

RFP 17-10 ADDENDUM 2

Questions & Answers & Traffic Study Information

1. The RFP does not include any specific proposal content requirements. Can the City clarify what information respondents should include in their proposals? **Answer; Refer to Addendum 1**
2. The Offeror's RFP Checklist references a cover page form and reference questionnaire form. These forms are not included in the RFP. Can the City confirm that only the "proposal form" found in the RFP is required? **Answer; A cover page form and reference questionnaire form are not required.**
3. How does the City want the cost proposal formatted? How much detail should offerors provide? **Answer; There is no specific format required for the cost proposal. Provide sufficient detail about assumptions, exclusions and scope that form the basis of the cost proposal. Identify any potential additional services.**
4. Are there any GDOT Area Class pre-qualification requirements? **Answer; Prequalification in areas 3.02, 3.09, 3.10, 3.12, 3.13 and 9.01 are required.**
5. Can we get copies of the traffic study referenced in the RFP, and the school campus design on which it is based? **Answer; See attached**
6. Is landscape design and a street lighting plan part of this design project? It is only mentioned in the Public Transportation Plan requirements checklist, and the checklist states: Items on this list may not be applicable in all circumstances. **Answer; Landscape and lighting plans are not required.**
7. Please see the attached map and confirm *the location of the new signal with a right and left turn lane*. **Answer; Yes this is the location.**
8. Would it be possible to obtain the latest school design plans for Austin Elementary. PDF would be fine. I see the concept but it's hard to read. The proposed may have an impact on geometrics and drainage etc. **Answer; The school construction will not change any of the existing roadway alignment. The school entrances will align with the existing driveways. Assume that the roadway drainage will have to be handled independently of the school's stormwater facilities. A full set of site plans for the school will be provided to the successful proposer.**

9. Under Section 2.1 General Scope of Work where it mentions “necessary bid and construction documents”. Can you be more specific as to what is actually included in this scope? i.e. are we to prepare the Contract between the City and the Construction Contractor? **Answer; The specific scope is provided in Section 3. Construction contract preparation is not required.**
10. Under Section 14, is the Indemnification Clause negotiable? i.e. where it states “any and all liabilities” and “expert and attorneys’ fees”. **Answer; Any proposed exceptions to the city’s contract language should be submitted with the proposal.**

**SIGNAL WARRANT ANALYSIS
FOR
ROBERTS DRIVE AT ROBERTS PARK ROAD (NEW AUSTIN
ELEMENTARY SCHOOL'S PARENT DROP-OFF/PICKUP DRIVEWAY)
CITY OF DUNWOODY, GEORGIA**



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April 28, 2017
A&R Engineering Project #: 17-022

TRAFFIC ENGINEERING STUDY

Roberts Drive at Roberts Park Road (Relocated Austin Elementary School's Visitors and Parent Drop-off / Pickup Driveway) City of Dunwoody, Georgia

LOCATION:

The study intersection is the existing intersection of Roberts Drive at Roberts Park Road in DeKalb County, Georgia. The study intersection is located approximately 805 feet south of the existing signal at the current Austin Elementary School driveway. The Austin Elementary School will be relocated from its existing location just north of Dunwoody Knoll Drive to Dunwoody Park. Roberts Park Road, which is a private road, currently provides access to the Dunwoody Nature Center and is proposed to serve as joint driveway to the Nature Center and the new school's visitors and parent drop-off/pickup driveway. A location map is included in Appendix A.



COUNTY:

The study intersection is in DeKalb County, Georgia.

REQUESTED BY:

DeKalb County School System has requested this traffic engineering study.

REASON FOR INVESTIGATION:

The reason for this study is to determine if the future traffic volumes at the intersection of Roberts Drive at Roberts Park Road (new Austin Elementary School's visitors and parent drop-off/pickup driveway) will satisfy MUTCD signal warrants for consideration of a stop-and-go traffic signal after addition of traffic from the proposed new school.

DESCRIPTION OF THE INTERSECTION:

Roberts Drive is a north-south, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the study intersection. Roberts Park Road is an east-west, private two-lane, undivided roadway providing access to the Dunwoody Nature Center.

EXISTING TRAFFIC CONTROL:

Roberts Park Road is currently stop-controlled with Roberts Drive remaining free flow.

VEHICULAR VOLUMES:

Existing 24-hour tube counts were collected on Roberts Drive south of Roberts Park Road on Tuesday, March 7, 2017. The counts revealed that Roberts Drive had 5,987 vehicles in the northbound direction and 5,773 vehicles in the southbound direction during the 24-hour period. The counts from 7:00 am to 10:00 pm were used in this study. The existing traffic counts are shown in Table 1. Detailed traffic counts are included in Appendix E.

<p align="center">TABLE 1 EXISTING TRAFFIC VOLUMES ROBERTS DRIVE SOUTH OF ROBERTS PARK ROAD</p>		
Time	Northbound Roberts Drive	Southbound Roberts Drive
7:00 A.M. – 8:00 P.M.	326	602
8:00 A.M. – 9:00 A.M.	273	553
9:00 A.M. – 10:00 A.M.	277	548
10:00 A.M. – 11:00 A.M.	272	343
11:00 A.M. – 12:00 Noon	306	395
12:00 Noon – 1:00 P.M.	353	332
1:00 P.M. – 2:00 P.M.	402	300
2:00 P.M. – 3:00 P.M.	460	369
3:00 P.M. – 4:00 P.M.	510	404
4:00 P.M. – 5:00 P.M.	553	412
5:00 P.M. – 6:00 P.M.	621	390
6:00 P.M. – 7:00 P.M.	562	316
7:00 P.M. – 8:00 P.M.	403	230
8:00 P.M. – 9:00 P.M.	236	110
9:00 P.M. – 10:00 P.M.	171	73
TOTAL	5,725	5,377

VEHICLE SPEEDS:

The posted speed limit on Roberts Drive is 35 mph.

PEDESTRIAN ACTIVITY:

No pedestrian activity was observed near the study intersection. However, pedestrian counts were collected at the existing Austin Elementary School's driveways on Tuesday, March 7, 2017. A total of 44 pedestrians crossed the southbound approach and 14 pedestrians crossed the westbound approach in the AM peak hour at drop-off/pickup (southern) driveway. Similarly, 57 crossed the southbound approach and 6 crossed the westbound approach in the school dismissal peak hour at same driveway. These counts were assumed to also occur at the new school's parent drop-off/pickup driveway (northern driveway) and therefore included in our analysis. No pedestrian activity was noted at the northern driveway. These counts are also included in Appendix E. Please refer to the Traffic Impact Study Section 5.3 Pedestrian Traffic.

PARKING:

No parking is allowed on Roberts Drive in the vicinity of the study intersection.

DELAY:

A discussion of signalized and unsignalized delay for the future traffic is discussed in the "Capacity Analysis" section of this report.

SIGHT DISTANCE:

Roberts Drive is a north-south, two-lane, undivided roadway with a posted speed limit of 35 mph. AASHTO requires 412 feet of sight distance for left turns from the minor road (Case B1: two lanes crossed) and 335 feet of sight distance for right turns (Case B2: one lane crossed). Sight distances for the study intersection need to be checked at the time of designing the driveway, to ascertain that it meets the sight distance minimum requirements.

SITE INFORMATION:

The proposed 900-student Austin Elementary School site will be located in Dunwoody Park in City of Dunwoody, Georgia. The new school will replace the existing Austin Elementary School located just north of Dunwoody Knoll Drive. A site plan is also included in Appendix C. The development proposes access at the following locations on Roberts Drive:

- Site Driveway 1 (Roberts Park Road): Full access driveway for visitors and parent drop-off / pickup. Roberts Park Road currently provides access to Dunwoody Nature Center and will be shared by proposed school development as its visitors and parent drop-off/pick-up driveway.
- Site Driveway 2: Full access driveway for staff and buses

Trip generation estimates were based on the rates and equations published in the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Use: 520 – *Elementary School*. The calculated trip generation for the site is shown in Table 2.

Land Use	Size	AM Peak Hour			School Exit Peak Hour			PM Peak Hour			24-Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 520 – Elementary School	900 Students	223	182	405	113	139	252	66	69	135	1,161

Total trips in Table 2 were distributed to hours throughout the day according to data from similar existing land uses. The hourly site traffic is shown in Table 3.

TIME	Enter	Exit	Total
7:00 A.M. – 8:00 P.M.	223	182	405
8:00 A.M. – 9:00 A.M.	41	48	89
9:00 A.M. – 10:00 A.M.	25	33	58
10:00 A.M. – 11:00 A.M.	6	5	11
11:00 A.M. – 12:00 Noon	10	2	12
12:00 Noon – 1:00 P.M.	12	5	17
1:00 P.M. – 2:00 P.M.	17	3	20
2:00 P.M. – 3:00 P.M.	37	41	78
3:00 P.M. – 4:00 P.M.	113	139	252
4:00 P.M. – 5:00 P.M.	66	69	135
5:00 P.M. – 6:00 P.M.	24	41	65
6:00 P.M. – 7:00 P.M.	5	9	14
7:00 P.M. – 8:00 P.M.	1	2	3
8:00 P.M. – 9:00 P.M.	1	1	2
9:00 P.M. – 10:00 P.M.	0	0	0
TOTAL	581	580	1,161

The distribution of site traffic was assumed as below:

- 35% of the new trips will travel to/from the north on Roberts Drive
- 45% of the new trips will travel to/from the south on Chamblee Dunwoody Road
- 15% of the new trips will travel to/from the west on Dunwoody Knoll Drive
- 5% of the new trips will travel to/from the north on Chamblee Dunwoody Road

The hourly volumes in Table 3 were assigned to the turning movements at the proposed site's driveway locations based on the above assumed trip distribution. Table 4 shows the site generated traffic from the development at the study intersection.

TABLE 4 – NEW SITE GENERATED TRAFFIC VOLUMES												
ROBERTS DR AT ROBERTS PARK RD (NEW SCHOOL PARENT DROP-OFF/PICKUP DRWY)												
Time	Northbound Roberts Dr			Southbound Roberts Dr			Eastbound -			Westbound Roberts Park Rd (New School Parent Drwy)		
	L	T	R	L	T	R	L	T	R	L	T	R
Entering Traffic %	-	-	40	40	10	-	-	-	-	-	-	-
Exiting Traffic %	-	10	-	-	-	-	-	-	-	40	-	40
Time / Movement	L	T	R	L	T	R	L	T	R	L	T	R
7:00 A.M. – 8:00 P.M.	0	18	89	89	22	0	0	0	0	73	0	73
8:00 A.M. – 9:00 A.M.	0	5	16	16	4	0	0	0	0	19	0	19
9:00 A.M. – 10:00 A.M.	0	3	10	10	3	0	0	0	0	13	0	13
10:00 A.M. – 11:00 A.M.	0	1	2	2	1	0	0	0	0	2	0	2
11:00 A.M. – 12:00 Noon	0	0	4	4	1	0	0	0	0	1	0	1
12:00 Noon – 1:00 P.M.	0	1	5	5	1	0	0	0	0	2	0	2
1:00 P.M. – 2:00 P.M.	0	0	7	7	2	0	0	0	0	1	0	1
2:00 P.M. – 3:00 P.M.	0	4	15	15	4	0	0	0	0	16	0	16
3:00 P.M. – 4:00 P.M.	0	14	45	45	11	0	0	0	0	56	0	56
4:00 P.M. – 5:00 P.M.	0	7	26	26	7	0	0	0	0	28	0	28
5:00 P.M. – 6:00 P.M.	0	4	10	10	2	0	0	0	0	16	0	16
6:00 P.M. – 7:00 P.M.	0	1	2	2	1	0	0	0	0	4	0	4
7:00 P.M. – 8:00 P.M.	0	0	0	0	0	0	0	0	0	1	0	1
8:00 P.M. – 9:00 P.M.	0	0	0	0	0	0	0	0	0	0	0	0
9:00 P.M. – 10:00 P.M.	0	0	0	0	0	0	0	0	0	0	0	0

The new site generated traffic volumes from proposed development shown in Table 4 were added to the existing traffic volumes shown in Table 1 to calculate the future traffic volumes (Table 5).

TABLE 5 – FUTURE TRAFFIC VOLUMES												
ROBERTS DR AT ROBERTS PARK RD (NEW SCHOOL PARENT DROP-OFF/PICKUP DRWY)												
Time	Northbound Roberts Dr			Southbound Roberts Dr			Eastbound -			Westbound Roberts Park Rd (New School Parent Drwy)		
	L	T	R	L	T	R	L	T	R	L	T	R
7:00 A.M. – 8:00 P.M.	0	344	89	89	624	0	0	0	0	73	0	73
8:00 A.M. – 9:00 A.M.	0	278	16	16	557	0	0	0	0	19	0	19
9:00 A.M. – 10:00 A.M.	0	280	10	10	551	0	0	0	0	13	0	13
10:00 A.M. – 11:00 A.M.	0	273	2	2	344	0	0	0	0	2	0	2
11:00 A.M. – 12:00 Noon	0	306	4	4	396	0	0	0	0	1	0	1
12:00 Noon – 1:00 P.M.	0	354	5	5	333	0	0	0	0	2	0	2
1:00 P.M. – 2:00 P.M.	0	402	7	7	302	0	0	0	0	1	0	1
2:00 P.M. – 3:00 P.M.	0	464	15	15	373	0	0	0	0	16	0	16
3:00 P.M. – 4:00 P.M.	0	524	45	45	415	0	0	0	0	56	0	56
4:00 P.M. – 5:00 P.M.	0	560	26	26	419	0	0	0	0	28	0	28
5:00 P.M. – 6:00 P.M.	0	625	10	10	392	0	0	0	0	16	0	16
6:00 P.M. – 7:00 P.M.	0	563	2	2	317	0	0	0	0	4	0	4
7:00 P.M. – 8:00 P.M.	0	403	0	0	230	0	0	0	0	1	0	1
8:00 P.M. – 9:00 P.M.	0	236	0	0	110	0	0	0	0	0	0	0
9:00 P.M. – 10:00 P.M.	0	171	0	0	73	0	0	0	0	0	0	0

WARRANT ANALYSIS:

The posted speed limit on Roberts Drive is 35 mph. A signal warrant analysis was performed for the study intersection per MUTCD (2009 Edition) using a main street approach speed limit of 35 mph with the intersection geometry of a two-lane major street approach and a single-lane minor street approach. As a westbound right-turn lane is not recommended, no right-turn reduction was applied to the side street (Roberts Park Road / new Austin Elementary School's visitors and parent drop-off/pickup driveway). By not taking any reduction, it becomes easier to meet the signal warrants as all approaching traffic is included in this scenario.

The future traffic volumes shown in Table 5 were used in the signal warrant analyses. The results of the signal warrant analysis indicate that signal warrants 1, 2 and 3 are not satisfied for 100% standard. However, the number of adequate gaps in the traffic stream during the period when the children are using the crossing is less than the number of minutes in the same period. Therefore, signal warrant 5 – School Crossing is satisfied. A detailed copy of the signal warrant analysis is included in Appendix D.

MUTCD Signal Warrant Analysis (Major and Minor Street Volumes):

- Warrant 1 – Eight hour vehicular volume – NOT SATISFIED
 - Standard 1 (Condition A): 0 Hours
 - Standard 1 (Condition B): 2 Hours
 - Standard 2 (Condition A): 1 Hours
 - Standard 2 (Condition B): 2 Hours
- Warrant 2 – Four hour vehicular volume – NOT SATISFIED
- Warrant 3 – Peak hour vehicular volume – NOT SATISFIED
- Warrant 5 – School Crossing – SATISFIED

The methodology used for calculating the adequacy of gap in traffic to cross the road and frequency of adequate gaps is based on the criteria set forth in Institute of Transportation Engineers' Manual of Transportation Engineering Studies, 2nd Edition, Section 2.3 Gap Studies. Table 6 below shows the computation of critical gap and frequency of adequate gaps found.

From the video of the traffic data collection at the traffic signal at existing Austin Elementary School driveway, we counted the actual gaps in the traffic stream during the AM peak hour. While counting the gaps we ignored the traffic signal and considered the gaps that would have occurred if there was no signal. We also ignored the gaps of less than the critical gap length, and added the adequate gaps to arrive at the total gap for the peak hour. MUTCD criterion (warrant 5) states a traffic signal may be warranted when the number of adequate gaps in the traffic stream when school children are crossing is less than the number of minutes in the same period (FHWA, 2003). We found a total of 42 adequate gaps during the peak hour of 60 minutes. We are assuming that those gaps will also occur at the proposed school's driveway.

**TABLE 6
FIELD SHEET FOR A GAP STUDY**

LOCATION	: ROBERTS DRIVE	TIME	: 07.15AM – 08.15AM
DATE	: 03-07-2017	WALKING SPEED:	3.5 FEET/SECOND
CROSSING DISTANCE	: 36 FEET	CRITICAL GAP	: 13.29 SECONDS
GAP SIZE IN SECONDS	TALLY	TOTAL GAPS	
10	<p align="center">Discard Gaps Less Than Critical Gap. According to Section 2.3 Gap Studies of Manual of Transportation Engineering Studies, 2nd Edition <i>36 feet</i> <i>Critical Gap = ----- +3 Seconds = 13.29 sec</i> <i>3.5 feet / sec</i></p>		
11			
12			
13			
14			
15	11111111	9	
16	111	3	
17	1111	4	
18	1111	4	
19	11111	5	
20	1	1	
21		0	
22	1	1	
23		0	
24	1	1	
25	11	2	
26 - 30	111111	6	
31 - 35	11	2	
36 - 40	11	2	
41 & Above	11	2	
TOTAL ADEQUATE GAPS		42	

FUTURE INTERSECTION CAPACITY ANALYSIS:

The methodology used for evaluating traffic operations at the study intersection is based on the criteria set forth in the Transportation Research Board’s Highway Capacity Manual (HCM 2010). Synchro Software, which emulates the HCM methodology, was used for conducting the analysis. The future intersection operation analyses are shown in Table 7 for unsignalized condition and Table 8 for signalized condition. Detailed analyses are included in Appendix F for un-signalized condition and Appendix G for signalized condition.

TABLE 7						
FUTURE INTERSECTION OPERATIONS - NO SIGNAL						
Intersection	A.M. Peak Hour		School Dismissal Peak Hour		P.M. Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
<u>Roberts Dr @ Roberts Park Rd (Visitor & Parent Drop-off/Pickup Drwy)</u>						
-Westbound Approach	E	38.4	E	39.7	D	31.1
-Northbound Left	A	0.0	A	0.0	A	0.0
-Southbound Left	A	8.4	A	9.2	A	9.2

As shown in Table 6, the intersection of Roberts Drive at Roberts Park Road (new school visitor and parent drop-off/pickup driveway) would operate with level-of-service “E” for the westbound (Roberts Park Road) approach in the AM and School Dismissal peak hours without a signal.

TABLE 8						
FUTURE INTERSECTION OPERATIONS - SIGNAL						
Intersection	A.M. Peak Hour		School Dismissal Peak Hour		P.M. Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
<u>Roberts Dr @ Roberts Park Rd (Visitor & Parent Drop-off/Pickup Drwy)</u>	<u>Overall:</u>	<u>Overall:</u>	<u>Overall:</u>	<u>Overall:</u>	<u>Overall:</u>	<u>Overall:</u>
	<u>A</u>	<u>7.4</u>	<u>A</u>	<u>6.9</u>	<u>A</u>	<u>4.1</u>
-Westbound Approach	C	24.3	C	30.3	C	30.6
-Northbound Approach	A	4.2	A	4.1	A	2.8
-Southbound Approach	A	5.3	A	4.0	A	2.6

As shown in Table 7, after the installation of a traffic signal, the study intersection will operate at overall LOS A in the morning, school dismissal and evening peak hours.

CONCLUSIONS AND RECOMMENDATIONS:

The results of the signal warrant analysis indicate that the future traffic volumes at the intersection of Roberts Drive at Roberts Park Road (new Austin Elementary School's visitors and parent drop-off/pickup driveway) will not meet the MUTCD warrants 1, 2 and 3 after relocation of the Austin Elementary School to Dunwoody Park. However, the number of adequate gaps in the traffic stream during the period when the children are using the crossing is less than the number of minutes in the same period and therefore signal warrant 5 – School Crossing is satisfied. Therefore, a traffic signal installation is recommended at this intersection based on the projected School Crossing (Warrant 5).

Abdul K. Amer

PREPARED BY: _____

A&R Engineering, Inc.

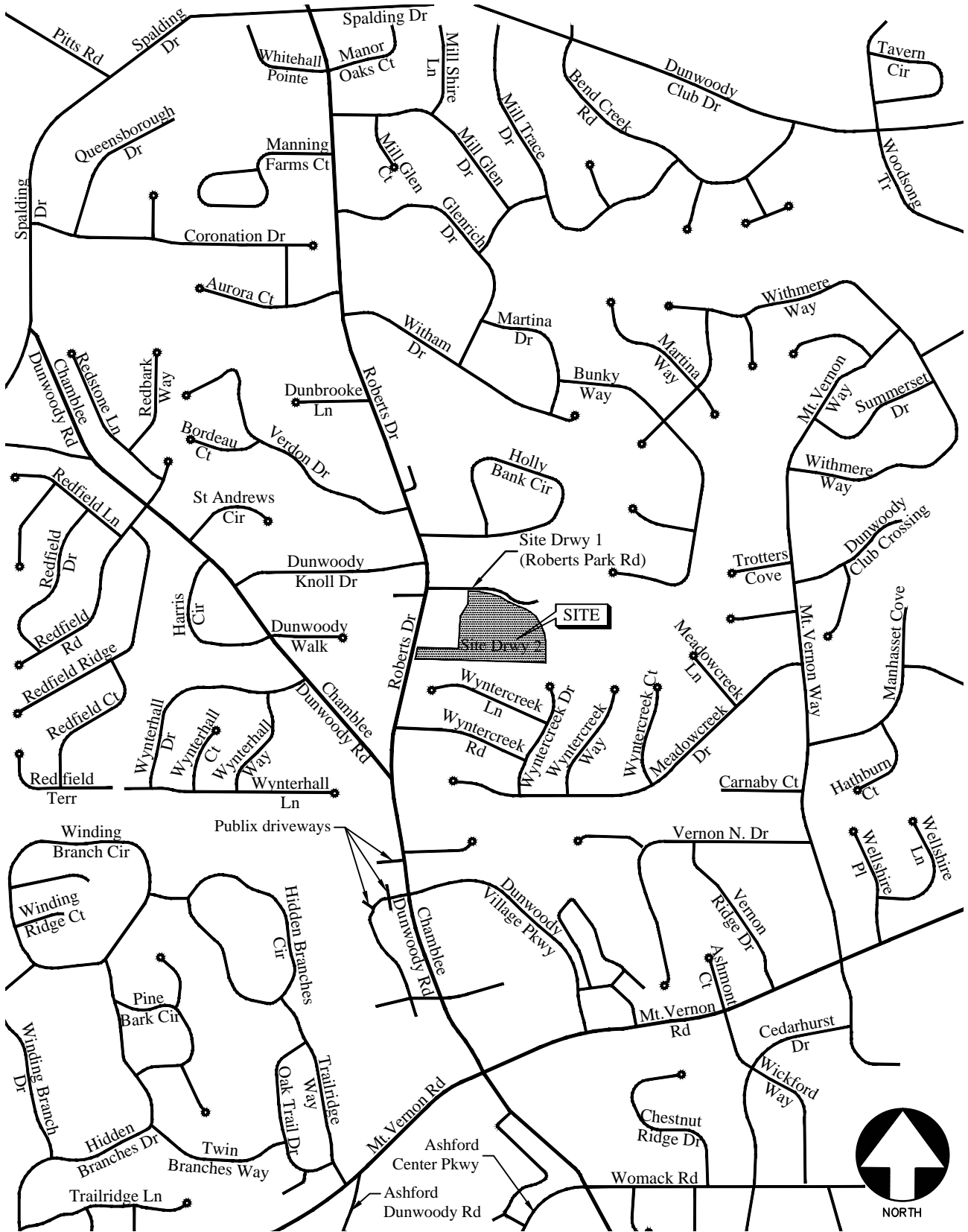
DATE: 04-28-2017.



APPENDIX

- A. Location Map**
- B. Adjacent Signalized Intersections**
- C. Site Plan**
- D. Warrant Analysis Sheets**
- E. Traffic Count Information**
- F. Future Capacity Analysis (Without Signal)**
- G. Future Capacity Analysis (With Signal)**
- H. Volume Worksheet**

A - LOCATION MAP

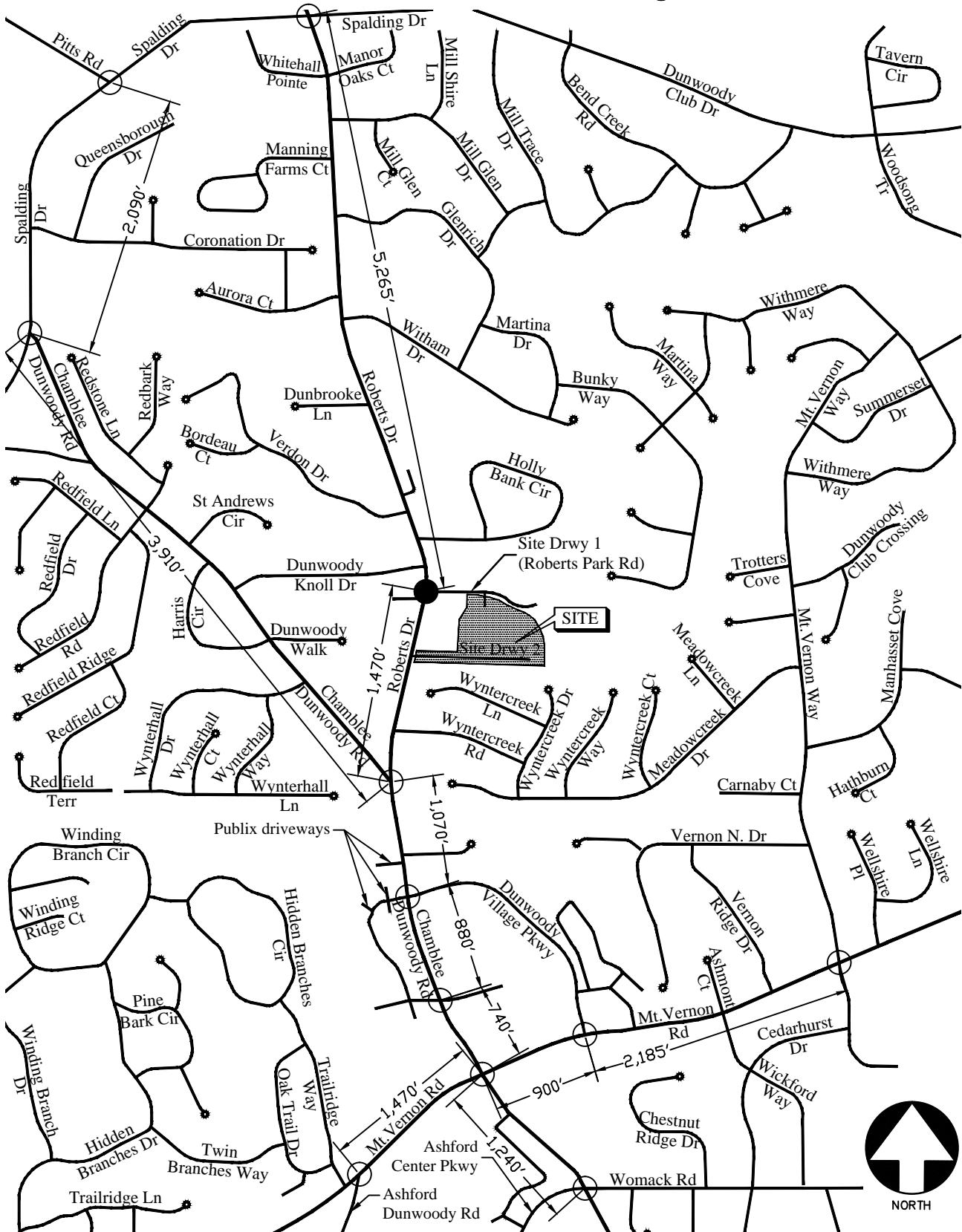


LOCATION MAP

B - ADJACENT SIGNALIZED INTERSECTIONS

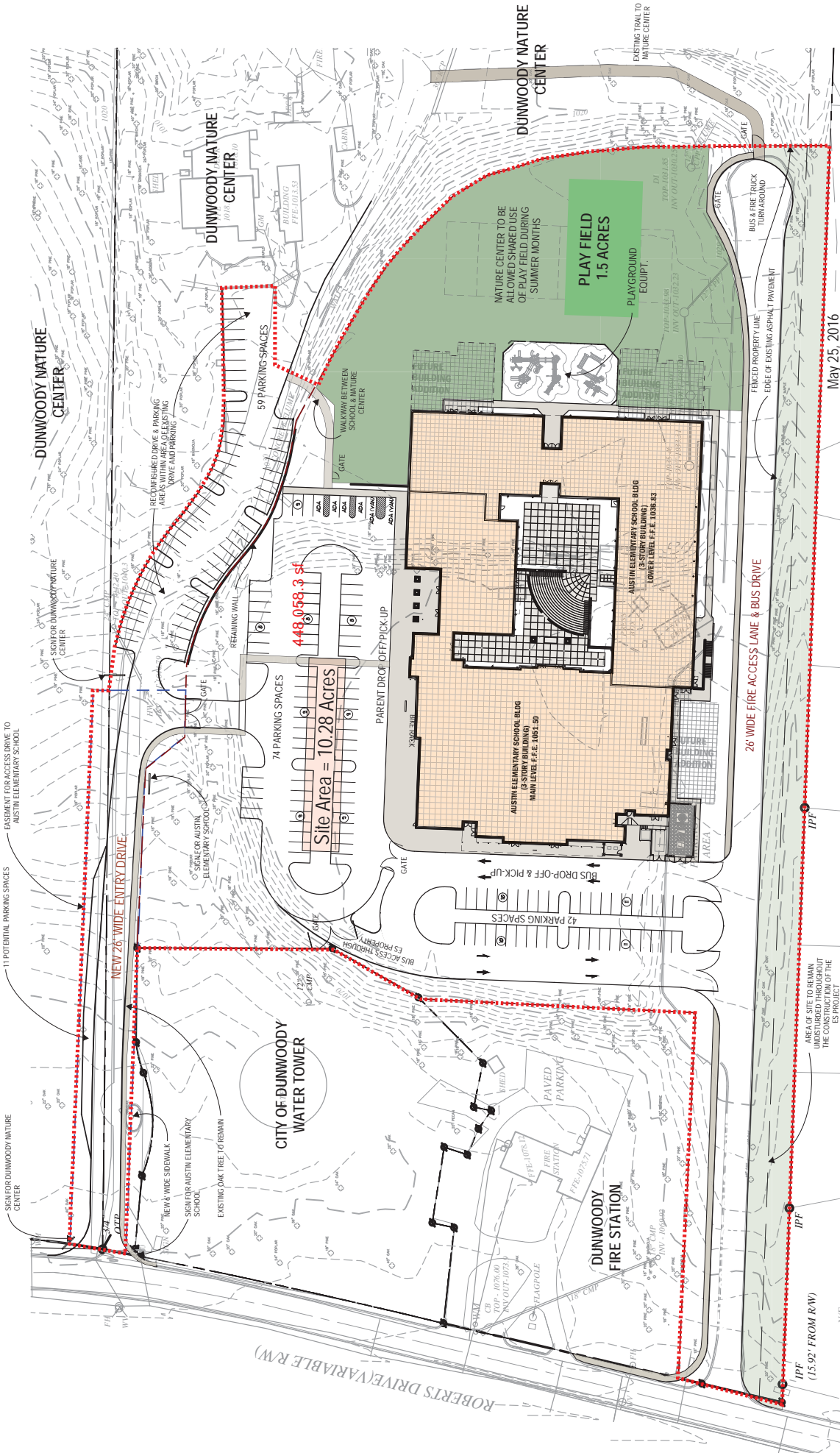
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- - SIGNALIZED INTERSECTION WITHIN 1 MILE OF STUDY INTERSECTION
- - STUDY INTERSECTION



ADJACENT SIGNALIZED INTERSECTIONS

C - SITE PLAN



CONCEPTUAL SITE PLAN OF AUSTIN ELEMENTARY SCHOOL AT DUNWOODY PARK

May 25, 2016

IPF (15.92' FROM R/W)

26 WIDE FIRE ACCESS LANE & BUS DRIVE

448,058.3 sq ft

Site Area = 10.28 Acres

ROBERTS DRIVE (VARIABLE R/W)

DUNWOODY NATURE CENTER

DUNWOODY NATURE CENTER

DUNWOODY NATURE CENTER

DUNWOODY FIRE STATION

CITY OF DUNWOODY WATER TOWER

AUSTIN ELEMENTARY SCHOOL BLDG (3-STORY BUILDING) MAIN LEVEL P.F.E. 105,150

AUSTIN ELEMENTARY SCHOOL BLDG (3-STORY BUILDING) LOWER LEVEL P.F.E. 105,833

PLAY FIELD 1.5 ACRES

NATURE CENTER TO BE ALLOWED SHARED USE OF PLAY FIELD DURING SUMMER MONTHS

59 PARKING SPACES

74 PARKING SPACES

42 PARKING SPACES

PLAYGROUND EQUIPT.

FENCED PROPERTY LINE

EDGE OF EXISTING ASPHALT PAVEMENT

BUS & FIRE TRUCK TURNAROUND

GATE

GATE

GATE

GATE

GATE

GATE

GATE

GATE

GATE

GATE

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GATE

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GATE

**D - WARRANT ANALYSIS SHEETS
(MAJOR AND MINOR STREET VOLUMES)**

A&R ENGINEERING, INC.

SIGNAL WARRANT ANALYSIS SUMMARY REPORT - Roberts Dr @ Roberts Park Rd

Project Number : 17-022	Report Date : April 28, 2017
	Counts Date : February 23, 2017
Major Street : Roberts Dr	Lanes @ Intersection : Major Street - 1
Minor Street : Roberts Park Rd	Minor Street - 1
Speed on Major Street : 35	Analyst : SDP

24-HOUR TRAFFIC VOLUME
TABLE 1

Time	Major Street				Major Street			
	Northbound				Southbound			
	Total Approach Volume	Right Turn	% Right Turn	With 0% RT Turn Reduction	Total Approach Volume	Right Turn	% Right Turn	With 0% RT Turn Reduction
12:00 AM	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0
7:00 AM	433	0	0	433	713	0	0	713
8:00 AM	294	0	0	294	573	0	0	573
9:00 AM	290	0	0	290	561	0	0	561
10:00 AM	275	0	0	275	346	0	0	346
11:00 AM	310	0	0	310	400	0	0	400
12:00 PM	359	0	0	359	338	0	0	338
1:00 PM	409	0	0	409	309	0	0	309
2:00 PM	479	0	0	479	388	0	0	388
3:00 PM	569	0	0	569	460	0	0	460
4:00 PM	586	0	0	586	445	0	0	445
5:00 PM	635	0	0	635	402	0	0	402
6:00 PM	565	0	0	565	319	0	0	319
7:00 PM	403	0	0	403	230	0	0	230
8:00 PM	236	0	0	236	110	0	0	110
9:00 PM	171	0	0	171	73	0	0	73
10:00 PM	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0
Total				6014				5667

A&R ENGINEERING, INC.

24-HOUR TRAFFIC VOLUME
TABLE 2

Time	Minor Street				Minor Street			
	Eastbound				Westbound			
24 Hours	Total Approach Volume	Right Turn	% Right Turn	With 0% RT Turn Reduction	Total Approach Volume	Right Turn	% Right Turn	With 0% RT Turn Reduction
12:00 AM	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	146	73	50	146
8:00 AM	0	0	0	0	38	19	50	38
9:00 AM	0	0	0	0	26	13	50	26
10:00 AM	0	0	0	0	4	2	50	4
11:00 AM	0	0	0	0	2	1	50	2
12:00 PM	0	0	0	0	4	2	50	4
1:00 PM	0	0	0	0	2	1	50	2
2:00 PM	0	0	0	0	32	16	50	32
3:00 PM	0	0	0	0	112	56	50	112
4:00 PM	0	0	0	0	56	28	50	56
5:00 PM	0	0	0	0	32	16	50	32
6:00 PM	0	0	0	0	8	4	50	8
7:00 PM	0	0	0	0	2	1	50	2
8:00 PM	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0
Total				0				464

A&R ENGINEERING, INC.

WARRANT ANALYSIS RESULTS - Roberts Dr @ Roberts Park Rd

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

WARRANT 1 NOT SATISFIED

STANDARD 1	NOT SATISFIED	CONDITION A	0	HOURS
		CONDITION B	2	HOURS
STANDARD 2	NOT SATISFIED	CONDITION A	1	HOURS
		CONDITION B	2	HOURS

24-HOUR TRAFFIC VOLUME EVALUATION

TABLE 3

HOUR OF DAY	MAJOR ST TOTAL OF BOTH APPROACHES	MINOR ST HIGH VOLUME APPROACH	WARRANT 1			
			STANDARD 1		STANDARD 2	
			CONDITION A	CONDITION B	CONDITION A	CONDITION B
12:00 AM	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0
7:00 AM	1146	146	MAJOR	BOTH	BOTH	BOTH
8:00 AM	867	38	MAJOR	MAJOR	MAJOR	MAJOR
9:00 AM	851	26	MAJOR	MAJOR	MAJOR	MAJOR
10:00 AM	621	4	MAJOR	0	MAJOR	MAJOR
11:00 AM	710	2	MAJOR	0	MAJOR	MAJOR
12:00 PM	697	4	MAJOR	0	MAJOR	MAJOR
1:00 PM	718	2	MAJOR	0	MAJOR	MAJOR
2:00 PM	867	32	MAJOR	MAJOR	MAJOR	MAJOR
3:00 PM	1029	112	MAJOR	BOTH	MAJOR	BOTH
4:00 PM	1031	56	MAJOR	MAJOR	MAJOR	MAJOR
5:00 PM	1037	32	MAJOR	MAJOR	MAJOR	MAJOR
6:00 PM	884	8	MAJOR	MAJOR	MAJOR	MAJOR
7:00 PM	633	2	MAJOR	0	MAJOR	MAJOR
8:00 PM	346	0	0	0	0	0
9:00 PM	244	0	0	0	0	0
10:00 PM	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0
TOTAL	11681	464				

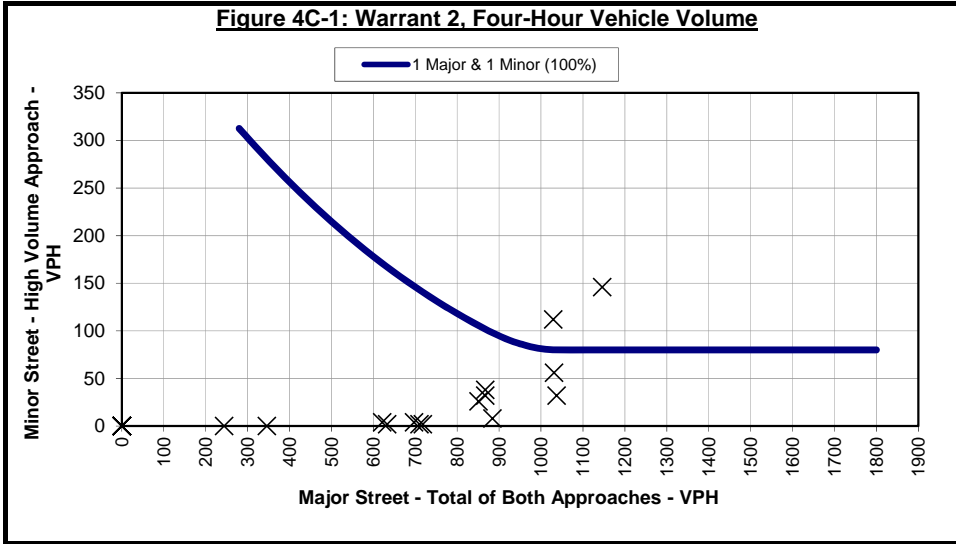
CRITERIA**	STANDARD 1 - 100%		STANDARD 2 - 80%	
	CONDITION A	CONDITION B	CONDITION A	CONDITION B
MAJOR ST	500	750	400	600
MINOR ST	150	75	120	60
NO. OF HOURS MET	0	2	1	2

A&R ENGINEERING, INC.

WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

WARRANT 2* NOT SATISFIED

2 HOURS



WARRANT 3, PEAK HOUR

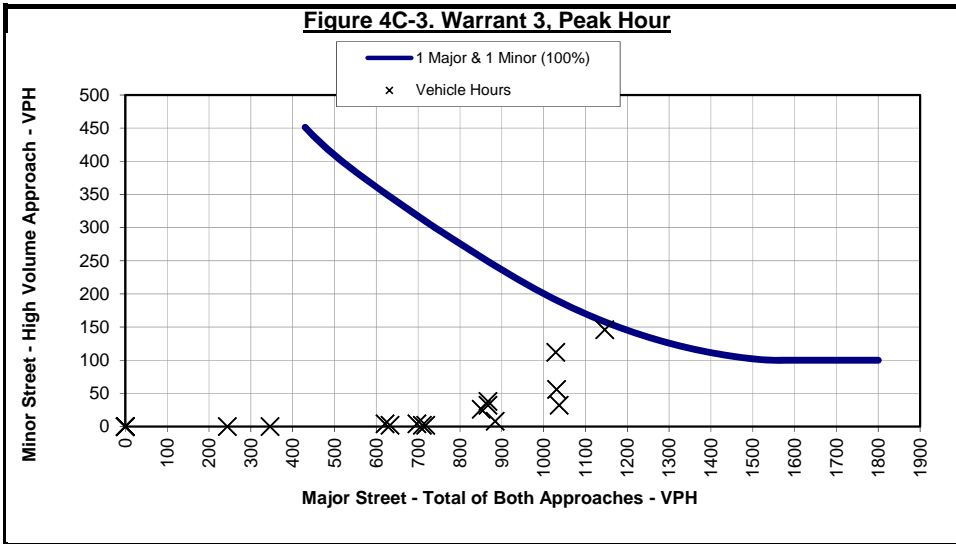
STANDARD A NOT EVALUATED

0 VEHICLE HOURS

- 0 Peak Hour Minor-Street Volume
- 0 Average Minor-Street Delay (seconds)
- 1 Number of Approach Lanes (Minor Street)

STANDARD B* NOT SATISFIED

0 HOURS



*Note: Curves for minimum volumes are based on the curves from FIGURES 4C-1 & 4C-2, Page 4C-7 for WARRANT 2, and FIGURES 4C-3 & 4C-4, Page 4C-9 in section C of the MUTCD 2009 edition for WARRANT 3.

A&R ENGINEERING, INC.

WARRANT 4, PEDESTRIAN VOLUME

WARRANT 4	NOT SATISFIED		
	STANDARD A	NOT SATISFIED	0 HOURS
	STANDARD B	NOT SATISFIED	0 HOURS

WARRANT 5, SCHOOL CROSSING

WARRANT 5 SATISFIED

WARRANT 6, COORDINATED SIGNAL SYSTEM

WARRANT 6 NOT EVALUATED

WARRANT 7, CRASH EXPERIENCE

WARRANT 7 NOT EVALUATED

WARRANT 8, ROADWAY NETWORK

WARRANT 8 NOT EVALUATED

WARRANT 9, INTERSECTION NEAR A GRADE CROSSING

WARRANT 9 NOT EVALUATED

E – TRAFFIC COUNTS INFORMATION

Reliable Traffic Data Services, LLC

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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	19	61	0	0	80	0	152	2	0	154	1	0	127	0	128	0	0	0	0	0	362
07:15 AM	29	105	0	0	134	0	166	1	0	167	1	0	123	0	124	0	0	0	0	0	425
07:30 AM	52	69	0	0	121	0	153	8	0	161	2	0	120	0	122	0	0	0	0	0	404
07:45 AM	48	67	0	0	115	0	151	0	0	151	2	0	130	0	132	0	0	0	0	0	398
Total	148	302	0	0	450	0	622	11	0	633	6	0	500	0	506	0	0	0	0	0	1589
08:00 AM	41	70	0	0	111	0	145	3	0	148	1	0	137	0	138	0	0	0	0	0	397
08:15 AM	44	65	0	0	109	0	113	0	0	113	0	0	140	0	140	0	0	0	0	0	362
08:30 AM	47	62	0	0	109	0	131	1	0	132	0	0	129	0	129	0	0	0	0	0	370
08:45 AM	38	88	0	0	126	0	154	5	0	159	2	0	114	0	116	0	0	0	0	0	401
Total	170	285	0	0	455	0	543	9	0	552	3	0	520	0	523	0	0	0	0	0	1530
*** BREAK ***																					
02:00 PM	64	118	0	0	182	0	88	3	0	91	6	0	79	0	85	0	0	0	0	0	358
02:15 PM	65	109	0	0	174	0	93	2	0	95	4	0	76	0	80	0	0	0	0	0	349
02:30 PM	66	119	0	0	185	0	102	5	0	107	2	0	70	0	72	0	0	0	0	0	364
02:45 PM	60	88	0	0	148	0	88	4	0	92	3	0	69	0	72	0	0	0	0	0	312
Total	255	434	0	0	689	0	371	14	0	385	15	0	294	0	309	0	0	0	0	0	1383
03:00 PM	88	112	0	0	200	0	85	5	0	90	2	0	66	0	68	0	0	0	0	0	358
03:15 PM	87	143	0	0	230	0	102	2	0	104	7	0	78	0	85	0	0	0	0	0	419
03:30 PM	86	135	0	0	221	0	104	3	0	107	4	0	83	0	87	0	0	0	0	0	415
03:45 PM	102	130	0	0	232	0	109	5	0	114	4	0	84	0	88	0	0	0	0	0	434
Total	363	520	0	0	883	0	400	15	0	415	17	0	311	0	328	0	0	0	0	0	1626
04:00 PM	122	151	0	0	273	0	85	4	0	89	2	0	74	0	76	0	0	0	0	0	438
04:15 PM	136	138	0	0	274	0	91	3	0	94	3	0	68	0	71	0	0	0	0	0	439
04:30 PM	162	142	0	0	304	0	104	6	0	110	5	0	81	0	86	0	0	0	0	0	500
04:45 PM	168	155	0	0	323	0	112	8	0	120	3	0	86	0	89	0	0	0	0	0	532
Total	588	586	0	0	1174	0	392	21	0	413	13	0	309	0	322	0	0	0	0	0	1909
05:00 PM	161	180	0	0	341	0	85	6	0	91	6	0	71	0	77	0	0	0	0	0	509
05:15 PM	130	139	0	0	269	0	84	7	0	91	2	0	91	0	93	0	0	0	0	0	453
05:30 PM	160	165	0	0	325	0	90	6	0	96	11	0	114	0	125	0	0	0	0	0	546
05:45 PM	134	157	0	0	291	0	105	4	0	109	10	0	117	0	127	0	0	0	0	0	527
Total	585	641	0	0	1226	0	364	23	0	387	29	0	393	0	422	0	0	0	0	0	2035
Grand Total	2109	2768	0	0	4877	0	2692	93	0	2785	83	0	2327	0	2410	0	0	0	0	0	10072
Apprch %	43.2	56.8	0	0		0	96.7	3.3	0		3.4	0	96.6	0		0	0	0	0	0	
Total %	20.9	27.5	0	0	48.4	0	26.7	0.9	0	27.7	0.8	0	23.1	0	23.9	0	0	0	0	0	

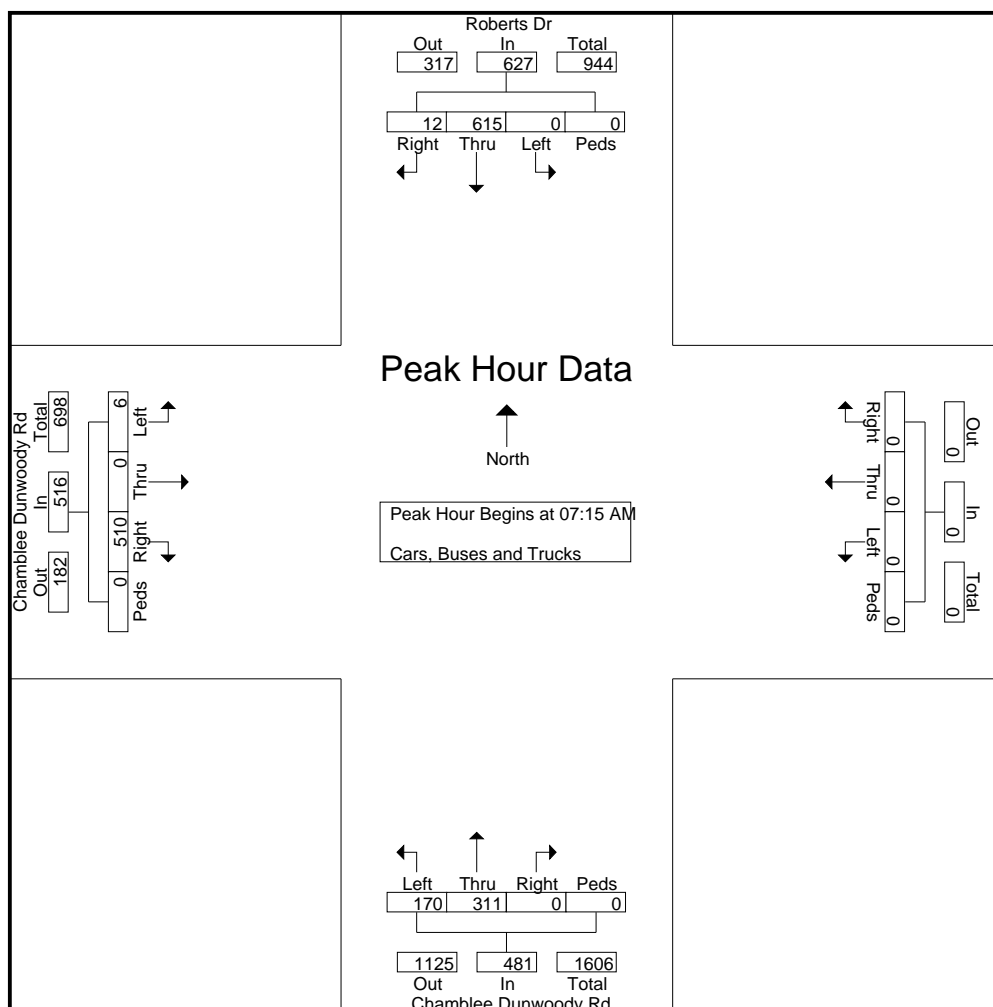
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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 2

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	29	105	0	0	134	0	166	1	0	167	1	0	123	0	124	0	0	0	0	0	425
07:30 AM	52	69	0	0	121	0	153	8	0	161	2	0	120	0	122	0	0	0	0	0	404
07:45 AM	48	67	0	0	115	0	151	0	0	151	2	0	130	0	132	0	0	0	0	0	398
08:00 AM	41	70	0	0	111	0	145	3	0	148	1	0	137	0	138	0	0	0	0	0	397
Total Volume	170	311	0	0	481	0	615	12	0	627	6	0	510	0	516	0	0	0	0	0	1624
% App. Total	35.3	64.7	0	0		0	98.1	1.9	0		1.2	0	98.8	0		0	0	0	0		
PHF	.817	.740	.000	.000	.897	.000	.926	.375	.000	.939	.750	.000	.931	.000	.935	.000	.000	.000	.000	.000	.955



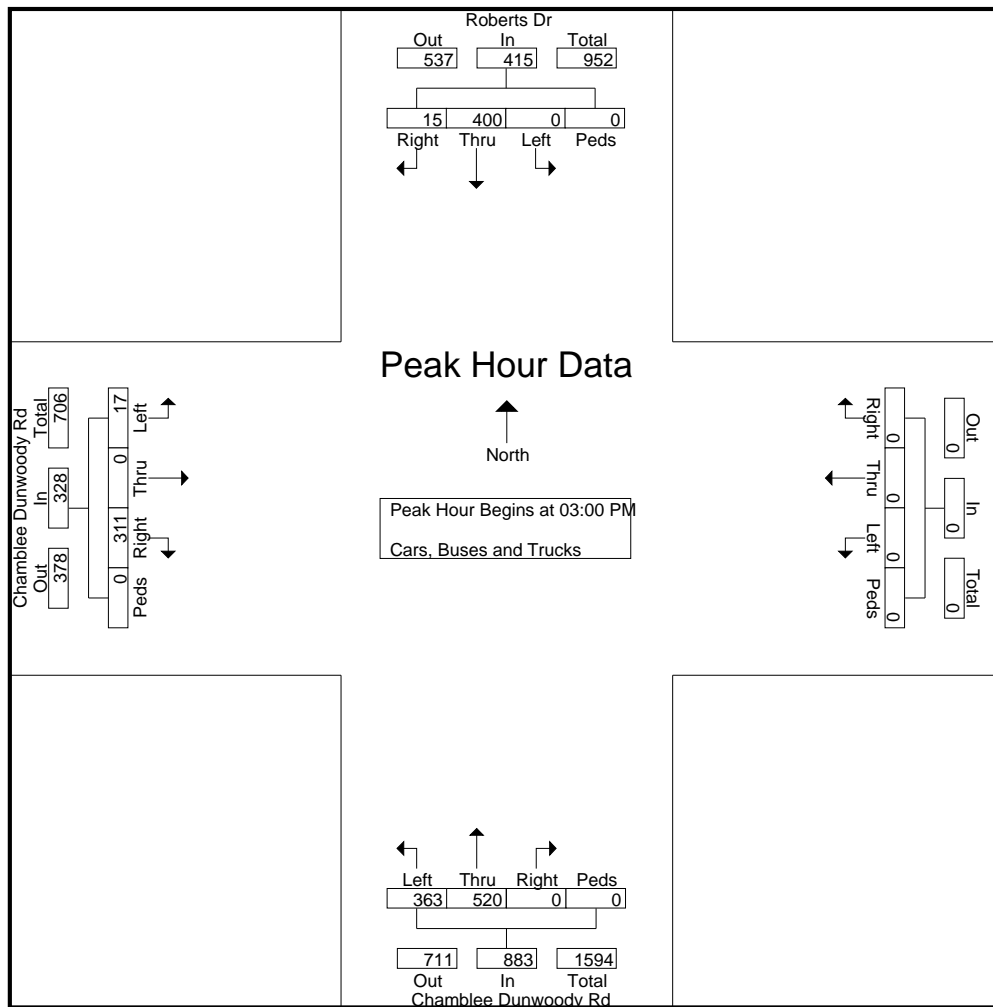
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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 3

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	88	112	0	0	200	0	85	5	0	90	2	0	66	0	68	0	0	0	0	0	358
03:15 PM	87	143	0	0	230	0	102	2	0	104	7	0	78	0	85	0	0	0	0	0	419
03:30 PM	86	135	0	0	221	0	104	3	0	107	4	0	83	0	87	0	0	0	0	0	415
03:45 PM	102	130	0	0	232	0	109	5	0	114	4	0	84	0	88	0	0	0	0	0	434
Total Volume	363	520	0	0	883	0	400	15	0	415	17	0	311	0	328	0	0	0	0	0	1626
% App. Total	41.1	58.9	0	0		0	96.4	3.6	0		5.2	0	94.8	0		0	0	0	0		
PHF	.890	.909	.000	.000	.952	.000	.917	.750	.000	.910	.607	.000	.926	.000	.932	.000	.000	.000	.000	.000	.937



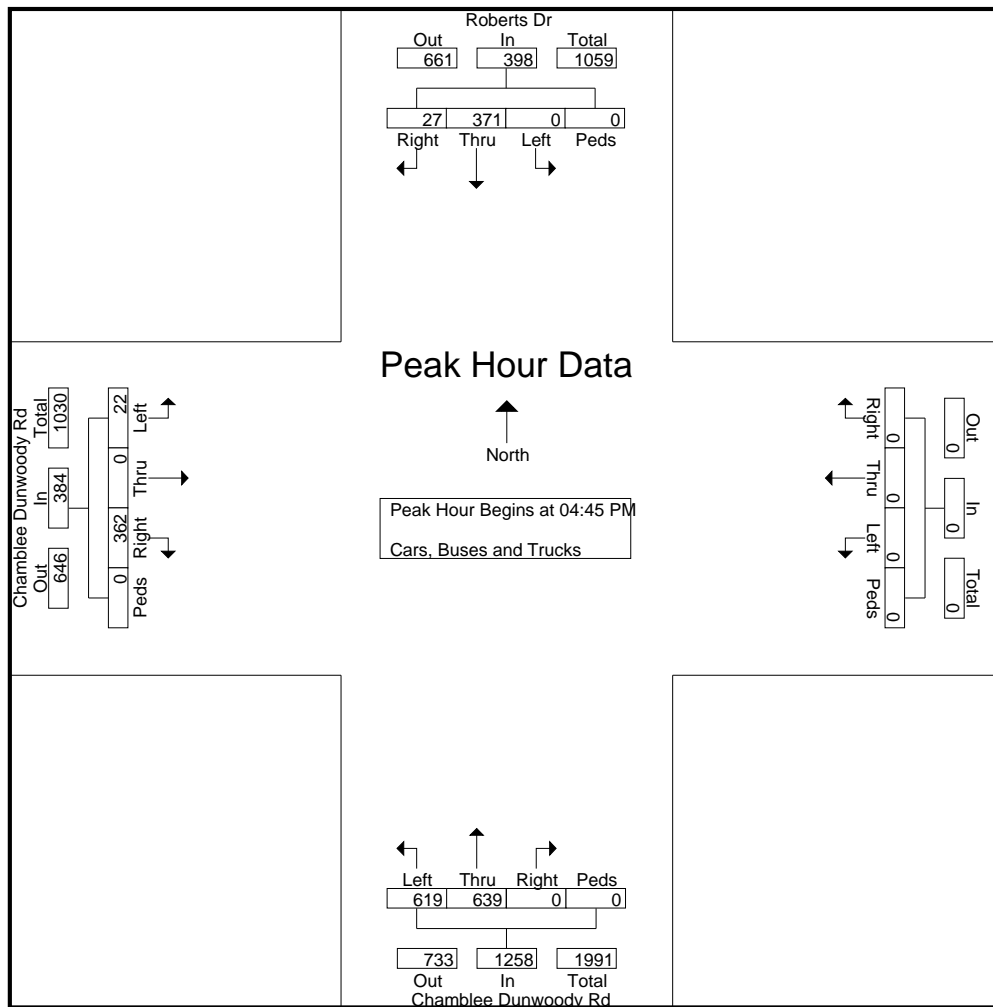
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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 4

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	168	155	0	0	323	0	112	8	0	120	3	0	86	0	89	0	0	0	0	0	532
05:00 PM	161	180	0	0	341	0	85	6	0	91	6	0	71	0	77	0	0	0	0	0	509
05:15 PM	130	139	0	0	269	0	84	7	0	91	2	0	91	0	93	0	0	0	0	0	453
05:30 PM	160	165	0	0	325	0	90	6	0	96	11	0	114	0	125	0	0	0	0	0	546
Total Volume	619	639	0	0	1258	0	371	27	0	398	22	0	362	0	384	0	0	0	0	0	2040
% App. Total	49.2	50.8	0	0		0	93.2	6.8	0		5.7	0	94.3	0		0	0	0	0		
PHF	.921	.888	.000	.000	.922	.000	.828	.844	.000	.829	.500	.000	.794	.000	.768	.000	.000	.000	.000	.000	.934



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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	70	0	0	70	2	157	0	0	159	1	0	0	0	1	0	0	1	0	1	231
07:15 AM	0	120	0	0	120	0	160	0	0	160	0	0	1	0	1	1	0	0	0	1	282
07:30 AM	0	66	0	0	66	0	163	0	0	163	0	0	0	0	0	0	0	0	0	0	229
07:45 AM	0	73	0	0	73	0	165	0	0	165	0	0	0	0	0	0	0	0	0	0	238
Total	0	329	0	0	329	2	645	0	0	647	1	0	1	0	2	1	0	1	0	2	980
08:00 AM	0	76	0	0	76	0	141	0	0	141	0	0	0	0	0	0	0	0	0	0	217
08:15 AM	0	67	0	0	67	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	178
08:30 AM	0	76	0	0	76	0	150	0	0	150	0	0	0	0	0	0	0	0	0	0	226
08:45 AM	0	84	2	0	86	2	167	0	0	169	0	0	0	0	0	1	0	0	0	1	256
Total	0	303	2	0	305	2	569	0	0	571	0	0	0	0	0	1	0	0	0	1	877
*** BREAK ***																					
02:00 PM	0	109	2	0	111	2	99	0	0	101	0	0	0	0	0	2	0	2	0	4	216
02:15 PM	0	105	2	0	107	0	97	0	0	97	0	0	0	0	0	2	0	2	0	4	208
02:30 PM	0	106	1	0	107	1	95	0	0	96	0	0	0	0	0	3	0	1	0	4	207
02:45 PM	1	110	1	0	112	0	99	0	0	99	0	0	0	0	0	1	0	2	0	3	214
Total	1	430	6	0	437	3	390	0	0	393	0	0	0	0	0	8	0	7	0	15	845
03:00 PM	0	120	2	0	122	0	93	0	0	93	0	0	0	0	0	1	0	1	0	2	217
03:15 PM	0	151	3	0	154	2	111	0	0	113	0	0	0	0	0	0	0	3	0	3	270
03:30 PM	0	138	3	0	141	1	110	0	0	111	0	0	0	0	0	1	0	1	0	2	254
03:45 PM	0	132	3	0	135	9	106	0	0	115	0	0	0	0	0	6	0	1	0	7	257
Total	0	541	11	0	552	12	420	0	0	432	0	0	0	0	0	8	0	6	0	14	998
04:00 PM	0	130	10	0	140	3	90	0	0	93	0	0	0	0	0	2	0	2	0	4	237
04:15 PM	0	135	6	0	141	3	100	0	0	103	0	0	0	0	0	1	0	0	0	1	245
04:30 PM	0	144	6	0	150	5	122	0	0	127	0	0	0	0	0	3	0	0	0	3	280
04:45 PM	0	148	12	0	160	10	118	0	0	128	0	0	0	0	0	1	0	0	0	1	289
Total	0	557	34	0	591	21	430	0	0	451	0	0	0	0	0	7	0	2	0	9	1051
05:00 PM	0	155	5	0	160	1	100	0	0	101	0	0	0	0	0	0	0	1	0	1	262
05:15 PM	0	159	7	0	166	5	102	0	0	107	0	0	0	0	0	0	0	0	0	0	273
05:30 PM	0	157	5	0	162	3	100	0	0	103	0	0	0	0	0	2	0	0	0	2	267
05:45 PM	0	153	3	0	156	1	110	0	0	111	0	0	0	0	0	1	0	2	0	3	270
Total	0	624	20	0	644	10	412	0	0	422	0	0	0	0	0	3	0	3	0	6	1072
Grand Total	1	2784	73	0	2858	50	2866	0	0	2916	1	0	1	0	2	28	0	19	0	47	5823
Apprch %	0	97.4	2.6	0		1.7	98.3	0	0		50	0	50	0		59.6	0	40.4	0		
Total %	0	47.8	1.3	0	49.1	0.9	49.2	0	0	50.1	0	0	0	0	0	0.5	0	0.3	0	0.8	

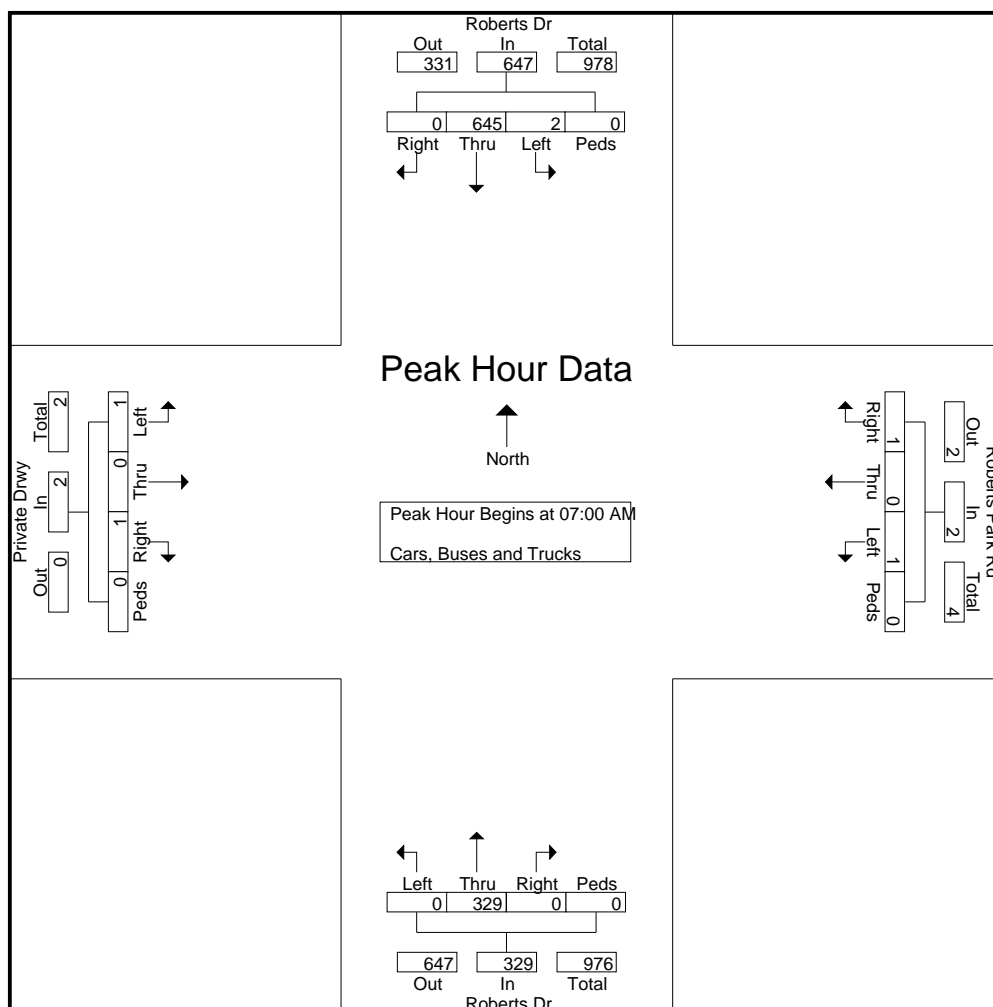
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	70	0	0	70	2	157	0	0	159	1	0	0	0	1	0	0	1	0	1	231
07:15 AM	0	120	0	0	120	0	160	0	0	160	0	0	1	0	1	1	0	0	0	1	282
07:30 AM	0	66	0	0	66	0	163	0	0	163	0	0	0	0	0	0	0	0	0	0	229
07:45 AM	0	73	0	0	73	0	165	0	0	165	0	0	0	0	0	0	0	0	0	0	238
Total Volume	0	329	0	0	329	2	645	0	0	647	1	0	1	0	2	1	0	1	0	2	980
% App. Total	0	100	0	0		0.3	99.7	0	0		50	0	50	0		50	0	50	0		
PHF	.000	.685	.000	.000	.685	.250	.977	.000	.000	.980	.250	.000	.250	.000	.500	.250	.000	.250	.000	.500	.869



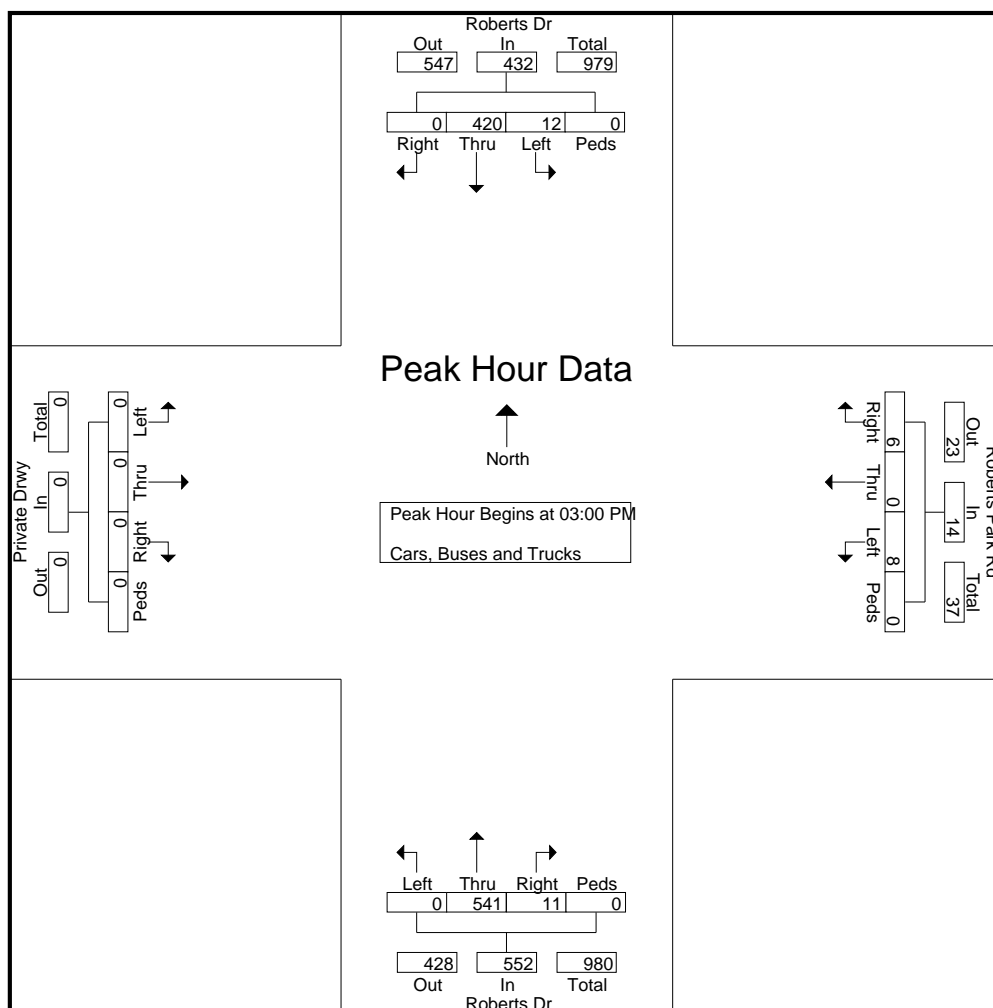
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	120	2	0	122	0	93	0	0	93	0	0	0	0	0	1	0	1	0	2	217
03:15 PM	0	151	3	0	154	2	111	0	0	113	0	0	0	0	0	0	0	3	0	3	270
03:30 PM	0	138	3	0	141	1	110	0	0	111	0	0	0	0	0	1	0	1	0	2	254
03:45 PM	0	132	3	0	135	9	106	0	0	115	0	0	0	0	0	6	0	1	0	7	257
Total Volume	0	541	11	0	552	12	420	0	0	432	0	0	0	0	0	8	0	6	0	14	998
% App. Total	0	98	2	0		2.8	97.2	0	0		0	0	0	0		57.1	0	42.9	0		
PHF	.000	.896	.917	.000	.896	.333	.946	.000	.000	.939	.000	.000	.000	.000	.000	.333	.000	.500	.000	.500	.924



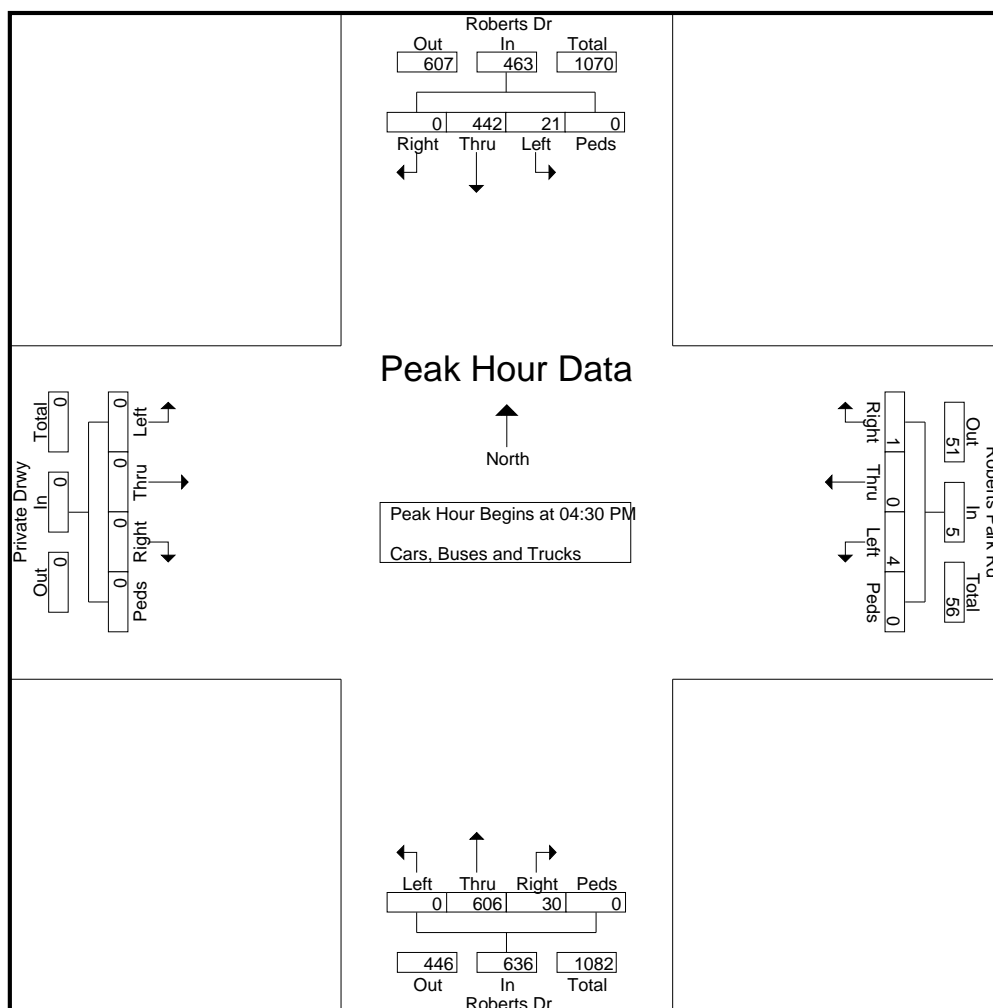
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 4

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	144	6	0	150	5	122	0	0	127	0	0	0	0	0	3	0	0	0	3	280
04:45 PM	0	148	12	0	160	10	118	0	0	128	0	0	0	0	0	1	0	0	0	1	289
05:00 PM	0	155	5	0	160	1	100	0	0	101	0	0	0	0	0	0	0	1	0	1	262
05:15 PM	0	159	7	0	166	5	102	0	0	107	0	0	0	0	0	0	0	0	0	0	273
Total Volume	0	606	30	0	636	21	442	0	0	463	0	0	0	0	0	4	0	1	0	5	1104
% App. Total	0	95.3	4.7	0		4.5	95.5	0	0		0	0	0	0		80	0	20	0		
PHF	.000	.953	.625	.000	.958	.525	.906	.000	.000	.904	.000	.000	.000	.000	.000	.333	.000	.250	.000	.417	.955



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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	1	84	0	0	85	0	151	2	0	153	7	0	4	0	11	0	0	0	0	0	249
07:15 AM	3	117	0	0	120	0	168	4	0	172	11	0	4	0	15	0	0	0	0	0	307
07:30 AM	1	67	0	0	68	0	163	15	0	178	14	0	2	0	16	0	0	0	0	0	262
07:45 AM	2	63	0	0	65	0	158	6	0	164	2	0	14	0	16	0	0	0	0	0	245
Total	7	331	0	0	338	0	640	27	0	667	34	0	24	0	58	0	0	0	0	0	1063
08:00 AM	2	76	0	0	78	0	144	1	0	145	0	0	3	0	3	0	0	0	0	0	226
08:15 AM	3	73	0	0	76	0	113	1	0	114	4	0	3	0	7	0	0	0	0	0	197
08:30 AM	1	77	0	0	78	0	148	0	0	148	2	0	2	0	4	0	0	0	0	0	230
08:45 AM	1	82	0	0	83	0	174	1	0	175	2	0	2	0	4	0	0	0	0	0	262
Total	7	308	0	0	315	0	579	3	0	582	8	0	10	0	18	0	0	0	0	0	915
*** BREAK ***																					
02:00 PM	2	110	0	0	112	0	100	1	0	101	4	0	2	0	6	0	0	0	0	0	219
02:15 PM	2	112	0	0	114	0	98	3	0	101	4	0	1	0	5	0	0	0	0	0	220
02:30 PM	0	109	0	0	109	0	106	11	0	117	5	0	4	0	9	0	0	0	0	0	235
02:45 PM	1	115	0	0	116	0	97	0	0	97	0	0	2	0	2	0	0	0	0	0	215
Total	5	446	0	0	451	0	401	15	0	416	13	0	9	0	22	0	0	0	0	0	889
03:00 PM	2	132	0	0	134	0	106	1	0	107	5	0	2	0	7	0	0	0	0	0	248
03:15 PM	4	140	0	0	144	0	112	0	0	112	5	0	2	0	7	0	0	0	0	0	263
03:30 PM	4	146	0	0	150	0	109	0	0	109	7	0	4	0	11	0	0	0	0	0	270
03:45 PM	1	133	0	0	134	0	106	8	0	114	4	0	2	0	6	0	0	0	0	0	254
Total	11	551	0	0	562	0	433	9	0	442	21	0	10	0	31	0	0	0	0	0	1035
04:00 PM	1	134	0	0	135	0	109	4	0	113	2	0	3	0	5	0	0	0	0	0	253
04:15 PM	5	137	0	0	142	0	116	3	0	119	4	0	3	0	7	0	0	0	0	0	268
04:30 PM	4	142	0	0	146	0	112	1	0	113	1	0	5	0	6	0	0	0	0	0	265
04:45 PM	5	146	0	0	151	0	109	4	0	113	3	0	4	0	7	0	0	0	0	0	271
Total	15	559	0	0	574	0	446	12	0	458	10	0	15	0	25	0	0	0	0	0	1057
05:00 PM	4	167	0	0	171	0	107	3	0	110	6	0	1	0	7	0	0	0	0	0	288
05:15 PM	2	162	0	0	164	0	104	2	0	106	4	0	1	0	5	0	0	0	0	0	275
05:30 PM	1	153	0	0	154	0	100	5	0	105	10	0	2	0	12	0	0	0	0	0	271
05:45 PM	4	150	0	0	154	0	110	2	0	112	5	0	4	0	9	0	0	0	0	0	275
Total	11	632	0	0	643	0	421	12	0	433	25	0	8	0	33	0	0	0	0	0	1109
Grand Total	56	2827	0	0	2883	0	2920	78	0	2998	111	0	76	0	187	0	0	0	0	0	6068
Apprch %	1.9	98.1	0	0		0	97.4	2.6	0		59.4	0	40.6	0		0	0	0	0	0	
Total %	0.9	46.6	0	0	47.5	0	48.1	1.3	0	49.4	1.8	0	1.3	0	3.1	0	0	0	0	0	

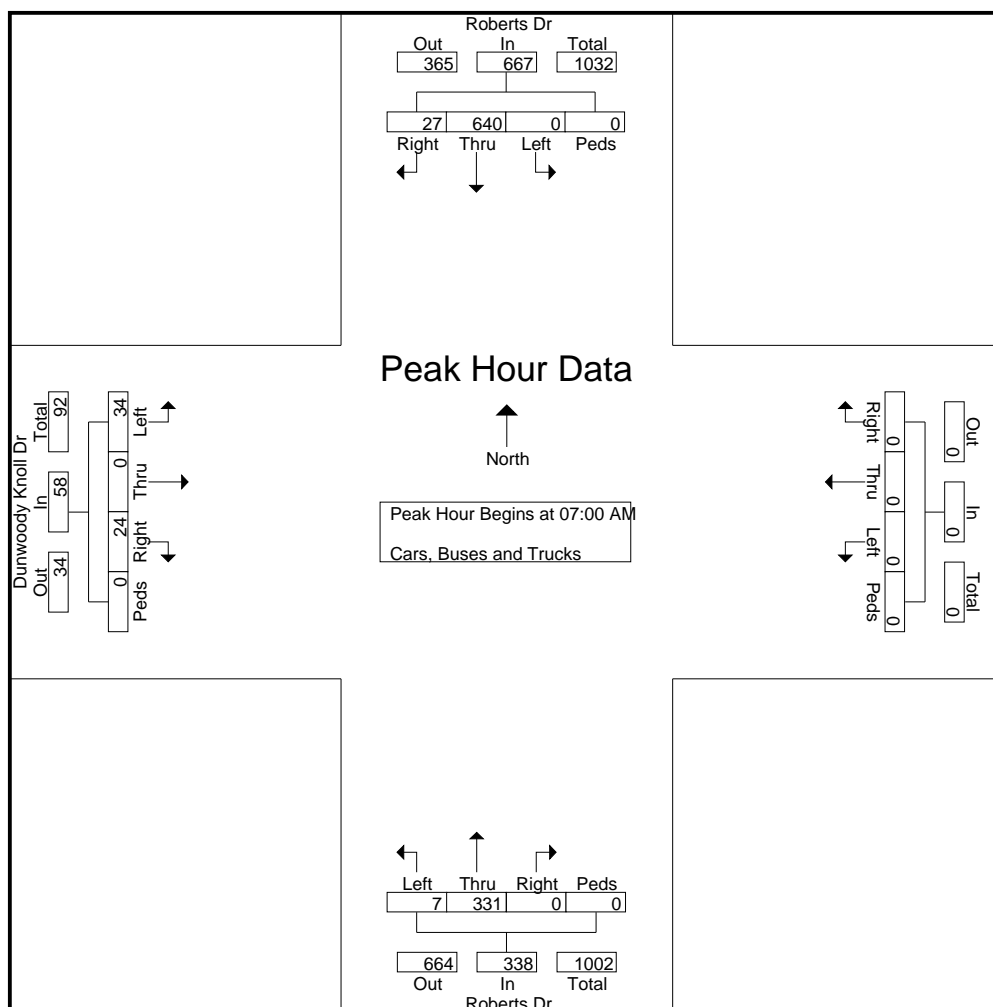
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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	1	84	0	0	85	0	151	2	0	153	7	0	4	0	11	0	0	0	0	0	249
07:15 AM	3	117	0	0	120	0	168	4	0	172	11	0	4	0	15	0	0	0	0	0	307
07:30 AM	1	67	0	0	68	0	163	15	0	178	14	0	2	0	16	0	0	0	0	0	262
07:45 AM	2	63	0	0	65	0	158	6	0	164	2	0	14	0	16	0	0	0	0	0	245
Total Volume	7	331	0	0	338	0	640	27	0	667	34	0	24	0	58	0	0	0	0	0	1063
% App. Total	2.1	97.9	0	0		0	96	4	0		58.6	0	41.4	0		0	0	0	0		
PHF	.583	.707	.000	.000	.704	.000	.952	.450	.000	.937	.607	.000	.429	.000	.906	.000	.000	.000	.000	.000	.866



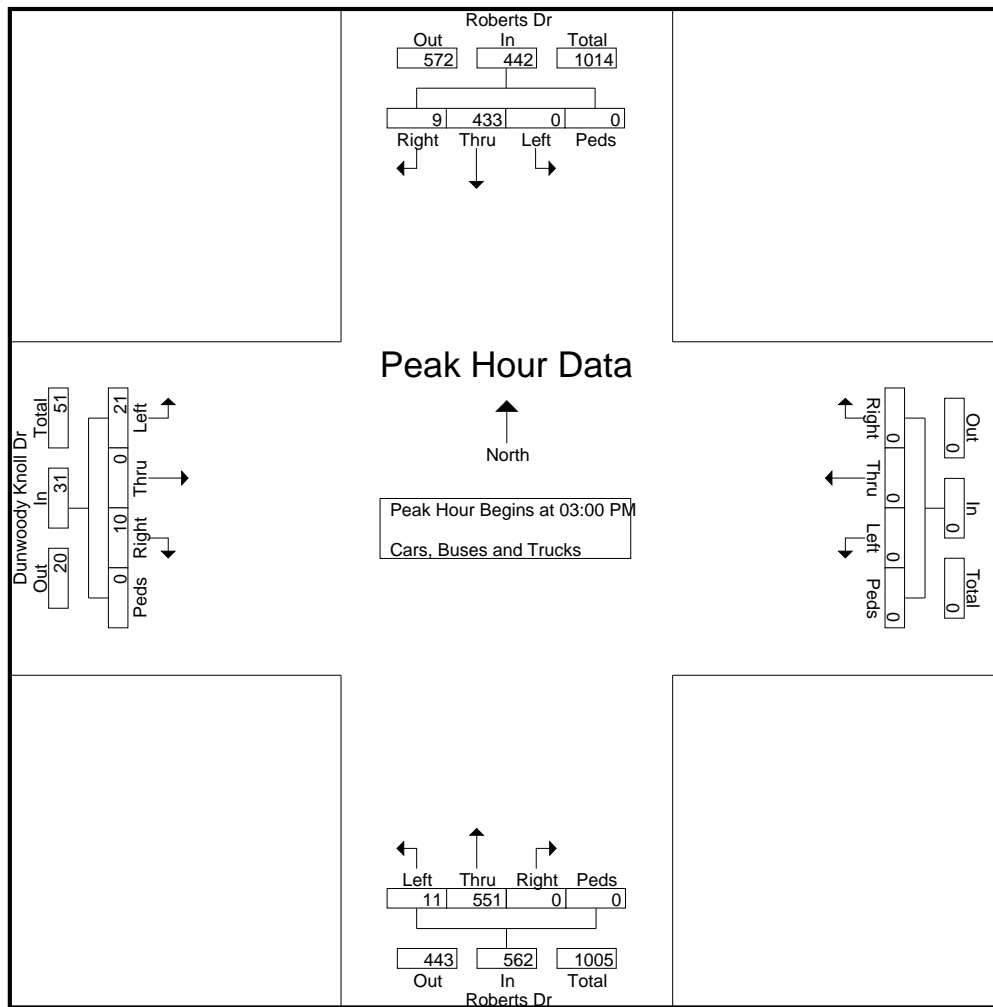
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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	2	132	0	0	134	0	106	1	0	107	5	0	2	0	7	0	0	0	0	0	248
03:15 PM	4	140	0	0	144	0	112	0	0	112	5	0	2	0	7	0	0	0	0	0	263
03:30 PM	4	146	0	0	150	0	109	0	0	109	7	0	4	0	11	0	0	0	0	0	270
03:45 PM	1	133	0	0	134	0	106	8	0	114	4	0	2	0	6	0	0	0	0	0	254
Total Volume	11	551	0	0	562	0	433	9	0	442	21	0	10	0	31	0	0	0	0	0	1035
% App. Total	2	98	0	0		0	98	2	0		67.7	0	32.3	0		0	0	0	0		
PHF	.688	.943	.000	.000	.937	.000	.967	.281	.000	.969	.750	.000	.625	.000	.705	.000	.000	.000	.000	.000	.958



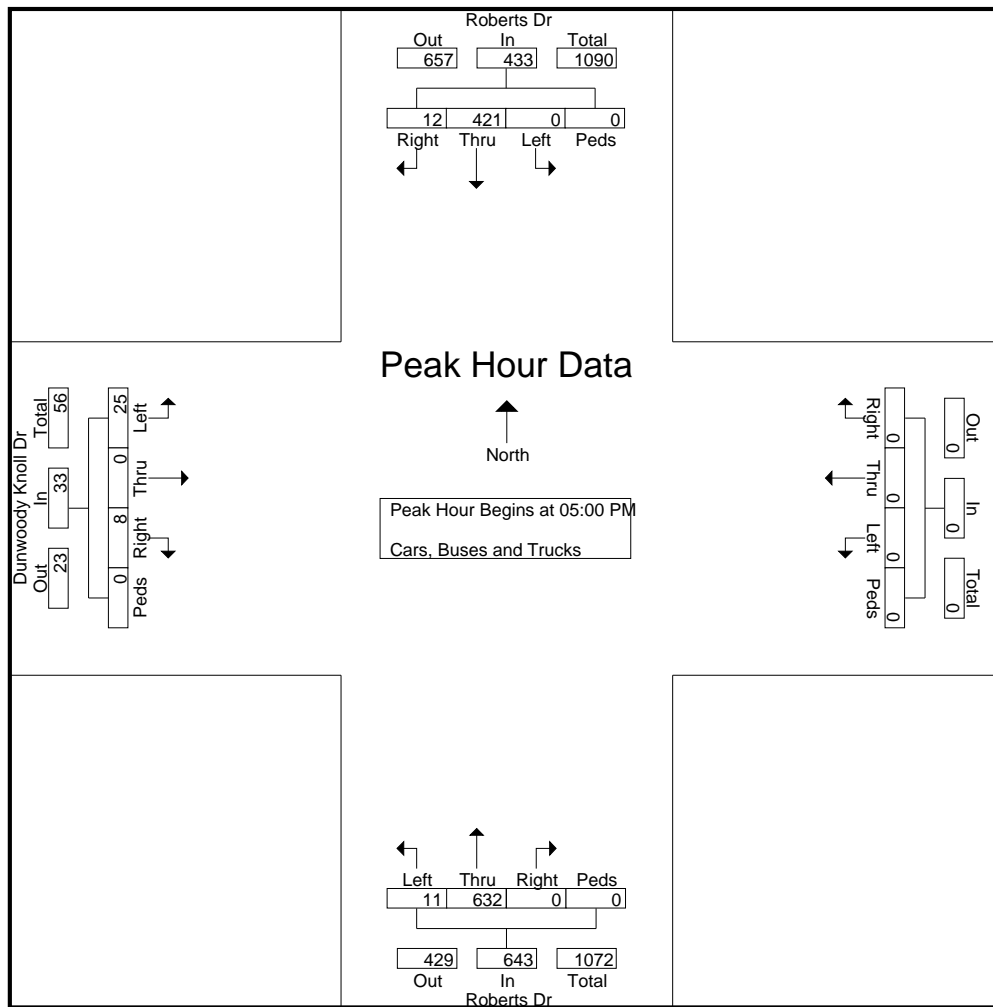
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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 4

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	167	0	0	171	0	107	3	0	110	6	0	1	0	7	0	0	0	0	0	288
05:15 PM	2	162	0	0	164	0	104	2	0	106	4	0	1	0	5	0	0	0	0	0	275
05:30 PM	1	153	0	0	154	0	100	5	0	105	10	0	2	0	12	0	0	0	0	0	271
05:45 PM	4	150	0	0	154	0	110	2	0	112	5	0	4	0	9	0	0	0	0	0	275
Total Volume	11	632	0	0	643	0	421	12	0	433	25	0	8	0	33	0	0	0	0	0	1109
% App. Total	1.7	98.3	0	0		0	97.2	2.8	0		75.8	0	24.2	0		0	0	0	0		
PHF	.688	.946	.000	.000	.940	.000	.957	.600	.000	.967	.625	.000	.500	.000	.688	.000	.000	.000	.000	.000	.963



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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	58	21	0	79	5	101	0	0	106	0	0	0	0	0	4	0	1	0	5	190
07:15 AM	0	54	79	0	133	11	100	0	19	130	0	0	0	0	0	54	0	6	3	63	326
07:30 AM	0	60	45	0	105	40	102	0	24	166	0	0	0	0	0	91	0	2	8	101	372
07:45 AM	0	56	2	0	58	2	106	0	1	109	0	0	0	0	0	15	0	2	2	19	186
Total	0	228	147	0	375	58	409	0	44	511	0	0	0	0	0	164	0	11	13	188	1074
08:00 AM	0	66	1	0	67	0	136	0	0	136	0	0	0	0	0	2	0	0	1	3	206
08:15 AM	0	72	2	0	74	0	131	0	0	131	0	0	0	0	0	3	0	0	0	3	208
08:30 AM	0	75	1	0	76	0	128	0	0	128	0	0	0	0	0	1	0	0	0	1	205
08:45 AM	0	71	1	0	72	1	122	0	2	125	0	0	0	0	0	2	0	0	2	4	201
Total	0	284	5	0	289	1	517	0	2	520	0	0	0	0	0	8	0	0	3	11	820
*** BREAK ***																					
02:00 PM	0	98	8	0	106	6	85	0	1	92	0	0	0	0	0	5	0	2	2	9	207
02:15 PM	0	101	16	0	117	6	82	0	57	145	0	0	0	0	0	14	0	2	5	21	283
02:30 PM	0	121	9	0	130	5	79	0	0	84	0	0	0	0	0	23	0	2	1	26	240
02:45 PM	0	112	1	0	113	0	76	0	0	76	0	0	0	0	0	5	0	2	0	7	196
Total	0	432	34	0	466	17	322	0	58	397	0	0	0	0	0	47	0	8	8	63	926
03:00 PM	0	118	1	0	119	0	84	0	0	84	0	0	0	0	0	14	0	0	0	14	217
03:15 PM	0	114	0	0	114	2	88	0	0	90	0	0	0	0	0	5	0	1	0	6	210
03:30 PM	0	120	2	0	122	1	93	0	0	94	0	0	0	0	0	8	0	0	0	8	224
03:45 PM	0	125	3	0	128	1	79	0	0	80	0	0	0	0	0	9	0	1	0	10	218
Total	0	477	6	0	483	4	344	0	0	348	0	0	0	0	0	36	0	2	0	38	869
Grand Total	0	1421	192	0	1613	80	1592	0	104	1776	0	0	0	0	0	255	0	21	24	300	3689
Apprch %	0	88.1	11.9	0		4.5	89.6	0	5.9		0	0	0	0		85	0	7	8		
Total %	0	38.5	5.2	0	43.7	2.2	43.2	0	2.8	48.1	0	0	0	0	0	6.9	0	0.6	0.7	8.1	

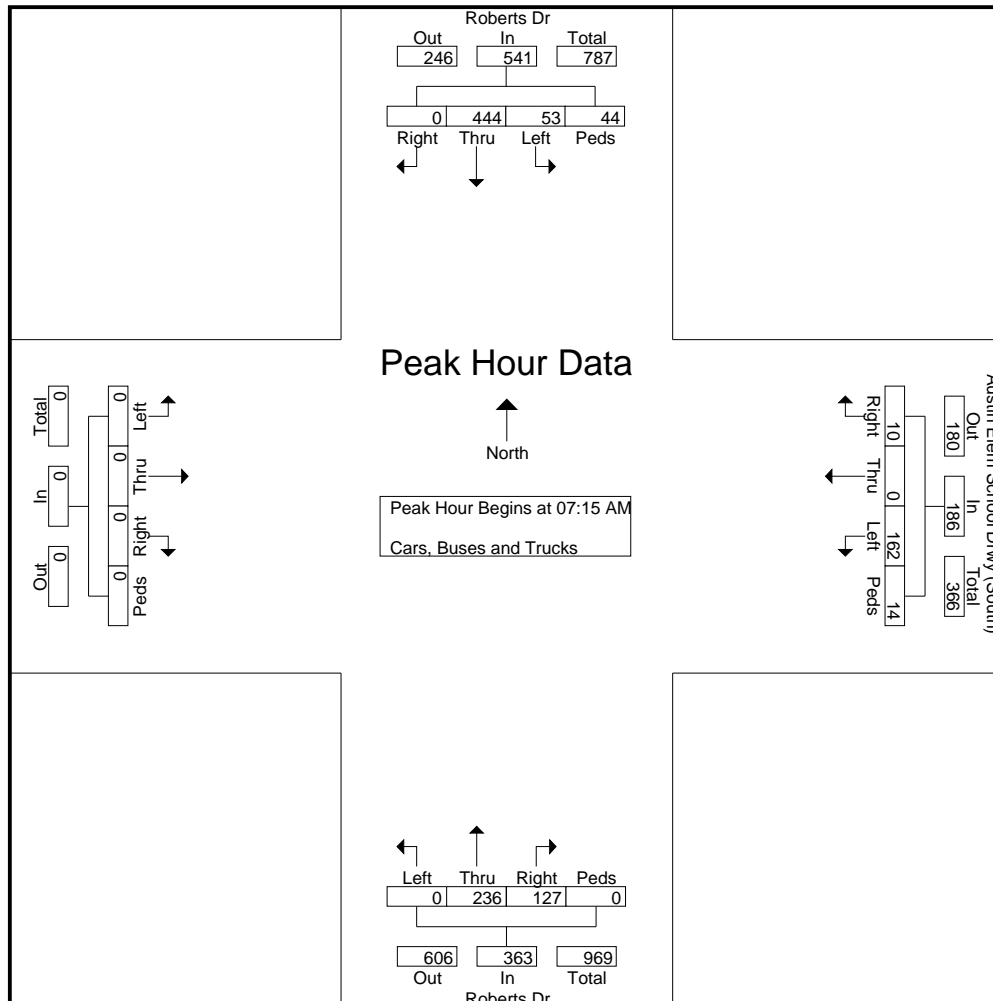
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	54	79	0	133	11	100	0	19	130	0	0	0	0	0	54	0	6	3	63	326
07:30 AM	0	60	45	0	105	40	102	0	24	166	0	0	0	0	0	91	0	2	8	101	372
07:45 AM	0	56	2	0	58	2	106	0	1	109	0	0	0	0	0	15	0	2	2	19	186
08:00 AM	0	66	1	0	67	0	136	0	0	136	0	0	0	0	0	2	0	0	1	3	206
Total Volume	0	236	127	0	363	53	444	0	44	541	0	0	0	0	0	162	0	10	14	186	1090
% App. Total	0	65	35	0		9.8	82.1	0	8.1		0	0	0	0		87.1	0	5.4	7.5		
PHF	.000	.894	.402	.000	.682	.331	.816	.000	.458	.815	.000	.000	.000	.000	.000	.445	.000	.417	.438	.460	.733



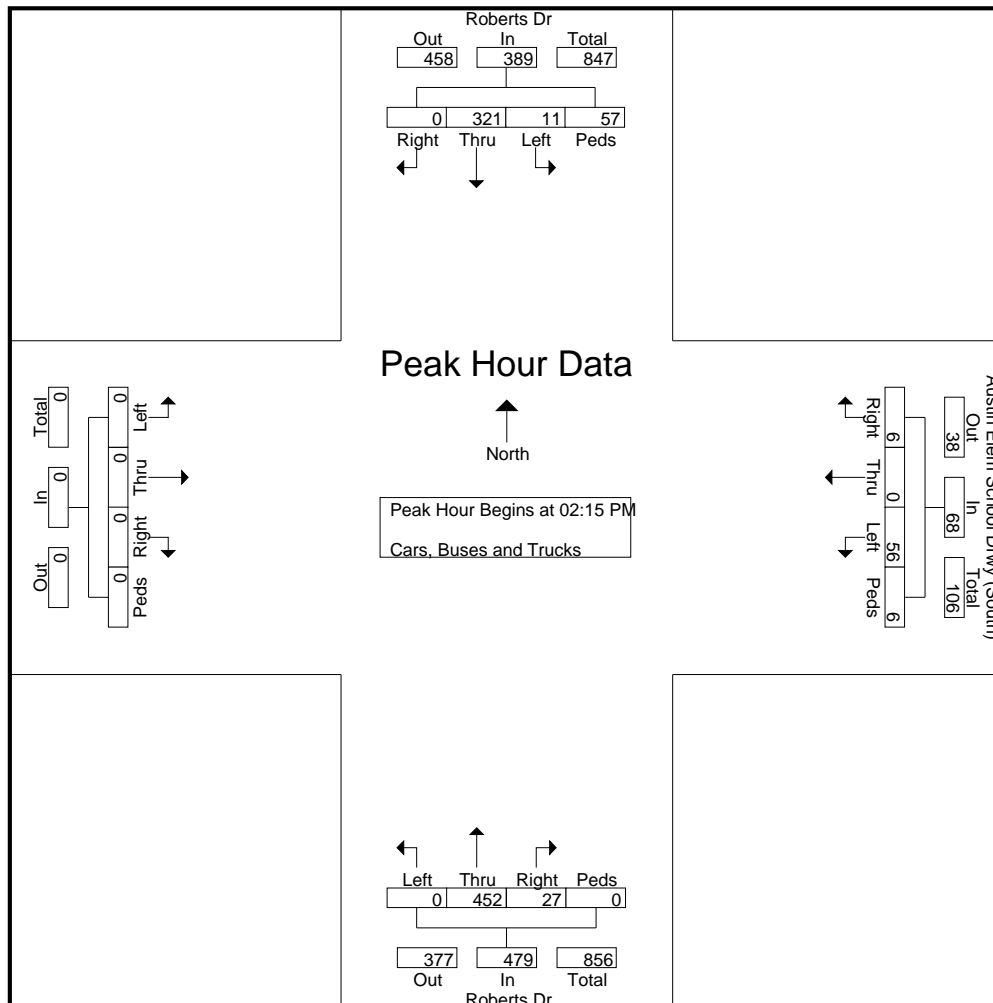
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am I 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	101	16	0	117	6	82	0	57	145	0	0	0	0	0	14	0	2	5	21	283
02:30 PM	0	121	9	0	130	5	79	0	0	84	0	0	0	0	0	23	0	2	1	26	240
02:45 PM	0	112	1	0	113	0	76	0	0	76	0	0	0	0	0	5	0	2	0	7	196
03:00 PM	0	118	1	0	119	0	84	0	0	84	0	0	0	0	0	14	0	0	0	14	217
Total Volume	0	452	27	0	479	11	321	0	57	389	0	0	0	0	0	56	0	6	6	68	936
% App. Total	0	94.4	5.6	0		2.8	82.5	0	14.7		0	0	0	0		82.4	0	8.8	8.8		
PHF	.000	.934	.422	.000	.921	.458	.955	.000	.250	.671	.000	.000	.000	.000	.000	.609	.000	.750	.300	.654	.827



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TMC Data
 Roberts Dr @ Austin Elem School Drwy (N)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020005
 Site Code : 40020005
 Start Date : 3/7/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	52	3	0	55	5	100	0	0	105	0	0	0	0	0	3	0	2	1	6	166
07:15 AM	0	57	5	0	62	27	109	0	0	136	0	0	0	0	0	5	0	18	0	23	221
07:30 AM	0	60	6	0	66	60	130	0	0	190	0	0	0	0	0	1	0	67	0	68	324
07:45 AM	0	63	2	0	65	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	176
Total	0	232	16	0	248	92	450	0	0	542	0	0	0	0	0	9	0	87	1	97	887
08:00 AM	0	68	0	0	68	0	132	0	0	132	0	0	0	0	0	0	0	1	0	1	201
08:15 AM	0	73	0	0	73	0	130	0	0	130	0	0	0	0	0	0	0	0	0	0	203
08:30 AM	0	78	0	0	78	0	126	0	0	126	0	0	0	0	0	0	0	0	2	2	206
08:45 AM	0	73	0	0	73	0	120	0	0	120	0	0	0	0	0	0	0	0	1	1	194
Total	0	292	0	0	292	0	508	0	0	508	0	0	0	0	0	0	0	1	3	4	804
*** BREAK ***																					
02:00 PM	0	100	6	0	106	1	77	0	0	78	0	0	0	0	0	4	0	1	1	6	190
02:15 PM	0	103	2	0	105	1	83	0	0	84	0	0	0	0	0	13	0	8	0	21	210
02:30 PM	0	121	0	0	121	0	79	0	0	79	0	0	0	0	0	2	0	3	0	5	205
02:45 PM	0	116	0	0	116	1	75	0	0	76	0	0	0	0	0	1	0	2	0	3	195
Total	0	440	8	0	448	3	314	0	0	317	0	0	0	0	0	20	0	14	1	35	800
03:00 PM	0	118	0	0	118	0	85	0	0	85	0	0	0	0	0	4	0	2	0	6	209
03:15 PM	0	116	0	0	116	0	87	0	0	87	0	0	0	0	0	1	0	2	0	3	206
03:30 PM	0	125	1	0	126	0	84	0	0	84	0	0	0	0	0	3	0	1	0	4	214
03:45 PM	0	123	4	0	127	3	78	0	0	81	0	0	0	0	0	1	0	2	0	3	211
Total	0	482	5	0	487	3	334	0	0	337	0	0	0	0	0	9	0	7	0	16	840
Grand Total	0	1446	29	0	1475	98	1606	0	0	1704	0	0	0	0	0	38	0	109	5	152	3331
Apprch %	0	98	2	0		5.8	94.2	0	0		0	0	0	0		25	0	71.7	3.3		
Total %	0	43.4	0.9	0	44.3	2.9	48.2	0	0	51.2	0	0	0	0		1.1	0	3.3	0.2	4.6	

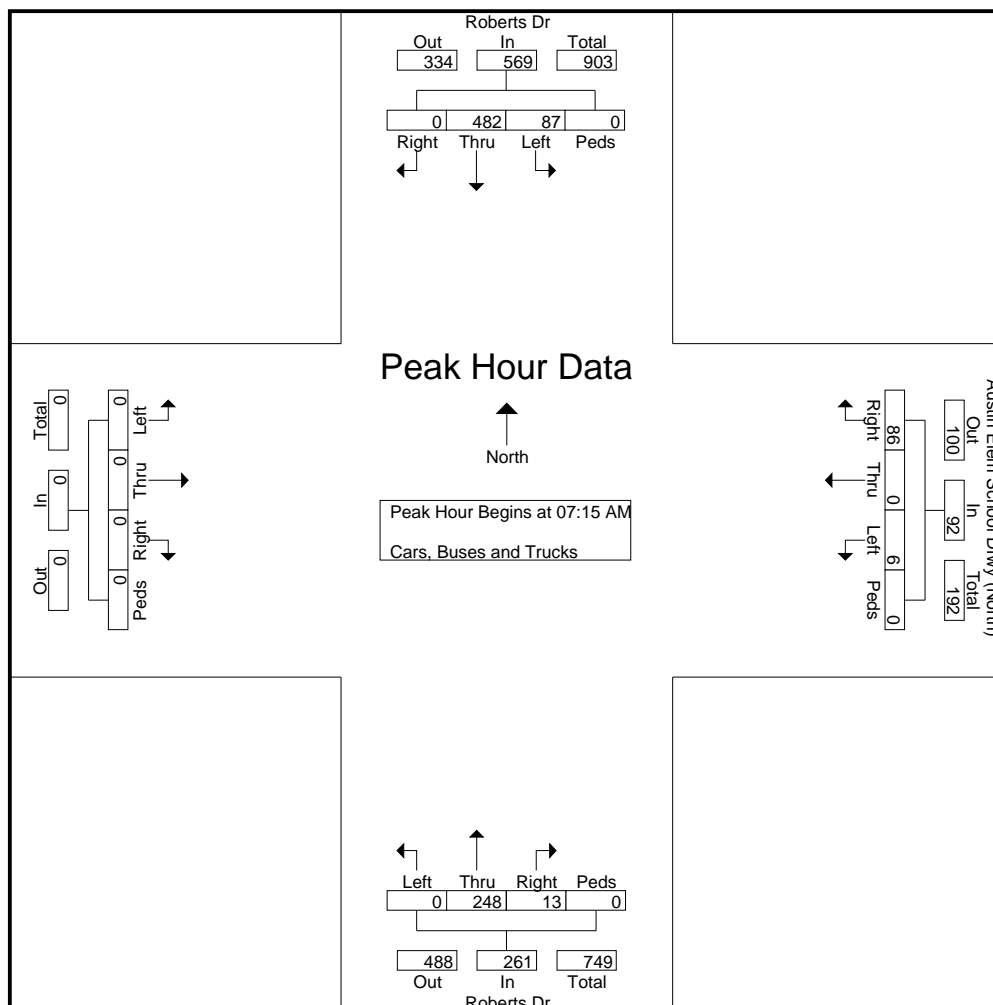
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (N)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020005
 Site Code : 40020005
 Start Date : 3/7/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	57	5	0	62	27	109	0	0	136	0	0	0	0	0	5	0	18	0	23	221
07:30 AM	0	60	6	0	66	60	130	0	0	190	0	0	0	0	0	1	0	67	0	68	324
07:45 AM	0	63	2	0	65	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	176
08:00 AM	0	68	0	0	68	0	132	0	0	132	0	0	0	0	0	0	0	1	0	1	201
Total Volume	0	248	13	0	261	87	482	0	0	569	0	0	0	0	0	6	0	86	0	92	922
% App. Total	0	95	5	0		15.3	84.7	0	0		0	0	0	0		6.5	0	93.5	0		
PHF	.000	.912	.542	.000	.960	.363	.913	.000	.000	.749	.000	.000	.000	.000	.000	.300	.000	.321	.000	.338	.711



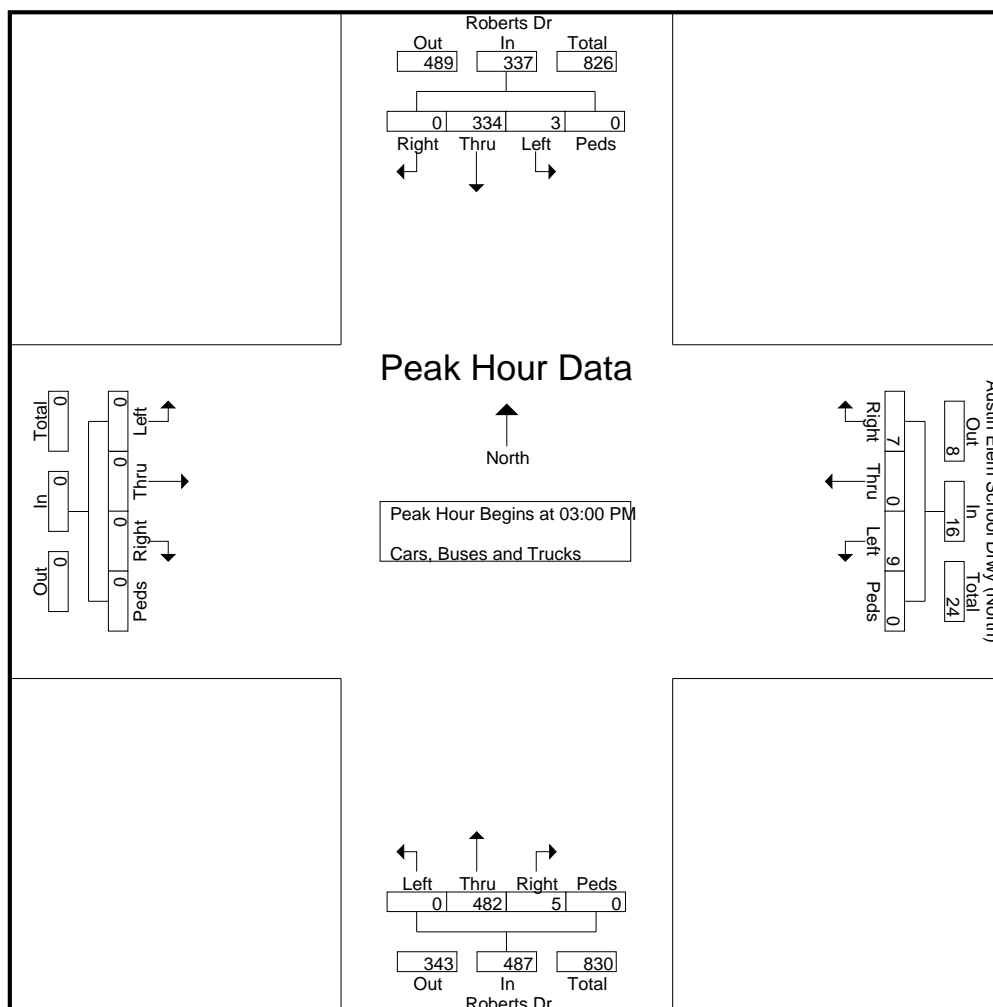
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (N)
 Dunwoody, GA
 7-9am I 2-4pm

File Name : 40020005
 Site Code : 40020005
 Start Date : 3/7/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	118	0	0	118	0	85	0	0	85	0	0	0	0	0	4	0	2	0	6	209
03:15 PM	0	116	0	0	116	0	87	0	0	87	0	0	0	0	0	1	0	2	0	3	206
03:30 PM	0	125	1	0	126	0	84	0	0	84	0	0	0	0	0	3	0	1	0	4	214
03:45 PM	0	123	4	0	127	3	78	0	0	81	0	0	0	0	0	1	0	2	0	3	211
Total Volume	0	482	5	0	487	3	334	0	0	337	0	0	0	0	0	9	0	7	0	16	840
% App. Total	0	99	1	0		0.9	99.1	0	0		0	0	0	0		56.2	0	43.8	0		
PHF	.000	.964	.313	.000	.959	.250	.960	.000	.000	.968	.000	.000	.000	.000	.000	.563	.000	.875	.000	.667	.981



F – FUTURE CAPACITY ANALYSIS – WITHOUT SIGNAL

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	1	0	1	74	0	74	0	240	89	91	549	0
Future Vol, veh/h	1	0	1	74	0	74	0	240	89	91	549	0
Conflicting Peds, #/hr	0	0	0	0	0	14	0	0	0	44	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	25	92	92	92	92	69	92	92	98	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	80	0	80	0	348	97	99	560	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1160	1120	560	1122	1120	406	560	0	0	362	0	0
Stage 1	758	758	-	362	362	-	-	-	-	-	-	-
Stage 2	402	362	-	760	758	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	172	206	528	183	206	645	1011	-	-	1197	-	-
Stage 1	399	415	-	657	625	-	-	-	-	-	-	-
Stage 2	625	625	-	398	415	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	134	186	528	167	186	610	1011	-	-	1147	-	-
Mov Cap-2 Maneuver	134	186	-	167	186	-	-	-	-	-	-	-
Stage 1	399	379	-	648	617	-	-	-	-	-	-	-
Stage 2	520	617	-	361	379	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	22.5			38.4			0			1.3		
HCM LOS	C			E								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1011	-	-	214	262	1147	-	-				
HCM Lane V/C Ratio	-	-	-	0.037	0.614	0.086	-	-				
HCM Control Delay (s)	0	-	-	22.5	38.4	8.4	-	-				
HCM Lane LOS	A	-	-	C	E	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	3.7	0.3	-	-				

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	64	0	62	0	549	56	57	392	0
Future Vol, veh/h	0	0	0	64	0	62	0	549	56	57	392	0
Conflicting Peds, #/hr	0	0	0	0	0	6	0	0	0	57	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	90	92	92	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	70	0	67	0	610	61	62	413	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1187	1153	413	1153	1153	673	413	0	0	616	0	0
Stage 1	537	537	-	616	616	-	-	-	-	-	-	-
Stage 2	650	616	-	537	537	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	165	197	639	174	197	455	1146	-	-	964	-	-
Stage 1	528	523	-	478	482	-	-	-	-	-	-	-
Stage 2	458	482	-	528	523	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	125	183	639	164	183	428	1146	-	-	912	-	-
Mov Cap-2 Maneuver	125	183	-	164	183	-	-	-	-	-	-	-
Stage 1	528	487	-	475	479	-	-	-	-	-	-	-
Stage 2	365	479	-	492	487	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			39.7			0			1.2		
HCM LOS	A			E								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1146	-	-	-	235	912	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.583	0.068	-	-				
HCM Control Delay (s)	0	-	-	0	39.7	9.2	-	-				
HCM Lane LOS	A	-	-	A	E	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	3.3	0.2	-	-				

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	32	0	29	0	637	57	48	467	0
Future Vol, veh/h	0	0	0	32	0	29	0	637	57	48	467	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	100	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	95	92	92	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	35	0	32	0	671	62	52	513	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1304	1289	513	1289	1289	671	513	0	0	671	0	0
Stage 1	618	618	-	671	671	-	-	-	-	-	-	-
Stage 2	686	671	-	618	618	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	137	164	561	141	164	456	1052	-	-	919	-	-
Stage 1	477	481	-	446	455	-	-	-	-	-	-	-
Stage 2	438	455	-	477	481	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	122	155	561	135	155	456	1052	-	-	919	-	-
Mov Cap-2 Maneuver	122	155	-	135	155	-	-	-	-	-	-	-
Stage 1	477	454	-	446	455	-	-	-	-	-	-	-
Stage 2	408	455	-	450	454	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			31.1			0			0.8		
HCM LOS	A			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1052	-	-	-	203	919	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.327	0.057	-	-				
HCM Control Delay (s)	0	-	-	0	31.1	9.2	-	-				
HCM Lane LOS	A	-	-	A	D	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	1.3	0.2	-	-				

G - FUTURE CAPACITY ANALYSIS – WITH SIGNAL

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Build AM
4/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	6	531	177	327	606
Future Volume (vph)	6	531	177	327	606
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	37.0	37.0	19.0	83.0	64.0
Total Split (%)	30.8%	30.8%	15.8%	69.2%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	24.6	24.6	84.4	84.4	68.3
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.57
v/c Ratio	0.02	0.94	0.50	0.34	0.64
Control Delay	33.7	41.0	11.4	8.8	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	41.0	11.4	8.8	23.3
LOS	C	D	B	A	C
Approach Delay	40.9			9.7	23.3
Approach LOS	D			A	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 23.9
 Intersection LOS: C
 Intersection Capacity Utilization 74.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Build AM
 4/18/2017

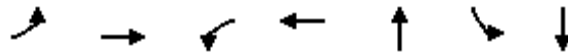


Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	6	531	177	327	606	8		
Future Volume (veh/h)	6	531	177	327	606	8		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	8	0	216	442	652	21		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.93	0.82	0.74	0.93	0.38		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	21	19	667	1670	1452	47		
Arrive On Green	0.01	0.00	0.04	0.90	0.81	0.81		
Sat Flow, veh/h	1774	1583	1774	1863	1795	58		
Grp Volume(v), veh/h	8	0	216	442	0	673		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1853		
Q Serve(g_s), s	0.5	0.0	2.2	3.9	0.0	13.1		
Cycle Q Clear(g_c), s	0.5	0.0	2.2	3.9	0.0	13.1		
Prop In Lane	1.00	1.00	1.00			0.03		
Lane Grp Cap(c), veh/h	21	19	667	1670	0	1499		
V/C Ratio(X)	0.39	0.00	0.32	0.26	0.00	0.45		
Avail Cap(c_a), veh/h	466	416	793	1670	0	1499		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	58.9	0.0	2.5	0.8	0.0	3.4		
Incr Delay (d2), s/veh	11.3	0.0	0.3	0.4	0.0	1.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.3	3.9	0.0	11.3		
LnGrp Delay(d),s/veh	70.2	0.0	2.8	1.2	0.0	4.4		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	8			658	673			
Approach Delay, s/veh	70.1			1.7	4.4			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.1		6.9	10.5	102.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		77.5		31.5	13.5	58.5		
Max Q Clear Time (g_c+I1), s		5.9		2.5	4.2	15.1		
Green Ext Time (p_c), s		46.5		0.0	0.5	32.5		
Intersection Summary								
HCM 2010 Ctrl Delay			3.5					
HCM 2010 LOS			A					

Timings

Build AM

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

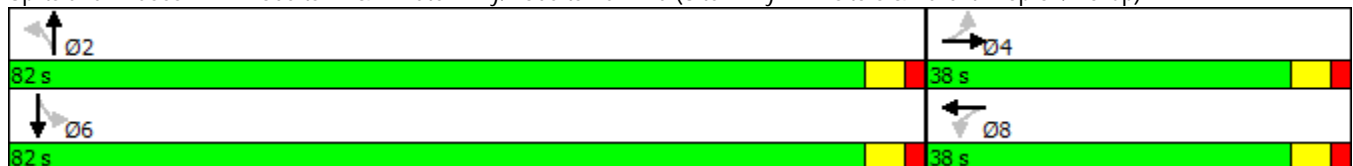



















Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↗	↘
Traffic Volume (vph)	1	0	74	0	252	91	564
Future Volume (vph)	1	0	74	0	252	91	564
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%
Yellow Time (s)	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
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-Lag Optimize?							
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)		11.1		11.1	34.5	34.5	34.5
Actuated g/C Ratio		0.19		0.19	0.61	0.61	0.61
v/c Ratio		0.03		0.52	0.42	0.20	0.51
Control Delay		3.5		23.5	7.3	6.8	8.7
Queue Delay		0.0		0.0	0.0	0.0	0.0
Total Delay		3.5		23.5	7.3	6.8	8.7
LOS		A		C	A	A	A
Approach Delay		3.5		23.5	7.3		8.4
Approach LOS		A		C	A		A

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 57	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	74	0	74	0	252	89	91	564	0
Future Volume (veh/h)	1	0	1	74	0	74	0	252	89	91	564	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		1.00	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	4	0	4	80	0	80	0	365	97	99	576	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.25	0.92	0.25	0.92	0.92	0.92	0.92	0.69	0.92	0.92	0.98	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	25	121	178	17	112	0	966	257	638	1268	0
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.00	0.68	0.68	0.68	0.68	0.00
Sat Flow, veh/h	631	167	797	630	112	743	0	1419	377	926	1863	0
Grp Volume(v), veh/h	8	0	0	160	0	0	0	0	462	99	576	0
Grp Sat Flow(s),veh/h/ln	1595	0	0	1485	0	0	0	0	1796	926	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	7.2	3.4	9.4	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	6.6	0.0	0.0	0.0	0.0	7.2	10.6	9.4	0.0
Prop In Lane	0.50		0.50	0.50		0.50	0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	324	0	0	307	0	0	0	0	1223	638	1268	0
V/C Ratio(X)	0.02	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.38	0.16	0.45	0.00
Avail Cap(c_a), veh/h	810	0	0	808	0	0	0	0	2095	1088	2173	0
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	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	26.4	0.0	0.0	0.0	0.0	4.5	6.8	4.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.2	0.1	0.3	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(95%),veh/ln	0.2	0.0	0.0	5.2	0.0	0.0	0.0	0.0	6.4	1.6	8.3	0.0
LnGrp Delay(d),s/veh	23.8	0.0	0.0	27.7	0.0	0.0	0.0	0.0	4.7	6.9	5.1	0.0
LnGrp LOS	C			C					A	A	A	
Approach Vol, veh/h		8			160			462			675	
Approach Delay, s/veh		23.8			27.7			4.7			5.4	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.2		15.4		50.2		15.4				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		76.5		32.5		76.5		32.5				
Max Q Clear Time (g_c+I1), s		9.2		2.3		12.6		8.6				
Green Ext Time (p_c), s		32.8		0.6		32.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			8.0									
HCM 2010 LOS			A									

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	58	34	300	615	0
Future Vol, veh/h	3	58	34	300	615	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	43	58	71	95	45
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	135	59	423	647	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1187	647	0
Stage 1	647	-	-
Stage 2	540	-	-
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	208	471	939
Stage 1	521	-	-
Stage 2	584	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	191	471	939
Mov Cap-2 Maneuver	191	-	-
Stage 1	521	-	-
Stage 2	536	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	939	-	448	-	-
HCM Lane V/C Ratio	0.062	-	0.312	-	-
HCM Control Delay (s)	9.1	0	16.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.3	-	-

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	18	18	323	22	22	617
Future Vol, veh/h	18	18	323	22	22	617
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	69	92	92	98
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	20	20	468	24	24	630

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1157	480	0	0	492	0
Stage 1	480	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	175	499	-	-	864	-
Stage 1	534	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	167	499	-	-	864	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	250	864	-
HCM Lane V/C Ratio	-	-	0.157	0.028	-
HCM Control Delay (s)	-	-	22.1	9.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	21	324	378	570	434
Future Volume (vph)	21	324	378	570	434
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	28.0	28.0	37.0	92.0	55.0
Total Split (%)	23.3%	23.3%	30.8%	76.7%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	9.8	9.8	99.2	99.2	79.4
Actuated g/C Ratio	0.08	0.08	0.83	0.83	0.66
v/c Ratio	0.23	0.78	0.58	0.41	0.41
Control Delay	53.2	17.6	6.2	4.1	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	17.6	6.2	4.1	12.7
LOS	D	B	A	A	B
Approach Delay	20.8			5.0	12.7
Approach LOS	C			A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 10.1
 Intersection Capacity Utilization 63.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	21	324	378	570	434	18		
Future Volume (veh/h)	21	324	378	570	434	18		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	34	0	425	626	472	24		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.61	0.93	0.89	0.91	0.92	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	60	54	790	1629	1318	67		
Arrive On Green	0.03	0.00	0.08	0.87	0.75	0.75		
Sat Flow, veh/h	1774	1583	1774	1863	1758	89		
Grp Volume(v), veh/h	34	0	425	626	0	496		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1847		
Q Serve(g_s), s	2.3	0.0	5.8	7.6	0.0	11.0		
Cycle Q Clear(g_c), s	2.3	0.0	5.8	7.6	0.0	11.0		
Prop In Lane	1.00	1.00	1.00			0.05		
Lane Grp Cap(c), veh/h	60	54	790	1629	0	1385		
V/C Ratio(X)	0.57	0.00	0.54	0.38	0.00	0.36		
Avail Cap(c_a), veh/h	333	297	1117	1629	0	1385		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	57.1	0.0	3.2	1.4	0.0	5.1		
Incr Delay (d2), s/veh	8.1	0.0	0.6	0.7	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	2.2	0.0	5.1	7.4	0.0	9.7		
LnGrp Delay(d),s/veh	65.2	0.0	3.8	2.1	0.0	5.8		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	34			1051	496			
Approach Delay, s/veh	65.2			2.8	5.8			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		110.4		9.6	14.9	95.5		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		86.5		22.5	31.5	49.5		
Max Q Clear Time (g_c+I1), s		9.6		4.3	7.8	13.0		
Green Ext Time (p_c), s		48.6		0.1	1.6	28.3		
Intersection Summary								
HCM 2010 Ctrl Delay			5.1					
HCM 2010 LOS			A					

Timings

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)




















Lane Group	WBT	NBT	SBL	SBT	Ø4
Lane Configurations	↔	↔	↗	↘	
Traffic Volume (vph)	0	552	57	398	
Future Volume (vph)	0	552	57	398	
Turn Type	NA	NA	Perm	NA	
Protected Phases	8	2		6	4
Permitted Phases			6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	71.5	71.5	71.5	23.5
Total Split (%)	20.8%	59.6%	59.6%	59.6%	20%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	Min	Min	Min	None
Act Effect Green (s)	8.7	37.3	37.3	37.3	
Actuated g/C Ratio	0.15	0.65	0.65	0.65	
v/c Ratio	0.43	0.56	0.15	0.35	
Control Delay	17.3	7.9	5.4	5.7	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	17.3	7.9	5.4	5.7	
LOS	B	A	A	A	
Approach Delay	17.3	7.9		5.6	
Approach LOS	B	A		A	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 57.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	64	0	62	0	552	56	57	398	0
Future Volume (veh/h)	0	0	0	64	0	62	0	552	56	57	398	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.97	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	70	0	67	0	613	61	62	419	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.92	0.92	0.95	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	3	0	98	0	93	0	1188	118	528	1328	0
Arrive On Green	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.71	0.71	0.71	0.71	0.00
Sat Flow, veh/h	0	1863	0	844	0	808	0	1668	166	761	1863	0
Grp Volume(v), veh/h	0	0	0	137	0	0	0	0	674	62	419	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1653	0	0	0	0	1833	761	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	10.7	2.6	5.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	10.7	13.3	5.3	0.0
Prop In Lane	0.00		0.00	0.51		0.49	0.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	191	0	0	0	0	1307	528	1328	0
V/C Ratio(X)	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.52	0.12	0.32	0.00
Avail Cap(c_a), veh/h	0	524	0	503	0	0	0	0	1889	770	1920	0
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)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.3	0.0	0.0	0.0	0.0	4.2	7.2	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	9.2	1.0	4.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.3	0.0	0.0	0.0	0.0	4.5	7.3	3.5	0.0
LnGrp LOS				C					A	A	A	
Approach Vol, veh/h		0			137			674			481	
Approach Delay, s/veh		0.0			32.3			4.5			4.0	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.1		0.0		51.1		12.9				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		66.0		18.0		66.0		19.5				
Max Q Clear Time (g_c+I1), s		12.7		0.0		15.3		7.1				
Green Ext Time (p_c), s		31.3		0.0		30.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.3								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	15	27	32	597	440	0
Future Vol, veh/h	15	27	32	597	440	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	62	69	94	97	28
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	44	46	635	454	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1182	454	0
Stage 1	454	-	-
Stage 2	728	-	-
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	210	606	1107
Stage 1	640	-	-
Stage 2	478	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	197	606	1107
Mov Cap-2 Maneuver	197	-	-
Stage 1	640	-	-
Stage 2	447	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1107	-	367	-	-
HCM Lane V/C Ratio	0.042	-	0.173	-	-
HCM Control Delay (s)	8.4	0	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	14	594	11	11	451
Future Vol, veh/h	14	14	594	11	11	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	90	92	92	95
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	15	15	660	12	12	475

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1165	666	0	0	672	0
Stage 1	666	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	173	385	-	-	730	-
Stage 1	431	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	169	385	-	-	730	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	730	-
HCM Lane V/C Ratio	-	-	0.13	0.016	-
HCM Control Delay (s)	-	-	22.6	10	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Build PM
4/27/2017

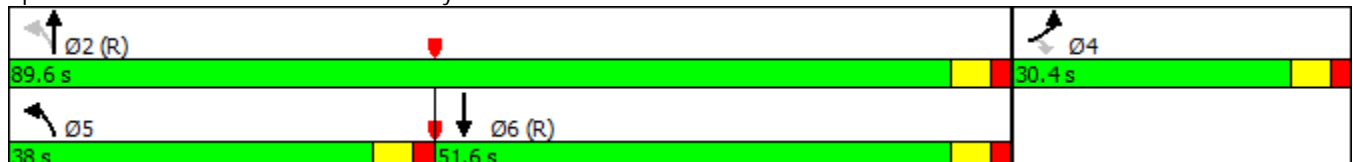


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	26	377	644	695	417
Future Volume (vph)	26	377	644	695	417
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	30.4	30.4	38.0	89.6	51.6
Total Split (%)	25.3%	25.3%	31.7%	74.7%	43.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effect Green (s)	11.5	11.5	97.5	97.5	59.5
Actuated g/C Ratio	0.10	0.10	0.81	0.81	0.50
v/c Ratio	0.31	0.82	0.92	0.52	0.59
Control Delay	52.5	16.4	33.5	5.9	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	16.4	33.5	5.9	26.1
LOS	D	B	C	A	C
Approach Delay	20.0			19.0	26.1
Approach LOS	B			B	C

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 20.7
 Intersection Capacity Utilization 78.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Build PM
 4/27/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	26	377	644	695	417	31		
Future Volume (veh/h)	26	377	644	695	417	31		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	52	0	700	781	502	37		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.50	0.79	0.92	0.89	0.83	0.84		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	73	65	786	1615	1158	85		
Arrive On Green	0.04	0.00	0.15	0.87	0.68	0.68		
Sat Flow, veh/h	1774	1583	1774	1863	1714	126		
Grp Volume(v), veh/h	52	0	700	781	0	539		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1840		
Q Serve(g_s), s	3.5	0.0	12.7	11.5	0.0	16.1		
Cycle Q Clear(g_c), s	3.5	0.0	12.7	11.5	0.0	16.1		
Prop In Lane	1.00	1.00	1.00			0.07		
Lane Grp Cap(c), veh/h	73	65	786	1615	0	1243		
V/C Ratio(X)	0.71	0.00	0.89	0.48	0.00	0.43		
Avail Cap(c_a), veh/h	368	329	1007	1615	0	1243		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	56.8	0.0	9.7	1.8	0.0	8.9		
Incr Delay (d2), s/veh	12.0	0.0	8.3	1.0	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	3.5	0.0	24.9	10.2	0.0	13.2		
LnGrp Delay(d),s/veh	68.9	0.0	18.0	2.9	0.0	10.0		
LnGrp LOS	E		B	A		B		
Approach Vol, veh/h	52			1481	539			
Approach Delay, s/veh	68.9			10.0	10.0			
Approach LOS	E			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		109.6		10.4	23.0	86.5		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		84.1		24.9	32.5	46.1		
Max Q Clear Time (g_c+I1), s		13.5		5.5	14.7	18.1		
Green Ext Time (p_c), s		55.4		0.1	2.8	25.0		
Intersection Summary								
HCM 2010 Ctrl Delay			11.5					
HCM 2010 LOS			B					

Timings

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

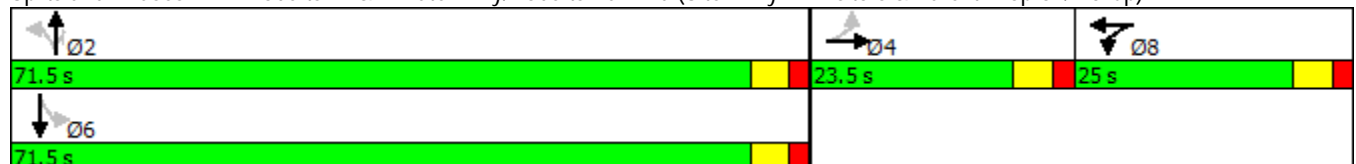




















Lane Group	WBT	NBT	NBR	SBL	SBT	Ø4
Lane Configurations	↔	↑	↗	↘	↓	
Traffic Volume (vph)	0	637	57	48	467	
Future Volume (vph)	0	637	57	48	467	
Turn Type	NA	NA	Perm	Perm	NA	
Protected Phases	8	2			6	4
Permitted Phases			2	6		
Detector Phase	8	2	2	6	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	71.5	71.5	71.5	71.5	23.5
Total Split (%)	20.8%	59.6%	59.6%	59.6%	59.6%	20%
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	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	Min	Min	Min	Min	None
Act Effct Green (s)	6.6	45.8	45.8	45.8	45.8	
Actuated g/C Ratio	0.11	0.78	0.78	0.78	0.78	
v/c Ratio	0.26	0.46	0.05	0.10	0.35	
Control Delay	10.8	4.6	0.7	3.0	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.8	4.6	0.7	3.0	3.8	
LOS	B	A	A	A	A	
Approach Delay	10.8	4.3			3.7	
Approach LOS	B	A			A	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 58.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	32	0	29	0	637	57	48	467	0
Future Volume (veh/h)	0	0	0	32	0	29	0	637	57	48	467	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	35	0	32	0	671	62	52	513	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.91	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	5	0	59	0	54	0	1195	1016	508	1195	0
Arrive On Green	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	0	1863	0	876	0	801	0	1863	1583	721	1863	0
Grp Volume(v), veh/h	0	0	0	67	0	0	0	671	62	52	513	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1678	0	0	0	1863	1583	721	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.6	0.6	1.6	5.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.6	0.6	9.3	5.1	0.0
Prop In Lane	0.00		0.00	0.52		0.48	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	5	0	112	0	0	0	1195	1016	508	1195	0
V/C Ratio(X)	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.56	0.06	0.10	0.43	0.00
Avail Cap(c_a), veh/h	0	888	0	867	0	0	0	3257	2768	1305	3257	0
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)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	17.1	0.0	0.0	0.0	3.8	2.5	6.4	3.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.4	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.0	0.4	0.6	4.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	22.1	0.0	0.0	0.0	4.2	2.5	6.5	3.6	0.0
LnGrp LOS				C				A	A	A	A	
Approach Vol, veh/h		0			67			733			565	
Approach Delay, s/veh		0.0			22.1			4.1			3.9	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.7		0.0		29.7		8.0				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		66.0		18.0		66.0		19.5				
Max Q Clear Time (g_c+I1), s		9.6		0.0		11.3		3.5				
Green Ext Time (p_c), s		13.0		0.0		13.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				4.9								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	26	18	21	682	461	12
Future Vol, veh/h	26	18	21	682	461	12
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	62	50	69	95	96	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	36	30	718	480	20

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1269	490	500 0
Stage 1	490	-	- -
Stage 2	779	-	- -
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	186	578	1064 -
Stage 1	616	-	- -
Stage 2	452	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	177	578	1064 -
Mov Cap-2 Maneuver	177	-	- -
Stage 1	616	-	- -
Stage 2	431	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	24.7	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1064	-	260	-	-
HCM Lane V/C Ratio	0.029	-	0.3	-	-
HCM Control Delay (s)	8.5	0	24.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection

Int Delay, s/veh 0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	7	7	688	7	7	492
Future Vol, veh/h	7	7	688	7	7	492
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	92	92	91
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	8	8	724	8	8	541

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1284	728	0	0	732	0
Stage 1	728	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	145	353	-	-	690	-
Stage 1	401	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	143	353	-	-	690	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	204	690	-
HCM Lane V/C Ratio	-	-	0.075	0.011	-
HCM Control Delay (s)	-	-	24.1	10.3	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

H – VOLUME WORKSHEETS

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

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 April 2017

1. Chamblee Dunwoody @ Roberts
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	170	311	0	481	0	615	12	627	6	0	510	516	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	177	324	0	481	0	640	12	627	6	0	531	516	0	0	0	0
Removed Old School Trips:	0	-115	0	-115	0	-138	-7	-145	-6	0	0	-6	0	0	0	0
Total New Trips:	0	100	0	100	0	82	9	91	11	0	0	11	0	0	0	0
Future Traffic Volumes:	177	309	0	486	0	584	14	598	11	0	531	542	0	0	0	0

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	363	520	0	883	0	400	15	415	17	0	311	328	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	378	541	0	883	0	416	16	415	18	0	324	328	0	0	0	0
Removed Old School Trips:	0	-26	0	-26	0	-53	-3	-56	-1	0	0	-1	0	0	0	0
Total New Trips:	0	51	0	51	0	63	7	70	6	0	0	6	0	0	0	0
Future Traffic Volumes:	378	566	0	944	0	426	20	446	23	0	324	347	0	0	0	0

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	619	639	0	1258	0	371	27	398	22	0	362	384	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	644	665	0	1258	0	386	28	398	23	0	377	384	0	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	30	0	30	0	31	3	34	3	0	0	3	0	0	0	0
Future Traffic Volumes:	644	695	0	1339	0	417	31	448	26	0	377	403	0	0	0	0

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

A&R Engineering
 April 2017

2. Roberts Dr @ Roberts Park Rd
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	329	0	2	645	0	647	1	0	1	1	0	1	2
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	342	0	2	671	0	647	1	0	1	1	0	1	2
Removed Old School Trips:	0	-120	0	0	-144	0	-144	0	0	0	0	0	0	0
Total New Trips:	0	18	89	107	22	0	111	0	0	0	73	0	73	146
Future Traffic Volumes:	0	240	89	329	91	549	0	640	1	0	74	0	74	148

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	541	11	12	420	0	432	0	0	0	8	0	6	14
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	563	11	12	437	0	432	0	0	0	8	0	6	14
Removed Old School Trips:	0	-28	0	0	-56	0	-56	0	0	0	0	0	0	0
Total New Trips:	0	14	45	59	11	0	56	0	0	0	56	0	56	112
Future Traffic Volumes:	0	549	56	605	57	392	0	449	0	0	64	0	62	126

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	606	30	21	442	0	463	0	0	0	4	0	1	5
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	630	31	22	460	0	463	0	0	0	4	0	1	5
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	7	26	33	26	7	0	33	0	0	28	0	28	56
Future Traffic Volumes:	0	637	57	694	48	467	0	515	0	0	32	0	29	61

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

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 April 2017

3. Roberts Dr @ Dunwoody Knoll
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	7	331	0	0	640	27	34	0	24	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	7	344	0	0	666	28	35	0	25	0	0	0
Removed Old School Trips:	0	-120	0	0	-144	-24	-20	0	0	0	0	0
Total New Trips:	27	64	0	0	78	0	0	0	33	0	0	0
Future Traffic Volumes:	34	288	0	0	600	4	15	0	58	0	0	0

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	11	551	0	0	433	9	21	0	10	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	11	573	0	0	450	9	22	0	10	0	0	0
Removed Old School Trips:	0	-28	0	0	-56	-9	-4	0	0	0	0	0
Total New Trips:	21	49	0	0	40	0	0	0	17	0	0	0
Future Traffic Volumes:	32	594	0	0	434	0	18	0	27	0	0	0

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	11	632	0	0	421	12	25	0	8	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	11	658	0	0	438	12	26	0	8	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	10	24	0	0	23	0	0	0	10	0	0	0
Future Traffic Volumes:	21	682	0	0	461	12	26	0	18	0	0	0

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

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 April 2017

4. Roberts Dr @ Site Drwy 2

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	329	0	0	647	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	342	0	0	673	0	0	0	0	0	0	0
Removed Old School Trips:	0	-120	0	0	-144	0	0	0	0	0	0	0
Total New Trips:	0	89	22	22	73	0	95	0	0	18	0	18
Future Traffic Volumes:	0	311	22	22	602	0	624	0	0	18	0	18

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	552	0	0	428	0	428	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	574	0	0	445	0	428	0	0	0	0	0
Removed Old School Trips:	0	-28	0	0	-56	0	-56	0	0	0	0	0
Total New Trips:	0	45	11	11	56	0	67	0	0	14	0	14
Future Traffic Volumes:	0	591	11	11	445	0	456	0	0	14	0	14

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	636	0	0	446	0	446	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	662	0	0	464	0	446	0	0	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	26	7	7	28	0	35	0	0	7	0	7
Future Traffic Volumes:	0	688	7	7	492	0	499	0	0	7	0	7

**TRAFFIC IMPACT STUDY
FOR
AUSTIN ELEMENTARY SCHOOL - ROBERTS DRIVE
CITY OF DUNWOODY, GEORGIA**



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A & R Project # 17-022

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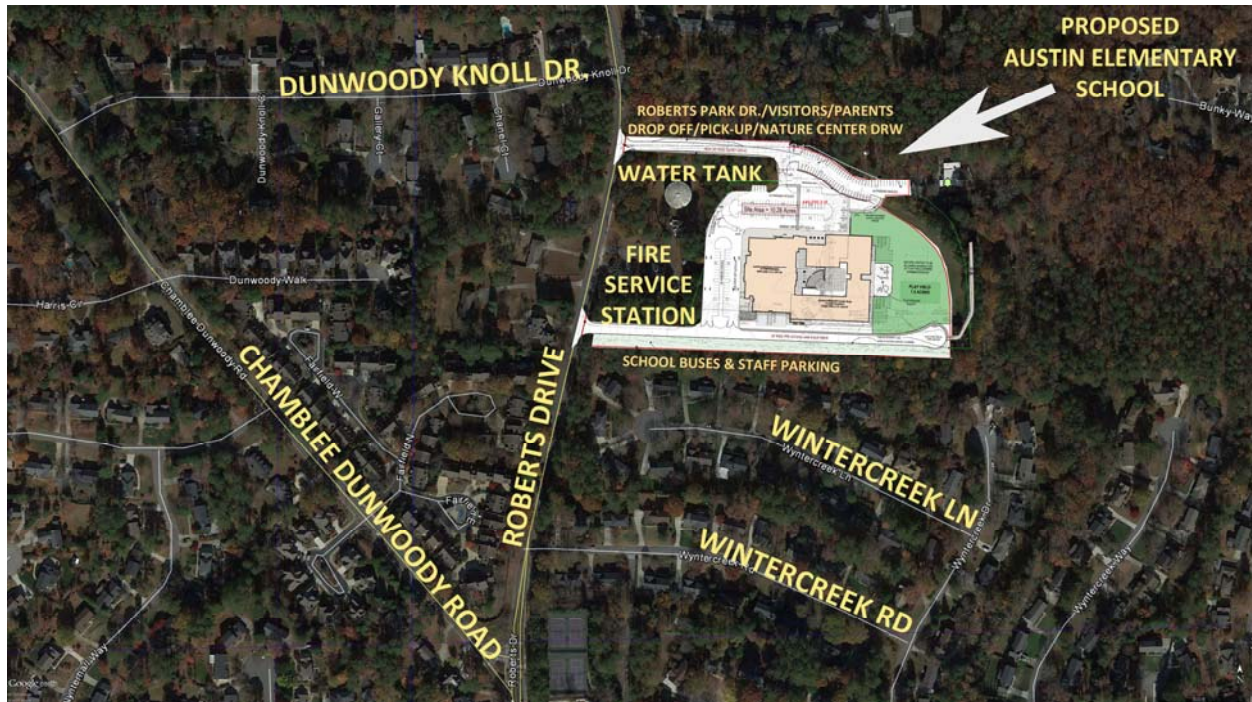
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1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed 900-student Austin Elementary School development located at Dunwoody Park in DeKalb County, Georgia. The new school will replace the existing Austin Elementary School located just north of Dunwoody Knoll Drive. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the new school. In order to estimate an accurate count of traffic on the roadway network and due to the close proximity of the existing and the proposed schools, the existing school traffic was deducted from the existing traffic and the projected traffic from the proposed new school building was added on the roadway network.



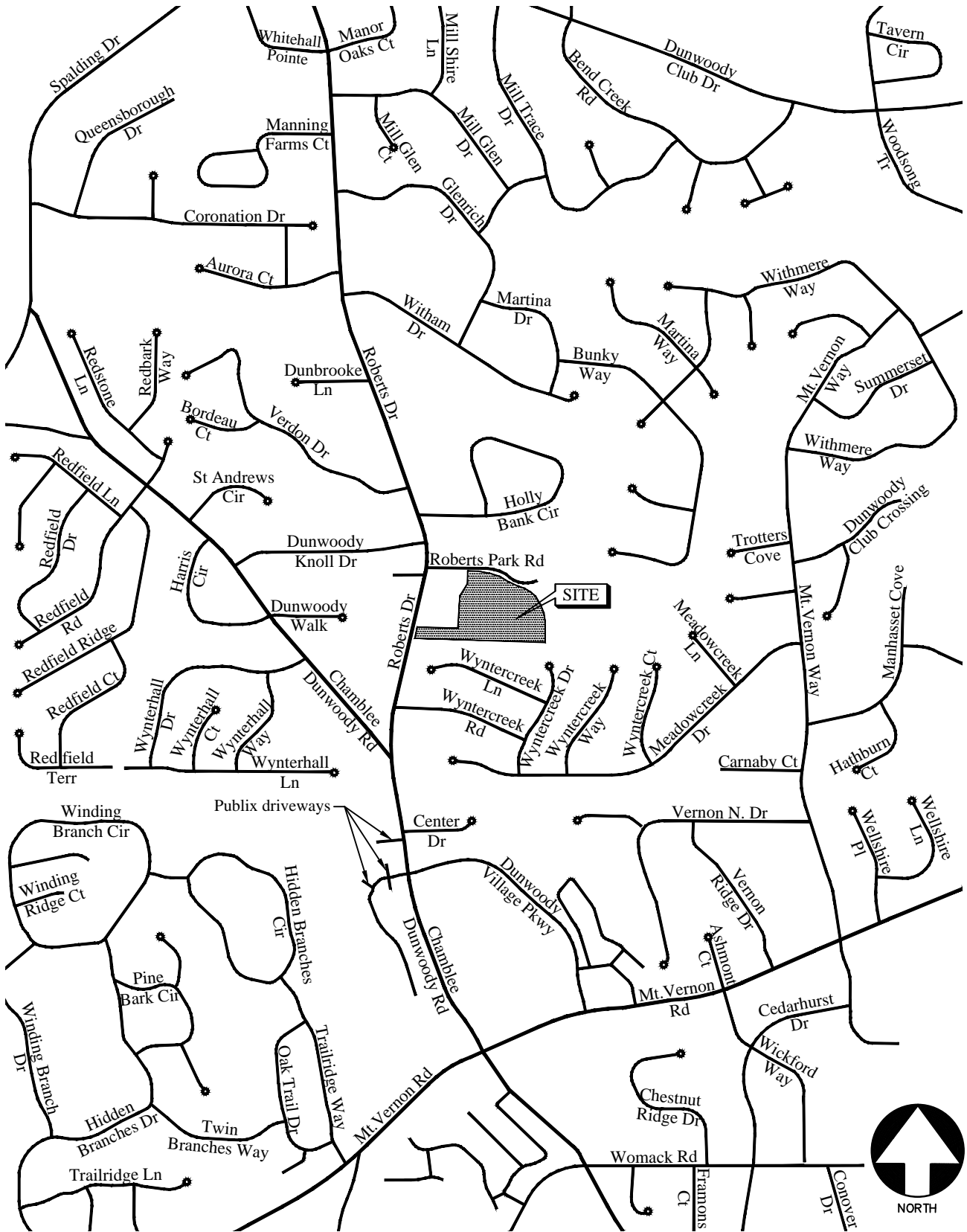
The development proposes access at the following locations on Roberts Drive:

- Site Driveway 1/Roberts Park Drive: Full access driveway for visitors and parent drop-off/pickup. Roberts Park Road (private road) currently provides access to Dunwoody Nature Center and will be shared by proposed school as its visitors and parent drop-off/pick-up driveway.
- Site Driveway 2: Full access driveway for staff and buses

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

- Chamblee Dunwoody Road at Roberts Drive
- Roberts Drive at Roberts Park Road
- Roberts Drive at Dunwoody Knoll Drive

Recommendations to improve traffic operations have been identified and are discussed in detail in the following sections of the report. The location of 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 Chamblee Dunwoody Road

Chamblee Dunwoody Road is a north-south, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID's 0894033 & 0893432) indicate that the daily traffic volume on Chamblee Dunwoody Road is 7,850 vehicles per day north of Dunwoody Knoll Drive and 18,700 vehicles per day south of Dunwoody Village Parkway. GDOT classifies Chamblee Dunwoody Road as an Urban Minor Arterial roadway to the south of Roberts Drive and as an Urban Major Collector to the north of Roberts Drive.

2.1.2 Roberts Drive

Roberts Drive is a north-south, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID 0890429) indicate that the daily traffic volume on Roberts Drive is 10,300 vehicles per day south of Witham Drive. GDOT classifies Roberts Drive as an Urban Minor Arterial roadway.

2.1.3 Roberts Park Road

Roberts Park Road is an east-west, two-lane, undivided private roadway providing access to the Dunwoody Nature Center.

2.1.4 Dunwoody Knoll Drive

Dunwoody Knoll Drive is an east-west, two-lane, undivided roadway with a posted 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, 2010 edition (HCM 2010). Synchro software, which utilizes the HCM 2010 methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

3.1 Unsignalized Intersections

For unsignalized intersections at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the level-of-service (LOS) for the turning movements at the intersection and the level-of-service for the overall intersection. Level-of-service is based on the average controlled delay incurred at the intersection. Controlled delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level-of-service is assigned a letter designation from "A" through "F". Level-of-service "A" indicates excellent operations with little delay to motorists, while level-of-service "F" exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross safely, resulting in extremely long total delays and long queues. The level-of-service criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections are given in Table 1.

Level-of-service	Average Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: 2010 Highway Capacity Manual

3.2 Signalized Intersections

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

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

TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
Level-of-service	Average Control Delay (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Source: 2010 Highway Capacity Manual

4.0 EXISTING TRAFFIC ANALYSIS

Existing traffic counts and intersection geometric data were obtained at the following study intersections:

- Chamblee Dunwoody Road at Roberts Drive
- Roberts Drive at Roberts Park Road
- Roberts Drive at Dunwoody Knoll Drive
- Roberts Drive at Existing Austin Elementary School's Northern Driveway
- Roberts Drive at Existing Austin Elementary School's Southern Driveway

Turning movement counts except for the existing school driveways' were collected on Thursday, February 23, 2017. All turning movement counts were recorded during the AM, School Dismissal and PM peak hours between 7:00am to 9:00am, 2:00pm to 4:00pm 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.

Peak hour turning movement counts at the existing school's site driveways were collected on Tuesday, March 13, 2017 during the AM and School Dismissal peak hours to document the exact traffic generated by the existing school. In order to avoid duplication of traffic from both existing and proposed schools, this traffic count from the existing school is subtracted from the existing traffic on the roadway network and the projected traffic from the proposed school is added to accurately calculate the total traffic on the roadway network. These counts are attached in the Appendix.

Pedestrian traffic was counted as part of the peak hour turning movement counts at the existing schools driveways. These pedestrian counts were assumed to be applicable to the new school as well and therefore assigned to the proposed school's driveways in order to evaluate the traffic operations and safety at the driveway intersections.

As the Dunwoody Nature Center will continue to exist and Roberts Park Road will serve as the joint driveway for the Nature Center as well as the proposed school, the projected school's traffic is added to the existing traffic on Roberts Park Road in the future conditions.

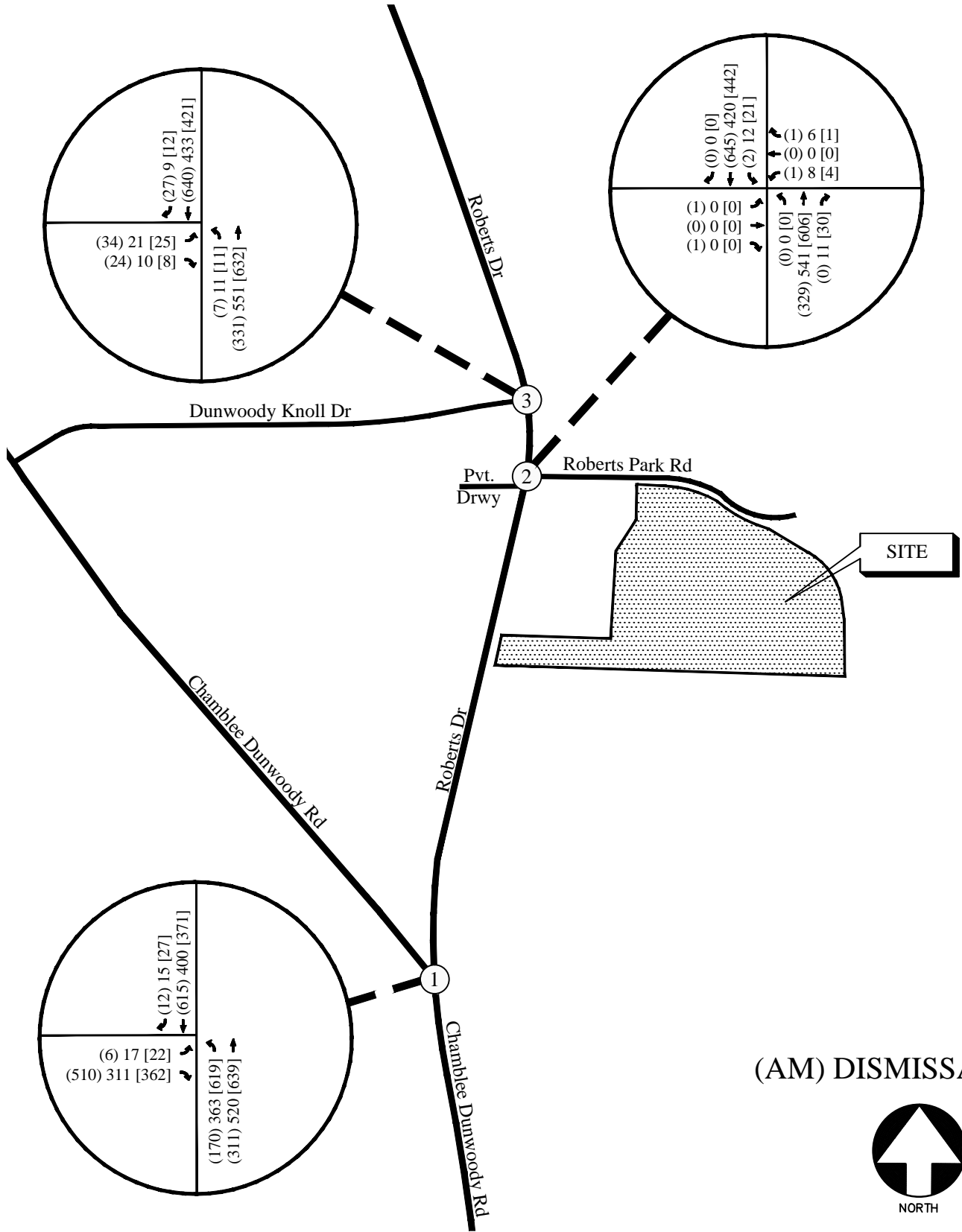
4.1 Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. A queue length analysis was also performed. The results of the analyses are shown in Tables 3 and 4. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS				
Intersection	Traffic Control	LOS (Delay)		
		AM Peak	School Dismissal Peak	PM Peak
1 Chamblee Dunwoody Rd @ Roberts Dr -Eastbound Approach -Northbound Approach -Southbound Approach	Signalized	A (3.6) E (70.1) A (1.8) A (4.5)	A (4.5) E (64.9) A (2.4) A (5.3)	A (7.8) E (66.6) A (5.5) A (8.9)
2 Roberts Dr @ Roberts Park Rd -Westbound Approach -Northbound Left -Southbound Left	Stop Controlled on Westbound Approach	C (19.0) A (0.0) A (8.3)	C (24.1) A (0.0) A (8.9)	D (27.2) A (0.0) A (9.1)
3 Roberts Dr @ Dunwoody Knoll Dr -Eastbound Approach -Northbound Left	Stop Controlled on EB Approach	D (26.6) A (9.2)	C (18.9) A (8.4)	C (22.4) A (8.3)

TABLE 4 – EXISTING INTERSECTION 95 TH PERCENTILE QUEUES				
Intersection	Available Storage	95 th Percentile Queue: feet		
		AM Peak	School Dismissal Peak	PM Peak
1 Chamblee Dunwoody Rd @ Roberts Dr -Eastbound Left -Northbound Left -Northbound Through -Southbound Approach	35' 340' - -	15 57 88 295	48 118 155 217	73 408 223 283
2 Roberts Dr @ Roberts Park Rd / Private Drwy -Westbound Approach -Northbound Approach -Southbound Approach	-	3 0 0	3 0 0	3 0 0
3 Roberts Dr @ Dunwoody Knoll Dr -Eastbound Approach -Northbound Approach	-	48 0	13 0	20 0

The results of existing traffic operations analysis indicate that all the study intersections are operating at satisfactory level of service during the morning, school dismissal and evening peak hours.



EXISTING WEEKDAY PEAK-HOUR VOLUMES




(AM) DISMISSAL [PM]

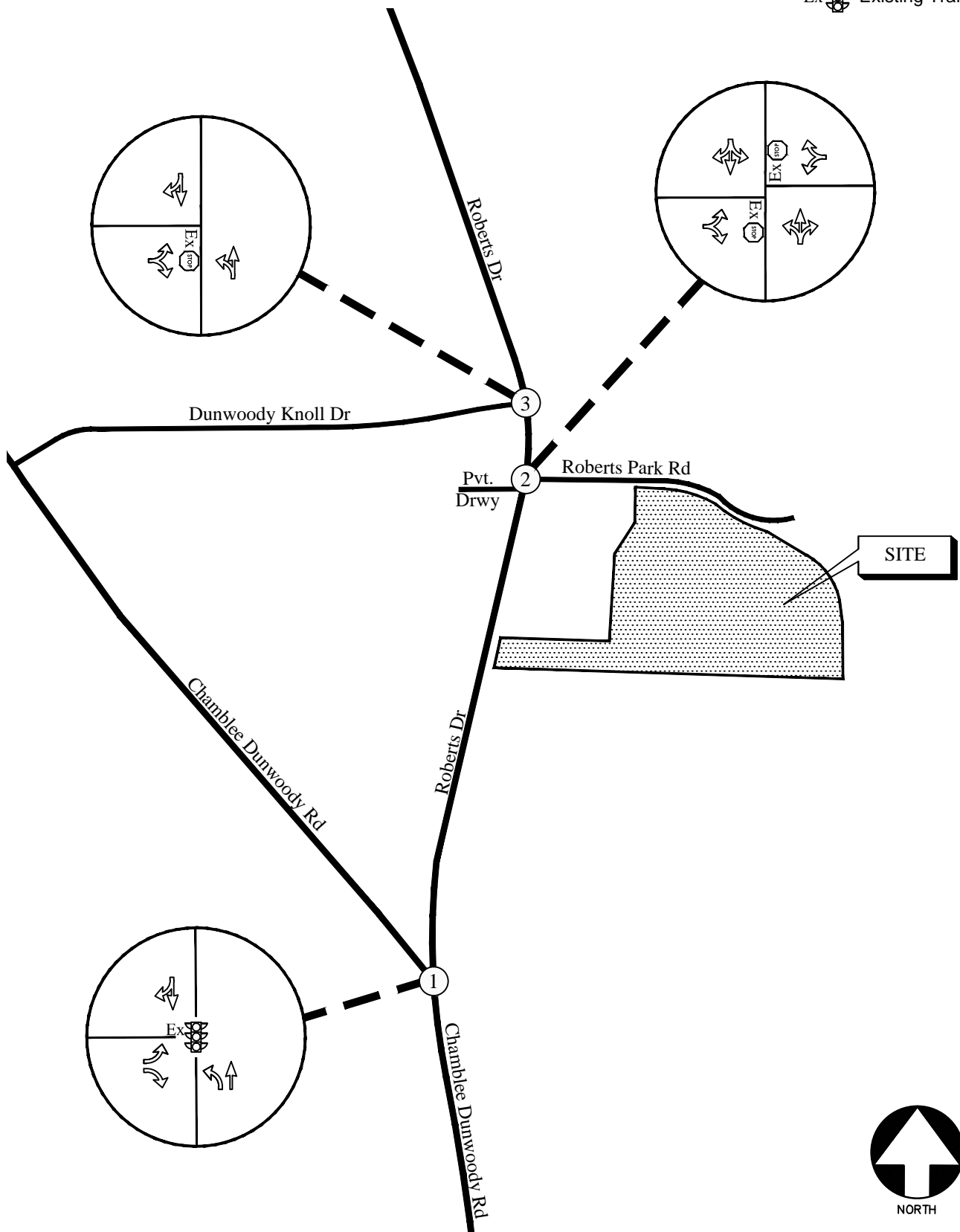


FIGURE 2

A&R Engineering Inc.

LEGEND

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



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

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5.0 PROPOSED DEVELOPMENT

The proposed 900-student Austin Elementary School site will be located in Dunwoody Park in DeKalb County, Georgia. The new school will replace the existing Austin Elementary School located just north of proposed school and Dunwoody Knoll Drive. The development proposes access at following locations:

- Site Driveway 1: Full access driveway on Roberts Drive for visitors and parent drop-off / pickup. (Roberts Park Road which is a private road currently serving as Dunwoody Nature Centre’s driveway will now be shared by proposed school also).
- Site Driveway 2: Full access driveway on Roberts Drive for staff and buses

Roberts Park Road currently provides access to the Dunwoody Nature Center and will be shared by the proposed school development. A site plan is shown in Figure 4.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Use: 520 – Elementary School. The calculated total trip generation for the proposed development is shown in Table 5.

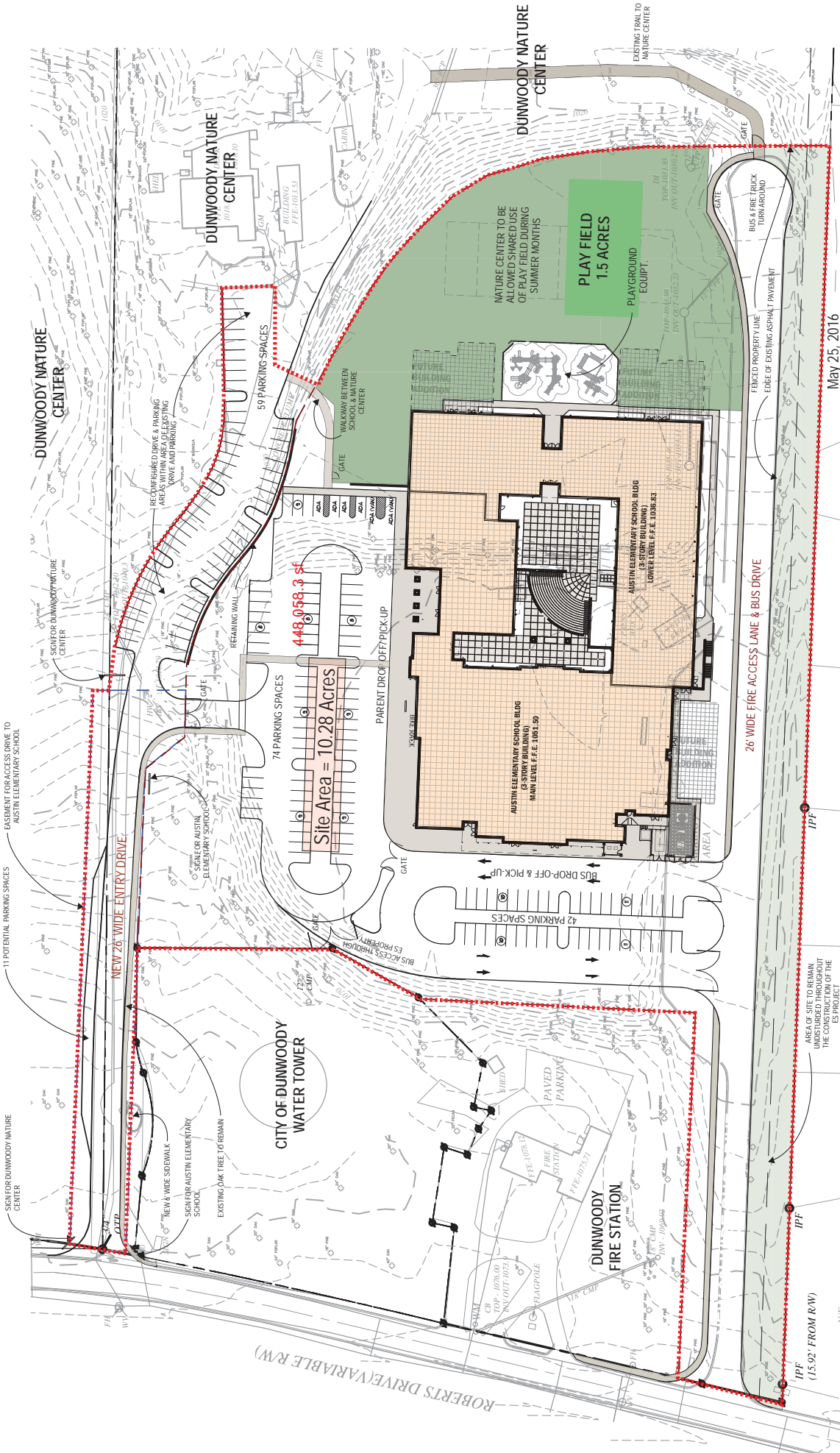
TABLE 5 – TRIP GENERATION												
Land Use	Size (Students)	AM Peak Hour			School Dismissal Peak Hour			PM Peak Hour			24 Hour	
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-way	
ITE 520 – Elementary School	900	223	182	405	113	139	252	66	69	223	1,161	

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 existing school’s trip distribution pattern. The site-generated peak hour traffic volumes, shown in Table 5, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM, School Dismissal and PM peak hour new traffic generated by the site are shown in Figure 5.

5.3 Pedestrian Traffic

Pedestrian traffic at the existing Austin Elementary School driveways was counted as part of the traffic counts and those pedestrian counts were used in synchro analysis for the “Build” conditions for the proposed new school in order to account for the pedestrian traffic and accurately evaluate the intersection operations.

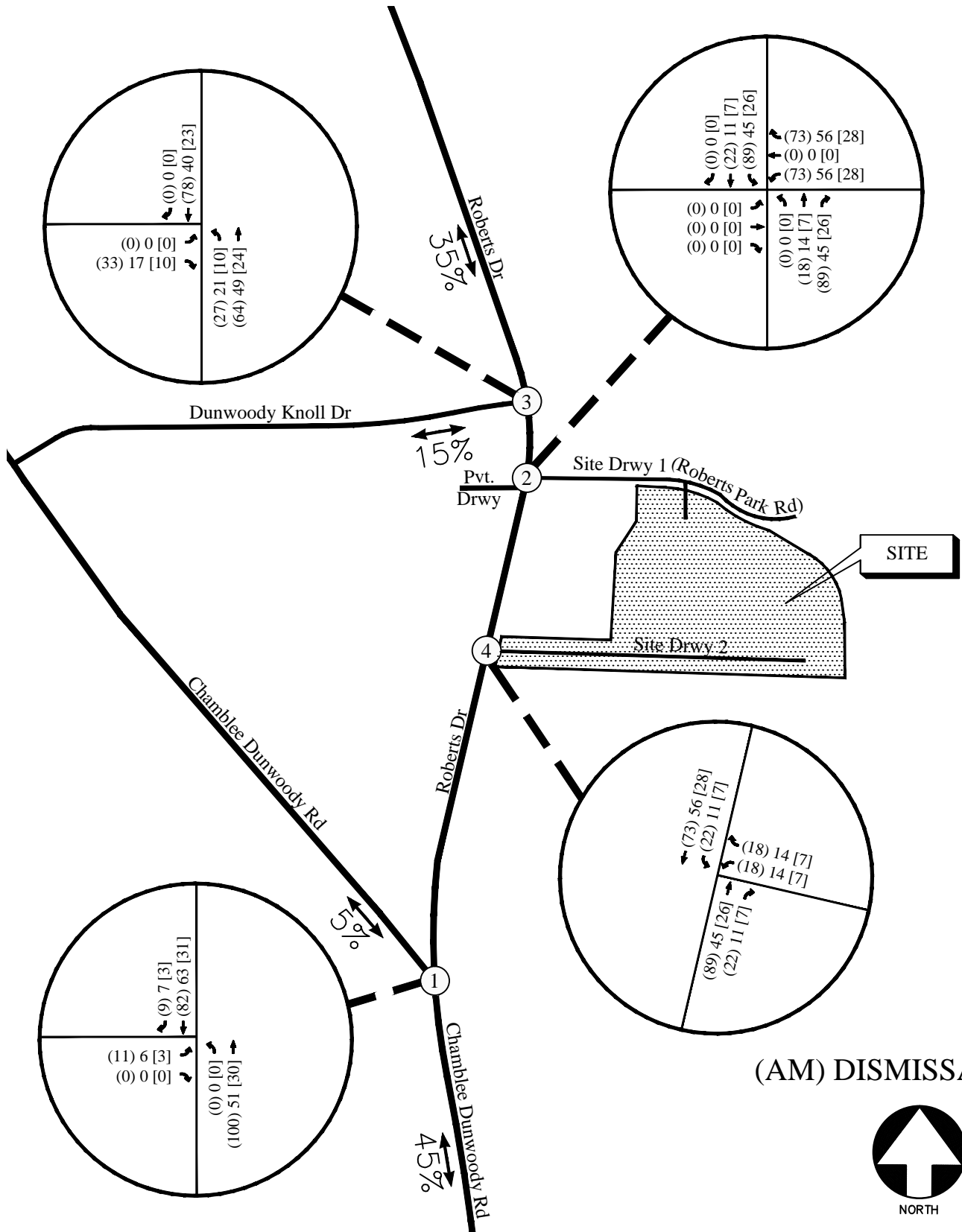


CONCEPTUAL SITE PLAN OF AUSTIN ELEMENTARY SCHOOL AT DUNWOODY PARK



May 25, 2016





TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 5

A&R Engineering Inc.

6.0 FUTURE TRAFFIC ANALYSIS

The future traffic operations are analyzed for the “Build” and “No-Build” conditions. This provides a basis of reference for determining both the contribution of the site to overall traffic conditions and the additional improvements needed to provide sufficient site access and capacity for passing traffic. Note that survey and construction drawings would be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.

Improvements that are identified as “System Improvements” address deficiencies that are found within the existing road network prior to any impacts from the proposed development’s added traffic. Improvements that are identified as “Site Mitigation Improvements” address further impacts that are a result of the proposed development’s added traffic.

6.1 Future “No-Build” Conditions

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

6.1.1 Annual Traffic Growth

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 years revealed growth of approximately 2% in the area. This growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future “No-Build” volumes on the roadway are shown in Figure 6.

6.2 Future “Build” Conditions

The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. The “Build” conditions are evaluated to determine effectiveness of the recommended system and site mitigation improvements. The additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes are shown in Figure 7. Because the new school will replace the current school, the existing school traffic was deducted at the study intersections using the same trip distribution as the new school site traffic.

6.2.1 Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway 1: Signalized Full access driveway on Roberts Drive for visitors and parent drop-off/ pickup. (Roberts Park Road is a private road and currently provides access to Dunwoody Nature Center and will be shared by proposed school development as its visitors and parent drop-off/pick-up driveway.)
 - This driveway on Roberts Drive is proposed to consist of one entering and one exiting (shared left / right turn) lanes.
 - A dedicated left turn bay on Roberts Drive is recommended to be constructed for entering traffic based on GDOT requirements (See Appendix for evaluation of left turn lane analysis).
 - A dedicated right turn lane on Roberts Drive is recommended to be constructed for entering traffic based on GDOT requirements (See Appendix for evaluation of right turn lane analysis).
 - A signal warrant analysis indicates that Warrant 5 – School Crossing will meet MUTCD threshold for a traffic signal.
- Site Driveway #2: Full access driveway on Roberts Drive for staff and buses
 - This driveway is proposed to consist of one entering and one exiting (shared left / right turn) lanes.
 - The intersection is proposed to be un-signalized with a STOP sign on the westbound (driveway) approach.
 - Entering left turn movements are proposed to be made from the southbound through lane. No dedicated turn bay is warranted (See Appendix for evaluation of left turn lane analysis).
 - Entering right turn movements are proposed to be made from the northbound through lane. No dedicated right turn lane is warranted (See Appendix for evaluation of right turn lane analysis).

6.3 Future Traffic Operations

The future “No-Build” and “Build” traffic operations were analyzed using the volumes in Figure 6 and Figure 7 respectively. The results of the future traffic operations analyses are shown in Tables 6 and 7. Recommendations on traffic control and lane geometry are shown graphically in Figure 8.

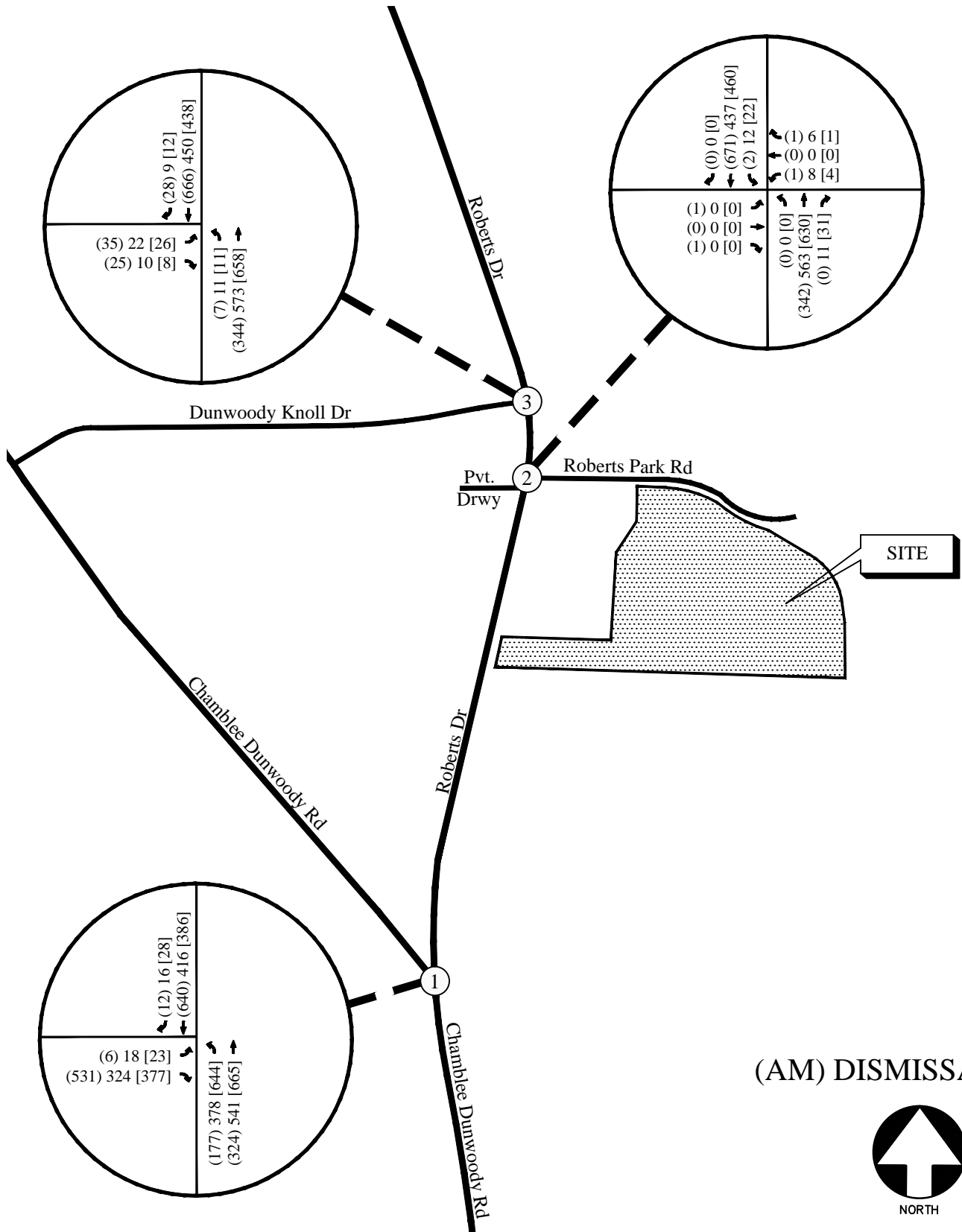
The Existing traffic signal at the existing Austin Elementary driveway on Roberts Drive unless the traffic volumes of the future occupant of the school building warrant the traffic signal.

TABLE 6 – FUTURE INTERSECTION OPERATIONS

Intersection		Future Conditions: LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	School Dismissal Peak	PM Peak	AM Peak	School Dismissal Peak	PM Peak
1	Chamblee Dunwoody Rd @ Roberts Dr	A (3.7)	A (4.8)	A (9.0)	A (4.1)	A (5.3)	B (11.5)
	-Eastbound Approach	E (70.1)	E (64.9)	E (67.1)	E (66.3)	E (65.6)	E (68.9)
	-Northbound Approach	A (1.9)	A (2.6)	A (7.0)	A (1.9)	A (2.8)	A (10.0)
	-Southbound Approach	A (4.7)	A (5.6)	A (9.6)	A (4.7)	A (5.9)	B (10.0)
2	Roberts Dr @ Roberts Park Rd (Drwy 1 – Visitor & Parent Drop-off/Pickup)				A (7.4)	A (6.9)	(A4.9)
	-Westbound Approach	C (19.9)	D (25.7)	D (29.3)	C (24.3)	C (30.3)	C (22.1)
	-Northbound Left	A (0.0)	A (0.0)	A (0.0)	A (4.2)	A (4.1)	A (4.1)
	-Southbound Left	A (8.4)	A (9.0)	A (9.3)	A (5.3)	A (4.0)	A (3.9)
3	Roberts Dr @ Dunwoody Knoll Dr						
	-Eastbound Approach	D (29.1)	C (20)	C (24)	C (20.3)	C (17.6)	C (24.7)
	-Northbound Left	A (9.3)	A (8.4)	A (8.4)	A (9.1)	A (8.4)	A (8.5)
4	Roberts Dr @ Site Drwy 2 (Staff & Bus)						
	-Westbound Approach	-	-	-	C (21.1)	C (22.3)	C (24.1)
	-Southbound Left				A (9.3)	A (10.0)	B (10.3)

TABLE 7 – FUTURE INTERSECTION 95TH PERCENTILE QUEUES

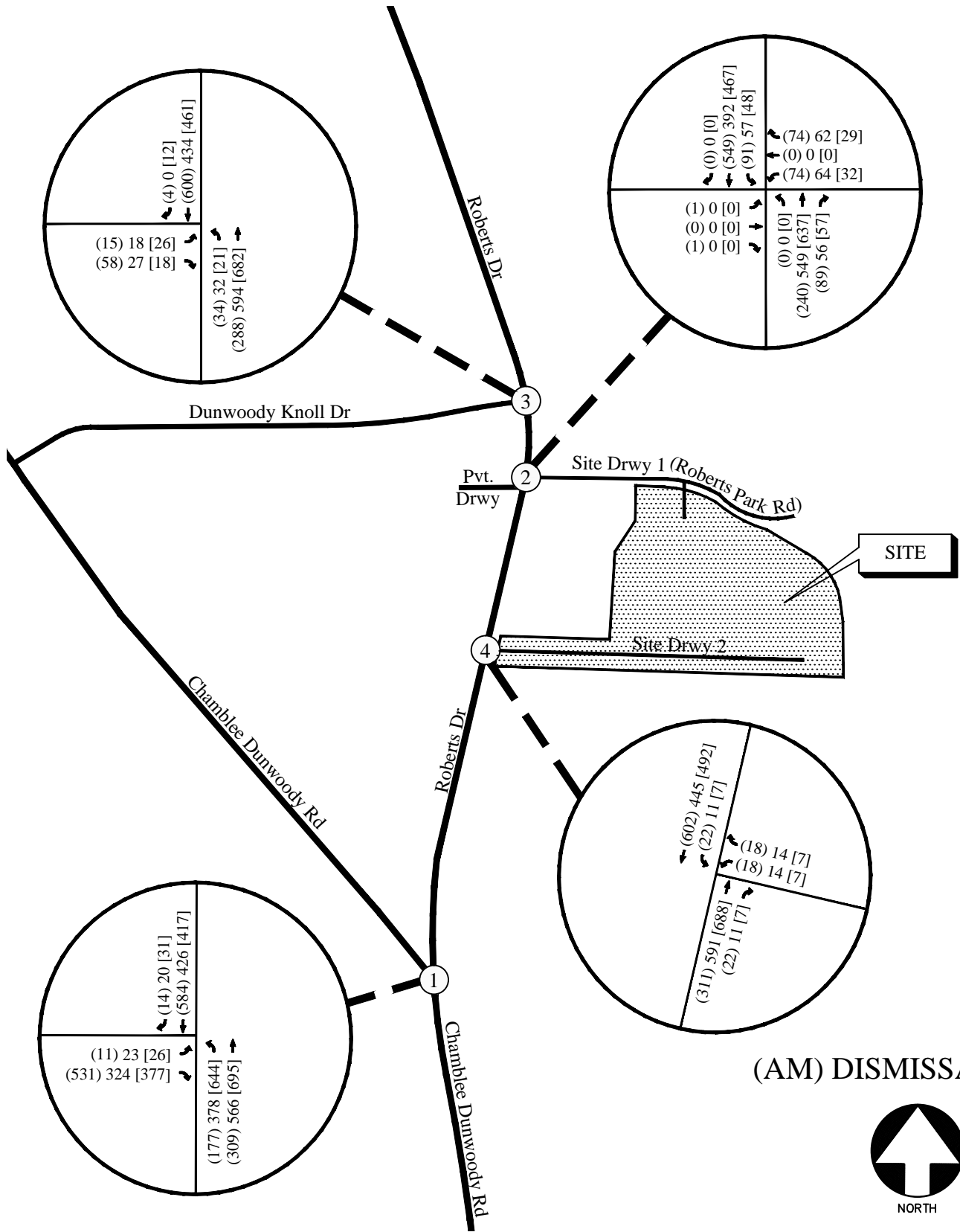
Intersection		Available Storage	Future Conditions: 95 th Percentile Queue (feet)					
			NO-BUILD			BUILD		
			AM Peak	School Dismissal Peak	PM Peak	AM Peak	School Dismissal Peak	PM Peak
1	Chamblee Dunwoody Rd @ Roberts Dr							
	-Eastbound Left	35'	15	50	78	25	55	88
	-Northbound Left	340'	65	127	525	60	127	623
	-Northbound Through	-	95	170	238	90	185	255
	-Southbound Approach	-	313	230	300	285	242	330
2	Roberts Dr @ Roberts Park Rd (Site Drwy 1 – Visitor & Parent Drop-off / Pickup)							
	-Westbound Approach	-	3	3	3	113	110	38
	-Northbound Through	-	0	0	0	108	200	175
	-(Northbound Right)	100'	-	-	-	25	15	10
	-(Southbound Left)	160'	-	-	-	35	23	15
	-Southbound Through	-	0	0	0	198	115	120
3	Roberts Dr @ Dunwoody Knoll Dr							
	-Eastbound Approach	-	53	15	23	48	18	30
	-Northbound Approach	-	0	0	0	5	3	3
4	Roberts Dr @ Site Drwy 2 (Staff & Bus)							
	-Westbound Approach	-	-	-	-	13	10	5
	-Southbound Approach	-	-	-	-	3	3	0



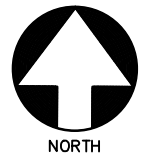
FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 6

A&R Engineering Inc.



(AM) DISMISSAL [PM]









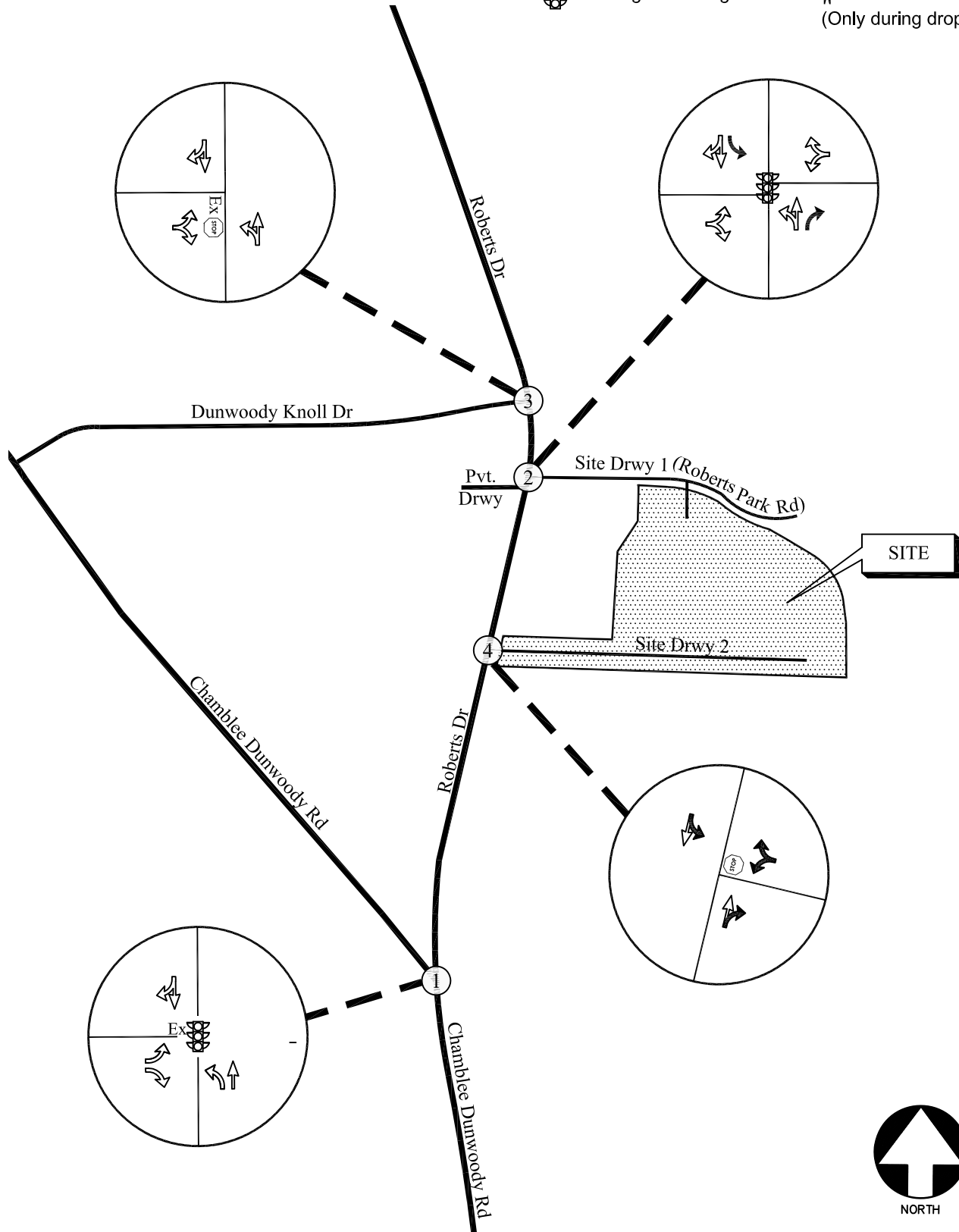
FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.

LEGEND

- Ex  Existing Signed Approach
-  Existing Lane Geometry
- Ex  Existing Traffic Signal
-  Proposed Signed Approach
-  Proposed Lane Geometry
-  Police Officer
(Only during drop-off / pick-up)



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 8

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed 900-student Austin Elementary School development that will be located at Dunwoody Park in DeKalb County, Georgia. The new school will replace the current Austin Elementary School located on Roberts Drive just north of Dunwoody Knoll Drive.

The development proposes access at the following locations on Roberts Drive:

- Site Driveway 1(Roberts Park Road): Signalized Full access driveway for visitors and parent drop-off/pick-up.
- Site Driveway 2: Full access driveway for staff and buses

Roberts Park Road currently provides access to the Dunwoody Nature Center and will be shared by the proposed school development.

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

- Chamblee Dunwoody Road at Roberts Drive
- Roberts Drive at Roberts Park Road
- Roberts Drive at Dunwoody Knoll Drive

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

7.1 System Recommendations and Improvements

Improvements that are identified as “System Improvements” address deficiencies that are found within the existing road network prior to any impacts from the proposed development’s added traffic. Since all the study intersections will operate at level-of-service “E” or better in the future prior to the construction of the school site, no improvements are identified.

7.2 Site Mitigation Improvements

Improvements that are identified as “Site Mitigation Improvements” address further impacts that are a result of the proposed development’s added traffic. Because operations would not be impacted beyond the projected “No-Build” conditions, mitigation improvements have not been identified outside of the recommended configuration for the site access points except the following:

Pedestrian related improvements must be implemented to help provide safer pedestrian crossing. These include pedestrian cross-walk and signage as part of traffic signal installation.

Appendix

Existing Intersection Traffic Counts
Linear Regression of Daily Traffic.....
Existing Intersection Analysis.....
GDOT Left Turn Lane Analysis.....
GDOT Right Turn Lane Analysis.....
Future “No-Build” Intersection Analysis
Future “Build” Intersection Analysis
Traffic Volume Worksheets

EXISTING INTERSECTION TRAFFIC COUNTS

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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	19	61	0	0	80	0	152	2	0	154	1	0	127	0	128	0	0	0	0	0	362
07:15 AM	29	105	0	0	134	0	166	1	0	167	1	0	123	0	124	0	0	0	0	0	425
07:30 AM	52	69	0	0	121	0	153	8	0	161	2	0	120	0	122	0	0	0	0	0	404
07:45 AM	48	67	0	0	115	0	151	0	0	151	2	0	130	0	132	0	0	0	0	0	398
Total	148	302	0	0	450	0	622	11	0	633	6	0	500	0	506	0	0	0	0	0	1589
08:00 AM	41	70	0	0	111	0	145	3	0	148	1	0	137	0	138	0	0	0	0	0	397
08:15 AM	44	65	0	0	109	0	113	0	0	113	0	0	140	0	140	0	0	0	0	0	362
08:30 AM	47	62	0	0	109	0	131	1	0	132	0	0	129	0	129	0	0	0	0	0	370
08:45 AM	38	88	0	0	126	0	154	5	0	159	2	0	114	0	116	0	0	0	0	0	401
Total	170	285	0	0	455	0	543	9	0	552	3	0	520	0	523	0	0	0	0	0	1530
*** BREAK ***																					
02:00 PM	64	118	0	0	182	0	88	3	0	91	6	0	79	0	85	0	0	0	0	0	358
02:15 PM	65	109	0	0	174	0	93	2	0	95	4	0	76	0	80	0	0	0	0	0	349
02:30 PM	66	119	0	0	185	0	102	5	0	107	2	0	70	0	72	0	0	0	0	0	364
02:45 PM	60	88	0	0	148	0	88	4	0	92	3	0	69	0	72	0	0	0	0	0	312
Total	255	434	0	0	689	0	371	14	0	385	15	0	294	0	309	0	0	0	0	0	1383
03:00 PM	88	112	0	0	200	0	85	5	0	90	2	0	66	0	68	0	0	0	0	0	358
03:15 PM	87	143	0	0	230	0	102	2	0	104	7	0	78	0	85	0	0	0	0	0	419
03:30 PM	86	135	0	0	221	0	104	3	0	107	4	0	83	0	87	0	0	0	0	0	415
03:45 PM	102	130	0	0	232	0	109	5	0	114	4	0	84	0	88	0	0	0	0	0	434
Total	363	520	0	0	883	0	400	15	0	415	17	0	311	0	328	0	0	0	0	0	1626
04:00 PM	122	151	0	0	273	0	85	4	0	89	2	0	74	0	76	0	0	0	0	0	438
04:15 PM	136	138	0	0	274	0	91	3	0	94	3	0	68	0	71	0	0	0	0	0	439
04:30 PM	162	142	0	0	304	0	104	6	0	110	5	0	81	0	86	0	0	0	0	0	500
04:45 PM	168	155	0	0	323	0	112	8	0	120	3	0	86	0	89	0	0	0	0	0	532
Total	588	586	0	0	1174	0	392	21	0	413	13	0	309	0	322	0	0	0	0	0	1909
05:00 PM	161	180	0	0	341	0	85	6	0	91	6	0	71	0	77	0	0	0	0	0	509
05:15 PM	130	139	0	0	269	0	84	7	0	91	2	0	91	0	93	0	0	0	0	0	453
05:30 PM	160	165	0	0	325	0	90	6	0	96	11	0	114	0	125	0	0	0	0	0	546
05:45 PM	134	157	0	0	291	0	105	4	0	109	10	0	117	0	127	0	0	0	0	0	527
Total	585	641	0	0	1226	0	364	23	0	387	29	0	393	0	422	0	0	0	0	0	2035
Grand Total	2109	2768	0	0	4877	0	2692	93	0	2785	83	0	2327	0	2410	0	0	0	0	0	10072
Apprch %	43.2	56.8	0	0		0	96.7	3.3	0		3.4	0	96.6	0		0	0	0	0	0	
Total %	20.9	27.5	0	0	48.4	0	26.7	0.9	0	27.7	0.8	0	23.1	0	23.9	0	0	0	0	0	

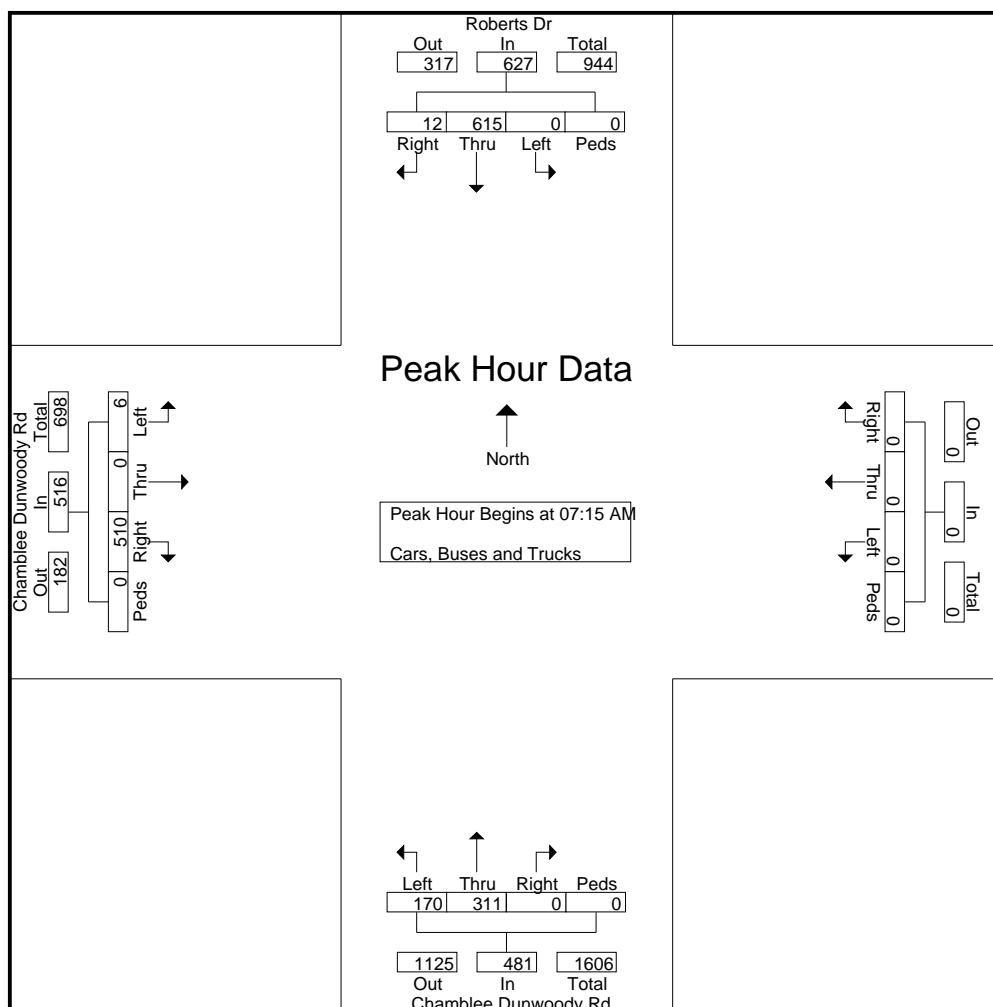
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TMC Data
 Chamblee Dunwoody Rd @ Roberts Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 2

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	29	105	0	0	134	0	166	1	0	167	1	0	123	0	124	0	0	0	0	0	425
07:30 AM	52	69	0	0	121	0	153	8	0	161	2	0	120	0	122	0	0	0	0	0	404
07:45 AM	48	67	0	0	115	0	151	0	0	151	2	0	130	0	132	0	0	0	0	0	398
08:00 AM	41	70	0	0	111	0	145	3	0	148	1	0	137	0	138	0	0	0	0	0	397
Total Volume	170	311	0	0	481	0	615	12	0	627	6	0	510	0	516	0	0	0	0	0	1624
% App. Total	35.3	64.7	0	0		0	98.1	1.9	0		1.2	0	98.8	0		0	0	0	0		
PHF	.817	.740	.000	.000	.897	.000	.926	.375	.000	.939	.750	.000	.931	.000	.935	.000	.000	.000	.000	.000	.955



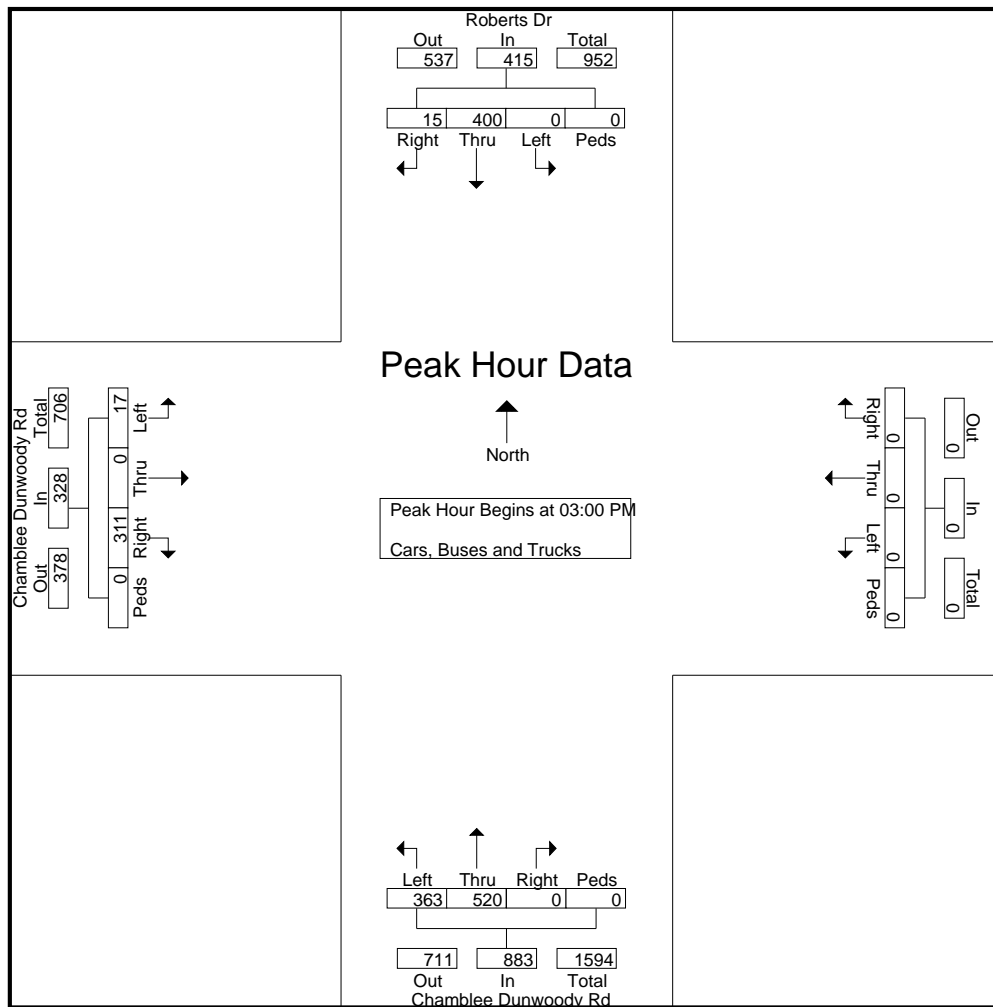
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 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 3

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	88	112	0	0	200	0	85	5	0	90	2	0	66	0	68	0	0	0	0	0	358
03:15 PM	87	143	0	0	230	0	102	2	0	104	7	0	78	0	85	0	0	0	0	0	419
03:30 PM	86	135	0	0	221	0	104	3	0	107	4	0	83	0	87	0	0	0	0	0	415
03:45 PM	102	130	0	0	232	0	109	5	0	114	4	0	84	0	88	0	0	0	0	0	434
Total Volume	363	520	0	0	883	0	400	15	0	415	17	0	311	0	328	0	0	0	0	0	1626
% App. Total	41.1	58.9	0	0		0	96.4	3.6	0		5.2	0	94.8	0		0	0	0	0		
PHF	.890	.909	.000	.000	.952	.000	.917	.750	.000	.910	.607	.000	.926	.000	.932	.000	.000	.000	.000	.000	.937



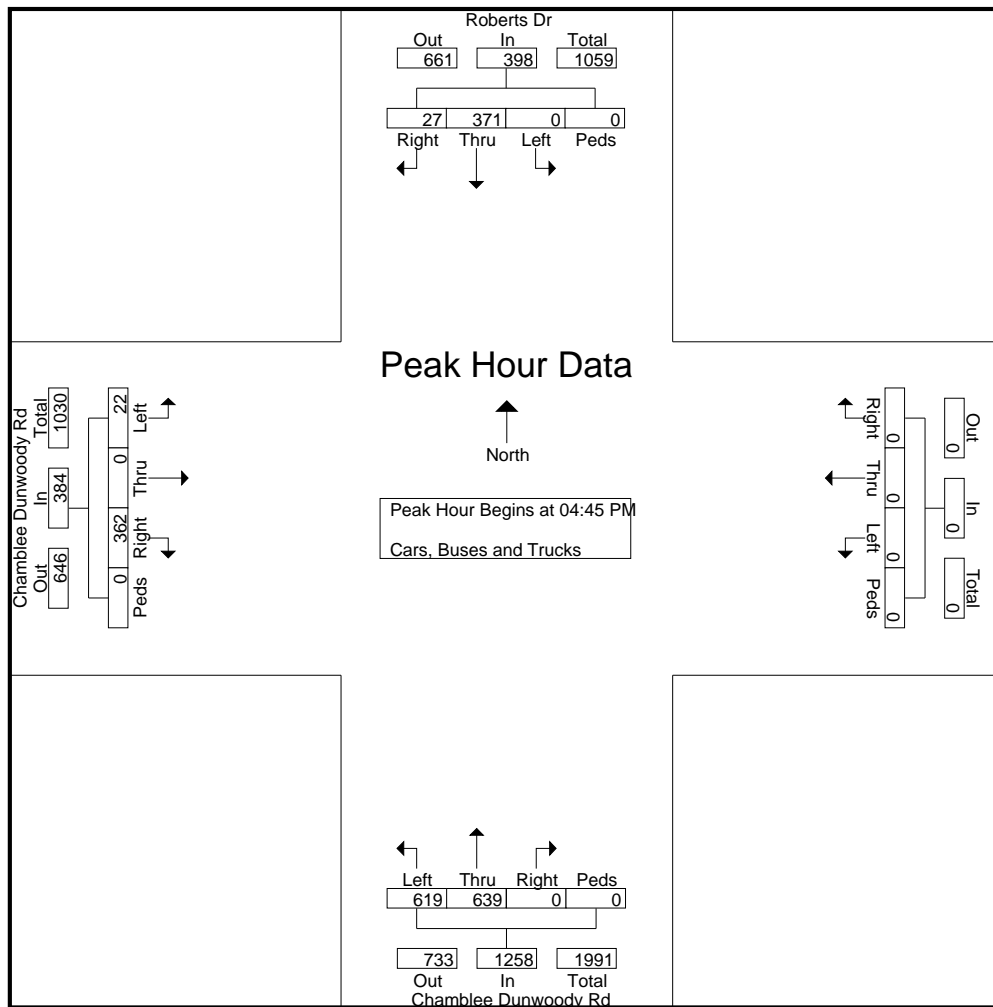
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 7-9am | 2-6pm

File Name : 40020001
 Site Code : 40020001
 Start Date : 2/23/2017
 Page No : 4

Start Time	Chamblee Dunwoody Rd Northbound					Roberts Dr Southbound					Chamblee Dunwoody Rd Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	168	155	0	0	323	0	112	8	0	120	3	0	86	0	89	0	0	0	0	0	532
05:00 PM	161	180	0	0	341	0	85	6	0	91	6	0	71	0	77	0	0	0	0	0	509
05:15 PM	130	139	0	0	269	0	84	7	0	91	2	0	91	0	93	0	0	0	0	0	453
05:30 PM	160	165	0	0	325	0	90	6	0	96	11	0	114	0	125	0	0	0	0	0	546
Total Volume	619	639	0	0	1258	0	371	27	0	398	22	0	362	0	384	0	0	0	0	0	2040
% App. Total	49.2	50.8	0	0		0	93.2	6.8	0		5.7	0	94.3	0		0	0	0	0		
PHF	.921	.888	.000	.000	.922	.000	.828	.844	.000	.829	.500	.000	.794	.000	.768	.000	.000	.000	.000	.000	.934



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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	70	0	0	70	2	157	0	0	159	1	0	0	0	1	0	0	1	0	1	231
07:15 AM	0	120	0	0	120	0	160	0	0	160	0	0	1	0	1	1	0	0	0	1	282
07:30 AM	0	66	0	0	66	0	163	0	0	163	0	0	0	0	0	0	0	0	0	0	229
07:45 AM	0	73	0	0	73	0	165	0	0	165	0	0	0	0	0	0	0	0	0	0	238
Total	0	329	0	0	329	2	645	0	0	647	1	0	1	0	2	1	0	1	0	2	980
08:00 AM	0	76	0	0	76	0	141	0	0	141	0	0	0	0	0	0	0	0	0	0	217
08:15 AM	0	67	0	0	67	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	178
08:30 AM	0	76	0	0	76	0	150	0	0	150	0	0	0	0	0	0	0	0	0	0	226
08:45 AM	0	84	2	0	86	2	167	0	0	169	0	0	0	0	0	1	0	0	0	1	256
Total	0	303	2	0	305	2	569	0	0	571	0	0	0	0	0	1	0	0	0	1	877
*** BREAK ***																					
02:00 PM	0	109	2	0	111	2	99	0	0	101	0	0	0	0	0	2	0	2	0	4	216
02:15 PM	0	105	2	0	107	0	97	0	0	97	0	0	0	0	0	2	0	2	0	4	208
02:30 PM	0	106	1	0	107	1	95	0	0	96	0	0	0	0	0	3	0	1	0	4	207
02:45 PM	1	110	1	0	112	0	99	0	0	99	0	0	0	0	0	1	0	2	0	3	214
Total	1	430	6	0	437	3	390	0	0	393	0	0	0	0	0	8	0	7	0	15	845
03:00 PM	0	120	2	0	122	0	93	0	0	93	0	0	0	0	0	1	0	1	0	2	217
03:15 PM	0	151	3	0	154	2	111	0	0	113	0	0	0	0	0	0	0	3	0	3	270
03:30 PM	0	138	3	0	141	1	110	0	0	111	0	0	0	0	0	1	0	1	0	2	254
03:45 PM	0	132	3	0	135	9	106	0	0	115	0	0	0	0	0	6	0	1	0	7	257
Total	0	541	11	0	552	12	420	0	0	432	0	0	0	0	0	8	0	6	0	14	998
04:00 PM	0	130	10	0	140	3	90	0	0	93	0	0	0	0	0	2	0	2	0	4	237
04:15 PM	0	135	6	0	141	3	100	0	0	103	0	0	0	0	0	1	0	0	0	1	245
04:30 PM	0	144	6	0	150	5	122	0	0	127	0	0	0	0	0	3	0	0	0	3	280
04:45 PM	0	148	12	0	160	10	118	0	0	128	0	0	0	0	0	1	0	0	0	1	289
Total	0	557	34	0	591	21	430	0	0	451	0	0	0	0	0	7	0	2	0	9	1051
05:00 PM	0	155	5	0	160	1	100	0	0	101	0	0	0	0	0	0	0	1	0	1	262
05:15 PM	0	159	7	0	166	5	102	0	0	107	0	0	0	0	0	0	0	0	0	0	273
05:30 PM	0	157	5	0	162	3	100	0	0	103	0	0	0	0	0	2	0	0	0	2	267
05:45 PM	0	153	3	0	156	1	110	0	0	111	0	0	0	0	0	1	0	2	0	3	270
Total	0	624	20	0	644	10	412	0	0	422	0	0	0	0	0	3	0	3	0	6	1072
Grand Total	1	2784	73	0	2858	50	2866	0	0	2916	1	0	1	0	2	28	0	19	0	47	5823
Apprch %	0	97.4	2.6	0		1.7	98.3	0	0		50	0	50	0		59.6	0	40.4	0		
Total %	0	47.8	1.3	0	49.1	0.9	49.2	0	0	50.1	0	0	0	0	0	0.5	0	0.3	0	0.8	

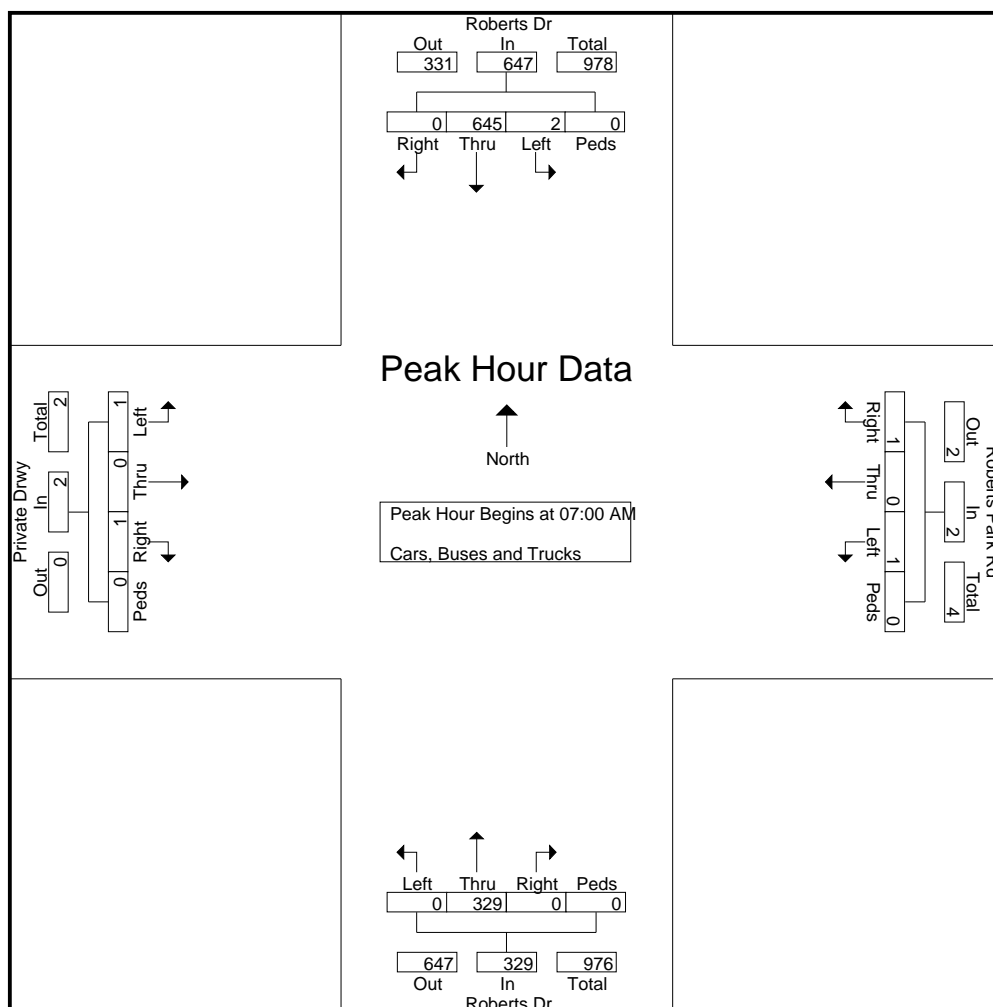
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	70	0	0	70	2	157	0	0	159	1	0	0	0	1	0	0	1	0	1	231
07:15 AM	0	120	0	0	120	0	160	0	0	160	0	0	1	0	1	1	0	0	0	1	282
07:30 AM	0	66	0	0	66	0	163	0	0	163	0	0	0	0	0	0	0	0	0	0	229
07:45 AM	0	73	0	0	73	0	165	0	0	165	0	0	0	0	0	0	0	0	0	0	238
Total Volume	0	329	0	0	329	2	645	0	0	647	1	0	1	0	2	1	0	1	0	2	980
% App. Total	0	100	0	0		0.3	99.7	0	0		50	0	50	0		50	0	50	0		
PHF	.000	.685	.000	.000	.685	.250	.977	.000	.000	.980	.250	.000	.250	.000	.500	.250	.000	.250	.000	.500	.869



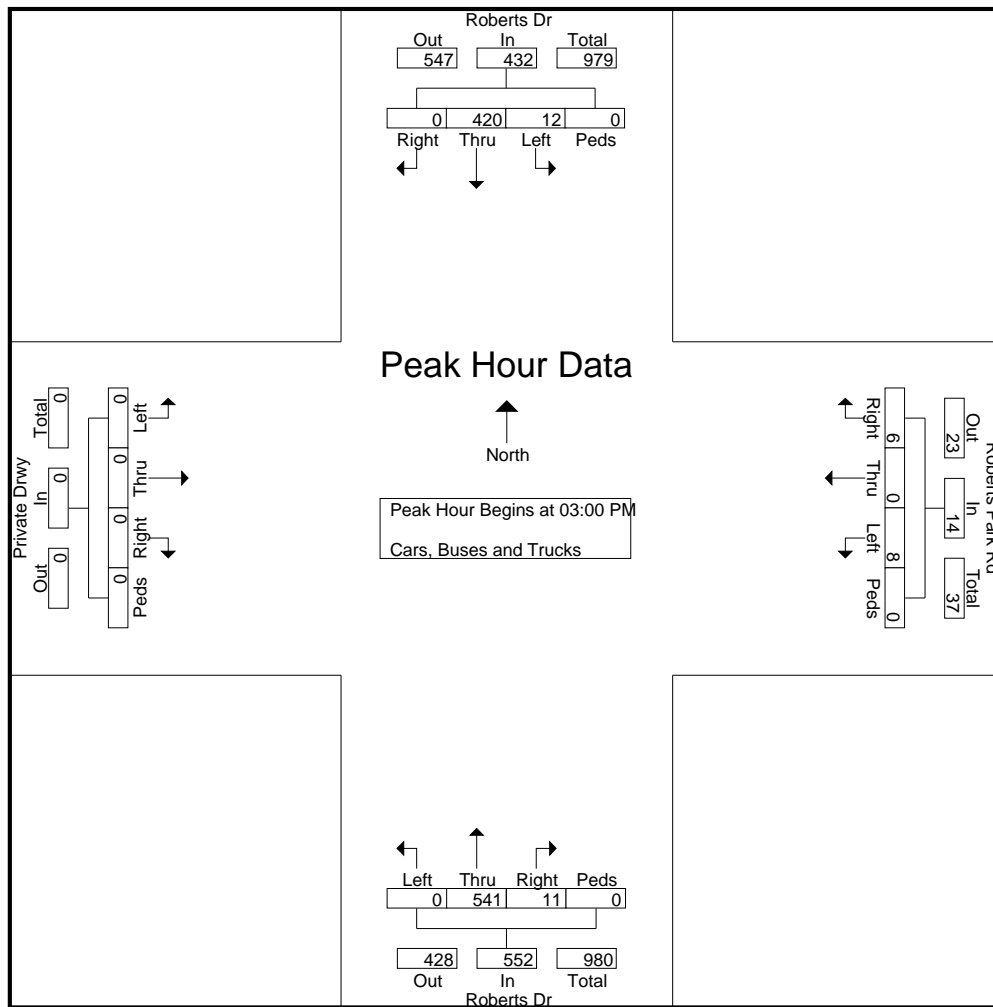
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	120	2	0	122	0	93	0	0	93	0	0	0	0	0	1	0	1	0	2	217
03:15 PM	0	151	3	0	154	2	111	0	0	113	0	0	0	0	0	0	0	3	0	3	270
03:30 PM	0	138	3	0	141	1	110	0	0	111	0	0	0	0	0	1	0	1	0	2	254
03:45 PM	0	132	3	0	135	9	106	0	0	115	0	0	0	0	0	6	0	1	0	7	257
Total Volume	0	541	11	0	552	12	420	0	0	432	0	0	0	0	0	8	0	6	0	14	998
% App. Total	0	98	2	0		2.8	97.2	0	0		0	0	0	0		57.1	0	42.9	0		
PHF	.000	.896	.917	.000	.896	.333	.946	.000	.000	.939	.000	.000	.000	.000	.000	.333	.000	.500	.000	.500	.924



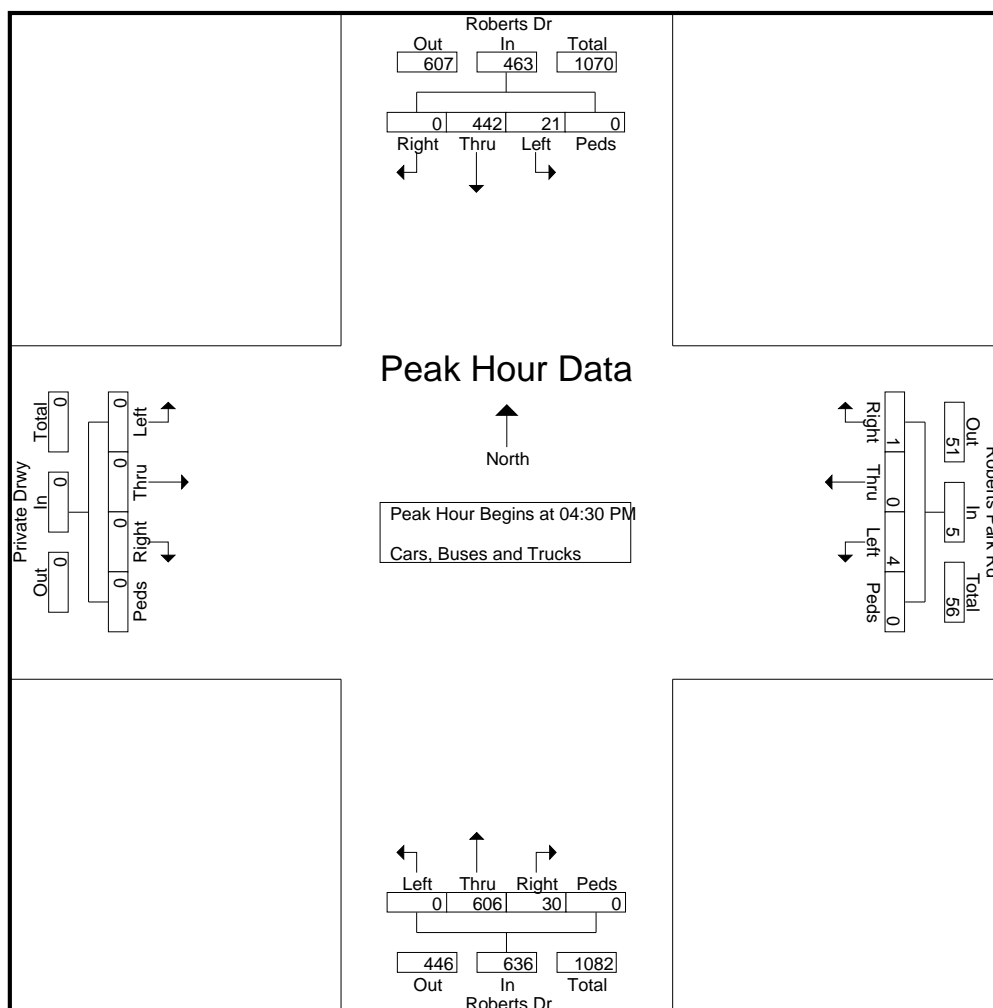
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TMC Data
 Roberts Dr @ Roberts Park Rd
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020002
 Site Code : 40020002
 Start Date : 2/23/2017
 Page No : 4

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Private Drwy Eastbound					Roberts Park Rd Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	144	6	0	150	5	122	0	0	127	0	0	0	0	0	3	0	0	0	3	280
04:45 PM	0	148	12	0	160	10	118	0	0	128	0	0	0	0	0	1	0	0	0	1	289
05:00 PM	0	155	5	0	160	1	100	0	0	101	0	0	0	0	0	0	0	1	0	1	262
05:15 PM	0	159	7	0	166	5	102	0	0	107	0	0	0	0	0	0	0	0	0	0	273
Total Volume	0	606	30	0	636	21	442	0	0	463	0	0	0	0	0	4	0	1	0	5	1104
% App. Total	0	95.3	4.7	0		4.5	95.5	0	0		0	0	0	0		80	0	20	0		
PHF	.000	.953	.625	.000	.958	.525	.906	.000	.000	.904	.000	.000	.000	.000	.000	.333	.000	.250	.000	.417	.955



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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	1	84	0	0	85	0	151	2	0	153	7	0	4	0	11	0	0	0	0	0	249
07:15 AM	3	117	0	0	120	0	168	4	0	172	11	0	4	0	15	0	0	0	0	0	307
07:30 AM	1	67	0	0	68	0	163	15	0	178	14	0	2	0	16	0	0	0	0	0	262
07:45 AM	2	63	0	0	65	0	158	6	0	164	2	0	14	0	16	0	0	0	0	0	245
Total	7	331	0	0	338	0	640	27	0	667	34	0	24	0	58	0	0	0	0	0	1063
08:00 AM	2	76	0	0	78	0	144	1	0	145	0	0	3	0	3	0	0	0	0	0	226
08:15 AM	3	73	0	0	76	0	113	1	0	114	4	0	3	0	7	0	0	0	0	0	197
08:30 AM	1	77	0	0	78	0	148	0	0	148	2	0	2	0	4	0	0	0	0	0	230
08:45 AM	1	82	0	0	83	0	174	1	0	175	2	0	2	0	4	0	0	0	0	0	262
Total	7	308	0	0	315	0	579	3	0	582	8	0	10	0	18	0	0	0	0	0	915
*** BREAK ***																					
02:00 PM	2	110	0	0	112	0	100	1	0	101	4	0	2	0	6	0	0	0	0	0	219
02:15 PM	2	112	0	0	114	0	98	3	0	101	4	0	1	0	5	0	0	0	0	0	220
02:30 PM	0	109	0	0	109	0	106	11	0	117	5	0	4	0	9	0	0	0	0	0	235
02:45 PM	1	115	0	0	116	0	97	0	0	97	0	0	2	0	2	0	0	0	0	0	215
Total	5	446	0	0	451	0	401	15	0	416	13	0	9	0	22	0	0	0	0	0	889
03:00 PM	2	132	0	0	134	0	106	1	0	107	5	0	2	0	7	0	0	0	0	0	248
03:15 PM	4	140	0	0	144	0	112	0	0	112	5	0	2	0	7	0	0	0	0	0	263
03:30 PM	4	146	0	0	150	0	109	0	0	109	7	0	4	0	11	0	0	0	0	0	270
03:45 PM	1	133	0	0	134	0	106	8	0	114	4	0	2	0	6	0	0	0	0	0	254
Total	11	551	0	0	562	0	433	9	0	442	21	0	10	0	31	0	0	0	0	0	1035
04:00 PM	1	134	0	0	135	0	109	4	0	113	2	0	3	0	5	0	0	0	0	0	253
04:15 PM	5	137	0	0	142	0	116	3	0	119	4	0	3	0	7	0	0	0	0	0	268
04:30 PM	4	142	0	0	146	0	112	1	0	113	1	0	5	0	6	0	0	0	0	0	265
04:45 PM	5	146	0	0	151	0	109	4	0	113	3	0	4	0	7	0	0	0	0	0	271
Total	15	559	0	0	574	0	446	12	0	458	10	0	15	0	25	0	0	0	0	0	1057
05:00 PM	4	167	0	0	171	0	107	3	0	110	6	0	1	0	7	0	0	0	0	0	288
05:15 PM	2	162	0	0	164	0	104	2	0	106	4	0	1	0	5	0	0	0	0	0	275
05:30 PM	1	153	0	0	154	0	100	5	0	105	10	0	2	0	12	0	0	0	0	0	271
05:45 PM	4	150	0	0	154	0	110	2	0	112	5	0	4	0	9	0	0	0	0	0	275
Total	11	632	0	0	643	0	421	12	0	433	25	0	8	0	33	0	0	0	0	0	1109
Grand Total	56	2827	0	0	2883	0	2920	78	0	2998	111	0	76	0	187	0	0	0	0	0	6068
Apprch %	1.9	98.1	0	0		0	97.4	2.6	0		59.4	0	40.6	0		0	0	0	0		
Total %	0.9	46.6	0	0	47.5	0	48.1	1.3	0	49.4	1.8	0	1.3	0	3.1	0	0	0	0	0	

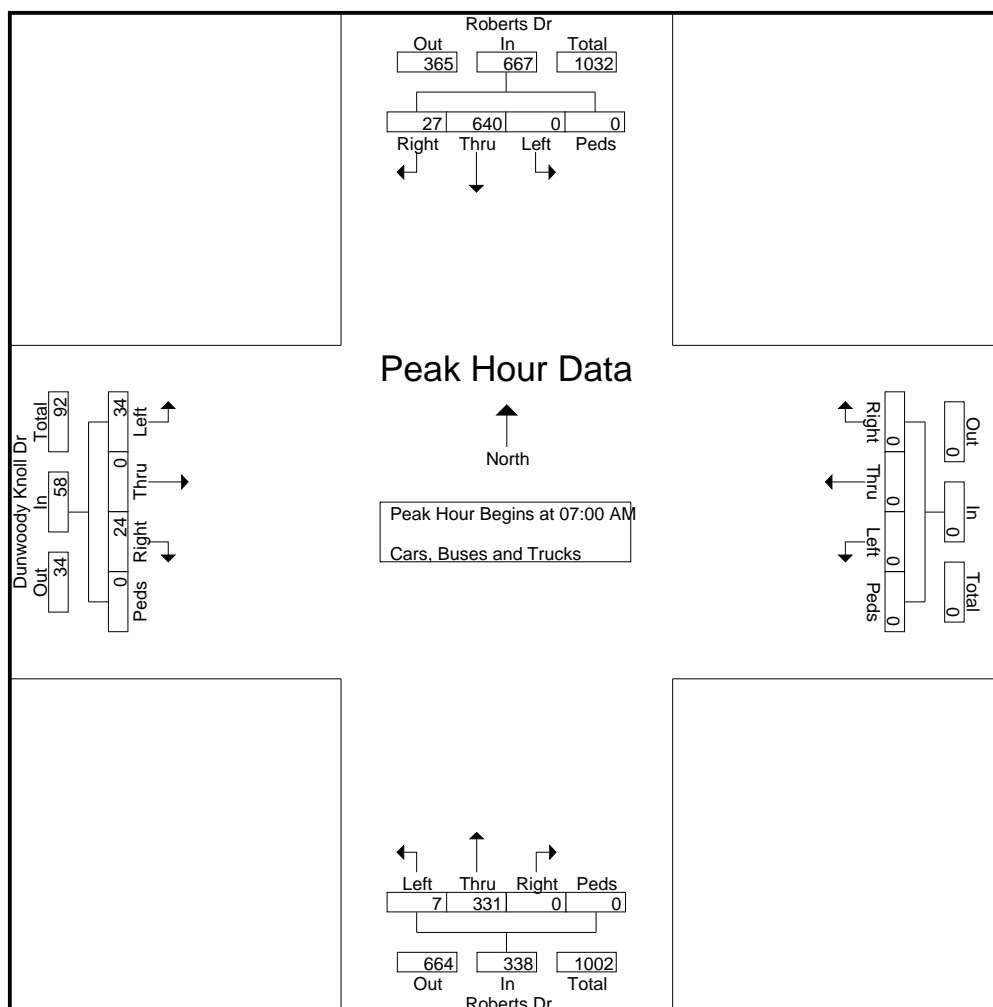
Reliable Traffic Data Services, LLC

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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am I 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	1	84	0	0	85	0	151	2	0	153	7	0	4	0	11	0	0	0	0	0	249
07:15 AM	3	117	0	0	120	0	168	4	0	172	11	0	4	0	15	0	0	0	0	0	307
07:30 AM	1	67	0	0	68	0	163	15	0	178	14	0	2	0	16	0	0	0	0	0	262
07:45 AM	2	63	0	0	65	0	158	6	0	164	2	0	14	0	16	0	0	0	0	0	245
Total Volume	7	331	0	0	338	0	640	27	0	667	34	0	24	0	58	0	0	0	0	0	1063
% App. Total	2.1	97.9	0	0		0	96	4	0		58.6	0	41.4	0		0	0	0	0		
PHF	.583	.707	.000	.000	.704	.000	.952	.450	.000	.937	.607	.000	.429	.000	.906	.000	.000	.000	.000	.000	.866



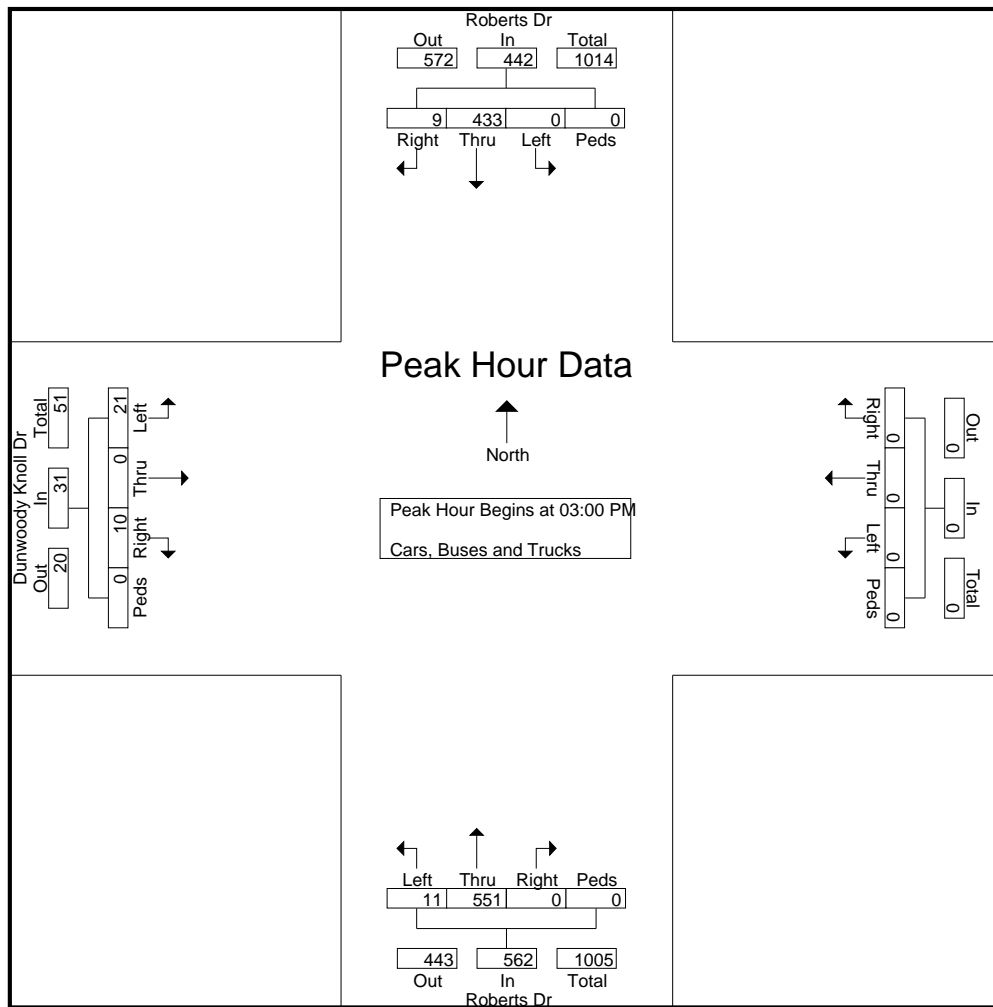
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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	2	132	0	0	134	0	106	1	0	107	5	0	2	0	7	0	0	0	0	0	248
03:15 PM	4	140	0	0	144	0	112	0	0	112	5	0	2	0	7	0	0	0	0	0	263
03:30 PM	4	146	0	0	150	0	109	0	0	109	7	0	4	0	11	0	0	0	0	0	270
03:45 PM	1	133	0	0	134	0	106	8	0	114	4	0	2	0	6	0	0	0	0	0	254
Total Volume	11	551	0	0	562	0	433	9	0	442	21	0	10	0	31	0	0	0	0	0	1035
% App. Total	2	98	0	0		0	98	2	0		67.7	0	32.3	0		0	0	0	0		
PHF	.688	.943	.000	.000	.937	.000	.967	.281	.000	.969	.750	.000	.625	.000	.705	.000	.000	.000	.000	.000	.958



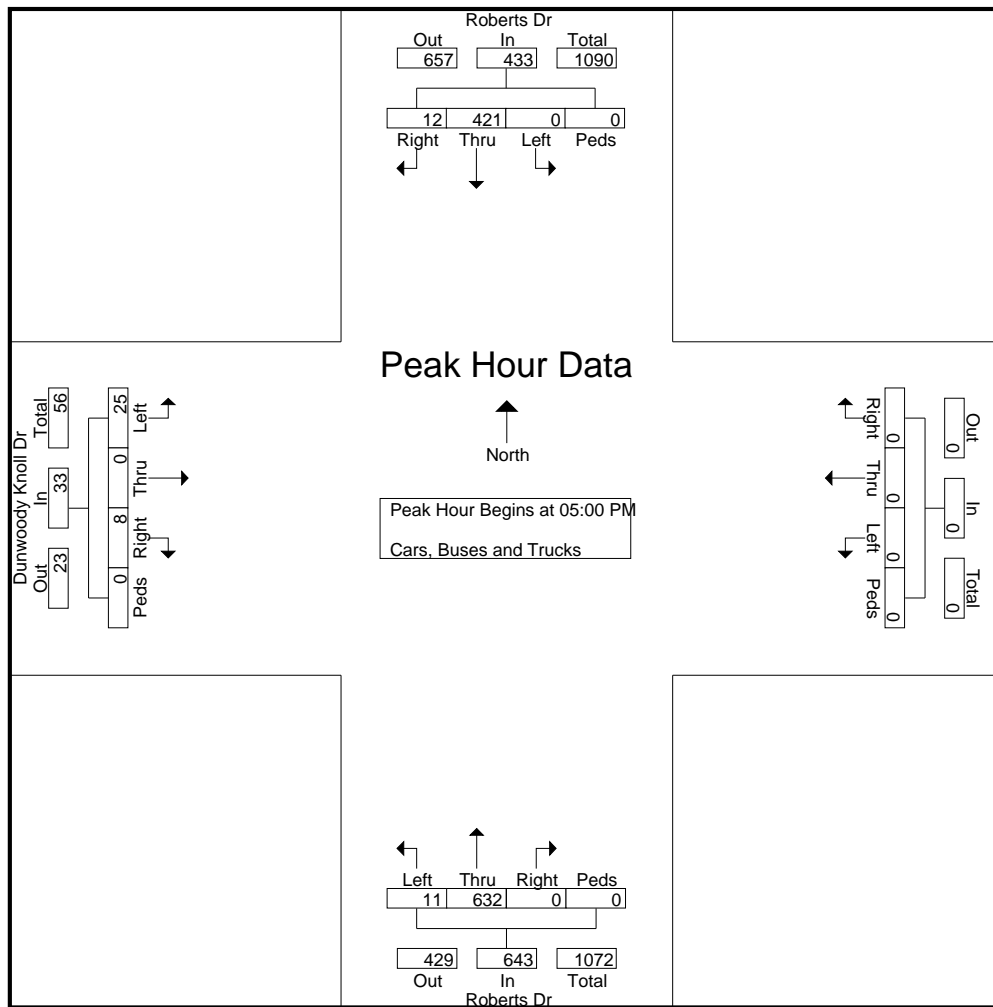
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TMC Data
 Roberts Dr @ Dunwoody Knoll Dr
 Dunwoody, GA
 7-9am | 2-6pm

File Name : 40020003
 Site Code : 40020003
 Start Date : 2/23/2017
 Page No : 4

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Dunwoody Knoll Dr Eastbound					Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	167	0	0	171	0	107	3	0	110	6	0	1	0	7	0	0	0	0	0	288
05:15 PM	2	162	0	0	164	0	104	2	0	106	4	0	1	0	5	0	0	0	0	0	275
05:30 PM	1	153	0	0	154	0	100	5	0	105	10	0	2	0	12	0	0	0	0	0	271
05:45 PM	4	150	0	0	154	0	110	2	0	112	5	0	4	0	9	0	0	0	0	0	275
Total Volume	11	632	0	0	643	0	421	12	0	433	25	0	8	0	33	0	0	0	0	0	1109
% App. Total	1.7	98.3	0	0		0	97.2	2.8	0		75.8	0	24.2	0		0	0	0	0		
PHF	.688	.946	.000	.000	.940	.000	.957	.600	.000	.967	.625	.000	.500	.000	.688	.000	.000	.000	.000	.000	.963



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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	58	21	0	79	5	101	0	0	106	0	0	0	0	0	4	0	1	0	5	190
07:15 AM	0	54	79	0	133	11	100	0	19	130	0	0	0	0	0	54	0	6	3	63	326
07:30 AM	0	60	45	0	105	40	102	0	24	166	0	0	0	0	0	91	0	2	8	101	372
07:45 AM	0	56	2	0	58	2	106	0	1	109	0	0	0	0	0	15	0	2	2	19	186
Total	0	228	147	0	375	58	409	0	44	511	0	0	0	0	0	164	0	11	13	188	1074
08:00 AM	0	66	1	0	67	0	136	0	0	136	0	0	0	0	0	2	0	0	1	3	206
08:15 AM	0	72	2	0	74	0	131	0	0	131	0	0	0	0	0	3	0	0	0	3	208
08:30 AM	0	75	1	0	76	0	128	0	0	128	0	0	0	0	0	1	0	0	0	1	205
08:45 AM	0	71	1	0	72	1	122	0	2	125	0	0	0	0	0	2	0	0	2	4	201
Total	0	284	5	0	289	1	517	0	2	520	0	0	0	0	0	8	0	0	3	11	820
*** BREAK ***																					
02:00 PM	0	98	8	0	106	6	85	0	1	92	0	0	0	0	0	5	0	2	2	9	207
02:15 PM	0	101	16	0	117	6	82	0	57	145	0	0	0	0	0	14	0	2	5	21	283
02:30 PM	0	121	9	0	130	5	79	0	0	84	0	0	0	0	0	23	0	2	1	26	240
02:45 PM	0	112	1	0	113	0	76	0	0	76	0	0	0	0	0	5	0	2	0	7	196
Total	0	432	34	0	466	17	322	0	58	397	0	0	0	0	0	47	0	8	8	63	926
03:00 PM	0	118	1	0	119	0	84	0	0	84	0	0	0	0	0	14	0	0	0	14	217
03:15 PM	0	114	0	0	114	2	88	0	0	90	0	0	0	0	0	5	0	1	0	6	210
03:30 PM	0	120	2	0	122	1	93	0	0	94	0	0	0	0	0	8	0	0	0	8	224
03:45 PM	0	125	3	0	128	1	79	0	0	80	0	0	0	0	0	9	0	1	0	10	218
Total	0	477	6	0	483	4	344	0	0	348	0	0	0	0	0	36	0	2	0	38	869
Grand Total	0	1421	192	0	1613	80	1592	0	104	1776	0	0	0	0	0	255	0	21	24	300	3689
Apprch %	0	88.1	11.9	0		4.5	89.6	0	5.9		0	0	0	0		85	0	7	8		
Total %	0	38.5	5.2	0	43.7	2.2	43.2	0	2.8	48.1	0	0	0	0	0	6.9	0	0.6	0.7	8.1	

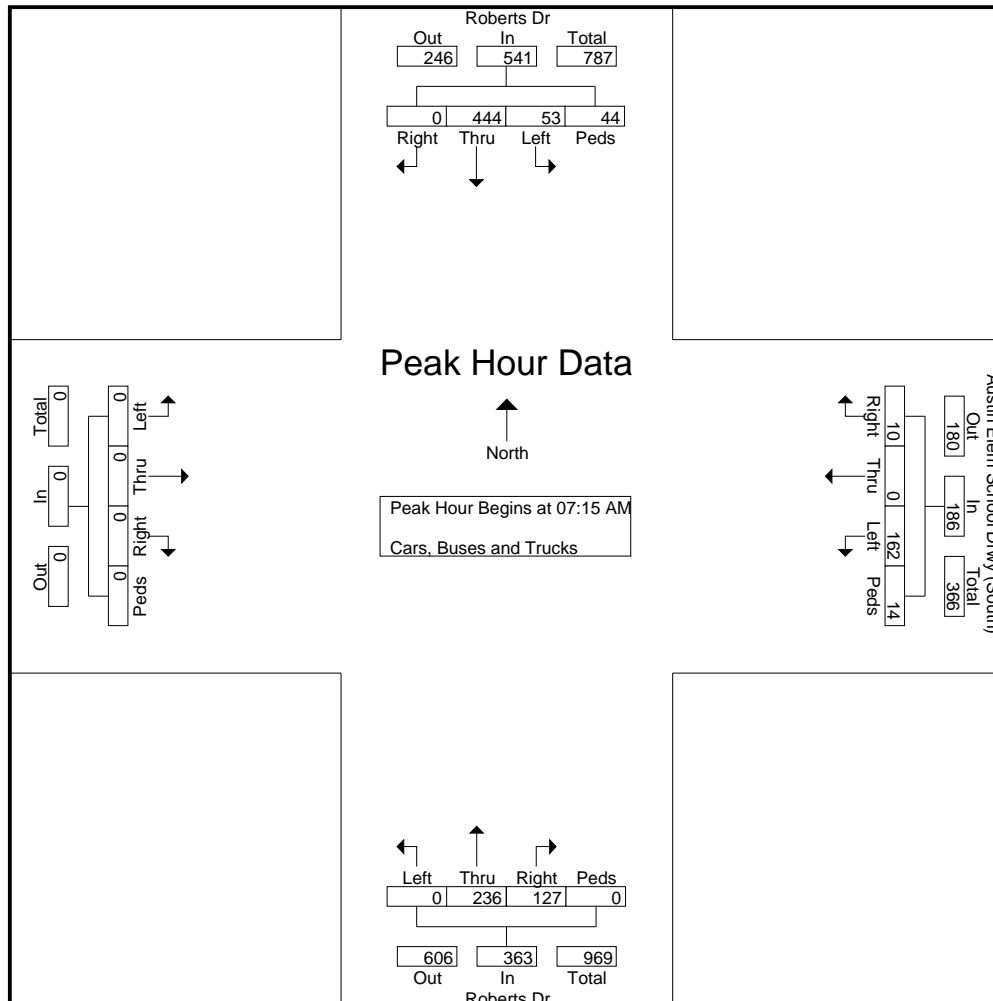
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am I 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	54	79	0	133	11	100	0	19	130	0	0	0	0	0	54	0	6	3	63	326
07:30 AM	0	60	45	0	105	40	102	0	24	166	0	0	0	0	0	91	0	2	8	101	372
07:45 AM	0	56	2	0	58	2	106	0	1	109	0	0	0	0	0	15	0	2	2	19	186
08:00 AM	0	66	1	0	67	0	136	0	0	136	0	0	0	0	0	2	0	0	1	3	206
Total Volume	0	236	127	0	363	53	444	0	44	541	0	0	0	0	0	162	0	10	14	186	1090
% App. Total	0	65	35	0		9.8	82.1	0	8.1		0	0	0	0		87.1	0	5.4	7.5		
PHF	.000	.894	.402	.000	.682	.331	.816	.000	.458	.815	.000	.000	.000	.000	.000	.445	.000	.417	.438	.460	.733



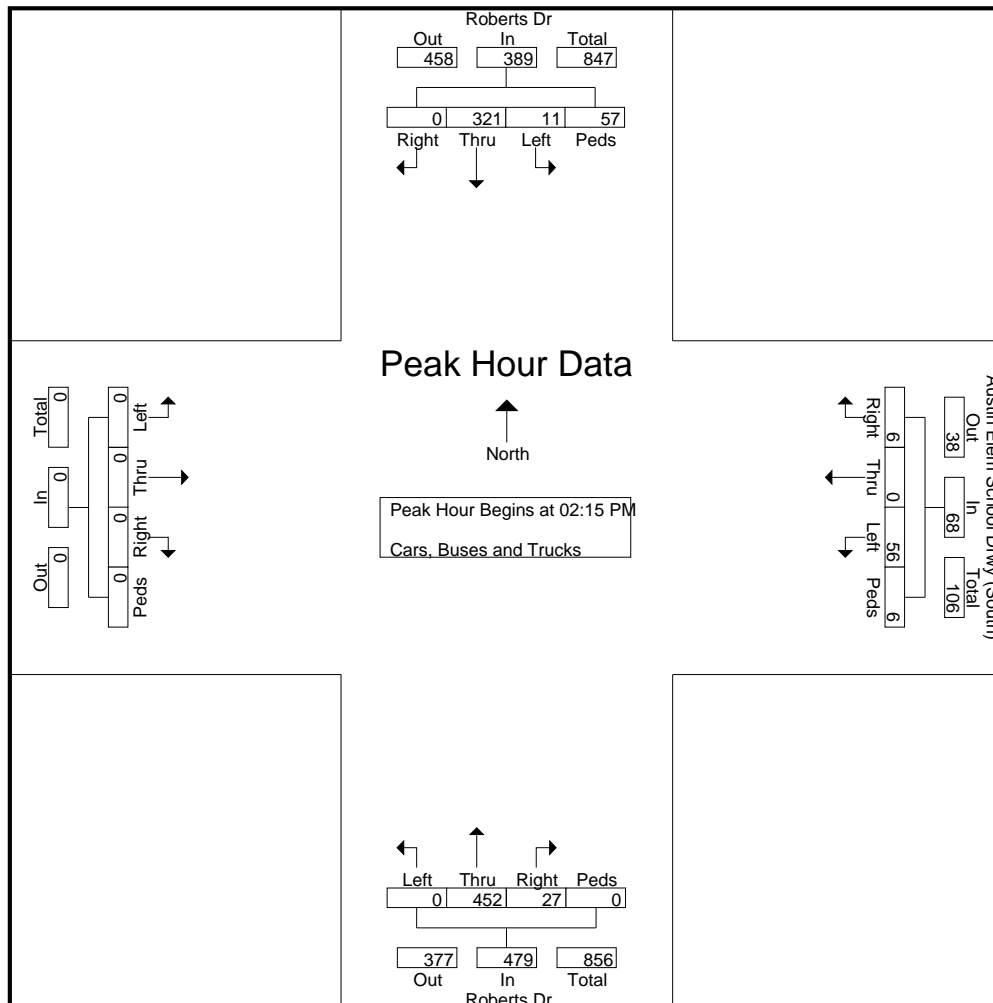
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (S)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020004
 Site Code : 40020004
 Start Date : 3/7/2017
 Page No : 3

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (South) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	101	16	0	117	6	82	0	57	145	0	0	0	0	0	14	0	2	5	21	283
02:30 PM	0	121	9	0	130	5	79	0	0	84	0	0	0	0	0	23	0	2	1	26	240
02:45 PM	0	112	1	0	113	0	76	0	0	76	0	0	0	0	0	5	0	2	0	7	196
03:00 PM	0	118	1	0	119	0	84	0	0	84	0	0	0	0	0	14	0	0	0	14	217
Total Volume	0	452	27	0	479	11	321	0	57	389	0	0	0	0	0	56	0	6	6	68	936
% App. Total	0	94.4	5.6	0		2.8	82.5	0	14.7		0	0	0	0		82.4	0	8.8	8.8		
PHF	.000	.934	.422	.000	.921	.458	.955	.000	.250	.671	.000	.000	.000	.000	.000	.609	.000	.750	.300	.654	.827



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TMC Data
 Roberts Dr @ Austin Elem School Drwy (N)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020005
 Site Code : 40020005
 Start Date : 3/7/2017
 Page No : 1

Groups Printed- Cars, Buses and Trucks

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	52	3	0	55	5	100	0	0	105	0	0	0	0	0	3	0	2	1	6	166
07:15 AM	0	57	5	0	62	27	109	0	0	136	0	0	0	0	0	5	0	18	0	23	221
07:30 AM	0	60	6	0	66	60	130	0	0	190	0	0	0	0	0	1	0	67	0	68	324
07:45 AM	0	63	2	0	65	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	176
Total	0	232	16	0	248	92	450	0	0	542	0	0	0	0	0	9	0	87	1	97	887
08:00 AM	0	68	0	0	68	0	132	0	0	132	0	0	0	0	0	0	0	1	0	1	201
08:15 AM	0	73	0	0	73	0	130	0	0	130	0	0	0	0	0	0	0	0	0	0	203
08:30 AM	0	78	0	0	78	0	126	0	0	126	0	0	0	0	0	0	0	0	2	2	206
08:45 AM	0	73	0	0	73	0	120	0	0	120	0	0	0	0	0	0	0	0	1	1	194
Total	0	292	0	0	292	0	508	0	0	508	0	0	0	0	0	0	0	1	3	4	804
*** BREAK ***																					
02:00 PM	0	100	6	0	106	1	77	0	0	78	0	0	0	0	0	4	0	1	1	6	190
02:15 PM	0	103	2	0	105	1	83	0	0	84	0	0	0	0	0	13	0	8	0	21	210
02:30 PM	0	121	0	0	121	0	79	0	0	79	0	0	0	0	0	2	0	3	0	5	205
02:45 PM	0	116	0	0	116	1	75	0	0	76	0	0	0	0	0	1	0	2	0	3	195
Total	0	440	8	0	448	3	314	0	0	317	0	0	0	0	0	20	0	14	1	35	800
03:00 PM	0	118	0	0	118	0	85	0	0	85	0	0	0	0	0	4	0	2	0	6	209
03:15 PM	0	116	0	0	116	0	87	0	0	87	0	0	0	0	0	1	0	2	0	3	206
03:30 PM	0	125	1	0	126	0	84	0	0	84	0	0	0	0	0	3	0	1	0	4	214
03:45 PM	0	123	4	0	127	3	78	0	0	81	0	0	0	0	0	1	0	2	0	3	211
Total	0	482	5	0	487	3	334	0	0	337	0	0	0	0	0	9	0	7	0	16	840
Grand Total	0	1446	29	0	1475	98	1606	0	0	1704	0	0	0	0	0	38	0	109	5	152	3331
Apprch %	0	98	2	0		5.8	94.2	0	0		0	0	0	0		25	0	71.7	3.3		
Total %	0	43.4	0.9	0	44.3	2.9	48.2	0	0	51.2	0	0	0	0	0	1.1	0	3.3	0.2	4.6	

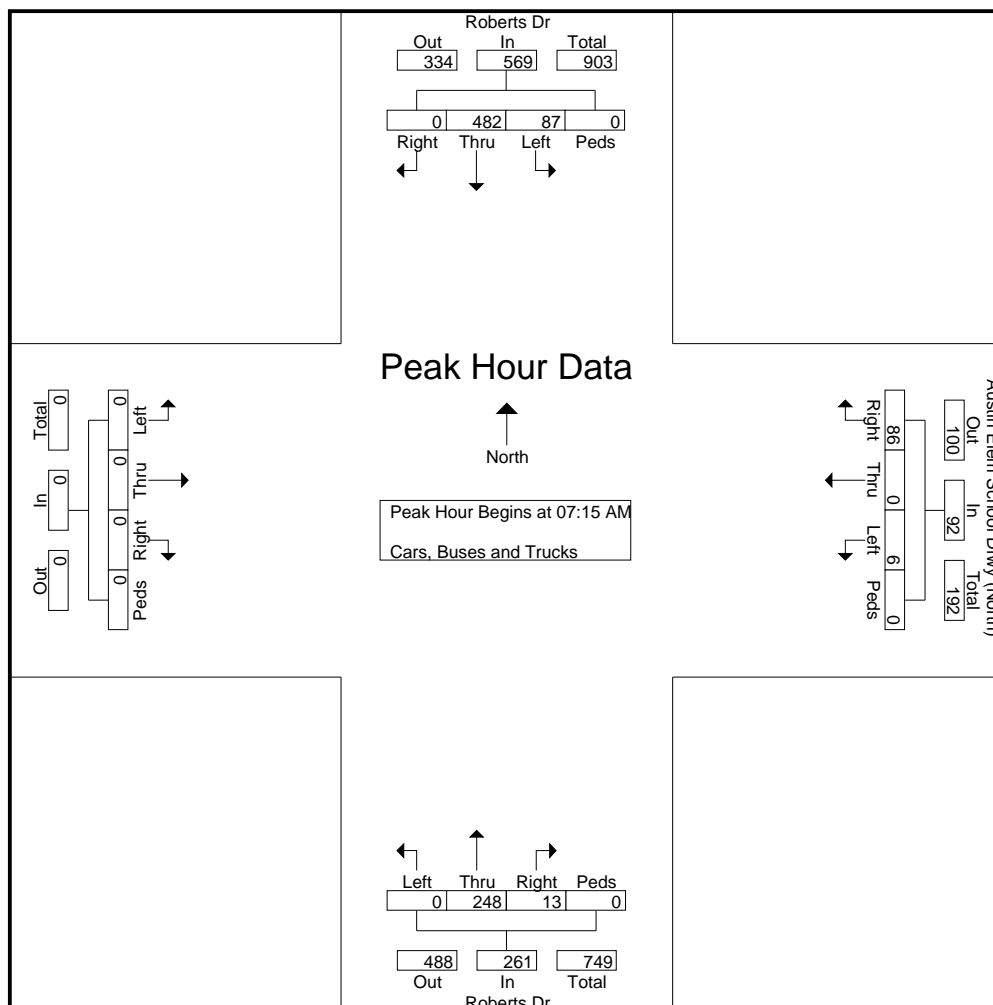
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TMC Data
 Roberts Dr @ Austin Elem School Drwy (N)
 Dunwoody, GA
 7-9am | 2-4pm

File Name : 40020005
 Site Code : 40020005
 Start Date : 3/7/2017
 Page No : 2

Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	57	5	0	62	27	109	0	0	136	0	0	0	0	0	5	0	18	0	23	221
07:30 AM	0	60	6	0	66	60	130	0	0	190	0	0	0	0	0	1	0	67	0	68	324
07:45 AM	0	63	2	0	65	0	111	0	0	111	0	0	0	0	0	0	0	0	0	0	176
08:00 AM	0	68	0	0	68	0	132	0	0	132	0	0	0	0	0	0	0	1	0	1	201
Total Volume	0	248	13	0	261	87	482	0	0	569	0	0	0	0	0	6	0	86	0	92	922
% App. Total	0	95	5	0		15.3	84.7	0	0		0	0	0	0		6.5	0	93.5	0		
PHF	.000	.912	.542	.000	.960	.363	.913	.000	.000	.749	.000	.000	.000	.000	.000	.300	.000	.321	.000	.338	.711



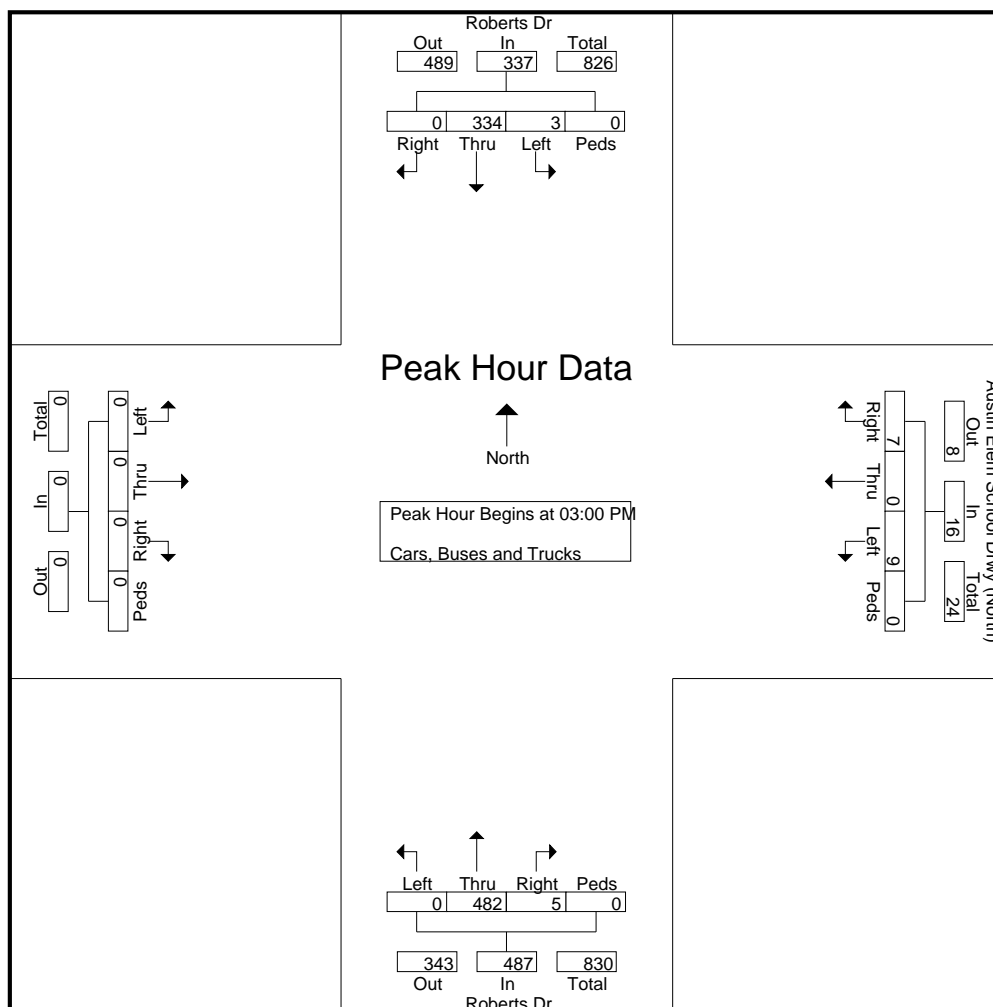
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 Page No : 3

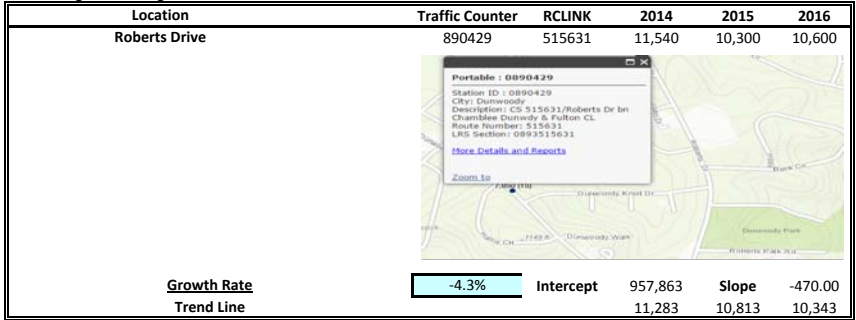
Start Time	Roberts Dr Northbound					Roberts Dr Southbound					Eastbound					Austin Elem School Drwy (North) Westbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	118	0	0	118	0	85	0	0	85	0	0	0	0	0	4	0	2	0	6	209
03:15 PM	0	116	0	0	116	0	87	0	0	87	0	0	0	0	0	1	0	2	0	3	206
03:30 PM	0	125	1	0	126	0	84	0	0	84	0	0	0	0	0	3	0	1	0	4	214
03:45 PM	0	123	4	0	127	3	78	0	0	81	0	0	0	0	0	1	0	2	0	3	211
Total Volume	0	482	5	0	487	3	334	0	0	337	0	0	0	0	0	9	0	7	0	16	840
% App. Total	0	.99	.01	0		0.9	99.1	0	0		0	0	0	0		56.2	0	43.8	0		
PHF	.000	.964	.313	.000	.959	.250	.960	.000	.000	.968	.000	.000	.000	.000	.000	.563	.000	.875	.000	.667	.981



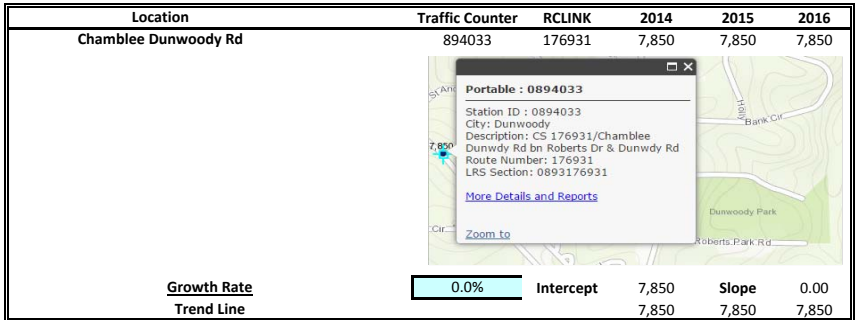
LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2014	2015	2016
Roberts Drive	-4.3%	0.53	890429	515631	11,540	10,300	10,600
Chamblee Dunwoody Rd	0.0%		894033	176931	7,850	7,850	7,850
Chamblee Dunwoody RD S	0.0%		893432	515631	18,700	18,700	18,700

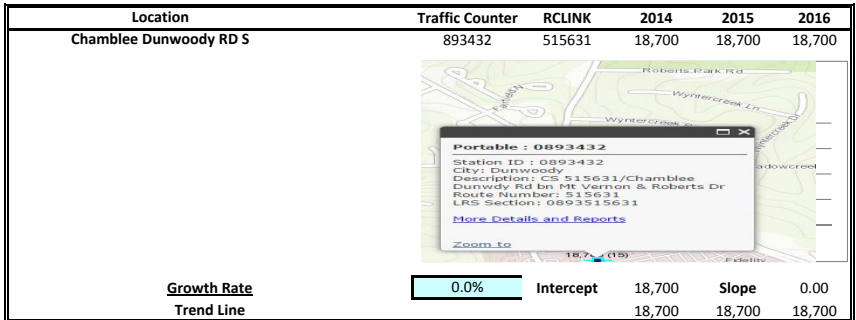
Weighted Average -1.3% 0.53 Sum of Count Stations = 38,090 36,850 37,150



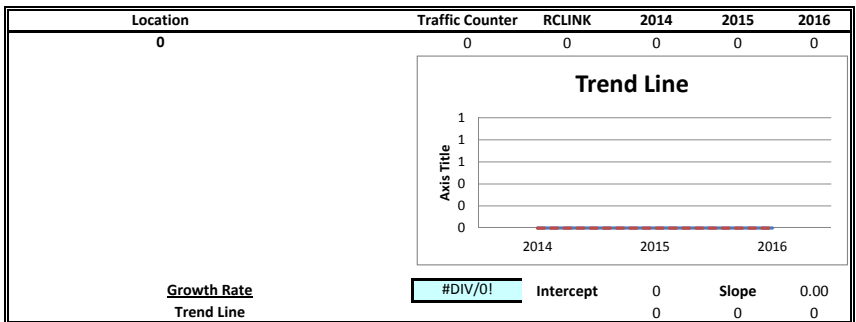
Sum X
Sum Y
Sum XY
Sum X²
Count
a
b
Mean Y
SS_{tot}
SS_{res}
R²



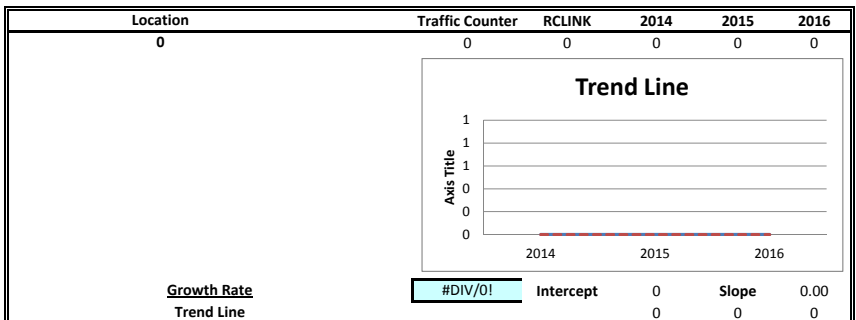
Sum X
Sum Y
Sum XY
Sum X²
Count
a
b
Mean Y
SS_{tot}
SS_{res}
R²



Sum X
Sum Y
Sum XY
Sum X²
Count
a
b
Mean Y
SS_{tot}
SS_{res}
R²



Sum X
Sum Y
Sum XY
Sum X²
Count
a
b
Mean Y
SS_{tot}
SS_{res}
R²



Sum X
Sum Y
Sum XY
Sum X²
Count
a
b
Mean Y
SS_{tot}
SS_{res}
R²

EXISTING INTERSECTION ANALYSIS

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Existing AM
4/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↗
Traffic Volume (vph)	6	510	170	311	615
Future Volume (vph)	6	510	170	311	615
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	40.0	40.0	19.1	80.0	60.9
Total Split (%)	33.3%	33.3%	15.9%	66.7%	50.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	23.7	23.7	85.3	85.3	69.5
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.58
v/c Ratio	0.02	0.93	0.49	0.32	0.65
Control Delay	32.8	38.7	11.2	8.6	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	38.7	11.2	8.6	23.5
LOS	C	D	B	A	C
Approach Delay	38.6			9.5	23.5
Approach LOS	D			A	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Existing AM
 4/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	6	510	170	311	615	12		
Future Volume (veh/h)	6	510	170	311	615	12		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	8	0	207	420	661	32		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.93	0.82	0.74	0.93	0.38		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	21	19	653	1670	1426	69		
Arrive On Green	0.01	0.00	0.04	0.90	0.81	0.81		
Sat Flow, veh/h	1774	1583	1774	1863	1762	85		
Grp Volume(v), veh/h	8	0	207	420	0	693		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1848		
Q Serve(g_s), s	0.5	0.0	2.1	3.6	0.0	13.7		
Cycle Q Clear(g_c), s	0.5	0.0	2.1	3.6	0.0	13.7		
Prop In Lane	1.00	1.00	1.00			0.05		
Lane Grp Cap(c), veh/h	21	19	653	1670	0	1495		
V/C Ratio(X)	0.39	0.00	0.32	0.25	0.00	0.46		
Avail Cap(c_a), veh/h	510	455	781	1670	0	1495		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	58.9	0.0	2.6	0.8	0.0	3.5		
Incr Delay (d2), s/veh	11.3	0.0	0.3	0.4	0.0	1.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.3	3.5	0.0	11.8		
LnGrp Delay(d),s/veh	70.2	0.0	2.9	1.2	0.0	4.5		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	8			627	693			
Approach Delay, s/veh	70.1			1.8	4.5			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.1		6.9	10.5	102.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		74.5		34.5	13.6	55.4		
Max Q Clear Time (g_c+I1), s		5.6		2.5	4.1	15.7		
Green Ext Time (p_c), s		45.5		0.0	0.4	30.3		
Intersection Summary								
HCM 2010 Ctrl Delay			3.6					
HCM 2010 LOS			A					

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	1	0	1	1	0	1	0	329	0	2	645	0
Future Vol, veh/h	1	0	1	1	0	1	0	329	0	2	645	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	25	25	92	25	92	69	92	25	98	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	4	0	4	0	477	0	8	658	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1153	1151	658	1153	1151	477	658	0	0	477	0	0
Stage 1	674	674	-	477	477	-	-	-	-	-	-	-
Stage 2	479	477	-	676	674	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	174	198	464	174	198	588	930	-	-	1085	-	-
Stage 1	444	454	-	569	556	-	-	-	-	-	-	-
Stage 2	568	556	-	443	454	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	171	196	464	171	196	588	930	-	-	1085	-	-
Mov Cap-2 Maneuver	171	196	-	171	196	-	-	-	-	-	-	-
Stage 1	444	449	-	569	556	-	-	-	-	-	-	-
Stage 2	564	556	-	434	449	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	19	0	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	930	-	-	250	265	1085	-	-
HCM Lane V/C Ratio	-	-	-	0.032	0.03	0.007	-	-
HCM Control Delay (s)	0	-	-	19.9	19	8.3	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	34	24	7	331	640	27
Future Vol, veh/h	34	24	7	331	640	27
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	61	43	58	71	95	45
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	56	12	466	674	60

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1194	704	734 0
Stage 1	704	-	- -
Stage 2	490	-	- -
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	206	437	871 -
Stage 1	490	-	- -
Stage 2	616	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	202	437	871 -
Mov Cap-2 Maneuver	202	-	- -
Stage 1	490	-	- -
Stage 2	604	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	26.6	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	871	-	276	-	-
HCM Lane V/C Ratio	0.014	-	0.404	-	-
HCM Control Delay (s)	9.2	0	26.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	1.9	-	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	17	311	363	520	400
Future Volume (vph)	17	311	363	520	400
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	31.0	31.0	38.0	89.0	51.0
Total Split (%)	25.8%	25.8%	31.7%	74.2%	42.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	9.6	9.6	99.4	99.4	80.8
Actuated g/C Ratio	0.08	0.08	0.83	0.83	0.67
v/c Ratio	0.20	0.77	0.54	0.37	0.36
Control Delay	52.5	17.8	5.5	3.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	17.8	5.5	3.7	11.2
LOS	D	B	A	A	B
Approach Delay	20.5			4.4	11.2
Approach LOS	C			A	B

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 9.4
 Intersection Capacity Utilization 60.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Existing School Dismissal
 4/18/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	17	311	363	520	400	15		
Future Volume (veh/h)	17	311	363	520	400	15		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	28	0	408	571	435	20		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.61	0.93	0.89	0.91	0.92	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	54	48	825	1635	1339	62		
Arrive On Green	0.03	0.00	0.07	0.88	0.76	0.76		
Sat Flow, veh/h	1774	1583	1774	1863	1767	81		
Grp Volume(v), veh/h	28	0	408	571	0	455		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1848		
Q Serve(g_s), s	1.9	0.0	5.4	6.5	0.0	9.5		
Cycle Q Clear(g_c), s	1.9	0.0	5.4	6.5	0.0	9.5		
Prop In Lane	1.00	1.00	1.00			0.04		
Lane Grp Cap(c), veh/h	54	48	825	1635	0	1401		
V/C Ratio(X)	0.52	0.00	0.49	0.35	0.00	0.32		
Avail Cap(c_a), veh/h	377	336	1173	1635	0	1401		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	57.3	0.0	2.8	1.3	0.0	4.7		
Incr Delay (d2), s/veh	7.6	0.0	0.5	0.6	0.0	0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	1.9	0.0	4.7	6.2	0.0	8.7		
LnGrp Delay(d),s/veh	64.9	0.0	3.2	1.9	0.0	5.3		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	28			979	455			
Approach Delay, s/veh	64.9			2.4	5.3			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		110.9		9.1	14.4	96.4		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		83.5		25.5	32.5	45.5		
Max Q Clear Time (g_c+I1), s		8.5		3.9	7.4	11.5		
Green Ext Time (p_c), s		42.5		0.0	1.5	24.9		
Intersection Summary								
HCM 2010 Ctrl Delay			4.5					
HCM 2010 LOS			A					

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	8	0	6	0	541	11	12	420	0
Future Vol, veh/h	0	0	0	8	0	6	0	541	11	12	420	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	33	92	50	92	90	92	33	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	24	0	12	0	601	12	36	442	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1128	1128	442	1122	1122	607	442	0	0	613	0	0
Stage 1	515	515	-	607	607	-	-	-	-	-	-	-
Stage 2	613	613	-	515	515	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	181	204	615	183	206	496	1118	-	-	966	-	-
Stage 1	543	535	-	483	486	-	-	-	-	-	-	-
Stage 2	480	483	-	543	535	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	170	194	615	176	196	496	1118	-	-	966	-	-
Mov Cap-2 Maneuver	170	194	-	176	196	-	-	-	-	-	-	-
Stage 1	543	509	-	483	486	-	-	-	-	-	-	-
Stage 2	468	483	-	516	509	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	24.1	0	0.7
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1118	-	-	- 224	966	-	-
HCM Lane V/C Ratio	-	-	-	- 0.162	0.038	-	-
HCM Control Delay (s)	0	-	-	0 24.1	8.9	0	-
HCM Lane LOS	A	-	-	A C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	- 0.6	0.1	-	-

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	21	10	11	551	433	9
Future Vol, veh/h	21	10	11	551	433	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	75	62	69	94	97	28
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	16	16	586	446	32

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1080	462	479 0
Stage 1	462	-	- -
Stage 2	618	-	- -
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	241	600	1083 -
Stage 1	634	-	- -
Stage 2	538	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	236	600	1083 -
Mov Cap-2 Maneuver	236	-	- -
Stage 1	634	-	- -
Stage 2	526	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1083	-	303	-	-
HCM Lane V/C Ratio	0.015	-	0.146	-	-
HCM Control Delay (s)	8.4	0	18.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Existing PM
4/18/2017

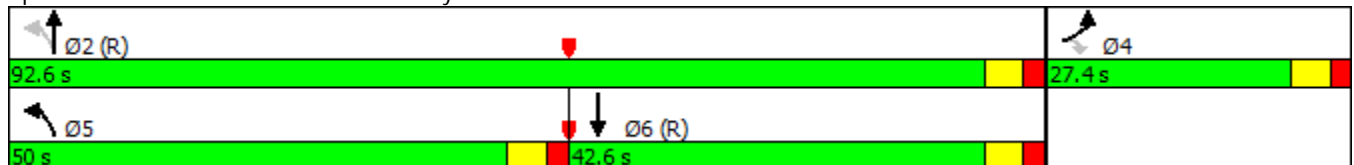


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	22	362	619	639	371
Future Volume (vph)	22	362	619	639	371
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	27.4	27.4	50.0	92.6	42.6
Total Split (%)	22.8%	22.8%	41.7%	77.2%	35.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effect Green (s)	11.1	11.1	97.9	97.9	52.4
Actuated g/C Ratio	0.09	0.09	0.82	0.82	0.44
v/c Ratio	0.27	0.81	0.80	0.47	0.59
Control Delay	52.0	16.7	19.3	5.3	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	16.7	19.3	5.3	32.3
LOS	D	B	B	A	C
Approach Delay	19.8			12.1	32.3
Approach LOS	B			B	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 17.8
 Intersection LOS: B
 Intersection Capacity Utilization 74.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Existing PM
 4/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	22	362	619	639	371	27		
Future Volume (veh/h)	22	362	619	639	371	27		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	44	0	673	718	447	32		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.50	0.79	0.92	0.89	0.83	0.84		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	68	61	830	1620	1177	84		
Arrive On Green	0.04	0.00	0.14	0.87	0.69	0.69		
Sat Flow, veh/h	1774	1583	1774	1863	1718	123		
Grp Volume(v), veh/h	44	0	673	718	0	479		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1841		
Q Serve(g_s), s	2.9	0.0	11.7	9.8	0.0	13.3		
Cycle Q Clear(g_c), s	2.9	0.0	11.7	9.8	0.0	13.3		
Prop In Lane	1.00	1.00	1.00			0.07		
Lane Grp Cap(c), veh/h	68	61	830	1620	0	1262		
V/C Ratio(X)	0.64	0.00	0.81	0.44	0.00	0.38		
Avail Cap(c_a), veh/h	324	289	1242	1620	0	1262		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	56.9	0.0	6.2	1.7	0.0	8.0		
Incr Delay (d2), s/veh	9.8	0.0	2.5	0.9	0.0	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	2.9	0.0	16.3	8.9	0.0	11.3		
LnGrp Delay(d),s/veh	66.6	0.0	8.7	2.5	0.0	8.9		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	44			1391	479			
Approach Delay, s/veh	66.6			5.5	8.9			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		109.9		10.1	22.2	87.7		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		87.1		21.9	44.5	37.1		
Max Q Clear Time (g_c+I1), s		11.8		4.9	13.7	15.3		
Green Ext Time (p_c), s		52.4		0.1	3.0	19.0		
Intersection Summary								
HCM 2010 Ctrl Delay			7.8					
HCM 2010 LOS			A					

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	4	0	1	0	606	30	21	442	0
Future Vol, veh/h	0	0	0	4	0	1	0	606	30	21	442	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	33	92	25	92	95	62	53	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	0	4	0	638	48	40	486	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1229	1251	486	1227	1227	662	486	0	0	686	0	0
Stage 1	565	565	-	662	662	-	-	-	-	-	-	-
Stage 2	664	686	-	565	565	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	155	172	581	155	178	462	1077	-	-	908	-	-
Stage 1	510	508	-	451	459	-	-	-	-	-	-	-
Stage 2	450	448	-	510	508	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	147	162	581	148	167	462	1077	-	-	908	-	-
Mov Cap-2 Maneuver	147	162	-	148	167	-	-	-	-	-	-	-
Stage 1	510	478	-	451	459	-	-	-	-	-	-	-
Stage 2	446	448	-	479	478	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	27.2	0	0.7
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1077	-	-	-	178	908	-
HCM Lane V/C Ratio	-	-	-	0.091	0.044	-	-
HCM Control Delay (s)	0	-	-	0	27.2	9.1	0
HCM Lane LOS	A	-	-	A	D	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	25	8	11	632	421	12
Future Vol, veh/h	25	8	11	632	421	12
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	62	50	69	95	96	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	16	16	665	439	20

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1146	449	459 0
Stage 1	449	-	- -
Stage 2	697	-	- -
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	220	610	1102 -
Stage 1	643	-	- -
Stage 2	494	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	215	610	1102 -
Mov Cap-2 Maneuver	215	-	- -
Stage 1	643	-	- -
Stage 2	483	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	22.4	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1102	-	263	-	-
HCM Lane V/C Ratio	0.014	-	0.214	-	-
HCM Control Delay (s)	8.3	0	22.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

GDOT LEFT TURN LANE ANALYSIS

LEFT TURN LANE ANALYSIS Per GDOT standards

The following left turn lane analyses were used to determine the need for dedicated turn bays at the proposed site driveway locations that are located on State Routes.

GDOT standards require the installation of a left lane on state routes at no cost to the department when traffic entering the development meets or exceeds the values shown in the following table.

GDOT REQUIREMENTS FOR LEFT TURN LANES					
Site Driveway	Left Turn Traffic (% Total Entering)	Left Turn Volume (veh/day)	Roadway Speed / # Lanes	GDOT Threshold (veh/day)	Results
Roberts Drive @ School Drwy 1 (N)/Roberts Park Road	40%	232	35 mph / 2-Lane	200	Warranted
Roberts Drive @ School Driveway 2 (South)	10%	59	35 mph / 2-Lane	200	Not Warranted

7.3 Findings

Based on the number of projected daily left turns, the northern driveway (Site Driveway 1) on Roberts Drive will meet the GDOT requirements for construction of a left turn lane. The southern driveway (Site Driveway 2) on Roberts Drive will not meet the GDOT requirements for construction of a left turn lane.

GDOT RIGHT TURN LANE ANALYSIS

RIGHT TURN LANE ANALYSIS Per GDOT standards

The following right turn lane analyses were used to determine the need for dedicated turn bays at the proposed site driveway locations that are located on State Routes.

GDOT standards require the installation of a deceleration lane on state routes at no cost to the department when traffic entering the development meets or exceeds the values shown in the following table.

GDOT REQUIREMENTS FOR DECELERATION LANES					
Site Driveway	Right Turn Traffic (% Total Entering)	Right Turn Volume (veh/day)	Roadway Speed / # Lanes	GDOT Threshold (veh/day)	Results
Roberts Drive @ School Drwy 1 (N)/Roberts Park Road	40%	232	35 mph / 2-Lane	100	Warranted
Roberts Drive @ School Driveway 2 (South)	10%	59	35 mph / 2-Lane	100	Not Warranted

7.4 Findings

Based on the number of projected daily right turns, the northern driveway (Site Driveway 1) on Roberts Drive will meet the GDOT requirements for construction of a right turn lane. The southern driveway (Site Driveway 2) on Roberts Drive will not meet the GDOT requirements for construction of a right turn lane.

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

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

No-Build AM
4/18/2017

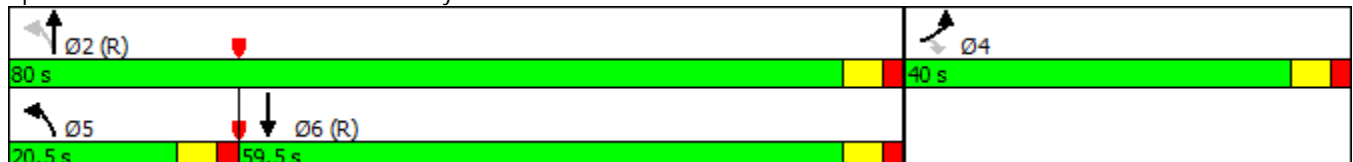


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	6	531	177	324	640
Future Volume (vph)	6	531	177	324	640
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	40.0	40.0	20.5	80.0	59.5
Total Split (%)	33.3%	33.3%	17.1%	66.7%	49.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	25.8	25.8	83.2	83.2	66.0
Actuated g/C Ratio	0.22	0.22	0.69	0.69	0.55
v/c Ratio	0.02	0.93	0.56	0.34	0.71
Control Delay	31.7	39.0	13.6	9.6	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	39.0	13.6	9.6	27.8
LOS	C	D	B	A	C
Approach Delay	38.9			10.9	27.8
Approach LOS	D			B	C

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 25.4
 Intersection LOS: C
 Intersection Capacity Utilization 76.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

No-Build AM
 4/18/2017

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	6	531	177	324	640	12		
Future Volume (veh/h)	6	531	177	324	640	12		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	8	0	216	438	688	32		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.93	0.82	0.74	0.93	0.38		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	21	19	635	1670	1429	66		
Arrive On Green	0.01	0.00	0.04	0.90	0.81	0.81		
Sat Flow, veh/h	1774	1583	1774	1863	1766	82		
Grp Volume(v), veh/h	8	0	216	438	0	720		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1848		
Q Serve(g_s), s	0.5	0.0	2.2	3.8	0.0	14.6		
Cycle Q Clear(g_c), s	0.5	0.0	2.2	3.8	0.0	14.6		
Prop In Lane	1.00	1.00	1.00			0.04		
Lane Grp Cap(c), veh/h	21	19	635	1670	0	1496		
V/C Ratio(X)	0.39	0.00	0.34	0.26	0.00	0.48		
Avail Cap(c_a), veh/h	510	455	783	1670	0	1496		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	58.9	0.0	2.8	0.8	0.0	3.6		
Incr Delay (d2), s/veh	11.3	0.0	0.3	0.4	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.6	3.8	0.0	12.5		
LnGrp Delay(d),s/veh	70.2	0.0	3.1	1.2	0.0	4.7		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	8			654	720			
Approach Delay, s/veh	70.1			1.9	4.7			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.1		6.9	10.5	102.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		74.5		34.5	15.0	54.0		
Max Q Clear Time (g_c+I1), s		5.8		2.5	4.2	16.6		
Green Ext Time (p_c), s		47.6		0.0	0.5	29.8		
Intersection Summary								
HCM 2010 Ctrl Delay			3.7					
HCM 2010 LOS			A					

Intersection												
Int Delay, s/veh	0.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	1	0	1	1	0	1	0	342	0	2	671	0
Future Vol, veh/h	1	0	1	1	0	1	0	342	0	2	671	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	25	25	92	25	92	69	92	25	98	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	4	0	4	0	496	0	8	685	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1199	1197	685	1199	1197	496	685	0	0	496	0	0
Stage 1	701	701	-	496	496	-	-	-	-	-	-	-
Stage 2	498	496	-	703	701	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	162	186	448	162	186	574	908	-	-	1068	-	-
Stage 1	429	441	-	556	545	-	-	-	-	-	-	-
Stage 2	554	545	-	428	441	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	159	184	448	159	184	574	908	-	-	1068	-	-
Mov Cap-2 Maneuver	159	184	-	159	184	-	-	-	-	-	-	-
Stage 1	429	436	-	556	545	-	-	-	-	-	-	-
Stage 2	550	545	-	419	436	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.9	19.9	0	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	908	-	-	235	249	1068	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.032	0.007	-	-
HCM Control Delay (s)	0	-	-	20.9	19.9	8.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	35	25	7	344	666	28
Future Vol, veh/h	35	25	7	344	666	28
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	61	43	58	71	95	45
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	58	12	485	701	62

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1241	732	763 0
Stage 1	732	-	- -
Stage 2	509	-	- -
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	193	421	850 -
Stage 1	476	-	- -
Stage 2	604	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	189	421	850 -
Mov Cap-2 Maneuver	189	-	- -
Stage 1	476	-	- -
Stage 2	593	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	29.1	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	850	-	262	-	-
HCM Lane V/C Ratio	0.014	-	0.441	-	-
HCM Control Delay (s)	9.3	0	29.1	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	2.1	-	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	18	324	378	541	416
Future Volume (vph)	18	324	378	541	416
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	30.6	30.6	39.0	89.4	50.4
Total Split (%)	25.5%	25.5%	32.5%	74.5%	42.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	9.8	9.8	99.2	99.2	78.8
Actuated g/C Ratio	0.08	0.08	0.83	0.83	0.66
v/c Ratio	0.21	0.78	0.57	0.39	0.39
Control Delay	52.5	17.7	5.9	3.9	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	17.7	5.9	3.9	12.9
LOS	D	B	A	A	B
Approach Delay	20.5			4.7	12.9
Approach LOS	C			A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 62.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	18	324	378	541	416	16		
Future Volume (veh/h)	18	324	378	541	416	16		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	30	0	425	595	452	21		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.61	0.93	0.89	0.91	0.92	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	56	50	811	1633	1330	62		
Arrive On Green	0.03	0.00	0.08	0.88	0.75	0.75		
Sat Flow, veh/h	1774	1583	1774	1863	1766	82		
Grp Volume(v), veh/h	30	0	425	595	0	473		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1848		
Q Serve(g_s), s	2.0	0.0	5.8	6.9	0.0	10.2		
Cycle Q Clear(g_c), s	2.0	0.0	5.8	6.9	0.0	10.2		
Prop In Lane	1.00	1.00	1.00			0.04		
Lane Grp Cap(c), veh/h	56	50	811	1633	0	1392		
V/C Ratio(X)	0.54	0.00	0.52	0.36	0.00	0.34		
Avail Cap(c_a), veh/h	371	331	1168	1633	0	1392		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	57.2	0.0	3.0	1.3	0.0	4.9		
Incr Delay (d2), s/veh	7.7	0.0	0.5	0.6	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	2.0	0.0	5.1	6.8	0.0	9.2		
LnGrp Delay(d),s/veh	64.9	0.0	3.5	2.0	0.0	5.6		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	30			1020	473			
Approach Delay, s/veh	64.9			2.6	5.6			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		110.7		9.3	14.9	95.8		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		83.9		25.1	33.5	44.9		
Max Q Clear Time (g_c+I1), s		8.9		4.0	7.8	12.2		
Green Ext Time (p_c), s		44.9		0.0	1.6	24.9		
Intersection Summary								
HCM 2010 Ctrl Delay			4.8					
HCM 2010 LOS			A					

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	8	0	6	0	563	11	12	437	0
Future Vol, veh/h	0	0	0	8	0	6	0	563	11	12	437	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	33	92	50	92	90	92	33	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	24	0	12	0	626	12	36	460	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1171	1171	460	1165	1165	632	460	0	0	638	0	0
Stage 1	533	533	-	632	632	-	-	-	-	-	-	-
Stage 2	638	638	-	533	533	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	170	193	601	171	194	480	1101	-	-	946	-	-
Stage 1	531	525	-	468	474	-	-	-	-	-	-	-
Stage 2	465	471	-	531	525	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	159	183	601	164	184	480	1101	-	-	946	-	-
Mov Cap-2 Maneuver	159	183	-	164	184	-	-	-	-	-	-	-
Stage 1	531	498	-	468	474	-	-	-	-	-	-	-
Stage 2	453	471	-	504	498	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	25.7	0	0.7
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	- 210	946	-	-
HCM Lane V/C Ratio	-	-	-	- 0.173	0.038	-	-
HCM Control Delay (s)	0	-	-	0 25.7	9	0	-
HCM Lane LOS	A	-	-	A D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	- 0.6	0.1	-	-

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	22	10	11	573	450	9
Future Vol, veh/h	22	10	11	573	450	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	75	62	69	94	97	28
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	16	16	610	464	32

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1121	480	496 0
Stage 1	480	-	- -
Stage 2	641	-	- -
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	228	586	1068 -
Stage 1	622	-	- -
Stage 2	525	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	223	586	1068 -
Mov Cap-2 Maneuver	223	-	- -
Stage 1	622	-	- -
Stage 2	513	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	20	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1068	-	286	-	-
HCM Lane V/C Ratio	0.015	-	0.159	-	-
HCM Control Delay (s)	8.4	0	20	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

No-Build PM
4/18/2017

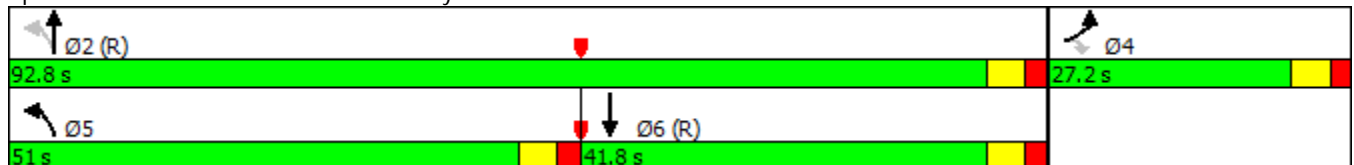


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	23	377	644	665	386
Future Volume (vph)	23	377	644	665	386
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	27.2	27.2	51.0	92.8	41.8
Total Split (%)	22.7%	22.7%	42.5%	77.3%	34.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effect Green (s)	11.2	11.2	97.8	97.8	49.0
Actuated g/C Ratio	0.09	0.09	0.82	0.82	0.41
v/c Ratio	0.28	0.82	0.83	0.49	0.66
Control Delay	52.3	16.8	25.0	5.5	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	16.8	25.0	5.5	35.9
LOS	D	B	C	A	D
Approach Delay	19.9			14.9	35.9
Approach LOS	B			B	D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 76.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

No-Build PM
 4/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	377	644	665	386	28		
Future Volume (veh/h)	23	377	644	665	386	28		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	46	0	700	747	465	33		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.50	0.79	0.92	0.89	0.83	0.84		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	70	62	819	1619	1162	82		
Arrive On Green	0.04	0.00	0.15	0.87	0.68	0.68		
Sat Flow, veh/h	1774	1583	1774	1863	1719	122		
Grp Volume(v), veh/h	46	0	700	747	0	498		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1841		
Q Serve(g_s), s	3.1	0.0	12.5	10.5	0.0	14.4		
Cycle Q Clear(g_c), s	3.1	0.0	12.5	10.5	0.0	14.4		
Prop In Lane	1.00	1.00	1.00			0.07		
Lane Grp Cap(c), veh/h	70	62	819	1619	0	1245		
V/C Ratio(X)	0.66	0.00	0.85	0.46	0.00	0.40		
Avail Cap(c_a), veh/h	321	286	1231	1619	0	1245		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	56.9	0.0	7.7	1.7	0.0	8.6		
Incr Delay (d2), s/veh	10.2	0.0	3.9	0.9	0.0	1.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	3.1	0.0	21.0	9.5	0.0	12.0		
LnGrp Delay(d),s/veh	67.1	0.0	11.6	2.7	0.0	9.6		
LnGrp LOS	E		B	A		A		
Approach Vol, veh/h	46			1447	498			
Approach Delay, s/veh	67.1			7.0	9.6			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		109.8		10.2	23.2	86.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		87.3		21.7	45.5	36.3		
Max Q Clear Time (g_c+I1), s		12.5		5.1	14.5	16.4		
Green Ext Time (p_c), s		54.6		0.1	3.1	17.8		
Intersection Summary								
HCM 2010 Ctrl Delay			9.0					
HCM 2010 LOS			A					

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	4	0	1	0	630	31	22	460	0
Future Vol, veh/h	0	0	0	4	0	1	0	630	31	22	460	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	33	92	25	92	95	62	53	91	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	0	4	0	663	50	42	505	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1279	1302	505	1277	1277	688	505	0	0	713	0	0
Stage 1	589	589	-	688	688	-	-	-	-	-	-	-
Stage 2	690	713	-	589	589	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	161	567	143	166	446	1060	-	-	887	-	-
Stage 1	494	495	-	436	447	-	-	-	-	-	-	-
Stage 2	435	435	-	494	495	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	135	150	567	136	155	446	1060	-	-	887	-	-
Mov Cap-2 Maneuver	135	150	-	136	155	-	-	-	-	-	-	-
Stage 1	494	462	-	436	447	-	-	-	-	-	-	-
Stage 2	431	435	-	461	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	29.3	0	0.7
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	-	164	887	-
HCM Lane V/C Ratio	-	-	-	-	0.098	0.047	-
HCM Control Delay (s)	0	-	-	0	29.3	9.3	0
HCM Lane LOS	A	-	-	A	D	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1	-

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	26	8	11	658	438	12
Future Vol, veh/h	26	8	11	658	438	12
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	62	50	69	95	96	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	16	16	693	456	20

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1191	466	476 0
Stage 1	466	-	- -
Stage 2	725	-	- -
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	207	597	1086 -
Stage 1	632	-	- -
Stage 2	479	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	202	597	1086 -
Mov Cap-2 Maneuver	202	-	- -
Stage 1	632	-	- -
Stage 2	468	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	24	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	247	-	-
HCM Lane V/C Ratio	0.015	-	0.235	-	-
HCM Control Delay (s)	8.4	0	24	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

FUTURE “BUILD” INTERSECTION ANALYSIS

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Build AM
4/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	6	531	177	327	606
Future Volume (vph)	6	531	177	327	606
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	37.0	37.0	19.0	83.0	64.0
Total Split (%)	30.8%	30.8%	15.8%	69.2%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	24.6	24.6	84.4	84.4	68.3
Actuated g/C Ratio	0.20	0.20	0.70	0.70	0.57
v/c Ratio	0.02	0.94	0.50	0.34	0.64
Control Delay	33.7	41.0	11.4	8.8	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	41.0	11.4	8.8	23.3
LOS	C	D	B	A	C
Approach Delay	40.9			9.7	23.3
Approach LOS	D			A	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 23.9
 Intersection LOS: C
 Intersection Capacity Utilization 74.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

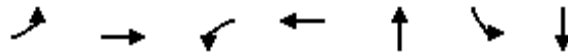
Build AM
 4/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	6	531	177	327	606	8		
Future Volume (veh/h)	6	531	177	327	606	8		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	8	0	216	442	652	21		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.93	0.82	0.74	0.93	0.38		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	21	19	667	1670	1452	47		
Arrive On Green	0.01	0.00	0.04	0.90	0.81	0.81		
Sat Flow, veh/h	1774	1583	1774	1863	1795	58		
Grp Volume(v), veh/h	8	0	216	442	0	673		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1853		
Q Serve(g_s), s	0.5	0.0	2.2	3.9	0.0	13.1		
Cycle Q Clear(g_c), s	0.5	0.0	2.2	3.9	0.0	13.1		
Prop In Lane	1.00	1.00	1.00			0.03		
Lane Grp Cap(c), veh/h	21	19	667	1670	0	1499		
V/C Ratio(X)	0.39	0.00	0.32	0.26	0.00	0.45		
Avail Cap(c_a), veh/h	466	416	793	1670	0	1499		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	58.9	0.0	2.5	0.8	0.0	3.4		
Incr Delay (d2), s/veh	11.3	0.0	0.3	0.4	0.0	1.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	0.6	0.0	2.3	3.9	0.0	11.3		
LnGrp Delay(d),s/veh	70.2	0.0	2.8	1.2	0.0	4.4		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	8			658	673			
Approach Delay, s/veh	70.1			1.7	4.4			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		113.1		6.9	10.5	102.6		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		77.5		31.5	13.5	58.5		
Max Q Clear Time (g_c+I1), s		5.9		2.5	4.2	15.1		
Green Ext Time (p_c), s		46.5		0.0	0.5	32.5		
Intersection Summary								
HCM 2010 Ctrl Delay			3.5					
HCM 2010 LOS			A					

Timings

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)

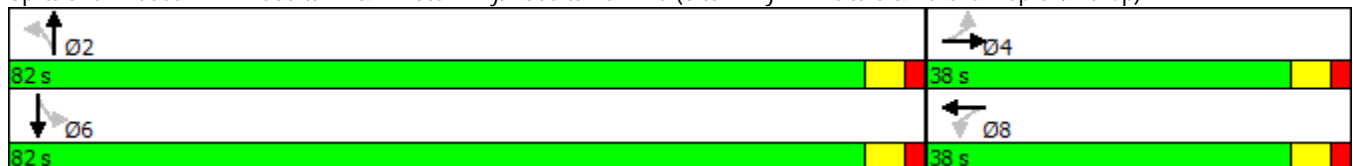



















Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations		↕		↕	↕	↗	↘
Traffic Volume (vph)	1	0	74	0	252	91	564
Future Volume (vph)	1	0	74	0	252	91	564
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	38.0	38.0	38.0	38.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	68.3%	68.3%	68.3%
Yellow Time (s)	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
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-Lag Optimize?							
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)		11.1		11.1	34.5	34.5	34.5
Actuated g/C Ratio		0.19		0.19	0.61	0.61	0.61
v/c Ratio		0.03		0.52	0.42	0.20	0.51
Control Delay		3.5		23.5	7.3	6.8	8.7
Queue Delay		0.0		0.0	0.0	0.0	0.0
Total Delay		3.5		23.5	7.3	6.8	8.7
LOS		A		C	A	A	A
Approach Delay		3.5		23.5	7.3		8.4
Approach LOS		A		C	A		A

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 57	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	74	0	74	0	252	89	91	564	0
Future Volume (veh/h)	1	0	1	74	0	74	0	252	89	91	564	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		1.00	1.00		0.95	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	4	0	4	80	0	80	0	365	97	99	576	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.25	0.92	0.25	0.92	0.92	0.92	0.92	0.69	0.92	0.92	0.98	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	25	121	178	17	112	0	966	257	638	1268	0
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.00	0.68	0.68	0.68	0.68	0.00
Sat Flow, veh/h	631	167	797	630	112	743	0	1419	377	926	1863	0
Grp Volume(v), veh/h	8	0	0	160	0	0	0	0	462	99	576	0
Grp Sat Flow(s),veh/h/ln	1595	0	0	1485	0	0	0	0	1796	926	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	7.2	3.4	9.4	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	6.6	0.0	0.0	0.0	0.0	7.2	10.6	9.4	0.0
Prop In Lane	0.50		0.50	0.50		0.50	0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	324	0	0	307	0	0	0	0	1223	638	1268	0
V/C Ratio(X)	0.02	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.38	0.16	0.45	0.00
Avail Cap(c_a), veh/h	810	0	0	808	0	0	0	0	2095	1088	2173	0
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	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.7	0.0	0.0	26.4	0.0	0.0	0.0	0.0	4.5	6.8	4.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.2	0.1	0.3	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(95%),veh/ln	0.2	0.0	0.0	5.2	0.0	0.0	0.0	0.0	6.4	1.6	8.3	0.0
LnGrp Delay(d),s/veh	23.8	0.0	0.0	27.7	0.0	0.0	0.0	0.0	4.7	6.9	5.1	0.0
LnGrp LOS	C			C					A	A	A	
Approach Vol, veh/h		8			160			462			675	
Approach Delay, s/veh		23.8			27.7			4.7			5.4	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.2		15.4		50.2		15.4				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		76.5		32.5		76.5		32.5				
Max Q Clear Time (g_c+I1), s		9.2		2.3		12.6		8.6				
Green Ext Time (p_c), s		32.8		0.6		32.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			8.0									
HCM 2010 LOS			A									

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	58	34	300	615	0
Future Vol, veh/h	3	58	34	300	615	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	43	58	71	95	45
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	135	59	423	647	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1187	647	0
Stage 1	647	-	-
Stage 2	540	-	-
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	208	471	939
Stage 1	521	-	-
Stage 2	584	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	191	471	939
Mov Cap-2 Maneuver	191	-	-
Stage 1	521	-	-
Stage 2	536	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	939	-	448	-	-
HCM Lane V/C Ratio	0.062	-	0.312	-	-
HCM Control Delay (s)	9.1	0	16.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.3	-	-

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	18	18	323	22	22	617
Future Vol, veh/h	18	18	323	22	22	617
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	69	92	92	98
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	20	20	468	24	24	630

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1157	480	0	0	492	0
Stage 1	480	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	175	499	-	-	864	-
Stage 1	534	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	167	499	-	-	864	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.1	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	250	864	-
HCM Lane V/C Ratio	-	-	0.157	0.028	-
HCM Control Delay (s)	-	-	22.1	9.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr















Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↖	↗	↖	↑	↘
Traffic Volume (vph)	21	324	378	570	434
Future Volume (vph)	21	324	378	570	434
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	28.0	28.0	37.0	92.0	55.0
Total Split (%)	23.3%	23.3%	30.8%	76.7%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	9.8	9.8	99.2	99.2	79.4
Actuated g/C Ratio	0.08	0.08	0.83	0.83	0.66
v/c Ratio	0.23	0.78	0.58	0.41	0.41
Control Delay	53.2	17.6	6.2	4.1	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	17.6	6.2	4.1	12.7
LOS	D	B	A	A	B
Approach Delay	20.8			5.0	12.7
Approach LOS	C			A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 10.1
 Intersection Capacity Utilization 63.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	21	324	378	570	434	18		
Future Volume (veh/h)	21	324	378	570	434	18		
Number	7	14	5	2	6	16		
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		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	34	0	425	626	472	24		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.61	0.93	0.89	0.91	0.92	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	60	54	790	1629	1318	67		
Arrive On Green	0.03	0.00	0.08	0.87	0.75	0.75		
Sat Flow, veh/h	1774	1583	1774	1863	1758	89		
Grp Volume(v), veh/h	34	0	425	626	0	496		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1847		
Q Serve(g_s), s	2.3	0.0	5.8	7.6	0.0	11.0		
Cycle Q Clear(g_c), s	2.3	0.0	5.8	7.6	0.0	11.0		
Prop In Lane	1.00	1.00	1.00			0.05		
Lane Grp Cap(c), veh/h	60	54	790	1629	0	1385		
V/C Ratio(X)	0.57	0.00	0.54	0.38	0.00	0.36		
Avail Cap(c_a), veh/h	333	297	1117	1629	0	1385		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	57.1	0.0	3.2	1.4	0.0	5.1		
Incr Delay (d2), s/veh	8.1	0.0	0.6	0.7	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(95%),veh/ln	2.2	0.0	5.1	7.4	0.0	9.7		
LnGrp Delay(d),s/veh	65.2	0.0	3.8	2.1	0.0	5.8		
LnGrp LOS	E		A	A		A		
Approach Vol, veh/h	34			1051	496			
Approach Delay, s/veh	65.2			2.8	5.8			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		110.4		9.6	14.9	95.5		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		86.5		22.5	31.5	49.5		
Max Q Clear Time (g_c+I1), s		9.6		4.3	7.8	13.0		
Green Ext Time (p_c), s		48.6		0.1	1.6	28.3		
Intersection Summary								
HCM 2010 Ctrl Delay			5.1					
HCM 2010 LOS			A					

Timings

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)




















Lane Group	WBT	NBT	SBL	SBT	Ø4
Lane Configurations	↔	↔	↗	↘	
Traffic Volume (vph)	0	552	57	398	
Future Volume (vph)	0	552	57	398	
Turn Type	NA	NA	Perm	NA	
Protected Phases	8	2		6	4
Permitted Phases			6		
Detector Phase	8	2	6	6	
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	71.5	71.5	71.5	23.5
Total Split (%)	20.8%	59.6%	59.6%	59.6%	20%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	Min	Min	Min	None
Act Effct Green (s)	8.7	37.3	37.3	37.3	
Actuated g/C Ratio	0.15	0.65	0.65	0.65	
v/c Ratio	0.43	0.56	0.15	0.35	
Control Delay	17.3	7.9	5.4	5.7	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	17.3	7.9	5.4	5.7	
LOS	B	A	A	A	
Approach Delay	17.3	7.9		5.6	
Approach LOS	B	A		A	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 57.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	64	0	62	0	552	56	57	398	0
Future Volume (veh/h)	0	0	0	64	0	62	0	552	56	57	398	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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		0.97	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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	70	0	67	0	613	61	62	419	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.92	0.92	0.95	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	3	0	98	0	93	0	1188	118	528	1328	0
Arrive On Green	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.71	0.71	0.71	0.71	0.00
Sat Flow, veh/h	0	1863	0	844	0	808	0	1668	166	761	1863	0
Grp Volume(v), veh/h	0	0	0	137	0	0	0	0	674	62	419	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1653	0	0	0	0	1833	761	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	10.7	2.6	5.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	10.7	13.3	5.3	0.0
Prop In Lane	0.00		0.00	0.51		0.49	0.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	0	191	0	0	0	0	1307	528	1328	0
V/C Ratio(X)	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.52	0.12	0.32	0.00
Avail Cap(c_a), veh/h	0	524	0	503	0	0	0	0	1889	770	1920	0
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)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.3	0.0	0.0	0.0	0.0	4.2	7.2	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	9.2	1.0	4.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.3	0.0	0.0	0.0	0.0	4.5	7.3	3.5	0.0
LnGrp LOS				C					A	A	A	
Approach Vol, veh/h		0			137			674			481	
Approach Delay, s/veh		0.0			32.3			4.5			4.0	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.1		0.0		51.1		12.9				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		66.0		18.0		66.0		19.5				
Max Q Clear Time (g_c+I1), s		12.7		0.0		15.3		7.1				
Green Ext Time (p_c), s		31.3		0.0		30.4		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				7.3								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	15	27	32	597	440	0
Future Vol, veh/h	15	27	32	597	440	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	62	69	94	97	28
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	44	46	635	454	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1182	454	0
Stage 1	454	-	-
Stage 2	728	-	-
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	210	606	1107
Stage 1	640	-	-
Stage 2	478	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	197	606	1107
Mov Cap-2 Maneuver	197	-	-
Stage 1	640	-	-
Stage 2	447	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1107	-	367	-	-
HCM Lane V/C Ratio	0.042	-	0.173	-	-
HCM Control Delay (s)	8.4	0	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	14	14	594	11	11	451
Future Vol, veh/h	14	14	594	11	11	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	90	92	92	95
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	15	15	660	12	12	475

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1165	666	0	0	672	0
Stage 1	666	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	173	385	-	-	730	-
Stage 1	431	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	169	385	-	-	730	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	730	-
HCM Lane V/C Ratio	-	-	0.13	0.016	-
HCM Control Delay (s)	-	-	22.6	10	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Timings
1: Chamblee Dunwoody Rd & Roberts Dr

Build PM
4/27/2017

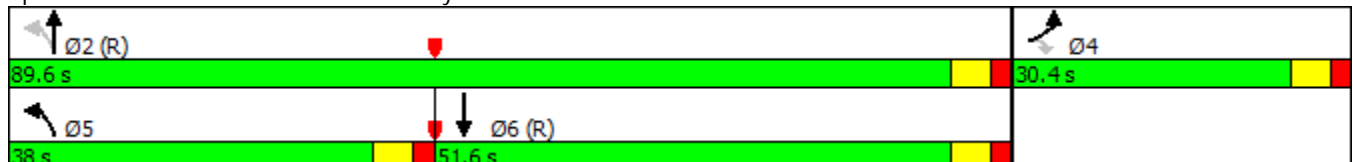


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	26	377	644	695	417
Future Volume (vph)	26	377	644	695	417
Turn Type	Prot	Perm	pm+pt	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4	2		
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	5.0	15.0	15.0
Minimum Split (s)	26.5	26.5	10.5	23.5	27.5
Total Split (s)	30.4	30.4	38.0	89.6	51.6
Total Split (%)	25.3%	25.3%	31.7%	74.7%	43.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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		Lag
Lead-Lag Optimize?					
Recall Mode	None	None	None	C-Min	C-Min
Act Effect Green (s)	11.5	11.5	97.5	97.5	59.5
Actuated g/C Ratio	0.10	0.10	0.81	0.81	0.50
v/c Ratio	0.31	0.82	0.92	0.52	0.59
Control Delay	52.5	16.4	33.5	5.9	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	16.4	33.5	5.9	26.1
LOS	D	B	C	A	C
Approach Delay	20.0			19.0	26.1
Approach LOS	B			B	C

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 20.7
 Intersection Capacity Utilization 78.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 1: Chamblee Dunwoody Rd & Roberts Dr



HCM 2010 Signalized Intersection Summary
 1: Chamblee Dunwoody Rd & Roberts Dr

Build PM
 4/27/2017

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	26	377	644	695	417	31			
Future Volume (veh/h)	26	377	644	695	417	31			
Number	7	14	5	2	6	16			
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			
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900			
Adj Flow Rate, veh/h	52	0	700	781	502	37			
Adj No. of Lanes	1	1	1	1	1	0			
Peak Hour Factor	0.50	0.79	0.92	0.89	0.83	0.84			
Percent Heavy Veh, %	2	2	2	2	2	2			
Cap, veh/h	73	65	786	1615	1158	85			
Arrive On Green	0.04	0.00	0.15	0.87	0.68	0.68			
Sat Flow, veh/h	1774	1583	1774	1863	1714	126			
Grp Volume(v), veh/h	52	0	700	781	0	539			
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1840			
Q Serve(g_s), s	3.5	0.0	12.7	11.5	0.0	16.1			
Cycle Q Clear(g_c), s	3.5	0.0	12.7	11.5	0.0	16.1			
Prop In Lane	1.00	1.00	1.00			0.07			
Lane Grp Cap(c), veh/h	73	65	786	1615	0	1243			
V/C Ratio(X)	0.71	0.00	0.89	0.48	0.00	0.43			
Avail Cap(c_a), veh/h	368	329	1007	1615	0	1243			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	56.8	0.0	9.7	1.8	0.0	8.9			
Incr Delay (d2), s/veh	12.0	0.0	8.3	1.0	0.0	1.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	3.5	0.0	24.9	10.2	0.0	13.2			
LnGrp Delay(d),s/veh	68.9	0.0	18.0	2.9	0.0	10.0			
LnGrp LOS	E		B	A		B			
Approach Vol, veh/h	52			1481	539				
Approach Delay, s/veh	68.9			10.0	10.0				
Approach LOS	E			B	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		109.6		10.4	23.0	86.5			
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5			
Max Green Setting (Gmax), s		84.1		24.9	32.5	46.1			
Max Q Clear Time (g_c+I1), s		13.5		5.5	14.7	18.1			
Green Ext Time (p_c), s		55.4		0.1	2.8	25.0			
Intersection Summary									
HCM 2010 Ctrl Delay			11.5						
HCM 2010 LOS			B						

Timings

2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



Lane Group	WBT	NBT	NBR	SBL	SBT	Ø4
Lane Configurations	↔	↑	↗	↘	↓	
Traffic Volume (vph)	0	637	57	48	467	
Future Volume (vph)	0	637	57	48	467	
Turn Type	NA	NA	Perm	Perm	NA	
Protected Phases	8	2			6	4
Permitted Phases			2	6		
Detector Phase	8	2	2	6	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	71.5	71.5	71.5	71.5	23.5
Total Split (%)	20.8%	59.6%	59.6%	59.6%	59.6%	20%
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	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	Min	Min	Min	Min	None
Act Effct Green (s)	6.6	45.8	45.8	45.8	45.8	
Actuated g/C Ratio	0.11	0.78	0.78	0.78	0.78	
v/c Ratio	0.26	0.46	0.05	0.10	0.35	
Control Delay	10.8	4.6	0.7	3.0	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.8	4.6	0.7	3.0	3.8	
LOS	B	A	A	A	A	
Approach Delay	10.8	4.3			3.7	
Approach LOS	B	A			A	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 58.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Roberts Dr & Private Drwy/Roberts Park Rd (Site Drwy 1 - Visitors & Parent Drop-off/Pickup)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	32	0	29	0	637	57	48	467	0
Future Volume (veh/h)	0	0	0	32	0	29	0	637	57	48	467	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	35	0	32	0	671	62	52	513	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.91	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	5	0	59	0	54	0	1195	1016	508	1195	0
Arrive On Green	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	0	1863	0	876	0	801	0	1863	1583	721	1863	0
Grp Volume(v), veh/h	0	0	0	67	0	0	0	671	62	52	513	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1678	0	0	0	1863	1583	721	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.6	0.6	1.6	5.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.6	0.6	9.3	5.1	0.0
Prop In Lane	0.00		0.00	0.52		0.48	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	5	0	112	0	0	0	1195	1016	508	1195	0
V/C Ratio(X)	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.56	0.06	0.10	0.43	0.00
Avail Cap(c_a), veh/h	0	888	0	867	0	0	0	3257	2768	1305	3257	0
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)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	17.1	0.0	0.0	0.0	3.8	2.5	6.4	3.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.4	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	7.0	0.4	0.6	4.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	22.1	0.0	0.0	0.0	4.2	2.5	6.5	3.6	0.0
LnGrp LOS				C				A	A	A	A	
Approach Vol, veh/h		0			67			733			565	
Approach Delay, s/veh		0.0			22.1			4.1			3.9	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.7		0.0		29.7		8.0				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		66.0		18.0		66.0		19.5				
Max Q Clear Time (g_c+I1), s		9.6		0.0		11.3		3.5				
Green Ext Time (p_c), s		13.0		0.0		13.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				4.9								
HCM 2010 LOS				A								

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	26	18	21	682	461	12
Future Vol, veh/h	26	18	21	682	461	12
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	62	50	69	95	96	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	36	30	718	480	20

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1269	490	500 0
Stage 1	490	-	- -
Stage 2	779	-	- -
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	186	578	1064 -
Stage 1	616	-	- -
Stage 2	452	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	177	578	1064 -
Mov Cap-2 Maneuver	177	-	- -
Stage 1	616	-	- -
Stage 2	431	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	24.7	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1064	-	260	-	-
HCM Lane V/C Ratio	0.029	-	0.3	-	-
HCM Control Delay (s)	8.5	0	24.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection

Int Delay, s/veh 0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	7	7	688	7	7	492
Future Vol, veh/h	7	7	688	7	7	492
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	92	92	91
Heavy Vehicles, %	50	50	2	50	50	2
Mvmt Flow	8	8	724	8	8	541

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1284	728	0	0	732	0
Stage 1	728	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Critical Hdwy	6.9	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	145	353	-	-	690	-
Stage 1	401	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	143	353	-	-	690	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	204	690	-
HCM Lane V/C Ratio	-	-	0.075	0.011	-
HCM Control Delay (s)	-	-	24.1	10.3	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

TRAFFIC VOLUME WORKSHEETS

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

A&R Engineering
 April 2017

1. Chamblee Dunwoody @ Roberts
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	170	311	0	481	0	615	12	627	6	0	510	516	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	177	324	0	481	0	640	12	627	6	0	531	516	0	0	0	0
Removed Old School Trips:	0	-115	0	-115	0	-138	-7	-145	-6	0	0	-6	0	0	0	0
Total New Trips:	0	100	0	100	0	82	9	91	11	0	0	11	0	0	0	0
Future Traffic Volumes:	177	309	0	486	0	584	14	598	11	0	531	542	0	0	0	0

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	363	520	0	883	0	400	15	415	17	0	311	328	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	378	541	0	883	0	416	16	415	18	0	324	328	0	0	0	0
Removed Old School Trips:	0	-26	0	-26	0	-53	-3	-56	-1	0	0	-1	0	0	0	0
Total New Trips:	0	51	0	51	0	63	7	70	6	0	0	6	0	0	0	0
Future Traffic Volumes:	378	566	0	944	0	426	20	446	23	0	324	347	0	0	0	0

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	R	L	T	R	L	T	R	L	T	R				
Existing:	619	639	0	1258	0	371	27	398	22	0	362	384	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	644	665	0	1258	0	386	28	398	23	0	377	384	0	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	30	0	30	0	31	3	34	3	0	0	3	0	0	0	0
Future Traffic Volumes:	644	695	0	1339	0	417	31	448	26	0	377	403	0	0	0	0

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

A&R Engineering
 April 2017

2. Roberts Dr @ Roberts Park Rd
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	329	0	2	645	0	647	1	0	1	1	0	1	2
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	342	0	2	671	0	647	1	0	1	1	0	1	2
Removed Old School Trips:	0	-120	0	0	-144	0	-144	0	0	0	0	0	0	0
Total New Trips:	0	18	89	107	22	0	111	0	0	0	73	0	73	146
Future Traffic Volumes:	0	240	89	329	91	549	0	640	1	0	74	0	74	148

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	541	11	12	420	0	432	0	0	0	8	0	6	14
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	563	11	12	437	0	432	0	0	0	8	0	6	14
Removed Old School Trips:	0	-28	0	0	-56	0	-56	0	0	0	0	0	0	0
Total New Trips:	0	14	45	59	11	0	56	0	0	0	56	0	56	112
Future Traffic Volumes:	0	549	56	605	57	392	0	449	0	0	64	0	62	126

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	0	606	30	21	442	0	463	0	0	0	4	0	1	5
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	630	31	22	460	0	463	0	0	0	4	0	1	5
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	7	26	33	7	0	33	0	0	0	28	0	28	56
Future Traffic Volumes:	0	637	57	694	48	467	0	515	0	0	32	0	29	61

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

A&R Engineering
 April 2017

3. Roberts Dr @ Dunwoody Knoll
A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	7	331	0	0	640	27	667	34	0	24	58	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	7	344	0	0	666	28	667	35	0	25	58	0	0	0
Removed Old School Trips:	0	-120	0	0	-144	-24	-168	-20	0	0	-20	0	0	0
Total New Trips:	27	64	0	0	78	0	78	0	0	33	33	0	0	0
Future Traffic Volumes:	34	288	0	0	600	4	604	15	0	58	73	0	0	0

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	11	551	0	0	433	9	442	21	0	10	31	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	11	573	0	0	450	9	442	22	0	10	31	0	0	0
Removed Old School Trips:	0	-28	0	0	-56	-9	-65	-4	0	0	-4	0	0	0
Total New Trips:	21	49	0	0	40	0	40	0	0	17	17	0	0	0
Future Traffic Volumes:	32	594	0	0	434	0	434	18	0	27	45	0	0	0

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound				
	L	T	R	L	T	R	L	T	R	L	T	R		
Existing:	11	632	0	0	421	12	433	25	0	8	33	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	11	658	0	0	438	12	433	26	0	8	33	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	10	24	0	0	23	0	23	0	0	10	10	0	0	0
Future Traffic Volumes:	21	682	0	0	461	12	473	26	0	18	44	0	0	0

17-022 Austin Elementary School - Roberts Drive- DeKalb County GA
Traffic Volumes
Future Conditions

A&R Engineering
 April 2017

4. Roberts Dr @ Site Drwy 2

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	329	0	0	647	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	342	0	0	673	0	0	0	0	0	0	0
Removed Old School Trips:	0	-120	0	0	-144	0	0	0	0	0	0	0
Total New Trips:	0	89	22	22	73	0	95	0	0	18	0	18
Future Traffic Volumes:	0	311	22	22	602	0	624	0	0	18	0	18

School Exit Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	552	0	0	428	0	428	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	574	0	0	445	0	428	0	0	0	0	0
Removed Old School Trips:	0	-28	0	0	-56	0	-56	0	0	0	0	0
Total New Trips:	0	45	11	11	56	0	67	0	0	14	0	14
Future Traffic Volumes:	0	591	11	11	445	0	456	0	0	14	0	14

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	0	636	0	0	446	0	446	0	0	0	0	0
Growth Factor (%):	2	2	2	2	2	2	2	2	2	2	2	2
Base Condition:	0	662	0	0	464	0	446	0	0	0	0	0
Removed Old School Trips:	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	26	7	7	28	0	35	0	0	7	0	7
Future Traffic Volumes:	0	688	7	7	492	0	499	0	0	7	0	7