cap-2 Maneuver	949	-	-
Stage 1	1000	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1589
HCM Lane V/C Ratio	-	-	0.011	0.003
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	0	0	8	1	0	0	0	1	0	0
Future Vol, veh/h	0	5	0	0	8	1	0	0	0	1	0	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	13	2	0	0	0	2	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

























Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	6.9	0	7.2
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	100%
Vol Thru, %	100%	100%	89%	0%
Vol Right, %	0%	0%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	5	9	1
LT Vol	0	0	0	1
Through Vol	0	5	8	0
RT Vol	0	0	1	0
Lane Flow Rate	0	8	15	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.009	0.016	0.002
Departure Headway (Hd)	3.974	3.947	3.875	4.173
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	911	928	861
Service Time	1.985	1.951	1.879	2.183
HCM Lane V/C Ratio	0	0.009	0.016	0.002
HCM Control Delay	7	7	6.9	7.2
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0	0

FUTURE “BUILD” INTERSECTION ANALYSIS

Timings
1: Atlanta Rd & Windy Hill Rd

3a. Build AM 2026
10/07/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1298	194	207	451	282	108	630	205	430	617	37
Future Volume (vph)	66	1298	194	207	451	282	108	630	205	430	617	37
Lane Group Flow (vph)	69	1366	204	218	475	297	114	663	216	453	649	39
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	43.0	43.0	16.0	44.0	44.0	15.0	39.0	39.0	22.0	46.0	46.0
Total Split (%)	12.5%	35.8%	35.8%	13.3%	36.7%	36.7%	12.5%	32.5%	32.5%	18.3%	38.3%	38.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.17	0.84	0.33	0.81	0.34	0.37	0.46	0.78	0.42	0.96	0.60	0.07
Control Delay	19.5	43.9	8.4	67.5	23.5	2.8	59.4	49.2	10.3	84.2	37.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	43.9	8.4	67.5	23.5	2.8	59.4	49.2	10.3	84.2	37.7	0.2
Queue Length 50th (ft)	28	363	17	126	82	2	44	252	20	181	225	0
Queue Length 95th (ft)	59	425	74	#307	134	32	74	307	82	#286	273	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	426	1626	623	270	1386	800	271	987	573	472	1194	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.84	0.33	0.81	0.34	0.37	0.42	0.67	0.38	0.96	0.54	0.06

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

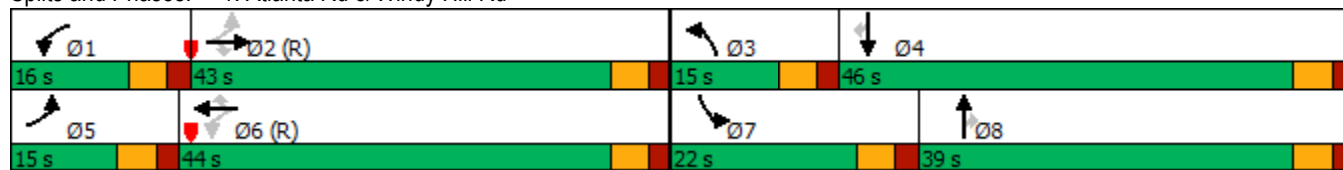
Natural Cycle: 105

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Atlanta Rd & Windy Hill Rd


































HCM 6th Signalized Intersection Summary

1: Atlanta Rd & Windy Hill Rd

3a. Build AM 2026

10/07/2024




												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (veh/h)	66	1298	194	207	451	282	108	630	205	430	617	37
Future Volume (veh/h)	66	1298	194	207	451	282	108	630	205	430	617	37
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	69	1366	204	218	475	297	114	663	216	453	649	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1878	583	261	1485	662	168	795	355	475	1111	
Arrive On Green	0.04	0.37	0.37	0.09	0.42	0.42	0.05	0.22	0.22	0.14	0.31	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	69	1366	204	218	475	297	114	663	216	453	649	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.9	27.7	11.2	8.8	10.8	16.1	3.9	21.4	14.7	15.6	18.4	0.0
Cycle Q Clear(g_c), s	2.9	27.7	11.2	8.8	10.8	16.1	3.9	21.4	14.7	15.6	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1878	583	261	1485	662	168	795	355	475	1111	
V/C Ratio(X)	0.19	0.73	0.35	0.84	0.32	0.45	0.68	0.83	0.61	0.95	0.58	
Avail Cap(c_a), veh/h	430	1878	583	261	1485	662	274	992	442	475	1199	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.2	32.7	27.5	26.2	23.5	25.0	56.1	44.4	41.9	51.4	34.7	0.0
Incr Delay (d2), s/veh	0.3	2.5	1.7	20.5	0.6	2.2	4.7	5.1	1.7	29.7	0.6	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	1.2	11.7	4.4	5.1	4.6	6.2	1.8	9.7	5.7	8.5	7.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	35.2	29.2	46.7	24.0	27.2	60.8	49.5	43.5	81.1	35.3	0.0
LnGrp LOS	C	D	C	D	C	C	E	D	D	F	D	
Approach Vol, veh/h	1639			990			993			1102		
Approach Delay, s/veh	33.9			30.0			49.5			54.1		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	49.6	11.3	43.0	10.0	55.6	22.0	32.4				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	10.5	37.5	9.5	40.5	9.5	38.5	16.5	33.5				
Max Q Clear Time (g_c+I1), s	10.8	29.7	5.9	20.4	4.9	18.1	17.6	23.4				
Green Ext Time (p_c), s	0.0	6.8	0.1	3.9	0.0	7.8	0.0	3.5				

Intersection Summary

HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

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

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	37	6	6	9
Future Vol, veh/h	4	6	37	6	6	9
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	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	44	7	7	11

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	73	48	0
Stage 1	48	-	-
Stage 2	25	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	931	1021	-
Stage 1	974	-	-
Stage 2	998	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	926	1021	-
Mov Cap-2 Maneuver	926	-	-
Stage 1	974	-	-
Stage 2	993	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	981	1555
HCM Lane V/C Ratio	-	-	0.012	0.005
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	10	2	0	0	1	2	0	0	0	0	1
Future Vol, veh/h	0	10	2	0	0	1	2	0	0	0	0	1
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	3	0	0	1	3	0	0	0	0	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	6.4	7.2	6.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	83%	0%	0%
Vol Right, %	0%	17%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	12	1	1
LT Vol	2	0	0	0
Through Vol	0	10	0	0
RT Vol	0	2	1	1
Lane Flow Rate	3	17	1	1
Geometry Grp	1	1	1	1
Degree of Util (X)	0.003	0.019	0.001	0.001
Departure Headway (Hd)	4.166	3.843	3.354	3.368
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	863	937	1072	1067
Service Time	2.174	1.843	1.358	1.375
HCM Lane V/C Ratio	0.003	0.018	0.001	0.001
HCM Control Delay	7.2	6.9	6.4	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0

Timings 5: Windy Hill Rd & Davis Rd Extension

3a. Build AM 2026
10/24/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL
Lane Configurations		↩	↩↩↩	↩↩	↩	↩↩
Traffic Volume (vph)	37	34	1851	934	33	70
Future Volume (vph)	37	34	1851	934	33	70
Lane Group Flow (vph)	0	75	1928	973	34	114
Turn Type	pm+pt	pm+pt	NA	NA	Perm	Prot
Protected Phases	5	5	2	6		4
Permitted Phases	2	2			6	
Detector Phase	5	5	2	6	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	15.0	6.0
Minimum Split (s)	15.0	15.0	23.5	23.5	23.5	23.5
Total Split (s)	19.0	19.0	90.0	71.0	71.0	30.0
Total Split (%)	15.8%	15.8%	75.0%	59.2%	59.2%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	C-Min	None
v/c Ratio		0.17	0.47	0.38	0.03	0.60
Control Delay		3.4	3.2	7.6	4.0	54.7
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		3.4	3.2	7.6	4.0	54.7
Queue Length 50th (ft)		9	87	141	3	70
Queue Length 95th (ft)		m13	m110	214	15	126
Internal Link Dist (ft)			158	555		383
Turn Bay Length (ft)		145			75	
Base Capacity (vph)		525	4114	2572	1155	367
Starvation Cap Reductn		0	392	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.14	0.52	0.38	0.03	0.31

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Windy Hill Rd & Davis Rd Extension



HCM 6th Signalized Intersection Summary

5: Windy Hill Rd & Davis Rd Extension

3a. Build AM 2026

10/24/2024



Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↩	↑↑↑	↩	↑↑	↗	↘	
Traffic Volume (veh/h)	37	34	1851	0	934	33	70	39
Future Volume (veh/h)	37	34	1851	0	934	33	70	39
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		35	1928		973	0	73	41
Peak Hour Factor		0.96	0.96		0.96	0.96	0.96	0.96
Percent Heavy Veh, %		2	2		2	2	2	2
Cap, veh/h		491	4214		2668		90	51
Arrive On Green		0.03	0.83		0.75	0.00	0.08	0.08
Sat Flow, veh/h		1781	5274		3647	1585	1083	608
Grp Volume(v), veh/h		35	1928		973	0	115	0
Grp Sat Flow(s),veh/h/ln		1781	1702		1777	1585	1707	0
Q Serve(g_s), s		0.5	12.7		11.3	0.0	7.9	0.0
Cycle Q Clear(g_c), s		0.5	12.7		11.3	0.0	7.9	0.0
Prop In Lane		1.00				1.00	0.63	0.36
Lane Grp Cap(c), veh/h		491	4214		2668		142	0
V/C Ratio(X)		0.07	0.46		0.36		0.81	0.00
Avail Cap(c_a), veh/h		640	4214		2668		348	0
HCM Platoon Ratio		1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00		1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		3.3	2.9		5.1	0.0	54.1	0.0
Incr Delay (d2), s/veh		0.1	0.4		0.4	0.0	10.5	0.0
Initial Q Delay(d3),s/veh		0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.1	3.2		3.8	0.0	3.9	0.0
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh		3.4	3.3		5.5	0.0	64.6	0.0
LnGrp LOS		A	A		A		E	A
Approach Vol, veh/h			1963		973		115	
Approach Delay, s/veh			3.3		5.5		64.6	
Approach LOS			A		A		E	
Timer - Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		104.5		15.5	8.9	95.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		84.5		24.5	13.5	65.5		
Max Q Clear Time (g_c+I1), s		14.7		9.9	2.5	13.3		
Green Ext Time (p_c), s		52.0		0.2	0.0	18.5		

Intersection Summary





HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

User approved ignoring U-Turning movement.






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

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	3	40	14	3	10
Future Vol, veh/h	14	3	40	14	3	10
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	-	-	50	-	-
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	15	3	43	15	3	11

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	60	43	0
Stage 1	43	-	-
Stage 2	17	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	947	1027	-
Stage 1	979	-	-
Stage 2	1006	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	945	1027	-
Mov Cap-2 Maneuver	945	-	-
Stage 1	979	-	-
Stage 2	1004	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	959	1546
HCM Lane V/C Ratio	-	-	0.019	0.002
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

























Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	95	68	0	13	0
Future Vol, veh/h	0	95	68	0	13	0
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	-	85	-	-	-
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	103	74	0	14	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	162	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	148	-	-	-	-	-
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	829	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	791	1066	1604	-	-	-
Mov Cap-2 Maneuver	791	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	7.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1066	-	-	
HCM Lane V/C Ratio	0.046	-	0.097	-	-	
HCM Control Delay (s)	7.4	-	8.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

Timings

1: Atlanta Rd & Windy Hill Rd

3b. Build PM 2026

10/07/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	1015	205	339	1243	402	207	587	138	354	686	93
Future Volume (vph)	87	1015	205	339	1243	402	207	587	138	354	686	93
Lane Group Flow (vph)	92	1068	216	357	1308	423	218	618	145	373	722	98
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	32.5	32.5	15.0	32.5	32.5	15.0	38.5	38.5	15.0	36.5	36.5
Total Split (s)	15.0	38.0	38.0	25.0	48.0	48.0	15.0	39.0	39.0	18.0	42.0	42.0
Total Split (%)	12.5%	31.7%	31.7%	20.8%	40.0%	40.0%	12.5%	32.5%	32.5%	15.0%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.50	0.75	0.38	0.86	0.90	0.51	0.80	0.75	0.29	1.04	0.79	0.18
Control Delay	28.8	43.7	9.8	56.7	44.5	16.8	76.5	48.6	4.3	111.6	48.2	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	43.7	9.8	56.7	44.5	16.8	76.5	48.6	4.3	111.6	48.2	0.8
Queue Length 50th (ft)	35	280	20	255	367	94	87	234	0	~161	274	0
Queue Length 95th (ft)	72	334	83	m#389	#706	m204	#149	283	32	#260	325	0
Internal Link Dist (ft)		601			116			1138			947	
Turn Bay Length (ft)	165		175				485		245	445		235
Base Capacity (vph)	203	1420	573	417	1453	827	271	987	566	357	1076	601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.75	0.38	0.86	0.90	0.51	0.80	0.63	0.26	1.04	0.67	0.16

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

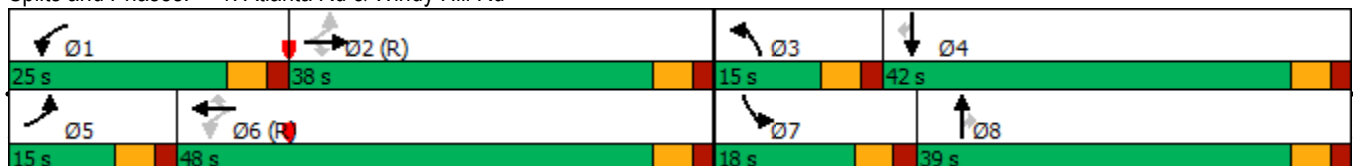
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Atlanta Rd & Windy Hill Rd





































HCM 6th Signalized Intersection Summary

1: Atlanta Rd & Windy Hill Rd

3b. Build PM 2026

10/07/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 	 		 	 	
Traffic Volume (veh/h)	87	1015	205	339	1243	402	207	587	138	354	686	93
Future Volume (veh/h)	87	1015	205	339	1243	402	207	587	138	354	686	93
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	92	1068	216	357	1308	423	218	618	145	373	722	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1828	567	392	1605	716	272	759	339	360	849	
Arrive On Green	0.05	0.36	0.36	0.14	0.45	0.45	0.08	0.21	0.21	0.10	0.24	0.00
Sat Flow, veh/h	1781	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	92	1068	216	357	1308	423	218	618	145	373	722	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.9	20.4	12.2	14.6	38.3	23.9	7.4	19.9	9.5	12.5	23.3	0.0
Cycle Q Clear(g_c), s	3.9	20.4	12.2	14.6	38.3	23.9	7.4	19.9	9.5	12.5	23.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	1828	567	392	1605	716	272	759	339	360	849	
V/C Ratio(X)	0.51	0.58	0.38	0.91	0.81	0.59	0.80	0.81	0.43	1.04	0.85	
Avail Cap(c_a), veh/h	238	1828	567	430	1605	716	274	992	442	360	1081	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.9	31.3	28.6	23.5	28.5	24.6	54.4	44.9	40.8	53.8	43.6	0.0
Incr Delay (d2), s/veh	2.2	1.4	1.9	22.1	4.7	3.6	15.5	4.1	0.9	57.1	5.3	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	1.8	8.6	4.8	8.3	17.0	9.2	3.7	8.9	3.7	8.1	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	32.7	30.6	45.6	33.2	28.2	69.9	49.0	41.7	110.9	48.9	0.0
LnGrp LOS	C	C	C	D	C	C	E	D	D	F	D	
Approach Vol, veh/h	1376			2088			981			1095		
Approach Delay, s/veh	32.1			34.3			52.6			70.0		
Approach LOS	C			C			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.4	48.5	14.9	34.2	11.2	59.7	18.0	31.1				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	19.5	32.5	9.5	36.5	9.5	42.5	12.5	33.5				
Max Q Clear Time (g_c+I1), s	16.6	22.4	9.4	25.3	5.9	40.3	14.5	21.9				
Green Ext Time (p_c), s	0.3	7.7	0.0	3.4	0.1	2.0	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay				44.0								
HCM 6th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	0	18	3	7	24
Future Vol, veh/h	2	0	18	3	7	24
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	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	0	25	4	10	33
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	80	27	0	0	29	0
Stage 1	27	-	-	-	-	-
Stage 2	53	-	-	-	-	-
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	922	1048	-	-	1584	-
Stage 1	996	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	916	1048	-	-	1584	-
Mov Cap-2 Maneuver	916	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.9	0		1.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	916	1584	-	
HCM Lane V/C Ratio	-	-	0.003	0.006	-	
HCM Control Delay (s)	-	-	8.9	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection												
Intersection Delay, s/veh	6.8											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	4	0	0	1	2	0	0	1	0	0
Future Vol, veh/h	0	5	4	0	0	1	2	0	0	1	0	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	6	0	0	2	3	0	0	2	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.7	6.4	7.2	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	56%	0%	0%
Vol Right, %	0%	44%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	9	1	1
LT Vol	2	0	0	1
Through Vol	0	5	0	0
RT Vol	0	4	1	0
Lane Flow Rate	3	15	2	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0.004	0.015	0.002	0.002
Departure Headway (Hd)	4.162	3.676	3.353	4.164
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	978	1072	863
Service Time	2.169	1.681	1.358	2.171
HCM Lane V/C Ratio	0.003	0.015	0.002	0.002
HCM Control Delay	7.2	6.7	6.4	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0	0

Timings 5: Windy Hill Rd & Davis Rd Extension

3b. Build PM 2026
10/24/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL
Lane Configurations		↩	↩↩↩	↩↩	↩	↩
Traffic Volume (vph)	48	75	1376	1971	72	68
Future Volume (vph)	48	75	1376	1971	72	68
Lane Group Flow (vph)	0	131	1448	2075	76	110
Turn Type	pm+pt	pm+pt	NA	NA	Perm	Prot
Protected Phases	5	5	2	6		4
Permitted Phases	2	2			6	
Detector Phase	5	5	2	6	6	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	15.0	23.5	23.5	23.5	23.5
Total Split (s)	15.0	15.0	95.0	80.0	80.0	25.0
Total Split (%)	12.5%	12.5%	79.2%	66.7%	66.7%	20.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Recall Mode	None	None	C-Min	C-Min	C-Min	None
v/c Ratio		0.66	0.35	0.85	0.07	0.59
Control Delay		55.0	0.4	20.2	5.8	55.2
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		55.0	0.4	20.2	5.8	55.2
Queue Length 50th (ft)		73	6	582	12	68
Queue Length 95th (ft)		m101	m9	#965	35	124
Internal Link Dist (ft)			158	555		383
Turn Bay Length (ft)		145			75	
Base Capacity (vph)		215	4121	2430	1094	295
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.61	0.35	0.85	0.07	0.37

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Windy Hill Rd & Davis Rd Extension



HCM 6th Signalized Intersection Summary

5: Windy Hill Rd & Davis Rd Extension

3b. Build PM 2026

10/24/2024



Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↩	↑↑↑	↩	↑↑	↗	↘	
Traffic Volume (veh/h)	48	75	1376	0	1971	72	68	36
Future Volume (veh/h)	48	75	1376	0	1971	72	68	36
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		79	1448		2075	0	72	38
Peak Hour Factor		0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %		2	2		2	2	2	2
Cap, veh/h		206	4230		2643		89	47
Arrive On Green		0.04	0.83		0.74	0.00	0.08	0.08
Sat Flow, veh/h		1781	5274		3647	1585	1109	585
Grp Volume(v), veh/h		79	1448		2075	0	111	0
Grp Sat Flow(s),veh/h/ln		1781	1702		1777	1585	1710	0
Q Serve(g_s), s		1.1	8.2		43.1	0.0	7.7	0.0
Cycle Q Clear(g_c), s		1.1	8.2		43.1	0.0	7.7	0.0
Prop In Lane		1.00				1.00	0.65	0.34
Lane Grp Cap(c), veh/h		206	4230		2643		137	0
V/C Ratio(X)		0.38	0.34		0.79		0.81	0.00
Avail Cap(c_a), veh/h		278	4230		2643		278	0
HCM Platoon Ratio		1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00		1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		16.6	2.5		9.5	0.0	54.3	0.0
Incr Delay (d2), s/veh		1.2	0.2		2.4	0.0	10.9	0.0
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	2.0		15.0	0.0	3.7	0.0
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh		17.7	2.7		11.9	0.0	65.2	0.0
LnGrp LOS		B	A		B		E	A
Approach Vol, veh/h			1527		2075		111	
Approach Delay, s/veh			3.5		11.9		65.2	
Approach LOS			A		B		E	
Timer - Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		104.9		15.1	10.1	94.8		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		89.5		19.5	9.5	74.5		
Max Q Clear Time (g_c+I1), s		10.2		9.7	3.1	45.1		
Green Ext Time (p_c), s		17.2		0.2	0.1	21.7		

Intersection Summary





HCM 6th Ctrl Delay	10.0
HCM 6th LOS	B





Notes

User approved volume balancing among the lanes for turning movement.








User approved ignoring U-Turning movement.

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

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	3	18	31	6	20
Future Vol, veh/h	14	3	18	31	6	20
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	-	-	50	-	-
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	15	3	20	34	7	22
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	56	20	0	0	54	0
Stage 1	20	-	-	-	-	-
Stage 2	36	-	-	-	-	-
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	952	1058	-	-	1551	-
Stage 1	1003	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	947	1058	-	-	1551	-
Mov Cap-2 Maneuver	947	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.8	0		1.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 965		1551	-	
HCM Lane V/C Ratio	-	- 0.019		0.004	-	
HCM Control Delay (s)	-	- 8.8		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	96	148	0	8	0
Future Vol, veh/h	0	96	148	0	8	0
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	-	85	-	-	-
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	104	161	0	9	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	331	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	322	-	-	-	-	-
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	664	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	598	1073	1611	-	-	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	7.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1611	-	1073	-	-	
HCM Lane V/C Ratio	0.1	-	0.097	-	-	
HCM Control Delay (s)	7.5	-	8.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-	

Intersection								
Int Delay, s/veh	6.2							
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↔ ↑↑↑	↔ ↑↑↑	↔	↔ ↑↑	↔ ↑	↔ ↑	↔ ↑
Traffic Vol, veh/h	37	34	1851	0	934	33	70	39
Future Vol, veh/h	37	34	1851	0	934	33	70	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	None
Storage Length	-	145	-	165	-	75	0	150
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	92	96	96	92	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	40	35	1928	0	973	34	73	41
Major/Minor	Major1		Major2		Minor2			
Conflicting Flow All	973	973	0	1408	-	0	1894	487
Stage 1	-	-	-	-	-	-	973	-
Stage 2	-	-	-	-	-	-	921	-
Critical Hdwy	6.44	4.14	-	5.64	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.04	-
Follow-up Hdwy	2.52	2.22	-	2.32	-	-	3.67	3.32
Pot Cap-1 Maneuver	346	704	-	260	-	-	81	526
Stage 1	-	-	-	-	-	-	319	-
Stage 2	-	-	-	-	-	-	323	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	430	430	-	260	-	-	~ 67	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 67	-
Stage 1	-	-	-	-	-	-	263	-
Stage 2	-	-	-	-	-	-	323	-
Approach	EB		WB		SB			
HCM Control Delay, s	0.6		0		159.8			
HCM LOS					F			
Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	430	-	260	-	-	67	526	
HCM Lane V/C Ratio	0.176	-	-	-	-	1.088	0.077	
HCM Control Delay (s)	15.2	-	0	-	-	242	12.4	
HCM Lane LOS	C	-	A	-	-	F	B	
HCM 95th %tile Q(veh)	0.6	-	0	-	-	5.6	0.2	
Notes								
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon								

Intersection								
Int Delay, s/veh	8.1							
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Vol, veh/h	48	75	1376	0	1971	72	68	36
Future Vol, veh/h	48	75	1376	0	1971	72	68	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	None
Storage Length	-	145	-	165	-	75	0	150
Veh in Median Storage, #	-	-	0	-	0	-	0	-
Grade, %	-	-	0	-	0	-	0	-
Peak Hour Factor	92	95	95	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	52	79	1448	0	2075	76	72	38
Major/Minor	Major1		Major2		Minor2			
Conflicting Flow All	2075	2075	0	1057	-	0	2916	1038
Stage 1	-	-	-	-	-	-	2075	-
Stage 2	-	-	-	-	-	-	841	-
Critical Hdwy	6.44	4.14	-	5.64	-	-	6.29	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.04	-
Follow-up Hdwy	2.52	2.22	-	2.32	-	-	3.67	3.32
Pot Cap-1 Maneuver	66	264	-	408	-	-	~ 19	228
Stage 1	-	-	-	-	-	-	81	-
Stage 2	-	-	-	-	-	-	356	-
Platoon blocked, %			-		-	-		
Mov Cap-1 Maneuver	107	107	-	408	-	-	0	228
Mov Cap-2 Maneuver	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	356	-
Approach	EB		WB		SB			
HCM Control Delay, s	19.7		0					
HCM LOS					-			
Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	107	-	408	-	-	-	228	
HCM Lane V/C Ratio	1.225	-	-	-	-	-	0.166	
HCM Control Delay (s)	237	-	0	-	-	-	23.9	
HCM Lane LOS	F	-	A	-	-	-	C	
HCM 95th %tile Q(veh)	8.7	-	0	-	-	-	0.6	
Notes								
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon								

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

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

1. Windy Hill Rd @ Atlanta Rd
A.M. Peak Hour

Condition	Atlanta Road					Atlanta Road					Windy Hill Road					Windy Hill Road				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	106	618	188	912	0	413	605	36	1054	0	65	1260	190	1515	0	187	423	266	876
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No-Build 2026 Volumes:	0	108	630	192	930	0	421	617	37	1075	0	66	1285	194	1545	0	191	431	271	893
Shifted Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	3	-1	1
Total New Trips:	0	0	0	13	13	0	9	0	0	9	0	0	13	0	13	0	17	17	12	46
Future 2026 Traffic Volumes:	0	108	630	205	943	0	430	617	37	1084	0	66	1298	194	1558	0	207	451	282	940

P.M. Peak Hour

Condition	Atlanta Road					Atlanta Road					Windy Hill Road					Windy Hill Road				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	203	575	108	886	0	328	673	91	1092	0	85	968	201	1254	0	317	1200	383	1900
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No-Build 2026 Volumes:	0	207	587	110	904	0	335	686	93	1114	0	87	987	205	1279	0	323	1224	391	1938
Shifted Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	2	-1	0
Total New Trips:	0	0	0	28	28	0	19	0	0	19	0	0	28	0	28	0	17	17	12	46
Future 2026 Traffic Volumes:	0	207	587	138	932	0	354	686	93	1133	0	87	1015	205	1307	0	339	1243	402	1984

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

2. Windy Hill Rd @ Dixie Ave
A.M. Peak Hour

Condition	Dixie Avenue Northbound					Dixie Avenue Southbound					Windy Hill Road Eastbound					Windy Hill Road Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	4	4	0	0	0	12	12	0	0	1847	14	1861	0	0	864	38	902
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2026 Volumes:	0	0	0	4	4	0	0	0	12	12	0	0	1884	14	1898	0	0	881	39	920
Shifted Trips:	0	0	0	0	0	0	0	0	-7	-7	0	0	0	0	0	0	0	7	0	7
Total New Trips:	0	0	0	0	0	0	0	0	14	14	0	0	34	0	34	0	0	32	14	46
Future 2026 Traffic Volumes:	0	0	0	4	4	0	0	0	19	19	0	0	1918	14	1932	0	0	920	53	973

P.M. Peak Hour

Condition	Dixie Avenue Northbound					Dixie Avenue Southbound					Windy Hill Road Eastbound					Windy Hill Road Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	5	5	0	0	0	12	12	0	0	1384	23	1407	0	0	1885	20	1905
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2026 Volumes:	0	0	0	5	5	0	0	0	12	12	0	0	1412	23	1435	0	0	1923	20	1943
Shifted Trips:	0	0	0	0	0	0	0	0	-4	-4	0	0	0	0	0	0	0	4	0	4
Total New Trips:	0	0	0	0	0	0	0	0	14	14	0	0	75	0	75	0	0	32	31	63
Future 2026 Traffic Volumes:	0	0	0	5	5	0	0	0	22	22	0	0	1487	23	1510	0	0	1959	51	2010

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

3. Dixie Ave @ Hillside Ave
A.M. Peak Hour

Condition	Dixie Avenue Northbound						Dixie Avenue Southbound						- Eastbound						Hillside Avenue Westbound																	
	U			L			T			R			U			L			T			U			L			T			R			Tot		
	Tot			Tot			Tot			Tot			Tot			Tot			Tot			Tot			Tot			Tot			Tot					
Existing 2024 Traffic Counts:	0	0	33	6	39		0	4	6	0	10		0	0	0	0	0	0	0	0	0	0	11	0	11	22										
Growth Factor (%):	1	1	1	1			1	1	1	1			1	1	1	1						1	1	1	1											
No-Build 2026 Volumes:	0	0	34	6	40		0	4	6	0	10		0	0	0	0	0	0	0	0	0	0	11	0	11	22										
Shifted Trips:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	-7	0	-7	-14										
Total New Trips:	0	0	3	0	3		0	2	3	0	5		0	0	0	0	0	0	0	0	0	0	0	0	2	2										
Future 2026 Traffic Volumes:	0	0	37	6	43		0	6	9	0	15		0	0	0	0	0	0	0	0	0	0	4	0	6	10										

P.M. Peak Hour

Condition	Dixie Avenue Northbound						Dixie Avenue Southbound						Eastbound						Hillside Avenue Westbound																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

4. Hillside Ave @ Park Dr
A.M. Peak Hour

Condition	Site Driveway 2					Park Drive					Hillside Avenue					Hillside Avenue				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	0	0	0	0	0	1	1	0	0	10	0	10	0	0	13	1	14
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2026 Volumes:	0	0	0	0	0	0	0	0	1	1	0	0	10	0	10	0	0	13	1	14
Shifted Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-13	0	-13
Total New Trips:	0	2	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Future 2026 Traffic Volumes:	0	2	0	0	2	0	0	0	1	1	0	0	10	2	12	0	0	0	1	1

P.M. Peak Hour

Condition	Site Driveway 2					Park Drive					Hillside Avenue					Hillside Avenue				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	0	0	0	1	0	0	1	0	0	5	0	5	0	0	8	1	9
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2026 Volumes:	0	0	0	0	0	0	1	0	0	1	0	0	5	0	5	0	0	8	1	9
Shifted Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-8	0	-8
Total New Trips:	0	2	0	0	2	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0
Future 2026 Traffic Volumes:	0	2	0	0	2	0	1	0	0	1	0	0	5	4	9	0	0	0	1	1

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
 October 2024

5. Windy Hill Rd @ Davis Rd Ext

A.M. Peak Hour

Condition	-					Davis Road Extension					Windy Hill Road					Windy Hill Road				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	36	0	1815	0	1851	0	0	902	0	902
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No-Build 2026 Volumes:	0	0	0	0	0	0	0	0	0	0	37	0	1851	0	1888	0	0	920	0	920
Shifted Trips:	0	0	0	0	0	0	7	0	7	14	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	0	0	0	63	0	32	95	0	34	0	0	34	0	0	14	33	47
Future 2026 Traffic Volumes:	0	0	0	0	0	0	70	0	39	109	37	34	1851	0	1922	0	0	934	33	967

P.M. Peak Hour

Condition	-					Davis Road Extension					Windy Hill Road					Windy Hill Road				
	Northbound					Southbound					Eastbound					Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2024 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	47	0	1349	0	1396	0	0	1902	0	1902
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No-Build 2026 Volumes:	0	0	0	0	0	0	0	0	0	0	48	0	1376	0	1424	0	0	1940	0	1940
Shifted Trips:	0	0	0	0	0	0	4	0	4	8	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	0	0	0	64	0	32	96	0	75	0	0	75	0	0	31	72	103
Future 2026 Traffic Volumes:	0	0	0	0	0	0	68	0	36	104	48	75	1376	0	1499	0	0	1971	72	2043

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

6, Dixie Ave @ Site Drwy 1
A.M. Peak Hour

Condition	Dixie Avenue Northbound					Dixie Avenue Southbound					Eastbound					Site Driveway 1 Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
	0	0	39	0	39	0	0	17	0	17	0	0	0	0	0	0	0	0	0	0
Existing 2024 Traffic Counts:	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Growth Factor (%):	0	0	40	0	40	0	0	17	0	17	0	0	0	0	0	0	0	0	0	0
No-Build 2026 Volumes:	0	0	0	0	0	0	0	-7	0	-7	0	0	0	0	0	0	0	0	0	0
Shifted Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	14	14	0	3	0	0	3	0	0	0	0	0	0	14	0	3	17
Future 2026 Traffic Volumes:	0	0	40	14	54	0	3	10	0	13	0	0	0	0	0	0	14	0	3	17

P.M. Peak Hour

Condition	Dixie Avenue Northbound					Dixie Avenue Southbound					Eastbound					Site Driveway 1 Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
	0	0	18	0	18	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0
Existing 2024 Traffic Counts:	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Growth Factor (%):	0	0	18	0	18	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0
No-Build 2026 Volumes:	0	0	0	0	0	0	0	-4	0	-4	0	0	0	0	0	0	0	0	0	0
Shifted Trips:	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	14	0	3	17
Total New Trips:	0	0	0	31	31	0	6	20	0	26	0	0	0	0	0	0	14	0	3	17
Future 2026 Traffic Volumes:	0	0	18	31	49	0	6	20	0	26	0	0	0	0	0	0	14	0	3	17

24-164 - Residential & Fitness Center Development on Windy Hill Road, Smyrna, GA
Traffic Volumes

A&R Engineering
October 2024

7. Davis Rd Ext @ Site Drwy 3

A.M. Peak Hour

Condition	Davis Road Extension						Davis Road Extension						Site Driveway 3						Westbound					
	Northbound						Southbound						Eastbound						Westbound					
	U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot	
Existing 2024 Traffic Counts:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Growth Factor (%):	1	1	1	1			1	1	1	1			1	1	1	1			1	1	1	1		
No-Build 2026 Volumes:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Shifted Trips:	0	0	0	0	0		0	0	13	0	13		0	0	0	0	0		0	0	0	0	0	
Total New Trips:	0	68	0	0	68		0	0	0	0	0		0	0	0	95	95		0	0	0	0	0	
Future 2026 Traffic Volumes:	0	68	0	0	68		0	0	13	0	13		0	0	0	95	95		0	0	0	0	0	

P.M. Peak Hour

Condition	Davis Road Extension						Davis Road Extension						Site Driveway 3						Westbound					
	Northbound						Southbound						Eastbound						Westbound					
	U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot		U	L	T	R	Tot	
Existing 2024 Traffic Counts:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Growth Factor (%):	1	1	1	1			1	1	1	1			1	1	1	1			1	1	1	1		
No-Build 2026 Volumes:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Shifted Trips:	0	0	0	0	0		0	0	8	0	8		0	0	0	0	0		0	0	0	0	0	
Total New Trips:	0	148	0	0	148		0	0	0	0	0		0	0	0	96	96		0	0	0	0	0	
Future 2026 Traffic Volumes:	0	148	0	0	148		0	0	8	0	8		0	0	0	96	96		0	0	0	0	0	