DEVELOPMENT OF REGIONAL IMPACT
(DRI #3650)

TRAFFIC STUDY
FOR
PROPOSED MIXED USE DEVELOPMENT ON SATELLITE BOULEVARD

GWINNETT COUNTY, GEORGIA

Prepared for:

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May 4, 2022
A & R Project # 22-034

EXECUTIVE SUMMARY

Traffic impacts were evaluated for the proposed redevelopment located to the northwest of the intersection of Satellite Boulevard and Boggs Road in Gwinnett County, Georgia. The redevelopment includes the demolition of existing development to allow construction of:

- Multifamily Housing: 648 units
- Multifamily Rental Cottages: 64 units
- Retail: 25,000 square feet

The redevelopment will use the existing two full access driveways on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

Existing and future operations during the AM peak hour (7:00 AM – 9:00 AM) and PM peak hour (4:00 PM – 6:00 PM) before and after completion of the project were analyzed at the following intersections:

1. Satellite Boulevard at Boggs Road
2. Satellite Boulevard at Children's Healthcare of Atlanta Driveway / Existing Eastern Access
3. Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)
4. Satellite Boulevard at Evergreen Boulevard
5. Boggs Road at Existing Access

Traffic Operations Summary

Table E1 below provides a summary of traffic operations for the "No-Build" and "Build" conditions for the year 2025 with and without system improvements. As per GRTA requirements, all approaches that do not meet the LOS standard (considered failing) are highlighted in Table E1.. Table E1 for "Build" conditions also includes the project's total added trip and the respective percentage of overall total "Build" condition approach traffic volume for all failing LOS approaches after all improvements are completed.

TABLE E1 – FUTURE INTERSECTION OPERATIONS

	Intersection	*No-Build Condition: LOS (Delay)*				*Build Condition: LOS (Delay)*							
		NO IMPROVEMENTS		SYSTEM IMPROVEMENTS		NO IMPROVEMENTS		SYSTEM IMPROVEMENTS		SITE VOLUMES AT FAILING APPROACH BUILD WITH IMPROVEMENTS		PRECENT SITE TRIPS OF TOTAL APPROACH TRIPS AT FAILING APPROACHES	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	**Satellite Boulevard @ Boggs Road**	**E (58.7)**	**D (49.8)**	**D (46.2)**	**D (40.9)**	**E (64.0)**	**D (52.7)**	**D (47.0)**	**D (43.5)**				
	-Eastbound Approach	D (39.9)	D (36.5)	C (27.6)	C (28.9)	D (43.4)	D (40.3)	C (28.7)	D (32.2)	-	-	-	-
	-Westbound Approach	E (60.9)	D (35.0)	D (38.1)	C (34.6)	E (72.3)	D (40.4)	D (39.7)	D (41.5)	-	-	-	-
	-Northbound Approach	E (57.2)	E (63.4)	D (53.5)	D (54.6)	E (60.0)	E (61.4)	D (53.8)	D (51.8)	-	-	-	-
	-Southbound Approach	E (71.2)	E (73.4)	D (55.0)	D (53.2)	E (72.2)	E (74.6)	D (54.7)	D (53.1)	-	-	-	-
2	**Satellite Boulevard @ Children's Healthcare of Atlanta Driveway / Existing Eastern Access**												
	-Eastbound Left	-	-	-	-	C (19.0)	B (10.2)	C (19.0)	B (10.2)	-	-	-	-
	-Westbound Left	A (8.3)	B (14.2)	A (8.3)	B (14.2)	A (8.5)	B (14.5)	A (8.5)	B (14.5)	-	-	-	-
	-Northbound Approach	A (0.0)	E (44.9)	A (0.0)	E (44.9)	F (168.9)	F (91.1)	F (168.9)	F (91.1)	1	2	100%	13%
	-Southbound Approach	-	-	-	-	F (*)	F (242.2)	F (*)	F (242.2)	78	56	100%	100%

3	**Satellite Boulevard @ Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)**												
	-Eastbound Left	C (17.7)	A (9.8)	C (17.7)	A (9.8)	C (19.0)	B (10.2)	C (19.0)	B (10.2)	-	-	-	-
	-Southbound Approach	F (52.6)	C (19.1)	F (52.6)	C (19.1)	F (151.4)	D (25.3)	F (151.4)	D (25.3)	62	-	41%	-
4	**Satellite Boulevard @ Evergreen Boulevard**	**A (6.8)**	**A (7.7)**	**A (6.8)**	**A (7.7)**	**A (7.2)**	**A (7.8)**	**A (7.2)**	**A (7.8)**				
		A (2.0)	A (4.1)	A (2.0)	A (4.1)	A (2.2)	A (4.3)	A (2.2)	A (4.3)				
	-Eastbound Left	A (6.8)	A (5.5)	A (6.8)	A (5.5)	A (7.3)	A (5.7)	A (7.3)	A (5.7)	-	-	-	-
	-Southbound Approach	E (65.4)	E (63.4)	E (65.4)	E (63.4)	E (65.6)	E (63.3)	E (65.6)	E (63.3)	2	4	2%	2%

Most of these approaches achieve the LOS standard after implementation of identified improvements. However, there are a few approaches where there are no feasible improvements for these approaches to meet the LOS standard. The list below includes additional information on the approaches that could not be improved to the LOS standard.

Intersection 2: Satellite Boulevard and Children's Healthcare of Atlanta Driveway / Existing Eastern Access

- Since the traffic volumes do not meet satisfy traffic signal warrants, the stop-sign controlled side street's level-of-service cannot be further improved

Intersection 3: Satellite Boulevard and Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)

- Since the traffic volumes do not meet satisfy traffic signal warrants, the stop-sign controlled side street's level-of-service cannot be further improved

Intersection 4: Satellite Boulevard and Evergreen Boulevard

- Since the traffic volumes do not meet satisfy traffic signal warrants, the stop-sign controlled side street's level-of-service cannot be further improved

- Since the traffic volumes do not meet satisfy traffic signal warrants, the stop-sign controlled side street's level-of-service cannot be further improved

The table below includes 95th percentile Synchro HCM 6 queue length for failing level-of-service approaches for the build condition with improvements that had site generated traffic. Queue length reports are included in the Appendix.

TABLE E2 – FUTURE 95TH PERCENTILE SYNCHRO QUEUES (FT) FOR FAILING APPROACHES

	Intersection	Available Storage	Queue in feet	
			BUILD with Improvements	
			AM Peak	PM Peak
2	**Satellite Boulevard @ Children's Healthcare of Atlanta Driveway / Existing Eastern Access**			
	-Northbound Approach	100'	25	25
3	**Satellite Boulevard @ Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)**			
	-Southbound Left	200'	162	35
	-Southbound Right	90'	32.5	25
4	**Satellite Boulevard @ Evergreen Boulevard**			
	-Southbound Left	230'	62.5	197.5

As reported in Table E2, the projected "Build" condition 95th percentile approach queues will be accommodated by the existing storage available.

Recommendation for Site Access Configuration

The following access configuration is recommended for the site driveway intersections.

- Site Driveway 1: Existing full access western driveway on Satellite Boulevard, shared with the Highlands at Sweetwater Creek residential site
  - One entering and two exiting lanes.
  - Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 2: Existing full access eastern driveway on Satellite Boulevard aligned with Children's Healthcare of Atlanta Driveway
  - One entering and two exiting lanes.
  - Stop-sign controlled on the driveway approach and Children's Healthcare of Atlanta Driveway with Satellite Boulevard remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 3: Proposed right-In/right-out driveway on Satellite Boulevard west of Boggs Road
  - One entering and one exiting lane.

- Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
- Deceleration lane for entering traffic.
- Confirm adequate sight distance per AASHTO standards.

- Site Driveway 4: Existing full access driveway on Boggs Road
  - One entering and two exiting lanes.
  - Stop-sign controlled on the driveway approach with Boggs Road remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Short deceleration lane if feasible within right of way

Summary of Recommended System Improvements

- Satellite Boulevard at Boggs Road
  - Provide triple left turn lanes, one through lane and one right turn lane on northbound approach
  - Addition of one receiving lane on westbound Satellite Boulevard going away from the intersection
  - Addition of a southbound right turn lane on Boggs Road

Recommended Site Improvements

Boggs Road at Existing Access

- Addition of a short deceleration lane for entering traffic as feasible within right-of-way

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INTRODUCTION

The purpose of this study is to determine the traffic impact from the proposed redevelopment located to the northwest of the intersection of Satellite Boulevard and Boggs Road in Gwinnett County, Georgia. The traffic analysis evaluates the current operations and future conditions with the traffic generated by the redevelopment. The redevelopment includes the demolition of existing development to allow construction of:

- Multifamily Housing: 648 units
- Multifamily Rental Cottages: 64 units
- Retail: 25,000 square feet

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

1. Satellite Boulevard at Boggs Road
2. Satellite Boulevard at Children's Healthcare of Atlanta Driveway / Existing Eastern Access
3. Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)
4. Satellite Boulevard at Evergreen Boulevard
5. Boggs Road at Existing Access

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report.

STUDY NETWORK DETERMINATION

The study network was determined by evaluating the amount of traffic that the proposed development will add to each roadway segment in the area. According to GRTA requirements, a roadway segment carries a "significant" amount of traffic if the project contributes 7% or more trips to the two-way daily service volumes of the roadway at the appropriate level of service standard. Upon agreement with GRTA a level of service standard of "D" was used for determining the study area network.

The traffic generated by the proposed project was then assigned to the area roadways using the trip distribution to determine the site-generated traffic on each roadway segment. The boundaries of the study network extend to the most distant intersections where at least 7% of the service volumes on the segment are attributed to project traffic. The following study intersections fell within the 7% rule and/or have been selected as being suitable for evaluation in discussions with ARC, GRTA, Gwinnett County, Forsyth County, Fulton County:

1. Satellite Boulevard at Boggs Road
2. Satellite Boulevard at Children's Healthcare of Atlanta Driveway / Existing Access
3. Satellite Boulevard at Highlands at Sweetwater Creek Driveway
4. Satellite Boulevard at Evergreen Boulevard
5. Boggs Road at Existing Access

The location of the development and the surrounding study network is shown in Figure 1. Other intersections within this corridor, such as unsignalized side streets, right-in / right-out driveways or private driveways have not been included in the study network.

LOCATION MAP AND STUDY INTERSECTIONS FIGURE 1

A&R Engineering Inc.

EXISTING ROADWAY FACILITIES

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

Satellite Boulevard

Satellite Boulevard is an east-west, four-lane roadway with a two-way left-turn lane and posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 135-0581) indicate that the daily traffic volume on Satellite Boulevard in 2019 was 24,200 vehicles per day east of Old Norcross Road. GDOT classifies Satellite Boulevard as an Urban Minor Arterial roadway.

Boggs Road

Boggs Road is a north-south, four-lane roadway with a two-way left-turn lane and posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 135-0527) indicate that the daily traffic volume on Boggs Road in 2019 was 12,100 vehicles per day north of Satellite Boulevard. GDOT classifies Boggs Road as an Urban Minor Arterial roadway.

Evergreen Boulevard

Evergreen Boulevard is a north-south, four-lane, median-divided roadway with a posted speed limit of 35 mph in the vicinity of the site.

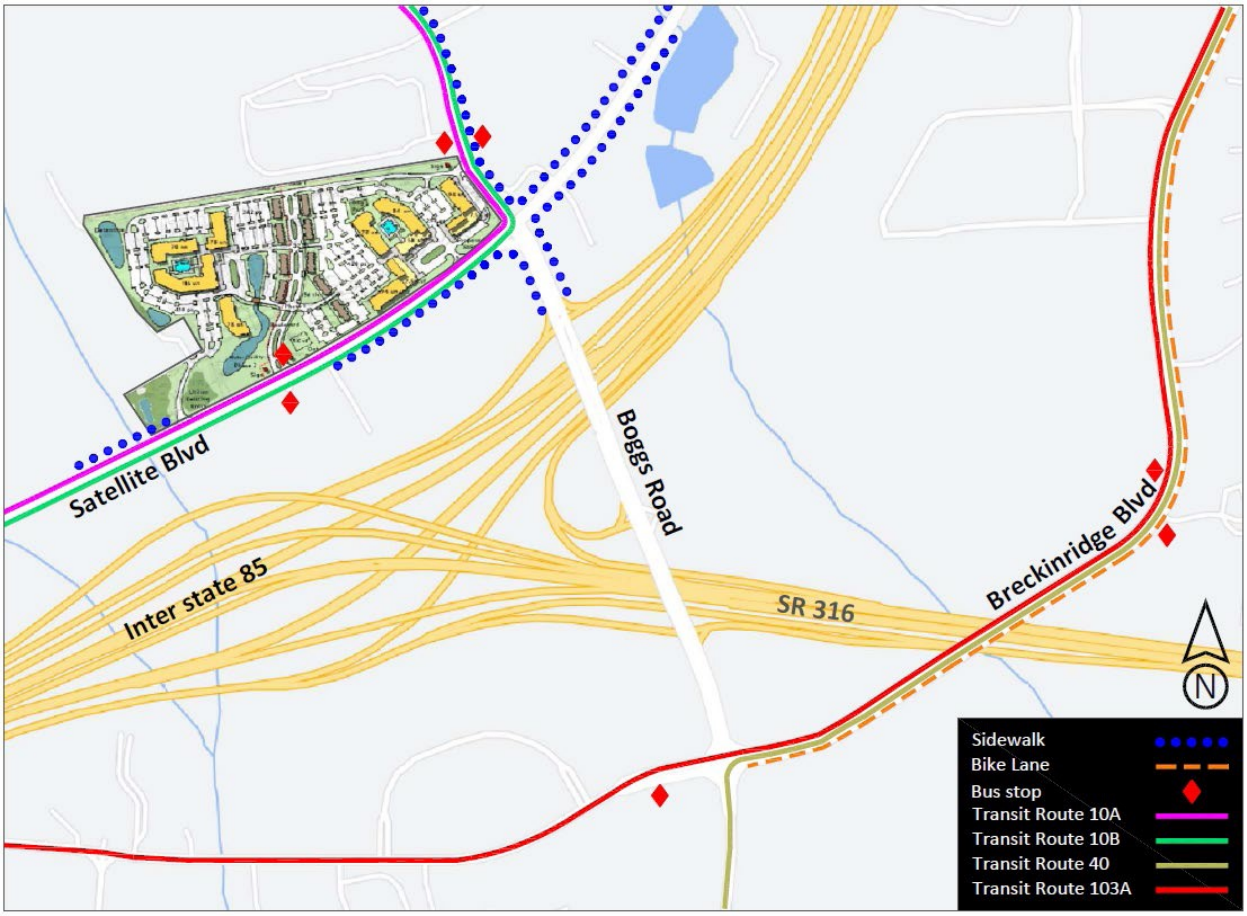
Existing Bicycle and Pedestrian Facilities

- Sidewalks are not available along the site frontage on Satellite Boulevard
- Sidewalks are not available along the site frontage on Boggs Road
- Sidewalks are present along eastbound Satellite Boulevard to the intersection of Boggs Road
- Sidewalks are present along northbound and southbound Boggs Road to the south of the intersection of Boggs Road and Satellite Boulevard
- Crosswalks are available at the intersection of Satellite Boulevard and Boggs Road
- Crosswalks are not available along existing site driveways
- Dedicated bike lane on Breckinridge Boulevard

Alternative Modes of Access

Gwinnett County Transit currently operates seven local bus routes and five Express routes. Local bus routes 10A, 10B, 40 and Express route 103A are operated in the proximity of the proposed development.

The graphic below includes the location of existing bus stops and sidewalks in the study network.



Transit Stop Ridership

Transit ridership data was obtained from MARTA and are presented in the tables included below.

STOP NO.	STOP NAME	ROUTE NO.
131	Boggs Rd & Quick Trip IB	10A, 10B
134	Boggs Rd & NCR1 (side entrance) OB	10A, 10B
145	Breckinridge Blvd & The Enclave @ Breck	40
148	Breckinridge Blvd & Kia Building	40
155	Breckinridge Blvd & Boggs Rd	103A
689	Satellite Blvd & Children's Healthcare IB	10A, 10B
690	Satellite & NCR Main Entrance OB	10A, 10B

Characteristics (Local Bus)	10A	10B	40
Weekday Peak Headway (mins)	30	30	30
Weekday Off-Peak Headway (mins)	60	120	60
Weekday Span of Service	5:30 a.m. - 10:30 p.m.	6:15 a.m. - 7:57 p.m.	6:00 a.m. - 8:50 p.m.
Saturday Headway (mins)	60	60	60
Saturday Span of Service	6:00 a.m. - 10:00 p.m.	6:30 a.m. - 9:30 p.m.	6:44 a.m. - 8:43 p.m.
Route Length – Inbound (mi)	15.8	16.9	20.2
Route Length – Outbound (mi)	15.1	16.1	19.4
Peak Hour Actual Running Time – Inbound/Outbound (mins)	58/60	60/63	62/63
Average Actual Running Time – Inbound/Outbound (mins)	52/53	53/55	58/57

Characteristics (Express Bus)	103A
Weekday Peak Headway (mins)	60
Weekday Span of Service	7:00 a.m. - 9:15 a.m.; 3:10 p.m.- 6:30 p.m.
Route Length – Inbound (mi)	27.9
Route Length – Outbound (mi)	32.5
Peak Hour Actual Running Time – Inbound/Outbound (mins)	59/74
Average Actual Running Time – Inbound/Outbound (mins)	59/73

STUDY METHODOLOGY

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

Unsignalized Intersections

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

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

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

TABLE 1 – LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c ≥ 1.0**
≤ 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

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

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

Signalized Intersections

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

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

TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)*	LOS for Lane Group by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c ≥ 1.0**
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

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

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

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

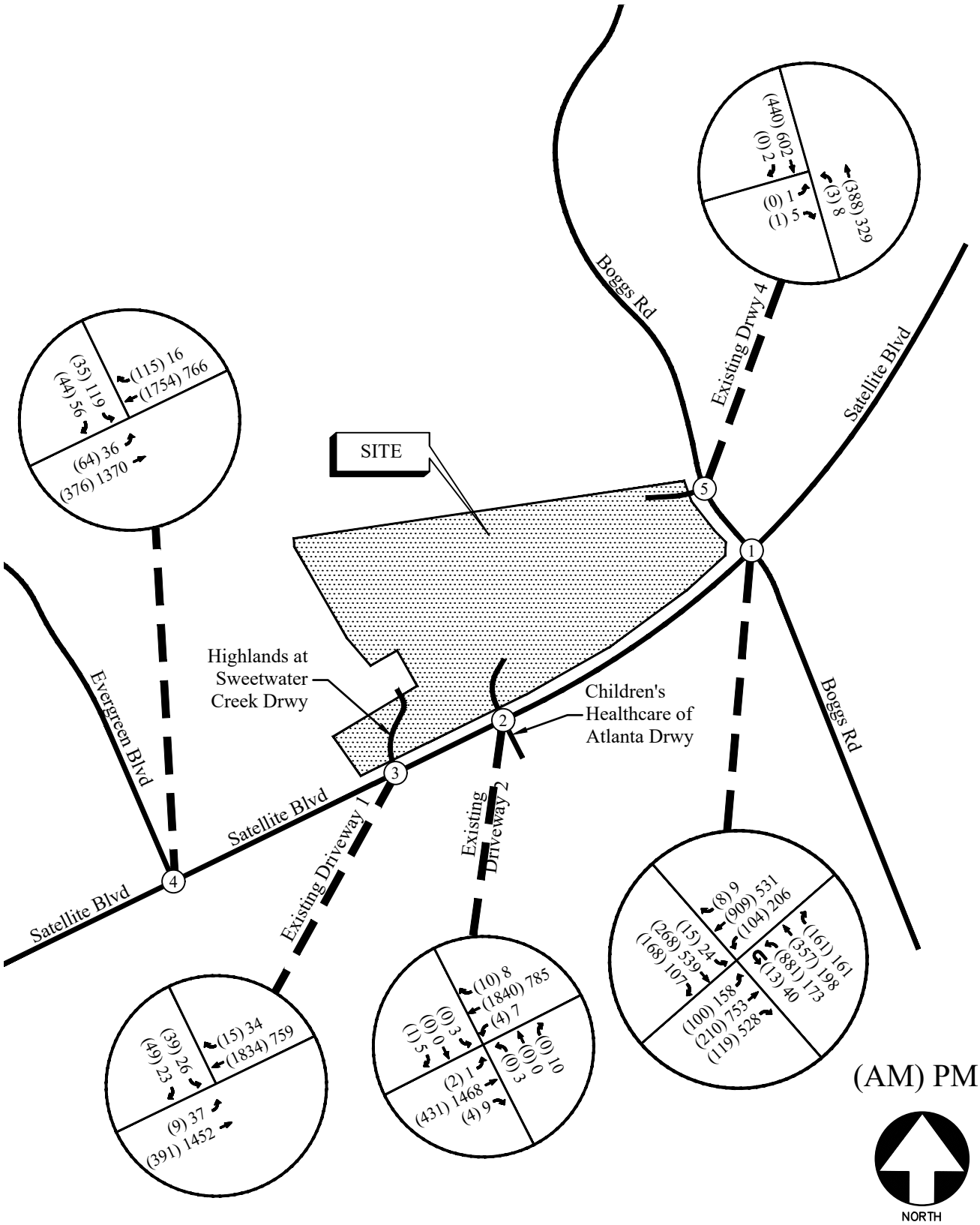
EXISTING 2022 TRAFFIC ANALYSIS

Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

- Satellite Boulevard at Boggs Road
- Satellite Boulevard at Children's Healthcare of Atlanta Driveway / Existing Eastern Access
- Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)
- Satellite Boulevard at Evergreen Boulevard
- Boggs Road at Existing Access

Turning movement counts were collected on Tuesday, February 15, 2022. All turning movement counts were recorded during the AM and PM peak hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.



EXISTING WEEKDAY PEAK-HOUR VOLUMES FIGURE 2

A&R Engineering Inc.

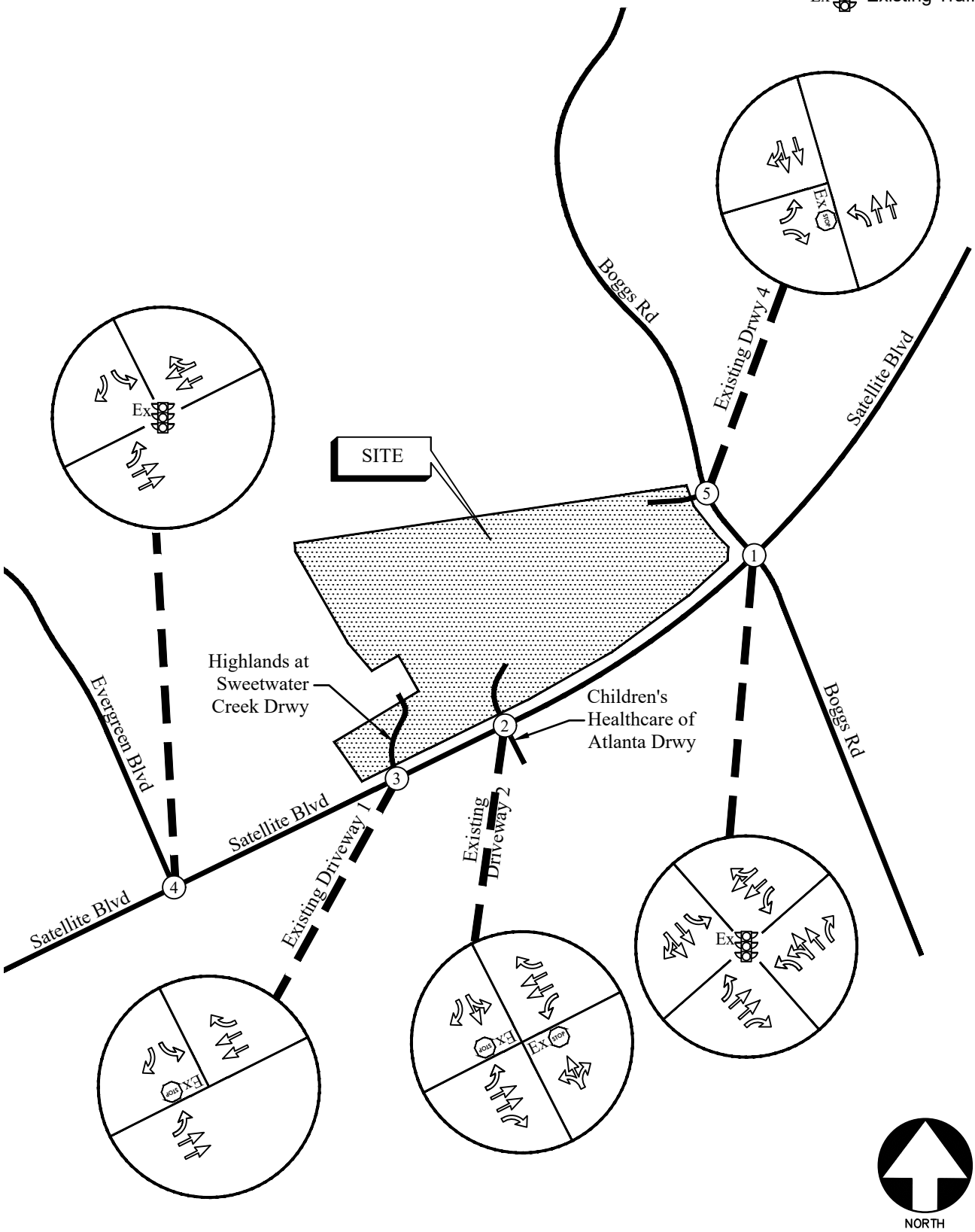
Existing Traffic Operations

Existing 2022 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analysis are shown in Table 3. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak	PM Peak	LOS Standard
1	**Satellite Boulevard @ Boggs Road**	Signalized	**E (63.1)**	**D (48.9)**	**E/D**
	-Eastbound Approach		C (33.2)	D (35.2)	D/D
	-Westbound Approach		D (47.0)	C (32.8)	D/D
	-Northbound Approach		E (79.6)	E (63.8)	E/E
	-Southbound Approach		E (68.4)	E (72.9)	E/E
2	**Satellite Boulevard @ Children's Healthcare of Atlanta Driveway / Existing Eastern Access**	Stop Controlled on NB and SB Approaches			
	-Eastbound Left		C (17.2)	A (9.6)	D/D
	-Westbound Left		A (8.3)	B (13.8)	D/D
	-Northbound Approach		A (0.0)	E (41.3)	D/E
	-Southbound Approach		C (19.3)	D (31.1)	D/D
3	**Satellite Boulevard @ Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)**	Stop Controlled on SB Approach			
	-Eastbound Left		C (17.1)	A (9.7)	D/D
	-Southbound Approach		E (47.2)	C (18.6)	E/D
4	**Satellite Boulevard @ Evergreen Boulevard**	Signalized	**A (6.5)**	**A (7.5)**	**D/D**
	-Eastbound Approach		A (1.9)	A (3.9)	D/D
	-Westbound Approach		A (6.5)	A (5.4)	D/D
	-Southbound Approach		E (65.3)	E (63.6)	E/E
5	**Boggs Road @ Existing Access**	Stop Controlled on EB Approach			
	-Eastbound Approach		A (9.7)	B (11.2)	D/D
	-Northbound Left		A (8.3)	A (9.0)	D/D

The results of existing traffic operations analysis indicate that both the signalized and unsignalized study intersections are operating at a level of service “E” or better in both the AM and PM peak hours. These areas are addressed in the Future Traffic Operations section.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 3

A&R Engineering Inc.

PROJECT DESCRIPTION

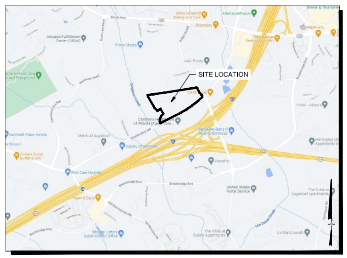
The proposed redevelopment will be located to the northwest of the intersection of Satellite Boulevard and Boggs Road in Gwinnett County, Georgia. The redevelopment includes the demolition of existing development to allow construction of:

- Multifamily Housing: 648 units
- Multifamily Rental Cottages: 64 units
- Retail: 25,000 square feet

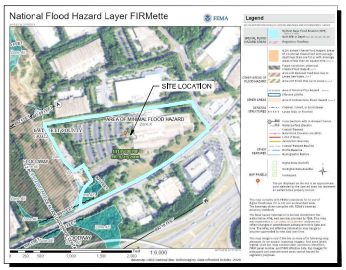
The redevelopment will use the existing two full access driveways on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

Site Plan

A site plan is shown as Figure 4.



SITE LOCATION MAP
NOT TO SCALE



FEMA FIRM MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL STREETS INTERNAL TO DEVELOPMENT TO BE PRIVATE STREETS.
2. ALL SIDEWALKS PROPOSED ON SITE TO BE CONCRETE AND FIVE IN WIDTH, UNLESS OTHER WISE NOTED ON PLAN.
3. ALL OFF-STREET SURFACE PARKING SHALL COMPLY WITH GWINNETT COUNTY UDO SECTION 610-30 OFF-STREET SURFACE PARKING LOT PLANTING REQUIREMENTS.
4. NO DAMN BREACH ZONE WAS LOCATED ON SITE.
5. SITE SHALL COMPLY WITH SECTION 210-225.10 OF THE GWINNETT UDO FOR STREETSCAPE DESIGN.

SITE CONSULTANTS:

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ABDUL AMER
2160 KINGSTON COURT, SUITE O
MARIETTA, GEORGIA 30067
PHONE: (770) 690-9255

CIVIL ENGINEER/ SITE PLANNER

PLANNERS & ENGINEERS COLLABORATIVE
MATT KACZENSKI
303 RESEARCH COURT
PEACHTREE CORNERS, GEORGIA 30092
PHONE: (770) 451-2741

OWNER/ DEVELOPER CONTACT

BRAND PROPERTIES
ANNA FORGEY
3328 PEACHTREE ROAD, NE, SUITE 100
ATLANTA, GEORGIA 30326
PHONE: (770) 407-2676

LEGEND:

- Ex. STOP — EXISTING SIGNED APPROACH
- PROP. STOP — PROPOSED SIGNED APPROACH
- EXISTING LANE GEOMETRY
- PROPOSED LANE GEOMETRY
- Ex. — EXISTING TRAFFIC SIGNAL
- ACCESS DRIVEWAY

SITE DATA RM-24 TRACT:	
RM-24 TRACT SITE AREA	36.308 ACRES
FLOODPLAIN & GAS EASEMENT	3.46 ACRES (50% = 1.73 ACRES)
NET LOT AREA	34.578 ACRES
ZONING	
EXISTING ZONING	M-1 & RA200
PROPOSED ZONING	RM-24
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	15 FEET
EXTERNAL SIDE YARD	15 FEET
EXTERNAL REAR YARD	30 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS	4-STORIES (65 FEET)
MULTI-FAMILY 4 STORY UNITS	648 UNITS
MULTI-FAMILY COTTAGE UNITS	64 UNITS
TOTAL NUMBER OF UNITS MF	712 UNITS
GROSS SITE DENSITY PROVIDED	19.61 UNITS PER ACRE
NET SITE DENSITY PROVIDED	20.59 UNITS PER ACRE
PARKING REQUIREMENTS	
MIN. MULTI-FAMILY PARKING REQUIRED	1.5 SP/UNIT x 712 UNITS = 1,068 SPACES
MAX. MULTI-FAMILY PARKING REQUIRED	3.0 SP/UNIT x 712 UNITS = 2,136 SPACES
TOTAL MULTI-FAMILY PARKING PROVIDED	1,129 SPACES (1.71 SP/UNIT)
BICYCLE PARKING REQUIRED	25 SPACES
BICYCLE PARKING PROVIDED	25 SPACES
H/C PARKING REQUIRED	20 SPACES
H/C PARKING PROVIDED	20 SPACES
EV PARKING REQUIRED	25 SPACES (1 SP/ 50 SPACES)
EV PARKING PROVIDED	25 SPACES
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	7.26 ACRES (20% OF TOTAL SITE AREA)
COMMON AREA PROVIDED	7.56 ACRES (20.8% OF TOTAL SITE AREA)
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	605,283 SF
MULTI-FAMILY COTTAGE FLOOR AREA PROVIDED	99,360 SF
AMENITY FLOOR AREA PROVIDED	7,500 SF
TOTAL RESIDENTIAL GFA PROVIDED	712,123 SF
GROSS LAND AREA	36.302 ACRES (1,581,315 SF)
TOTAL FAR PROVIDED	.45 (712,123 SF/ 1,581,315 SF)

SITE DATA MU-R TRACT:	
MU-R TRACT SITE AREA	3.788 ACRES
FLOODPLAIN & GAS EASEMENT	N/A
NET LOT AREA	3.788 ACRES
ZONING	
EXISTING ZONING	M-1
PROPOSED ZONING	MU-R
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	20 FEET
EXTERNAL SIDE YARD	20 FEET
EXTERNAL REAR YARD	20 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS w/ BONUSES	15 STORIES (210 FEET)
TOTAL COMMERCIAL AREA PROVIDED	25,000 SF
TOTAL MULTI-FAMILY UNITS PROVIDED	52 UNITS
GROSS SITE DENSITY PROVIDED	13.72 UNITS PER ACRE
NET SITE DENSITY PROVIDED	13.72 UNITS
PARKING REQUIREMENTS	
COMMERCIAL PARKING MIN. REQUIRED	1/400 SF x 25,000 SF = 63 SPACES
COMMERCIAL RETAIL PARKING PROVIDED	63 SPACES (1/400 SF)
MULTI-FAMILY PARKING MIN. REQUIRED	1.5 SP/UNIT x 52 UNITS = 78 SPACES
MULTI-FAMILY PARKING MAX. REQUIRED	3.0 SP/UNIT x 52 UNITS = 156 SPACES
MULTI-FAMILY PARKING PROVIDED	78 SPACES (1.5 SP/UNIT)
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	0.57 ACRES (15% OF TOTAL SITE AREA)
TOTAL COMMON AREA PROVIDED	0.65 ACRES (28,180 SF) 17.2% OF SITE AREA
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	54,837 SF
TOTAL RESIDENTIAL GFA PROVIDED	54,837 SF (68.7% OF GFA)
TOTAL COMMERCIAL GFA PROVIDED	25,000 SF (31.3% OF GFA)
TOTAL GFA PROVIDED	79,837 SF
GROSS LAND AREA	3.79 ACRES (165,082 SF)
TOTAL FAR PROVIDED	.484 (79,837 SF/ 165,082 SF)

MU-R DISTRICT BONUSES PROVIDED:

AMENITIES PROVIDED FOR FAR BONUS FOR MU-R DISTRICT:

COMMON AREA:	.1 FAR (ADDITIONAL .01 FAR/ EACH 1% OVER MIN.) (21.3% IN TOTAL PROVIDED)
MIXED-USE DEVELOPMENT:	.5 FAR
MULTI-USE PATHS:	1.2 FAR (.2 FAR/ 1,000' OF PATH) (6,000 LF OF PATH PROVIDED)

BASE FAR OF 0.4 + 1.8 FAR(BONUS)= 2.2 FAR

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PEACHTREE CORNERS, GA 30092

PROJECT

DRI# 3650 MIXED USED DEVELOPMENT

A MASTER PLANNED RESIDENTIAL DEVELOPMENT
AT
2651 SATELLITE BLVD.
DULUTH, GEORGIA 30096
CITY OF DULUTH/
GWINNETT COUNTY JURISDICTION

FOR
BRAND PROPERTIES

MUNICIPALITY PROJECT #

REVISIONS

NO.	DATE	BY	DESCRIPTION

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.

GEORGIA REGISTERED No. 37306 PROFESSIONAL ENGINEER MATTHEW F KACZENSKI

GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000066476 EXP. 06/27/2024

GRTA SITE PLAN

0 50 100 200 300

SCALE: 1" = 100'
DATE: 03/02/2022
PROJECT: 22038.00

GEORGIA 811 www.Georgia811.com Know what's below. Call before you dig.

24 HOUR CONTACT:
ANNA FORGEY

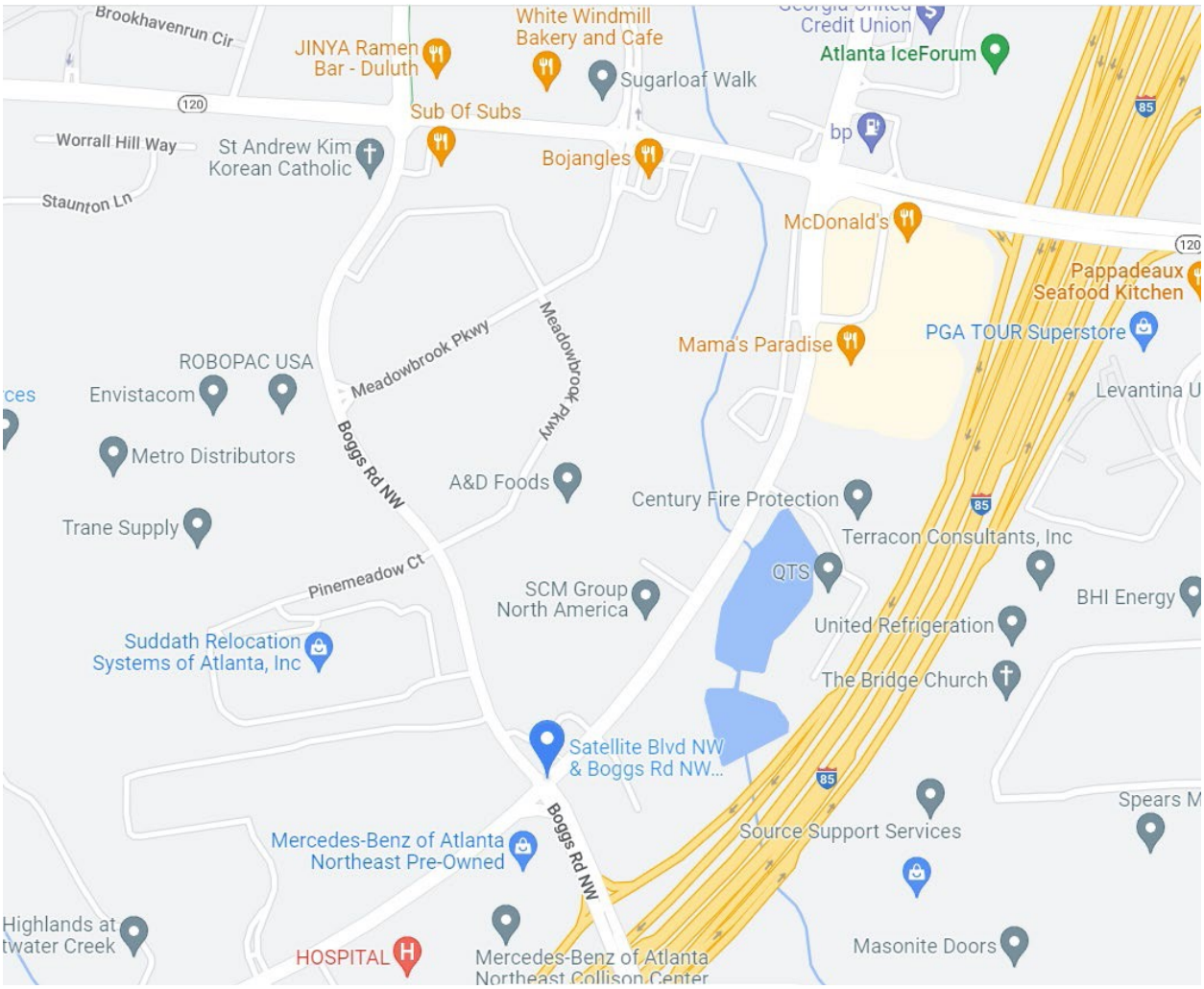
G1
SHEET

Planned Bicycle and Pedestrian Facilities

Sidewalks will be provided throughout the development.

Potential Pedestrian and Bicycle Destinations

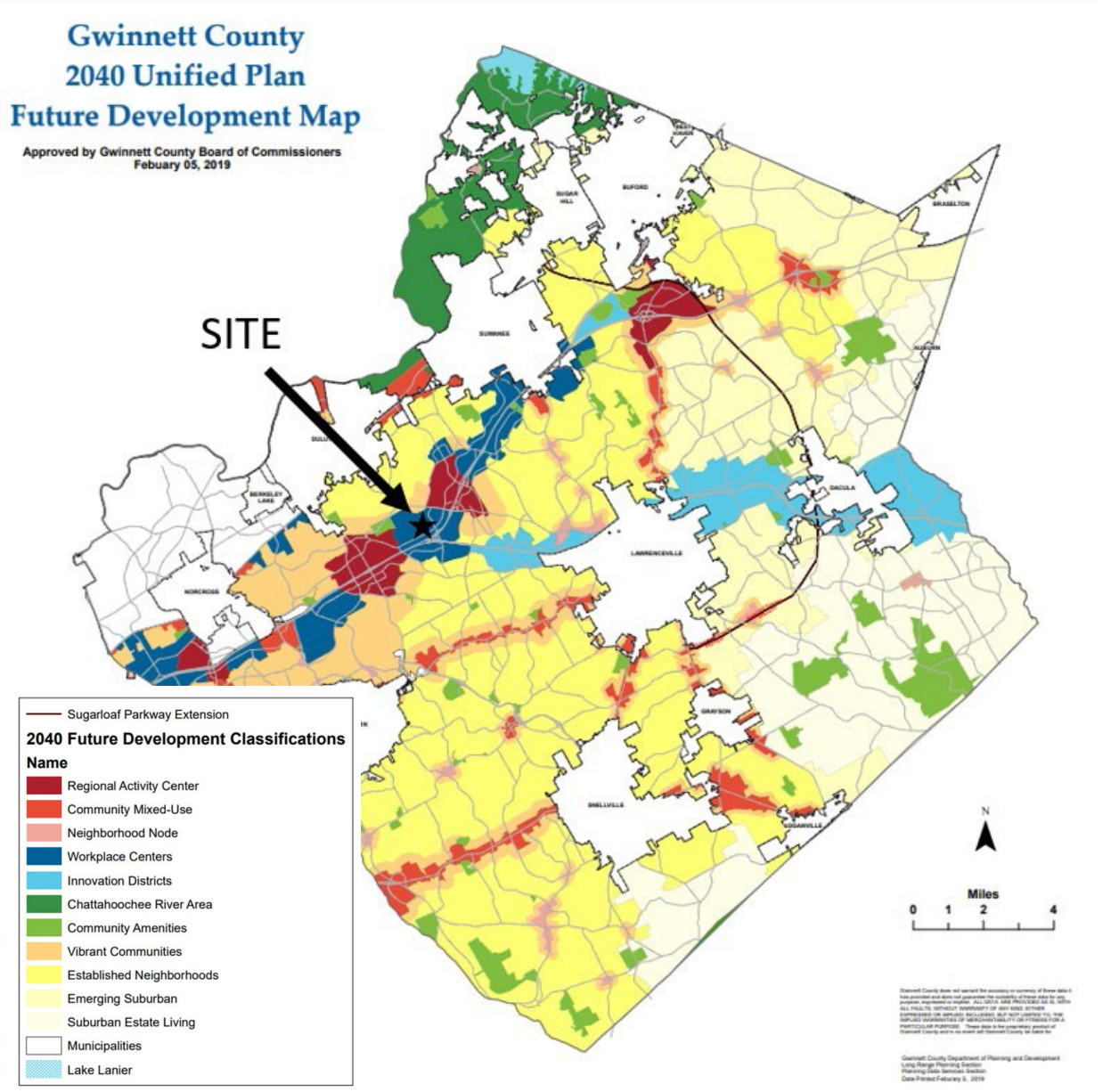
Potential pedestrian and bicycle destinations in the vicinity of the proposed development include McDaniel Farm Park, Shorty Howell Park, White Chapel Memorial Gardens, Club Drive Park and Sweet Water Park. Additional potential destinations are shown in the aerial below.



Consistency with Adopted Comprehensive Plan

The property includes 36.302 acres of land. The site is currently zoned as Light Industry District (M-1) & Agriculture-Residence District (RA-200). The applicant requests that the property is rezoned to Multifamily Residence District (RM-24) & Regional Mixed-Use District (MU-R). The future land use designated by Gwinnett County is Workplace Center (2040 Future Development Map) and is shown in the graphic below. The Workplace Center land use designation includes office parks, industrial parks, freight/logistic centers, warehouses, mixed use developments, townhomes and apartments. The goal of

this land use designation is to create an area that is predominantly employment oriented. While there is a focus on employment in this area, there should be appropriate opportunities for residential uses or multi use oriented commercial areas. The proposed development is consistent with the land use vision and goals listed above.



Project Phasing

This project has been evaluated for the complete build-out of the development in 2025.

Trip Generation

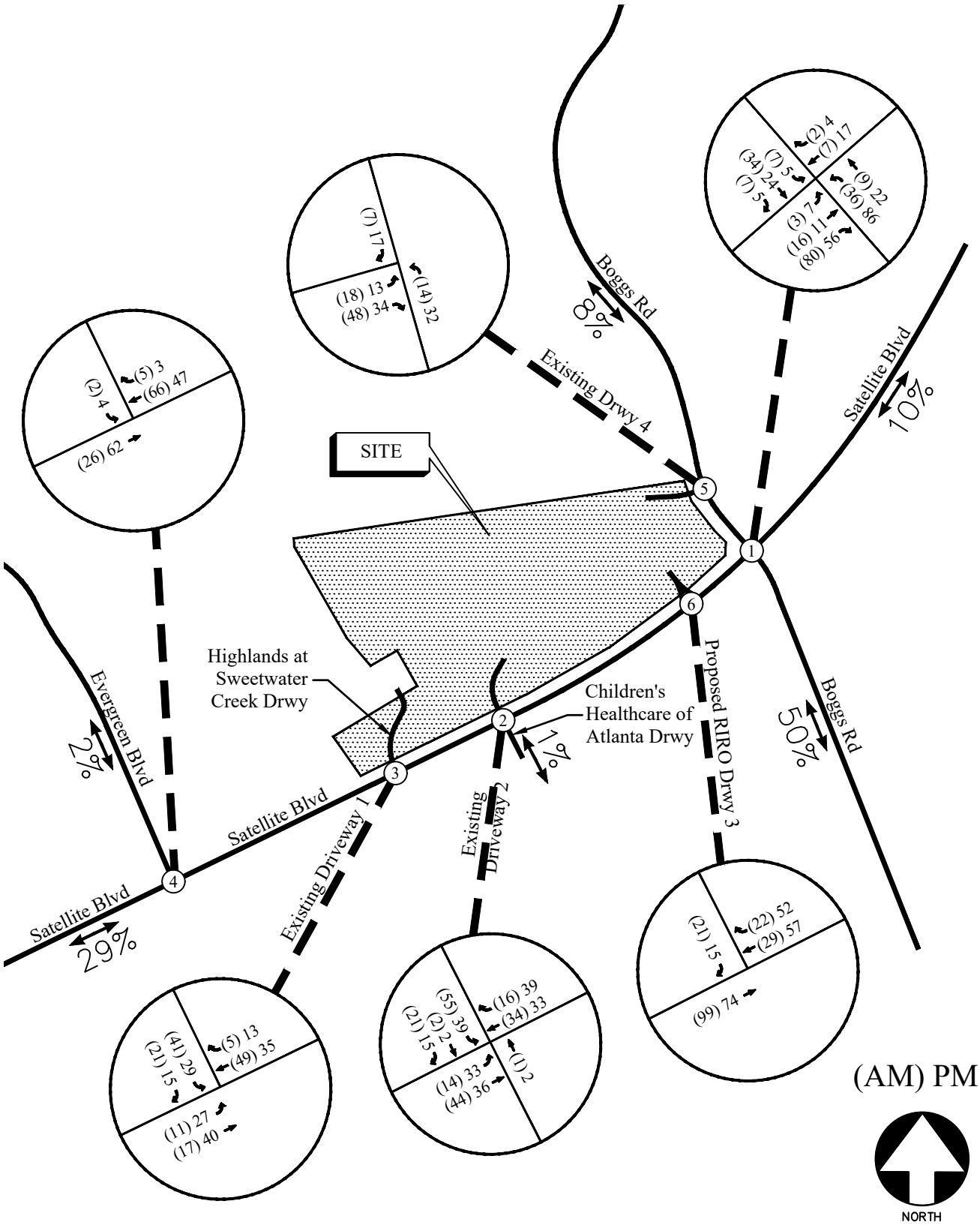
Trip generation estimates for the project were based on the rates and equations published in the 11th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses: *215 – Single-Family Attached Housing, 221 – Multifamily Housing (Mid-Rise)* and *822 – Strip Retail Plaza (<40k).* Due to the nature of the development mixed-use reductions have been applied per ITE standards. A 7% alternate mode reduction was also applied. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 215 – Multifamily Rental Cottages (Single-Family Attached Housing)	64 units	9	19	28	19	15	34	437
Mixed-Use Reduction		0	0	0	-1	-1	-2	-16
ITE 221 – Multifamily Housing (Mid-Rise)	648 units	63	211	274	154	99	253	3,045
Mixed-Use Reduction		-3	-3	-6	-6	-8	-14	-113
ITE 822 – Strip Retail Plaza (<40k)	25,000 sf	32	21	53	74	75	149	1,285
Mixed-Use Reduction		-3	-3	-6	-9	-7	-16	-129
Alternate Mode of Reduction (7%)		-7	-17	-24	-16	-12	-28	-316
Total Trips (without Reductions)		**104**	**251**	**355**	**247**	**189**	**436**	**4,767**
New External Trips (with Reductions)		**91**	**228**	**319**	**215**	**161**	**376**	**4,193**

Trip Distribution

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



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 5

A&R Engineering Inc.

FUTURE 2025 TRAFFIC ANALYSIS

The future 2025 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.

Future "No-Build" Conditions

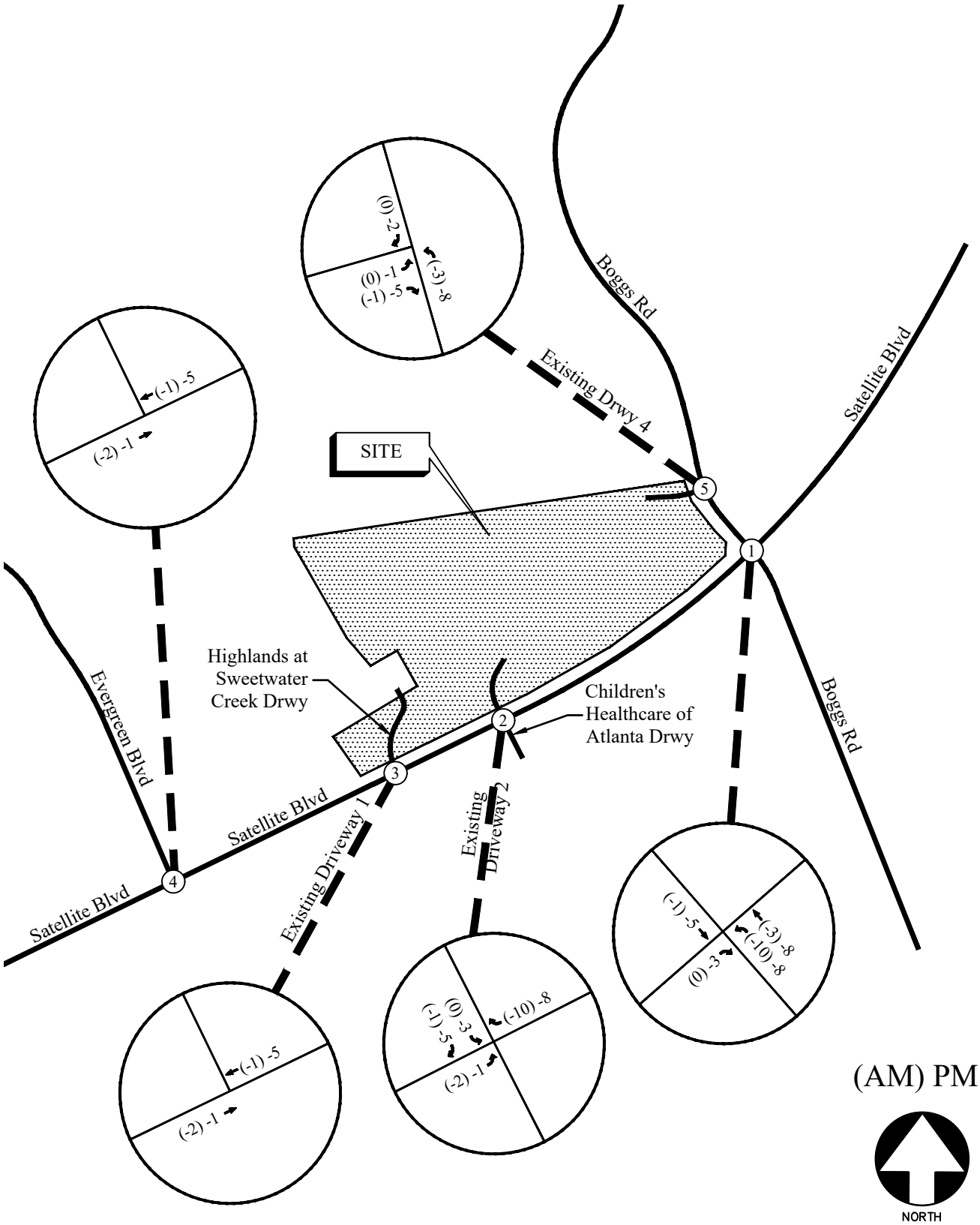
The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future "No-Build" volumes consist of the existing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

Removal of Existing Driveway Volumes

The existing development original facility is vacant. The parking lot is being used for Amazon delivery services; however, that is temporary, and it is not anticipated to continue to the no build conditions. Therefore, the existing trips at the site driveways were removed. Since the existing western access on Satellite Boulevard also serves the Highlands at Sweetwater Creek development that is going to be retained, the existing site volumes at this driveway were not removed. The removed traffic volumes are shown in Figure 6.

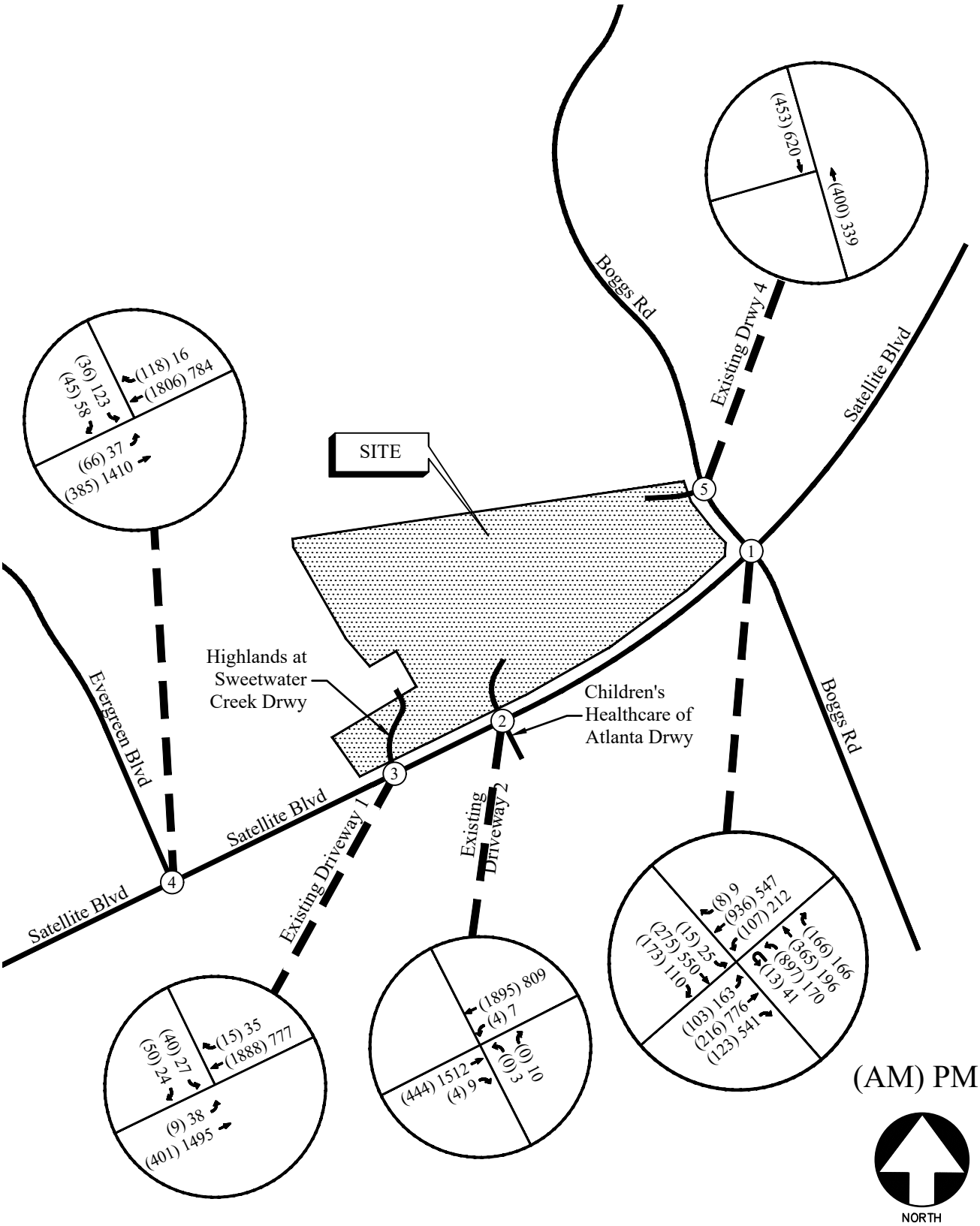
Annual Traffic Growth

To evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last three (2017-2019) years revealed a growth of approximately 1% in the area. This growth factor was applied to the existing traffic volumes (Figure 2) minus the removed site driveway volumes (Figure 6) 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 7.



REMOVED EXISTING VOLUMES AT DRIVEWAYS FIGURE 6

A&R Engineering Inc.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 7

A&R Engineering Inc.

Planned and Programmed Improvements in Study Area

The following improvements have been identified in the Regional Transportation Plan (Plan 2040), GDOT GeoPi, and/or the local comprehensive transportation plan. These improvements are within the vicinity of the proposed development.

TABLE 5 – PLANNED AND PROGRAMMED IMPROVEMENTS

Item #	Project Name	From / To Points	Sponsor	GDOT PI #	ARC ID #	Design FY	ROW / UTL FY	CST FY
1	Satellite Boulevard Corridor Marta Transit Service	From Doraville Rail Station to Sugarloaf Mills	Gwinnett County	N/A	AR-419D	TBD	TBD	2050

Project ID **AR-491D** will provide a high-capacity premium transit service along the I-85/Satellite Boulevard corridor in Gwinnet County between the Doraville Marta heavy rail station and the Sugarloaf Mills area.

Future "No-Build" Traffic Operations

The future "No-Build" traffic operations were analyzed using the volumes in Figure 7 and the results are shown in Table 6.

TABLE 6 – FUTURE "NO-BUILD" INTERSECTION OPERATIONS

	Intersection	No-Build Condition: LOS (Delay)			
		NO IMPROVEMENTS		SYSTEM IMPROVEMENTS	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Satellite Boulevard @ Boggs Road**	**E (58.7)**	**D (49.8)**	**D (46.2)**	**D (40.9)**
	-Eastbound Approach	D (39.9)	D (36.5)	C (27.6)	C (28.9)
	-Westbound Approach	E (60.9)	D (35.0)	D (38.1)	C (34.6)
	-Northbound Approach	E (57.2)	E (63.4)	D (53.5)	D (54.6)
	-Southbound Approach	E (71.2)	E (73.4)	D (55.0)	D (53.2)
2	**Satellite Boulevard @ Children's Healthcare of Atlanta Driveway / Existing Eastern Access**				
	-Eastbound Left	-	-	-	-
	-Westbound Left	A (8.3)	B (14.2)	A (8.3)	B (14.2)
	-Northbound Approach	A (0.0)	E (44.9)	A (0.0)	E (44.9)
	-Southbound Approach	-	-	-	-
3	**Satellite Boulevard @ Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)**				
	-Eastbound Left	C (17.7)	A (9.8)	C (17.7)	A (9.8)
	-Southbound Approach	F (52.6)	C (19.1)	F (52.6)	C (19.1)
4	**Satellite Boulevard @ Evergreen Boulevard**	**A (6.8)**	**A (7.7)**	**A (6.8)**	**A (7.7)**
	-Eastbound Approach	A (2.0)	A (4.1)	A (2.0)	A (4.1)
	-Westbound Approach	A (6.8)	A (5.5)	A (6.8)	A (5.5)
	-Southbound Approach	E (65.4)	E (63.4)	E (65.4)	E (63.4)
5	**Boggs Road @ Existing Access**				
	-Eastbound Approach	-	-	-	-
	-Northbound Left				

The results of future "No-Build" traffic operations show that the signalized intersection of Satellite Boulevard and Boggs Road will operate at an overall level-of-service "E" in the AM peak hour and "D" in the PM peak hour with no improvements. The signalized intersection of Satellite Boulevard and Evergreen Boulevard is operating at an overall LOS "A" in both the AM and PM peak hours. The LOS for the stop-controlled side-streets to the unsignalized intersections will be "E" or "F" in the AM and/or PM peak hour.

Recommendations for System Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below. These are recommended for the local municipality to use in planning future transportation projects.

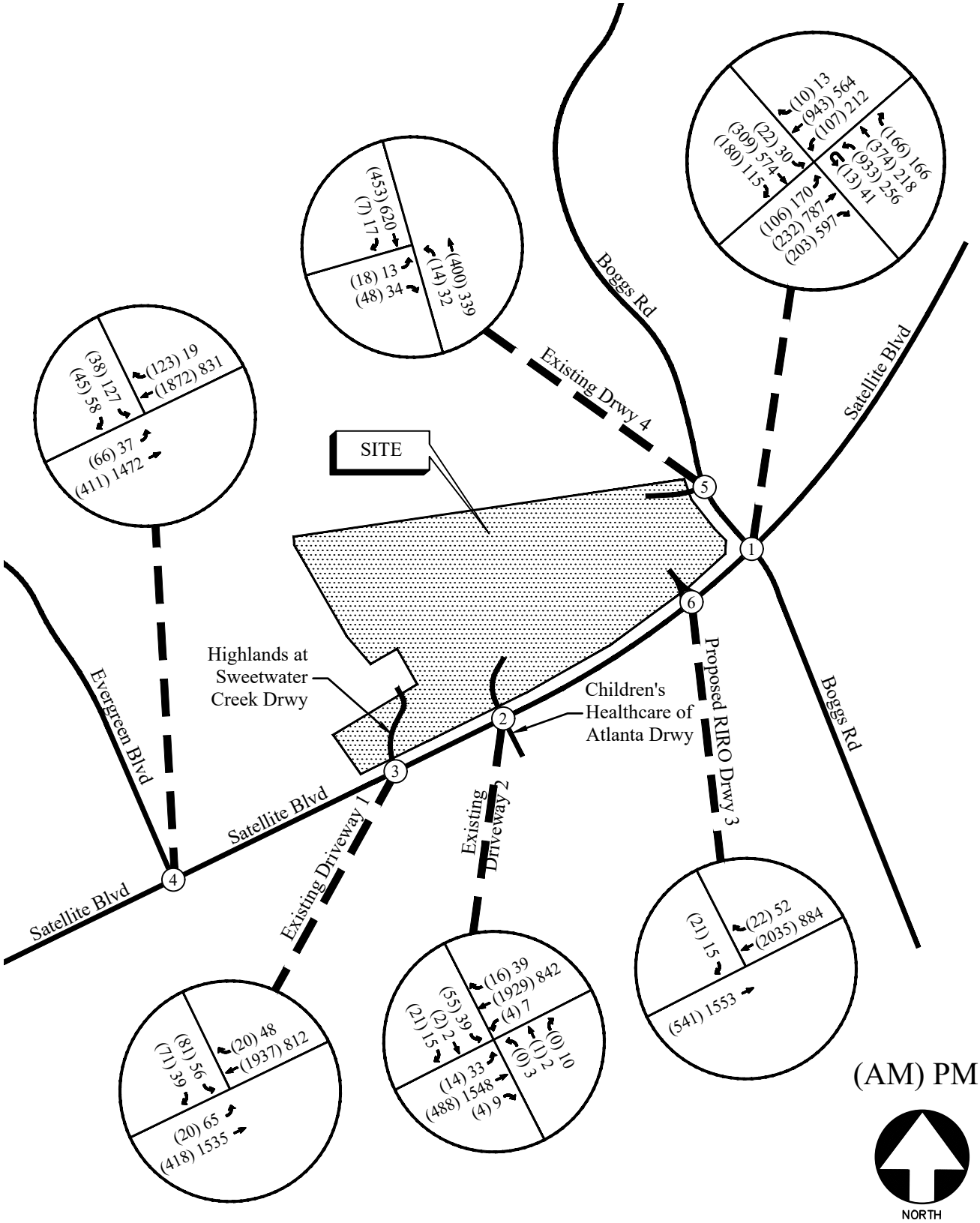
Summary of Recommended System Improvements

- Satellite Boulevard at Boggs Road
  - Provide triple left turn lanes, one through lane and one right turn lane on northbound approach
  - Addition of one receiving lane on westbound Satellite Boulevard going away from the intersection
  - Addition of southbound right turn lane on Boggs Road

After the system improvement the intersection of Satellite Boulevard and Boggs Road will operate at an overall LOS "D" in both the AM and PM peak hours. At the unsignalized intersections, delays are caused by side-street wait times to turn left onto the mainline. Since the intersections do not warrant construction of a signal to improve side-street delays, no additional improvements will aid left turn vehicles. Also, as it is not unusual for stop-controlled site-streets along arterial roadways to have elevated delays during peak periods, no other improvements have been identified at the unsignalized intersections.

Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figures 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 8.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 8

A&R Engineering Inc.

Auxiliary Lane Analysis

Included below are analyses for left-turn lanes and deceleration lanes for all site driveways per GDOT standards. The analyses below are based on the trip distribution included in the "Trip Distribution" section. According to the trip distribution, the total 24-hour two-way volume entering and exiting the site is 4,767 vehicles.

A two way left turn lane exists at all the existing (full access) driveways on Satellite Boulevard and Boggs Road. And the new site driveway on Satellite Boulevard is a right-in/right-out driveway. A left turn lane analysis is therefore not included.

Deceleration Turn Lane Analysis

For four lane roadways with AADT's greater than 10,000 vehicles and a posted speed limit of 45 mph, the threshold of daily site generated right-turn volume to warrant a right-turn lane is 75 vehicles. The projected right-turn volumes per day for each driveway is included in Table 7.

TABLE 7 – GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right-turn traffic (% total entering)	Right-turn Volume (vehicles/day)	Roadway Speed/ # lanes / ADT	GDOT Threshold (vehicles/day)	Warrants met?
Boggs Road @ Existing Access	8% (Southbound)	**168** (total trips) ÷ 2 × 0.08 = (4,193*) ÷ 2 x 0.08 = 168	45 mph / 4-Lane / > 10,000	75	Yes
Satellite Boulevard @ Proposed right-in/right-out Access	24% (Westbound)	**503** (total trips) ÷ 2 × 0.24 = (4,193*) ÷ 2 x 0.24 = 503	45 mph / 4-Lane / > 10,000	75	Yes

* Mixed use and alternate mode reductions not included

A deceleration lane is warranted at the existing access on Boggs Road and the new right-in/right-out access on Satellite Boulevard. Since the existing access on Boggs Road is located close to the property line, the feasibility of the right turn lane installation should be studied, and at least a short deceleration lane should be installed. Since deceleration lanes already exist at the two existing accesses on Satellite Boulevard, these driveways were not included in the right turn lane analysis.

Future "Build" Traffic Operations

The future "Build" traffic operations were analyzed using the volumes in Figure 8. The results of the future "Build" traffic operations analysis are shown in Table 8.

TABLE 8 – FUTURE "BUILD" INTERSECTION OPERATIONS

	Intersection	Build Condition: LOS (Delay)			
		NO IMPROVEMENTS		SYSTEM AND SITE IMPROVEMENTS	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Satellite Boulevard @ Boggs Road**	**E (64.0)**	**D (52.7)**	**D (47.0)**	**D (43.5)**
	-Eastbound Approach	D (43.4)	D (40.3)	C (28.7)	D (32.2)
	-Westbound Approach	E (72.3)	D (40.4)	D (39.7)	D (41.5)
	-Northbound Approach	E (60.0)	E (61.4)	D (53.8)	D (51.8)
	-Southbound Approach	E (72.2)	E (74.6)	D (54.7)	D (53.1)
2	**Satellite Boulevard @ Children's Healthcare of Atlanta Driveway / Existing Eastern Access**				
	-Eastbound Left	C (19.0)	B (10.2)	C (19.0)	B (10.2)
	-Westbound Left	A (8.5)	B (14.5)	A (8.5)	B (14.5)
	-Northbound Approach	F (168.9)	F (91.1)	F (168.9)	F (91.1)
	-Southbound Approach	F (*)	F (242.2)	F (*)	F (242.2)
3	**Satellite Boulevard @ Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)**				
	-Eastbound Left	C (19.0)	B (10.2)	C (19.0)	B (10.2)
	-Southbound Approach	F (151.4)	D (25.3)	F (151.4)	D (25.3)
4	**Satellite Boulevard @ Evergreen Boulevard**	**A (7.2)**	**A (7.8)**	**A (7.2)**	**A (7.8)**
	-Eastbound Approach	A (2.2)	A (4.3)	A (2.2)	A (4.3)
	-Westbound Approach	A (7.3)	A (5.7)	A (7.3)	A (5.7)
	-Southbound Approach	E (65.6)	E (63.3)	E (65.6)	E (63.3)
5	**Boggs Road @ Existing Access****				
	-Eastbound Approach	B (10.9)	B (12.3)	B (10.9)	B (12.2)
	-Northbound Left	A (8.4)	A (9.3)	A (8.4)	A (9.3)
6	**Satellite Boulevard @ Proposed right-in/right-out Access**				
	-Southbound Approach	C (24.7)	B (12.0)	D (28.5)	B (13.2)

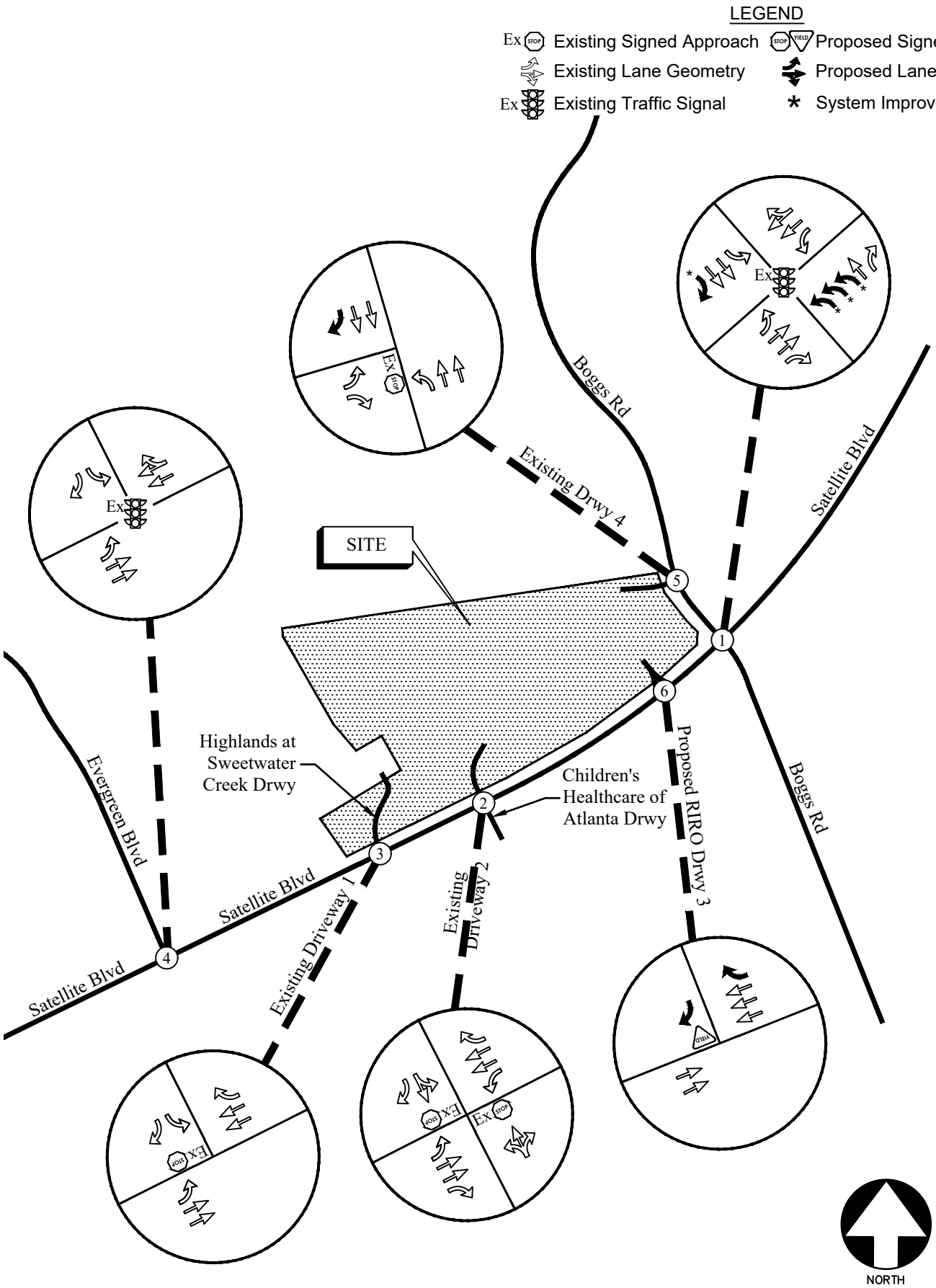
* Delay exceeds 300 seconds

** Includes addition of southbound right turn lane as a site improvement in improved conditions

It is not unusual for stop-controlled side-streets along arterial roadways to have elevated delays during peak periods as delays are caused by side-street wait times to turn left onto the mainline. The side street left turn traffic volumes do not meet the thresholds for installation of traffic signal. All other intersections will operate at level-of-service "D" or better in both the AM and PM peak hours after system improvements are accounted for. The following item is a recommended site mitigation improvement:

- Boggs Road at Existing Access: Addition of a short southbound deceleration lane for entering traffic as feasible within right-of-way

Recommendations for future traffic control and lane geometry are shown in Figure 9.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

A&R Engineering Inc.

CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the proposed redevelopment located to the northwest of the intersection of Satellite Boulevard and Boggs Road in Gwinnett County, Georgia. The redevelopment includes the demolition of existing development to allow construction of:

- Multifamily Housing: 648 units
- Multifamily Rental Cottages: 64 units
- Retail: 25,000 square feet

The redevelopment will use the existing two full access driveways on Satellite Boulevard and one existing full access driveway on Boggs Road. In addition, the redevelopment proposes one right-in/right-out driveway on Satellite Boulevard.

Existing and future operations during the AM peak hour (7:00 AM – 9:00 AM) and PM peak hour (4:00 PM – 6:00 PM) before and after completion of the project were analyzed at the following intersections:

1. Satellite Boulevard at Boggs Road
2. Satellite Boulevard at Children's Healthcare of Atlanta Driveway / Existing Eastern Access
3. Satellite Boulevard at Highlands at Sweetwater Creek Driveway (Existing Western Shared Access)
4. Satellite Boulevard at Evergreen Boulevard
5. Boggs Road at Existing Access
6. Satellite Boulevard at Proposed Right-in/right-out Access

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, the differences between “No-Build” and “Build” accounts for increase in traffic due to proposed redevelopment. The results of “No-Build” and “Build” analyses indicate that traffic operations will operate satisfactorily after the addition of site generated traffic and system improvements.

Recommendation for Site Access Configuration

The following access configuration is recommended for the site driveway intersections.

- Site Driveway 1: Existing full access western driveway on Satellite Boulevard, shared with the Highlands at Sweetwater Creek residential site
    - One entering and two exiting lanes.
    - Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
    - Left turn lane for entering traffic (two-way left turn lane exists)
    - Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 2: Existing full access eastern driveway on Satellite Boulevard aligned with Children's Healthcare of Atlanta Driveway
    - One entering and two exiting lanes.
    - Stop-sign controlled on the driveway approach and Children’s Healthcare of Atlanta Driveway with Satellite Boulevard remaining free flow.

- Left turn lane for entering traffic (two-way left turn lane exists)
- Deceleration lane for entering traffic (right turn lane exists)

- Site Driveway 3: Proposed right-In/right-out driveway on Satellite Boulevard west of Boggs Road
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with Satellite Boulevard remaining free flow.
  - Deceleration lane for entering traffic.
  - Confirm adequate sight distance per AASHTO standards.

- Site Driveway 4: Existing full access driveway on Boggs Road
  - One entering and two exiting lanes.
  - Stop-sign controlled on the driveway approach with Boggs Road remaining free flow.
  - Left turn lane for entering traffic (two-way left turn lane exists)
  - Short Deceleration lane as feasible within right-of-way

Summary of Recommended System Improvements

- Satellite Boulevard at Boggs Road
  - Provide triple left turn lanes, one through lane and one right turn lane on northbound approach
  - Addition of one receiving lane on westbound Satellite Boulevard going away from the intersection
  - Addition of a southbound right turn lane on Boggs Road

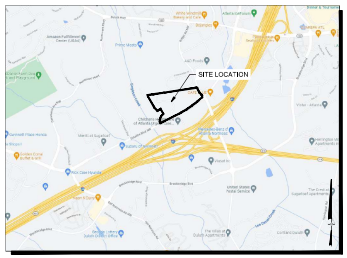
Recommended Site Improvements

Boggs Road at Existing Access

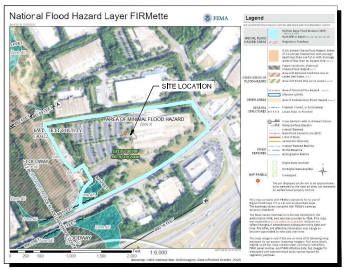
- Addition of a short deceleration lane for entering traffic as feasible within right-of-way

Appendix

Site Plan with BRT Station



SITE LOCATION MAP
NOT TO SCALE



FEMA FIRM MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL STREETS INTERNAL TO DEVELOPMENT TO BE PRIVATE STREETS.
2. ALL SIDEWALKS PROPOSED ON SITE TO BE CONCRETE AND FIVE IN WIDTH, UNLESS OTHER WISE NOTED ON PLAN.
3. ALL OFF-STREET SURFACE PARKING SHALL COMPLY WITH GWINNETT COUNTY UDO SECTION 610-30 OFF-STREET SURFACE PARKING LOT PLANTING REQUIREMENTS.
4. NO DAMN BREACH ZONE WAS LOCATED ON SITE.
5. SITE SHALL COMPLY WITH SECTION 210-225.10 OF THE GWINNETT UDO FOR STREETSCAPE DESIGN.

SITE CONSULTANTS:

TRAFFIC ENGINEER

A & R ENGINEERING
ABDUL AMER
2160 KINGSTON COURT, SUITE O
MARIETTA, GEORGIA 30067
PHONE: (770) 690-9255

CIVIL ENGINEER/ SITE PLANNER

PLANNERS & ENGINEERS COLLABORATIVE
MATT KACZENSKI
300 RESEARCH COURT
PEACHTREE CORNERS, GEORGIA 30092
PHONE: (770) 451-2741

OWNER/ DEVELOPER CONTACT

BRAND PROPERTIES
ANNA FORGEY
3328 PEACHTREE ROAD, NE, SUITE 100
ATLANTA, GEORGIA 30326
PHONE: (770) 407-3578

SITE DATA RM-24 TRACT:	
RM-24 TRACT SITE AREA	36.273 ACRES
FLOODPLAIN & GAS EASEMENT	3.46 ACRES (50% = 1.73 ACRES)
NET LOT AREA	34.543 ACRES
ZONING	
EXISTING ZONING	M-1 & RA200
PROPOSED ZONING	RM-24
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	15 FEET
EXTERNAL SIDE YARD	15 FEET
EXTERNAL REAR YARD	30 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS	4-STORIES (65 FEET)
MULTI-FAMILY 4 STORY UNITS	648 UNITS
MULTI-FAMILY COTTAGE UNITS	64 UNITS
TOTAL NUMBER OF UNITS MF	712 UNITS
GROSS SITE DENSITY PROVIDED	19.39 UNITS PER ACRE
NET SITE DENSITY PROVIDED	20.61 UNITS PER ACRE
PARKING REQUIREMENTS	
MIN. MULTI-FAMILY PARKING REQUIRED	1.5 SP/UNIT x 712 UNITS = 1,068 SPACES
MAX. MULTI-FAMILY PARKING REQUIRED	3.0 SP/UNIT x 712 UNITS = 2,136 SPACES
TOTAL MULTI-FAMILY PARKING PROVIDED	1,129 SPACES (1.71 SP/UNIT)
BICYCLE PARKING REQUIRED	25 SPACES
BICYCLE PARKING PROVIDED	25 SPACES
H/C PARKING REQUIRED	20 SPACES
H/C PARKING PROVIDED	20 SPACES
EV PARKING REQUIRED	25 SPACES (1 SP/ 50 SPACES)
EV PARKING PROVIDED	25 SPACES
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	7.25 ACRES (20% OF TOTAL SITE AREA)
COMMON AREA PROVIDED	7.56 ACRES (20.8% OF TOTAL SITE AREA)
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	605,283 SF
MULTI-FAMILY COTTAGE FLOOR AREA PROVIDED	99,360 SF
AMENITY FLOOR AREA PROVIDED	7,500 SF
TOTAL RESIDENTIAL GFA PROVIDED	712,123 SF
GROSS LAND AREA	36.302 ACRES (1,581,315 SF)
TOTAL FAR PROVIDED	.45 (712,123 SF/ 1,581,315 SF)

SITE DATA MU-R TRACT:	
MU-R TRACT SITE AREA	3.79 ACRES
FLOODPLAIN & GAS EASEMENT	N/A
NET LOT AREA	3.79 ACRES
ZONING	
EXISTING ZONING	M-1
PROPOSED ZONING	MU-R
ZONING JURISDICTION	GWINNETT COUNTY
SETBACK/BUFFER REQUIREMENTS	
EXTERNAL FRONT YARD (BOGGS RD/SATELLITE BLVD.)	20 FEET
EXTERNAL SIDE YARD	20 FEET
EXTERNAL REAR YARD	20 FEET
FRONTAGE LANDSCAPE STRIP OFF R/W	10 FEET
DEVELOPMENT STANDARDS	
MAXIMUM HEIGHT OF BUILDINGS w/ BONUSES	15 STORIES (210 FEET)
TOTAL COMMERCIAL AREA PROVIDED	25,000 SF
TOTAL MULTI-FAMILY UNITS PROVIDED	52 UNITS
GROSS SITE DENSITY PROVIDED	13.72 UNITS PER ACRE
NET SITE DENSITY PROVIDED	13.72 UNITS
PARKING REQUIREMENTS	
COMMERCIAL PARKING MIN. REQUIRED	1/400 SF x 25,000 SF = 63 SPACES
COMMERCIAL RETAIL PARKING PROVIDED	63 SPACES (1/400 SF)
MULTI-FAMILY PARKING MIN. REQUIRED	1.5 SP/UNIT x 52 UNITS = 78 SPACES
MULTI-FAMILY PARKING MAX. REQUIRED	3.0 SP/UNIT x 52 UNITS = 156 SPACES
MULTI-FAMILY PARKING PROVIDED	78 SPACES (1.5 SP/UNIT)
COMMON AREA CALCULATIONS	
COMMON AREA REQUIRED	0.57 ACRES (15% OF TOTAL SITE AREA)
TOTAL COMMON AREA PROVIDED	0.65 ACRES (28,180 SF) 17.2% OF SITE AREA
FLOOR AREA RATIO CALCULATIONS	
MULTI-FAMILY FLOOR AREA PROVIDED	54,837 SF
TOTAL RESIDENTIAL GFA PROVIDED	54,837 SF (68.7% OF GFA)
TOTAL COMMERCIAL GFA PROVIDED	25,000 SF (31.3% OF GFA)
TOTAL GFA PROVIDED	79,837 SF
GROSS LAND AREA	3.79 ACRES (165,082 SF)
TOTAL FAR PROVIDED	.484 (79,837 SF/ 165,082 SF)

MU-R DISTRICT BONUSES PROVIDED:

AMENITIES PROVIDED FOR FAR BONUS FOR MU-R DISTRICT:

COMMON AREA:	.1 FAR (ADDITIONAL .01 FAR/ EACH 1% OVER MIN.) (21.3% IN TOTAL PROVIDED)
MIXED-USE DEVELOPMENT:	.5 FAR
MULTI-USE PATHS:	1.2 FAR (.2 FAR/ 1,000' OF PATH) (6,000 LF OF PATH PROVIDED)

BASE FAR OF 0.4 + 1.8 FAR(BONUS)= 2.2 FAR

Brand Properties will coordinate design for parking lot and nature trail to accommodate future walkup BRT station installation.

GEORGIA811 www.Georgia811.com Know what's below. Call before you dig.

24 HOUR CONTACT:
ANNA FORGEY

P: (770) 451-2741 F: (770) 451-3915
WWW.PEC.PLUS
Planners & Engineers Collaborative+
LAND PLANNING + LANDSCAPE ARCHITECTURE + CIVIL ENGINEERING
ARBORISTS + SURVEYING & CONSTRUCTION + WATER RESOURCES
350 RESEARCH COURT STE 200
PEACHTREE CORNERS, GA 30092

PROJECT

DRI# 3650 MIXED USED DEVELOPMENT

A MASTER PLANNED RESIDENTIAL DEVELOPMENT
AT
2651 SATELLITE BLVD.
DULUTH, GEORGIA 30096

CITY OF DULUTH/
GWINNETT COUNTY JURISDICTION

FOR
BRAND PROPERTIES

MUNICIPALITY PROJECT #

REVISIONS

NO.	DATE	BY	DESCRIPTION

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.

GEORGIA REGISTERED No. 37306 PROFESSIONAL ENGINEER MATTHEW F KACZENSKI

GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION # 0000066476 EXP. 06/27/2024

GRTA SITE PLAN

0 50 100 200 300

SCALE: 1" = 100'
DATE: 03/02/2022
PROJECT: 22038.00

G1
SHEET

Existing Intersection Traffic Counts

A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	96	75	30	0	201	0	54	11	65	13	27	29	69	35	103	1	139	474
07:15 AM	103	69	27	2	201	1	61	15	77	12	31	29	72	34	112	2	148	498
07:30 AM	159	47	31	0	237	1	83	24	108	12	38	32	82	37	151	3	191	618
07:45 AM	193	78	52	1	324	6	69	28	103	22	55	28	105	25	215	2	242	774
Total	551	269	140	3	963	8	267	78	353	59	151	118	328	131	581	8	720	2364
08:00 AM	237	87	42	0	366	8	78	53	139	17	41	28	86	23	240	1	264	855
08:15 AM	204	89	26	5	324	1	68	46	115	28	48	34	110	33	212	3	248	797
08:30 AM	193	83	35	5	316	4	64	45	113	31	61	25	117	23	224	1	248	794
08:45 AM	290	123	63	3	479	5	101	33	139	29	80	38	147	29	251	3	283	1048
Total	924	382	166	13	1485	18	311	177	506	105	230	125	460	108	927	8	1043	3494
*** BREAK ***																		
04:00 PM	60	50	26	3	139	2	77	15	94	24	116	92	232	44	134	0	178	643
04:15 PM	39	46	31	4	120	3	146	34	183	38	119	132	289	50	122	1	173	765
04:30 PM	32	41	41	10	124	8	125	29	162	42	144	121	307	51	112	4	167	760
04:45 PM	42	38	36	3	119	4	112	29	145	31	167	144	342	53	123	5	181	787
Total	173	175	134	20	502	17	460	107	584	135	546	489	1170	198	491	10	699	2955
05:00 PM	38	52	39	9	138	8	114	25	147	38	153	125	316	49	131	2	182	783
05:15 PM	39	48	41	9	137	7	177	24	208	51	194	167	412	60	127	4	191	948
05:30 PM	35	43	41	9	128	7	142	36	185	36	241	128	405	51	156	1	208	926
05:45 PM	61	55	40	13	169	2	106	22	130	33	165	108	306	46	134	2	182	787
Total	173	198	161	40	572	24	539	107	670	158	753	528	1439	206	548	9	763	3444
Grand Total	1821	1024	601	76	3522	67	1577	469	2113	457	1680	1260	3397	643	2547	35	3225	12257
Apprch %	51.7	29.1	17.1	2.2		3.2	74.6	22.2		13.5	49.5	37.1		19.9	79	1.1		
Total %	14.9	8.4	4.9	0.6	28.7	0.5	12.9	3.8	17.2	3.7	13.7	10.3	27.7	5.2	20.8	0.3	26.3	

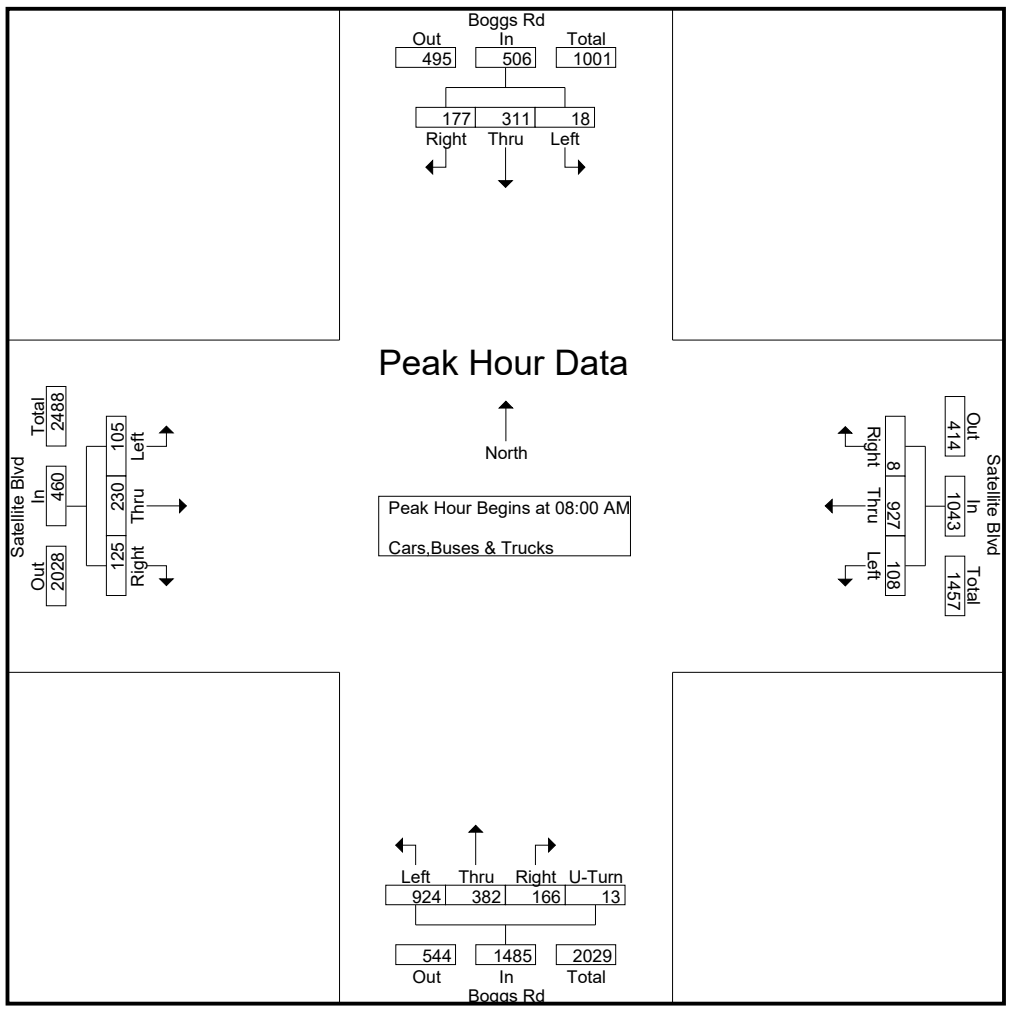
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 2

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00 AM																		
08:00 AM	237	87	42	0	366	**8**	78	**53**	**139**	17	41	28	86	23	240	1	264	855
08:15 AM	204	89	26	**5**	324	1	68	46	115	28	48	34	110	**33**	212	**3**	248	797
08:30 AM	193	83	35	5	316	4	64	45	113	**31**	61	25	117	23	224	1	248	794
08:45 AM	**290**	**123**	**63**	3	**479**	5	**101**	33	139	29	**80**	**38**	**147**	29	**251**	3	**283**	**1048**
Total Volume	924	382	166	13	1485	18	311	177	506	105	230	125	460	108	927	8	1043	3494
% App. Total	62.2	25.7	11.2	0.9		3.6	61.5	35		22.8	50	27.2		10.4	88.9	0.8		
PHF	.797	.776	.659	.650	.775	.563	.770	.835	.910	.847	.719	.822	.782	.818	.923	.667	.921	.833



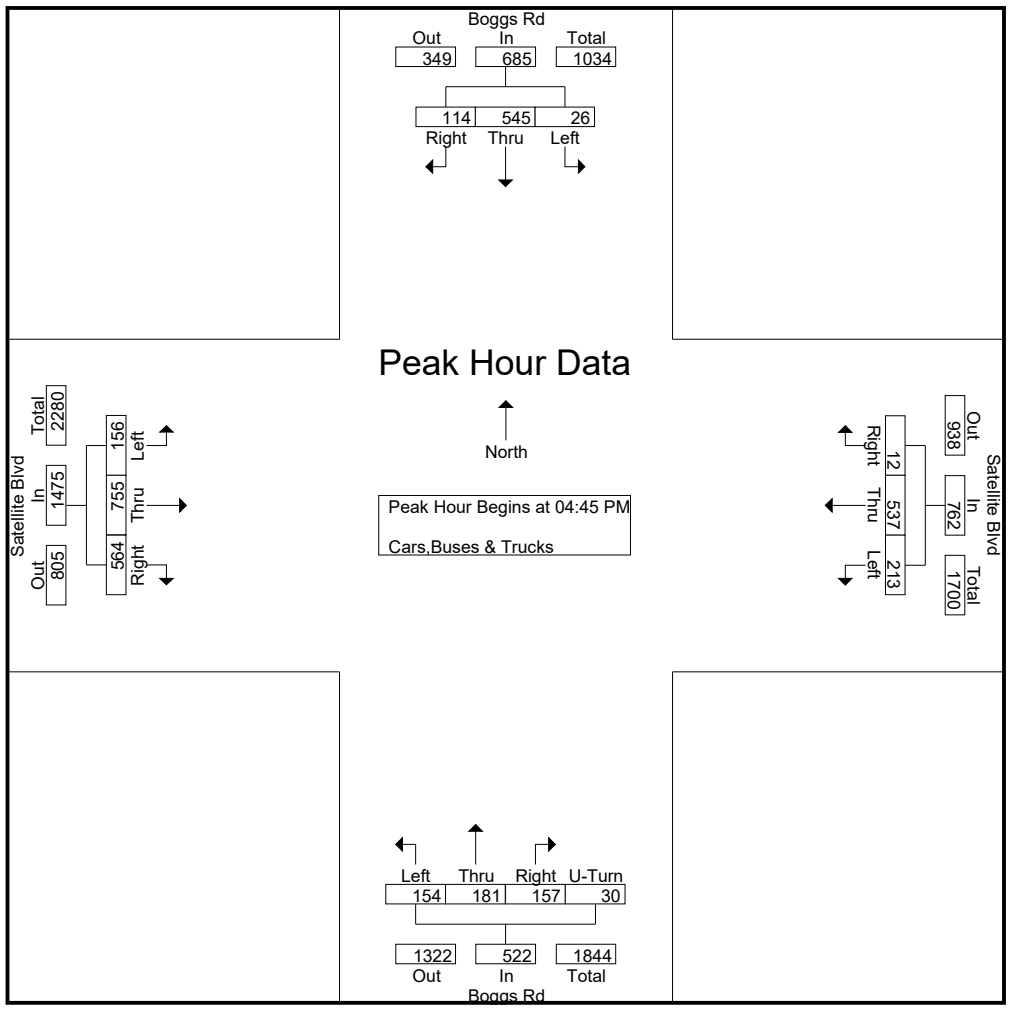
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Boggs Rd
7-9 am | 4-6 pm

File Name : 20220056
Site Code : 20220056
Start Date : 2/15/2022
Page No : 3

	Boggs Rd Northbound					Boggs Rd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:45 PM																		
04:45 PM	**42**	38	36	3	119	4	112	29	145	31	167	144	342	53	123	**5**	181	787
05:00 PM	38	**52**	39	**9**	**138**	**8**	114	25	147	38	153	125	316	49	131	2	182	783
05:15 PM	39	48	**41**	9	137	7	**177**	24	**208**	**51**	194	**167**	**412**	**60**	127	4	191	**948**
05:30 PM	35	43	41	9	128	7	142	**36**	185	36	**241**	128	405	51	**156**	1	**208**	926
Total Volume	154	181	157	30	522	26	545	114	685	156	755	564	1475	213	537	12	762	3444
% App. Total	29.5	34.7	30.1	5.7		3.8	79.6	16.6		10.6	51.2	38.2		28	70.5	1.6		
PHF	.917	.870	.957	.833	.946	.813	.770	.792	.823	.765	.783	.844	.895	.888	.861	.600	.916	.908



A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Children's Healthcare
of Atlanta Urgent Care Drwy
7-9 am | 4-6 pm

File Name : 20220057
Site Code : 20220057
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Children's Healthcare of Atlanta Urgent Care Drwy Northbound				Compris Technologies Drwy Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	1	1	82	0	83	0	200	0	200	284
07:15 AM	0	0	1	1	0	0	0	0	0	83	1	84	5	279	2	286	371
07:30 AM	0	0	0	0	0	0	1	1	2	90	0	92	0	374	0	374	467
07:45 AM	0	0	0	0	0	0	0	0	0	100	0	100	1	497	0	498	598
Total	0	0	1	1	0	0	2	2	3	355	1	359	6	1350	2	1358	1720
08:00 AM	0	0	0	0	0	0	0	0	1	103	3	107	0	467	0	467	574
08:15 AM	0	0	0	0	0	0	1	1	0	111	0	111	0	443	2	445	557
08:30 AM	0	0	0	0	0	0	0	0	0	112	0	112	3	441	1	445	557
08:45 AM	0	0	0	0	0	0	0	0	1	105	1	107	1	489	7	497	604
Total	0	0	0	0	0	0	1	1	2	431	4	437	4	1840	10	1854	2292
*** BREAK ***																	
04:00 PM	3	0	7	10	1	0	0	1	2	276	5	283	0	188	1	189	483
04:15 PM	3	0	3	6	2	0	3	5	2	280	0	282	2	149	1	152	445
04:30 PM	1	0	0	1	0	0	1	1	0	352	0	352	0	169	1	170	524
04:45 PM	0	0	3	3	0	0	0	0	0	326	0	326	0	229	2	231	560
Total	7	0	13	20	3	0	4	7	4	1234	5	1243	2	735	5	742	2012
05:00 PM	1	0	2	3	2	0	1	3	0	404	6	410	2	164	1	167	583
05:15 PM	1	0	3	4	0	0	0	0	0	403	1	404	4	197	1	202	610
05:30 PM	1	0	2	3	1	0	4	5	1	335	2	338	1	195	4	200	546
05:45 PM	1	0	4	5	3	0	1	4	0	314	0	314	1	203	5	209	532
Total	4	0	11	15	6	0	6	12	1	1456	9	1466	8	759	11	778	2271
Grand Total	11	0	25	36	9	0	13	22	10	3476	19	3505	20	4684	28	4732	8295
Apprch %	30.6	0	69.4		40.9	0	59.1		0.3	99.2	0.5		0.4	99	0.6		
Total %	0.1	0	0.3	0.4	0.1	0	0.2	0.3	0.1	41.9	0.2	42.3	0.2	56.5	0.3	57	

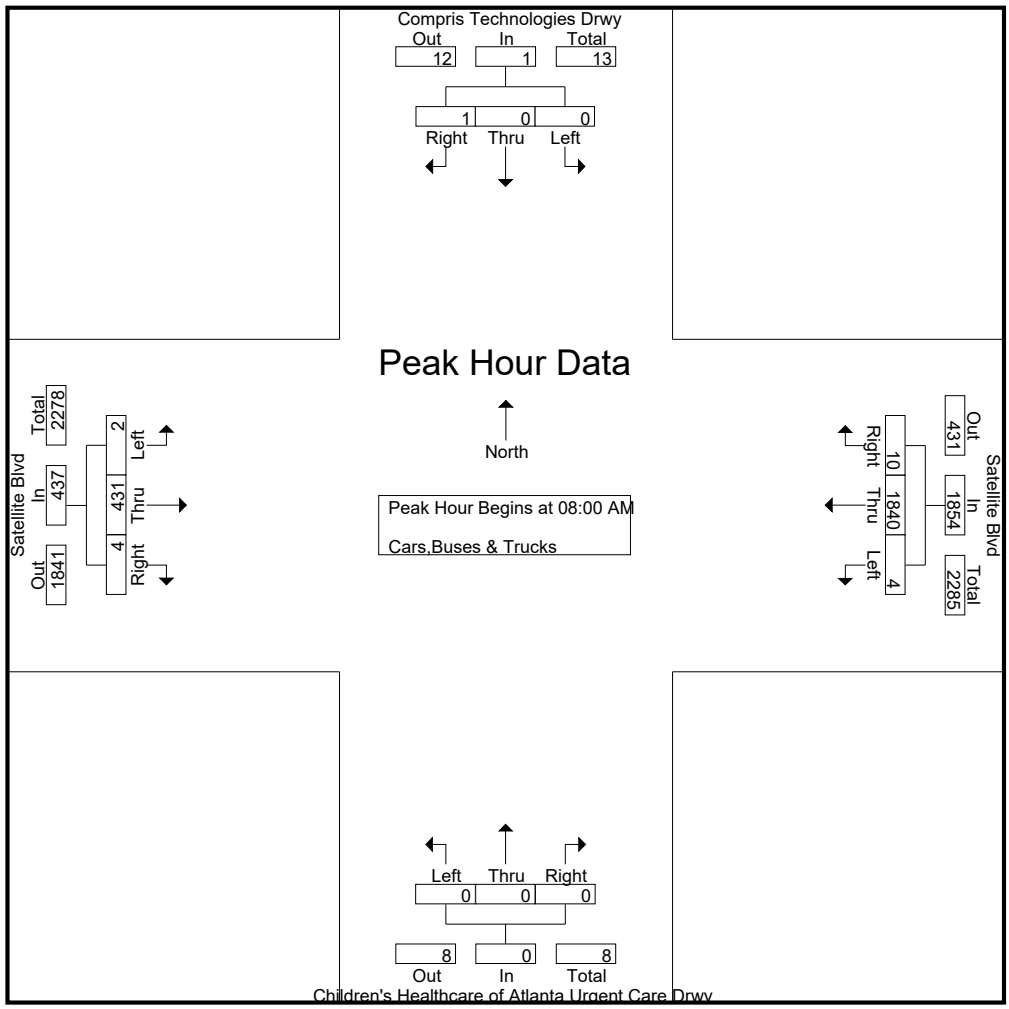
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Children's Healthcare of Atlanta Urgent Care Drwy
7-9 am | 4-6 pm

File Name : 20220057
Site Code : 20220057
Start Date : 2/15/2022
Page No : 2

	Children's Healthcare of Atlanta Urgent Care Drwy Northbound				Compris Technologies Drwy Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	**1**	103	**3**	107	0	467	0	467	574
08:15 AM	0	0	0	0	0	0	**1**	**1**	0	111	0	111	0	443	2	445	557
08:30 AM	0	0	0	0	0	0	0	0	0	**112**	0	**112**	**3**	441	1	445	557
08:45 AM	0	0	0	0	0	0	0	0	1	105	1	107	1	**489**	**7**	**497**	**604**
Total Volume	0	0	0	0	0	0	1	1	2	431	4	437	4	1840	10	1854	2292
% App. Total	0	0	0		0	0	100		0.5	98.6	0.9		0.2	99.2	0.5		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.500	.962	.333	.975	.333	.941	.357	.933	.949



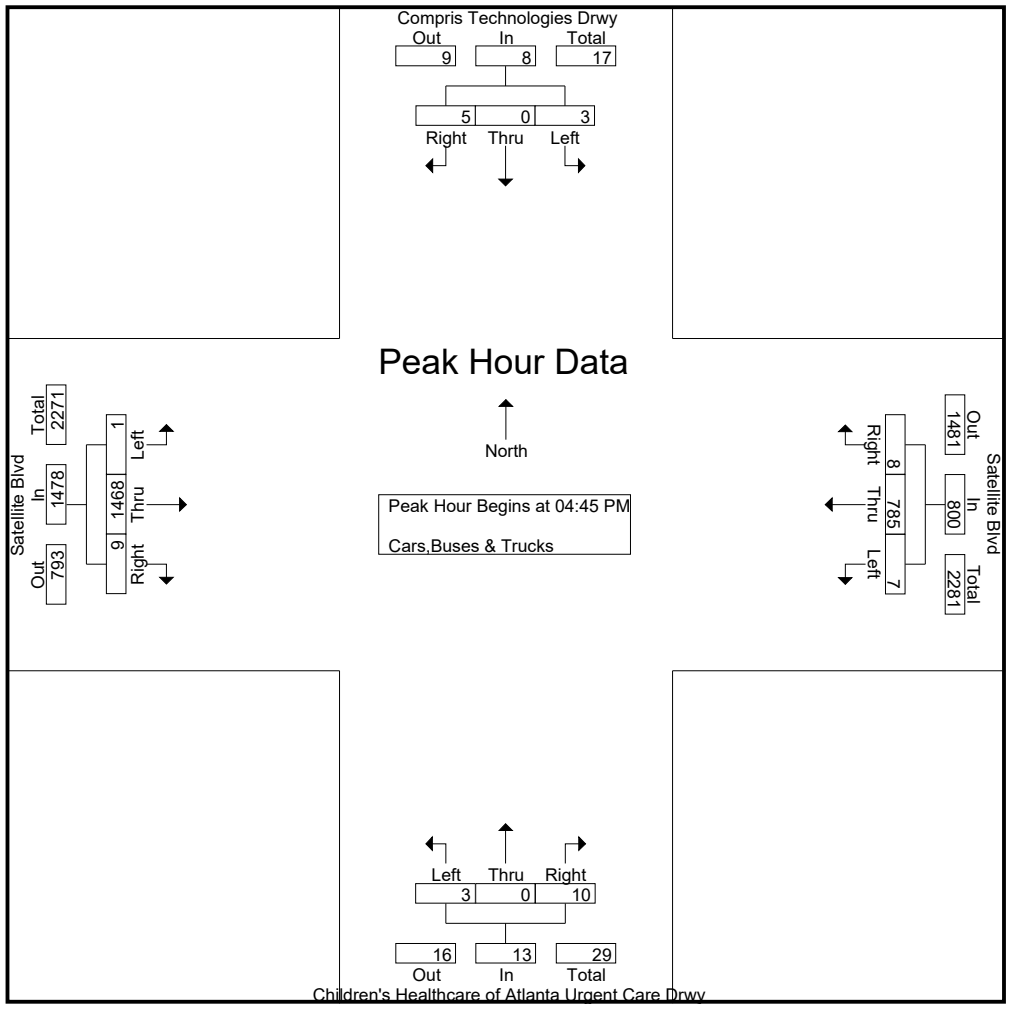
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Children's Healthcare of Atlanta Urgent Care Drwy
7-9 am | 4-6 pm

File Name : 20220057
Site Code : 20220057
Start Date : 2/15/2022
Page No : 3

	Children's Healthcare of Atlanta Urgent Care Drwy Northbound				Compris Technologies Drwy Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	**3**	3	0	0	0	0	0	326	0	326	0	**229**	2	**231**	560
05:00 PM	**1**	0	2	3	**2**	0	1	3	0	**404**	**6**	**410**	2	164	1	167	583
05:15 PM	1	0	3	**4**	0	0	0	0	0	403	1	404	**4**	197	1	202	**610**
05:30 PM	1	0	2	3	1	0	**4**	**5**	**1**	335	2	338	1	195	**4**	200	546
Total Volume	3	0	10	13	3	0	5	8	1	1468	9	1478	7	785	8	800	2299
% App. Total	23.1	0	76.9		37.5	0	62.5		0.1	99.3	0.6		0.9	98.1	1		
PHF	.750	.000	.833	.813	.375	.000	.313	.400	.250	.908	.375	.901	.438	.857	.500	.866	.942



A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	6	0	7	13	0	77	0	77	0	200	1	201	291
07:15 AM	0	0	0	0	12	0	6	18	0	72	0	72	0	279	0	279	369
07:30 AM	0	0	0	0	10	0	5	15	3	82	0	85	0	375	0	375	475
07:45 AM	0	0	0	0	14	0	8	22	3	86	0	89	0	493	4	497	608
Total	0	0	0	0	42	0	26	68	6	317	0	323	0	1347	5	1352	1743
08:00 AM	0	0	0	0	6	0	16	22	3	101	0	104	0	464	3	467	593
08:15 AM	0	0	0	0	10	0	13	23	2	101	0	103	0	443	1	444	570
08:30 AM	0	0	0	0	9	0	12	21	1	103	0	104	0	434	7	441	566
08:45 AM	0	0	0	0	8	0	4	12	1	99	0	100	0	483	6	489	601
Total	0	0	0	0	33	0	45	78	7	404	0	411	0	1824	17	1841	2330
*** BREAK ***																	
04:00 PM	0	0	0	0	7	0	3	10	7	276	0	283	0	187	4	191	484
04:15 PM	0	0	0	0	5	0	2	7	6	277	0	283	0	147	8	155	445
04:30 PM	0	0	0	0	9	0	6	15	2	343	0	345	0	164	7	171	531
04:45 PM	0	0	0	0	10	0	7	17	5	316	0	321	0	224	5	229	567
Total	0	0	0	0	31	0	18	49	20	1212	0	1232	0	722	24	746	2027
05:00 PM	0	0	0	0	9	0	4	13	10	401	0	411	0	154	12	166	590
05:15 PM	0	0	0	0	3	0	7	10	15	401	0	416	0	191	7	198	624
05:30 PM	0	0	0	0	4	0	5	9	7	334	0	341	0	190	10	200	550
05:45 PM	0	0	0	0	6	0	2	8	13	308	0	321	0	198	7	205	534
Total	0	0	0	0	22	0	18	40	45	1444	0	1489	0	733	36	769	2298
Grand Total	0	0	0	0	128	0	107	235	78	3377	0	3455	0	4626	82	4708	8398
Apprch %	0	0	0		54.5	0	45.5		2.3	97.7	0		0	98.3	1.7		
Total %	0	0	0	0	1.5	0	1.3	2.8	0.9	40.2	0	41.1	0	55.1	1	56.1	

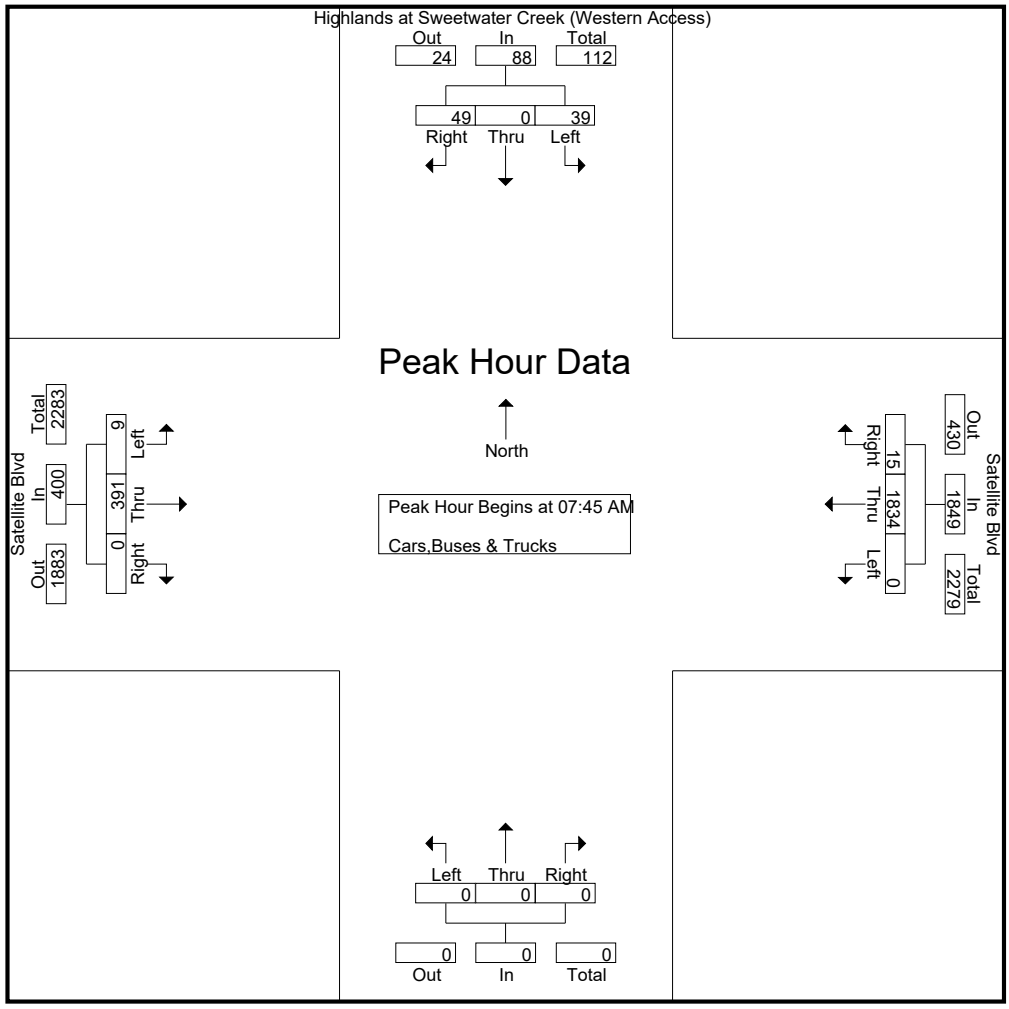
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 2

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	**14**	0	8	22	**3**	86	0	89	0	**493**	4	**497**	**608**
08:00 AM	0	0	0	0	6	0	**16**	22	3	101	0	**104**	0	464	3	467	593
08:15 AM	0	0	0	0	10	0	13	**23**	2	101	0	103	0	443	1	444	570
08:30 AM	0	0	0	0	9	0	12	21	1	**103**	0	104	0	434	**7**	441	566
Total Volume	0	0	0	0	39	0	49	88	9	391	0	400	0	1834	15	1849	2337
% App. Total	0	0	0		44.3	0	55.7		2.2	97.8	0		0	99.2	0.8		
PHF	.000	.000	.000	.000	.696	.000	.766	.957	.750	.949	.000	.962	.000	.930	.536	.930	.961



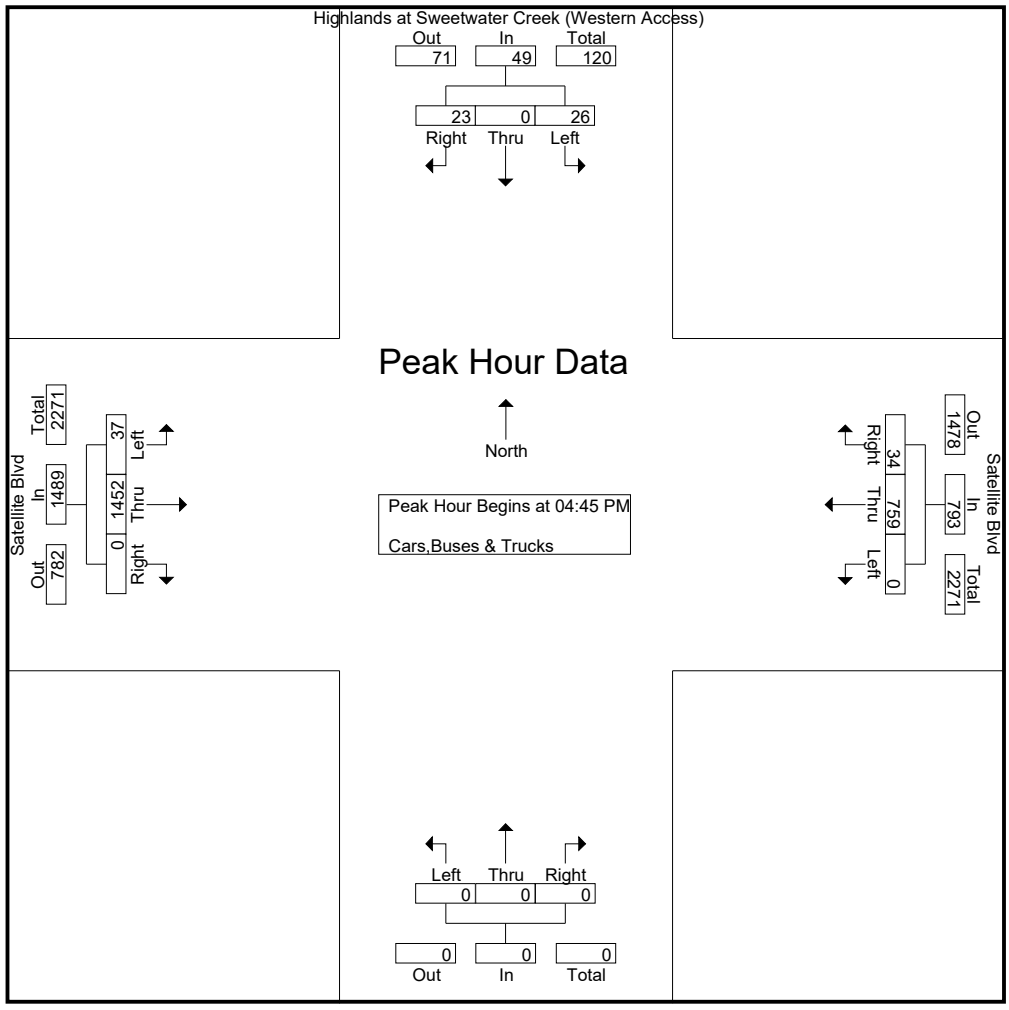
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Highlands at Sweetwater Creek (Western Access)
7-9 am | 4-6 pm

File Name : 20220058
Site Code : 20220058
Start Date : 2/15/2022
Page No : 3

	Northbound				Highlands at Sweetwater Creek (Western Access) Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	**10**	0	**7**	**17**	5	316	0	321	0	**224**	5	**229**	567
05:00 PM	0	0	0	0	9	0	4	13	10	**401**	0	411	0	154	**12**	166	590
05:15 PM	0	0	0	0	3	0	7	10	**15**	401	0	**416**	0	191	7	198	**624**
05:30 PM	0	0	0	0	4	0	5	9	7	334	0	341	0	190	10	200	550
Total Volume	0	0	0	0	26	0	23	49	37	1452	0	1489	0	759	34	793	2331
% App. Total	0	0	0		53.1	0	46.9		2.5	97.5	0		0	95.7	4.3		
PHF	.000	.000	.000	.000	.650	.000	.821	.721	.617	.905	.000	.895	.000	.847	.708	.866	.934



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

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	11	0	9	20	28	66	0	94	0	171	36	207	321
07:15 AM	0	0	0	0	6	0	6	12	13	66	0	79	0	266	19	285	376
07:30 AM	0	0	0	0	5	0	6	11	14	80	0	94	0	353	27	380	485
07:45 AM	0	0	0	0	7	0	3	10	19	82	0	101	0	458	43	501	612
Total	0	0	0	0	29	0	24	53	74	294	0	368	0	1248	125	1373	1794
08:00 AM	0	0	0	0	8	0	15	23	18	96	0	114	0	433	47	480	617
08:15 AM	0	0	0	0	9	0	10	19	16	94	0	110	0	431	25	456	585
08:30 AM	0	0	0	0	10	0	8	18	14	94	0	108	0	425	21	446	572
08:45 AM	0	0	0	0	8	0	11	19	16	92	0	108	0	465	22	487	614
Total	0	0	0	0	35	0	44	79	64	376	0	440	0	1754	115	1869	2388
*** BREAK ***																	
04:00 PM	0	0	0	0	27	0	18	45	9	256	0	265	0	180	10	190	500
04:15 PM	0	0	0	0	21	0	16	37	4	262	0	266	0	144	5	149	452
04:30 PM	0	0	0	0	27	0	14	41	9	318	0	327	0	163	7	170	538
04:45 PM	0	0	0	0	20	0	10	30	7	301	0	308	0	228	3	231	569
Total	0	0	0	0	95	0	58	153	29	1137	0	1166	0	715	25	740	2059
05:00 PM	0	0	0	0	50	0	26	76	13	361	0	374	0	151	7	158	608
05:15 PM	0	0	0	0	27	0	9	36	7	389	0	396	0	196	2	198	630
05:30 PM	0	0	0	0	22	0	11	33	9	319	0	328	0	191	4	195	556
05:45 PM	0	0	0	0	20	0	13	33	7	301	0	308	0	197	3	200	541
Total	0	0	0	0	119	0	59	178	36	1370	0	1406	0	735	16	751	2335
Grand Total	0	0	0	0	278	0	185	463	203	3177	0	3380	0	4452	281	4733	8576
Apprch %	0	0	0		60	0	40		6	94	0		0	94.1	5.9		
Total %	0	0	0	0	3.2	0	2.2	5.4	2.4	37	0	39.4	0	51.9	3.3	55.2	

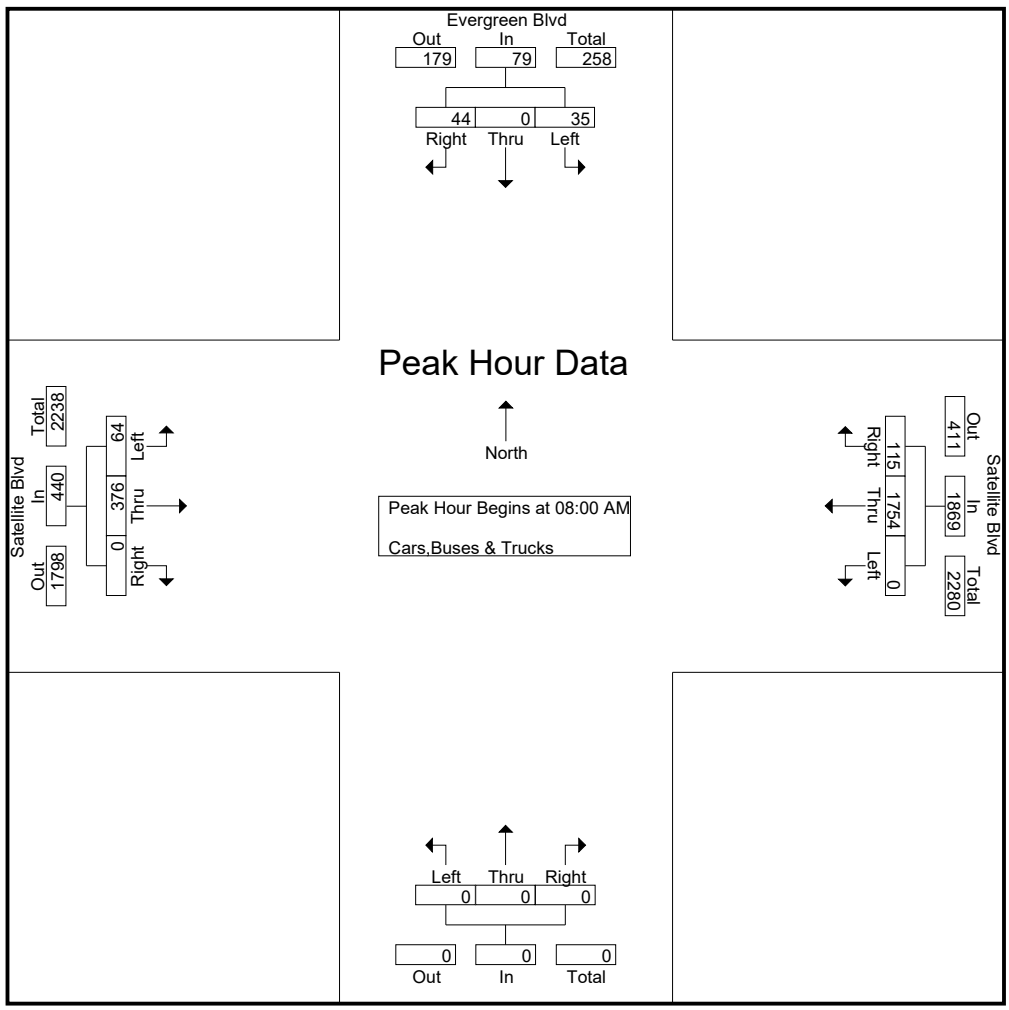
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 2

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	8	0	**15**	**23**	**18**	**96**	0	**114**	0	433	**47**	480	**617**
08:15 AM	0	0	0	0	9	0	10	19	16	94	0	110	0	431	25	456	585
08:30 AM	0	0	0	0	**10**	0	8	18	14	94	0	108	0	425	21	446	572
08:45 AM	0	0	0	0	8	0	11	19	16	92	0	108	0	**465**	22	**487**	614
Total Volume	0	0	0	0	35	0	44	79	64	376	0	440	0	1754	115	1869	2388
% App. Total	0	0	0		44.3	0	55.7		14.5	85.5	0		0	93.8	6.2		
PHF	.000	.000	.000	.000	.875	.000	.733	.859	.889	.979	.000	.965	.000	.943	.612	.959	.968



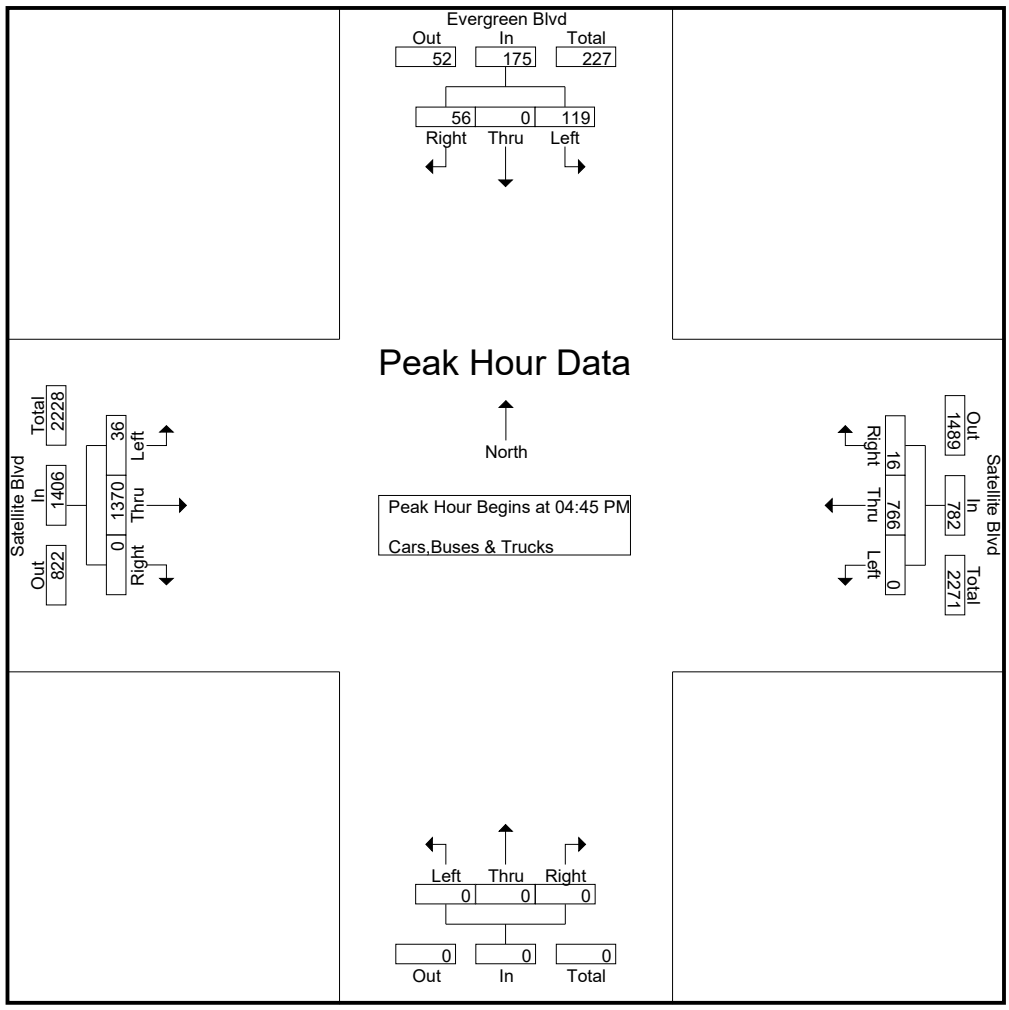
A & R Engineering, Inc.

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

TMC DATA
Satellite Blvd @ Evergreen Blvd
7-9 am | 4-6 pm

File Name : 20220059
Site Code : 20220059
Start Date : 2/15/2022
Page No : 3

	Northbound				Evergreen Blvd Southbound				Satellite Blvd Eastbound				Satellite Blvd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	20	0	10	30	7	301	0	308	0	**228**	3	**231**	569
05:00 PM	0	0	0	0	**50**	0	**26**	**76**	**13**	361	0	374	0	151	**7**	158	608
05:15 PM	0	0	0	0	27	0	9	36	7	**389**	0	**396**	0	196	2	198	**630**
05:30 PM	0	0	0	0	22	0	11	33	9	319	0	328	0	191	4	195	556
Total Volume	0	0	0	0	119	0	56	175	36	1370	0	1406	0	766	16	782	2363
% App. Total	0	0	0		68	0	32		2.6	97.4	0		0	98	2		
PHF	.000	.000	.000	.000	.595	.000	.538	.576	.692	.880	.000	.888	.000	.840	.571	.846	.938



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

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	70	0	70	0	69	0	69	0	0	0	0	0	0	0	0	139
07:15 AM	0	69	0	69	0	82	0	82	0	0	1	1	0	0	0	0	152
07:30 AM	0	68	0	68	0	95	0	95	0	0	0	0	0	0	0	0	163
07:45 AM	1	85	0	86	0	108	0	108	0	0	0	0	0	0	0	0	194
Total	1	292	0	293	0	354	0	354	0	0	1	1	0	0	0	0	648
08:00 AM	0	105	0	105	0	113	0	113	0	0	0	0	0	0	0	0	218
08:15 AM	1	94	0	95	0	112	0	112	0	0	1	1	0	0	0	0	208
08:30 AM	1	104	0	105	0	107	0	107	0	0	0	0	0	0	0	0	212
08:45 AM	2	85	0	87	0	94	0	94	0	0	0	0	0	0	0	0	181
Total	4	388	0	392	0	426	0	426	0	0	1	1	0	0	0	0	819
*** BREAK ***																	
04:00 PM	2	66	0	68	0	136	1	137	0	0	0	0	0	0	0	0	205
04:15 PM	2	77	0	79	0	126	0	126	0	0	1	1	0	0	0	0	206
04:30 PM	0	60	0	60	0	151	0	151	0	0	0	0	0	0	0	0	211
04:45 PM	1	60	0	61	0	119	1	120	0	0	1	1	0	0	0	0	182
Total	5	263	0	268	0	532	2	534	0	0	2	2	0	0	0	0	804
05:00 PM	1	98	0	99	0	165	1	166	1	0	0	1	0	0	0	0	266
05:15 PM	3	77	0	80	0	174	0	174	0	0	2	2	0	0	0	0	256
05:30 PM	1	66	0	67	0	150	1	151	0	0	1	1	0	0	0	0	219
05:45 PM	3	88	0	91	0	113	0	113	0	0	2	2	0	0	0	0	206
Total	8	329	0	337	0	602	2	604	1	0	5	6	0	0	0	0	947
Grand Total	18	1272	0	1290	0	1914	4	1918	1	0	9	10	0	0	0	0	3218
Apprch %	1.4	98.6	0		0	99.8	0.2		10	0	90		0	0	0		
Total %	0.6	39.5	0	40.1	0	59.5	0.1	59.6	0	0	0.3	0.3	0	0	0	0	

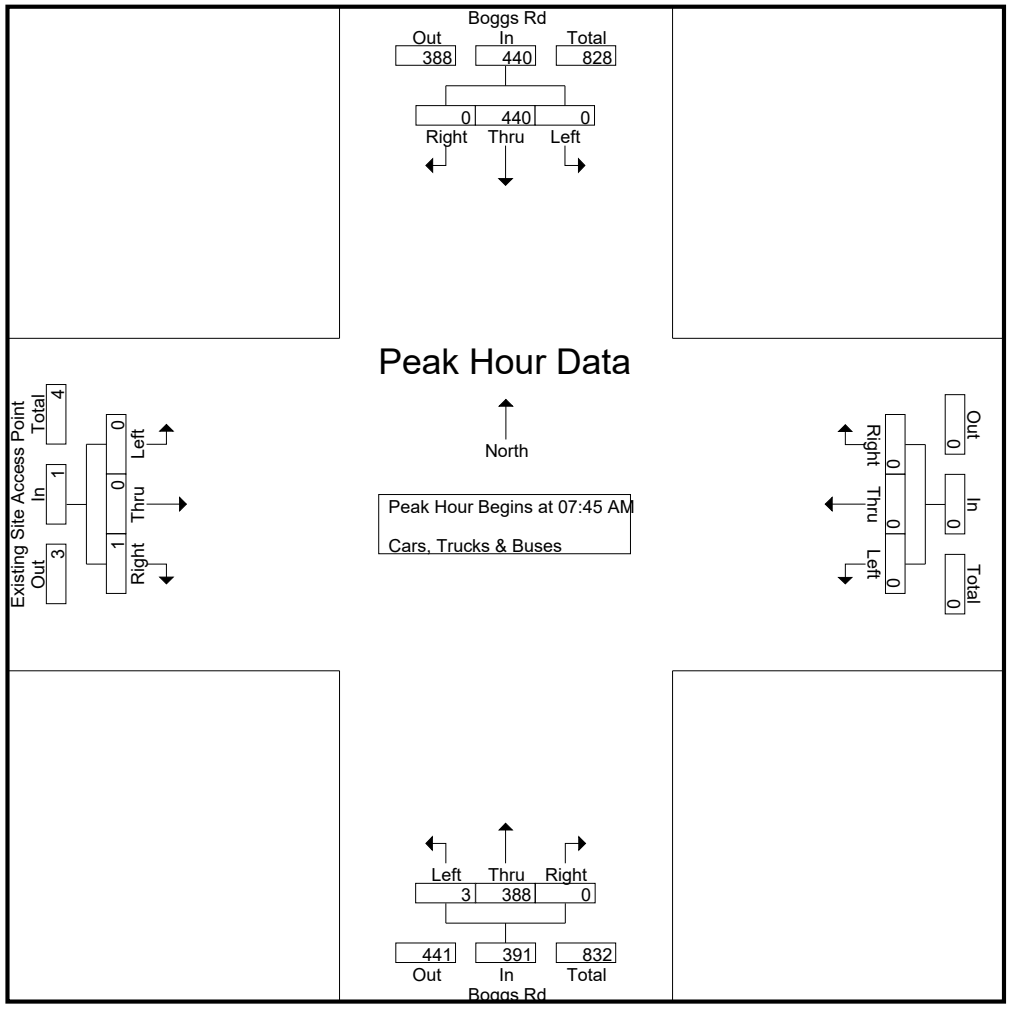
A & R Engineering, Inc.

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

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 2

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**1**	85	0	86	0	108	0	108	0	0	0	0	0	0	0	0	194
08:00 AM	0	**105**	0	**105**	0	**113**	0	**113**	0	0	0	0	0	0	0	0	**218**
08:15 AM	1	94	0	95	0	112	0	112	0	0	**1**	**1**	0	0	0	0	208
08:30 AM	1	104	0	105	0	107	0	107	0	0	0	0	0	0	0	0	212
Total Volume	3	388	0	391	0	440	0	440	0	0	1	1	0	0	0	0	832
% App. Total	0.8	99.2	0		0	100	0		0	0	100		0	0	0		
PHF	.750	.924	.000	.931	.000	.973	.000	.973	.000	.000	.250	.250	.000	.000	.000	.000	.954



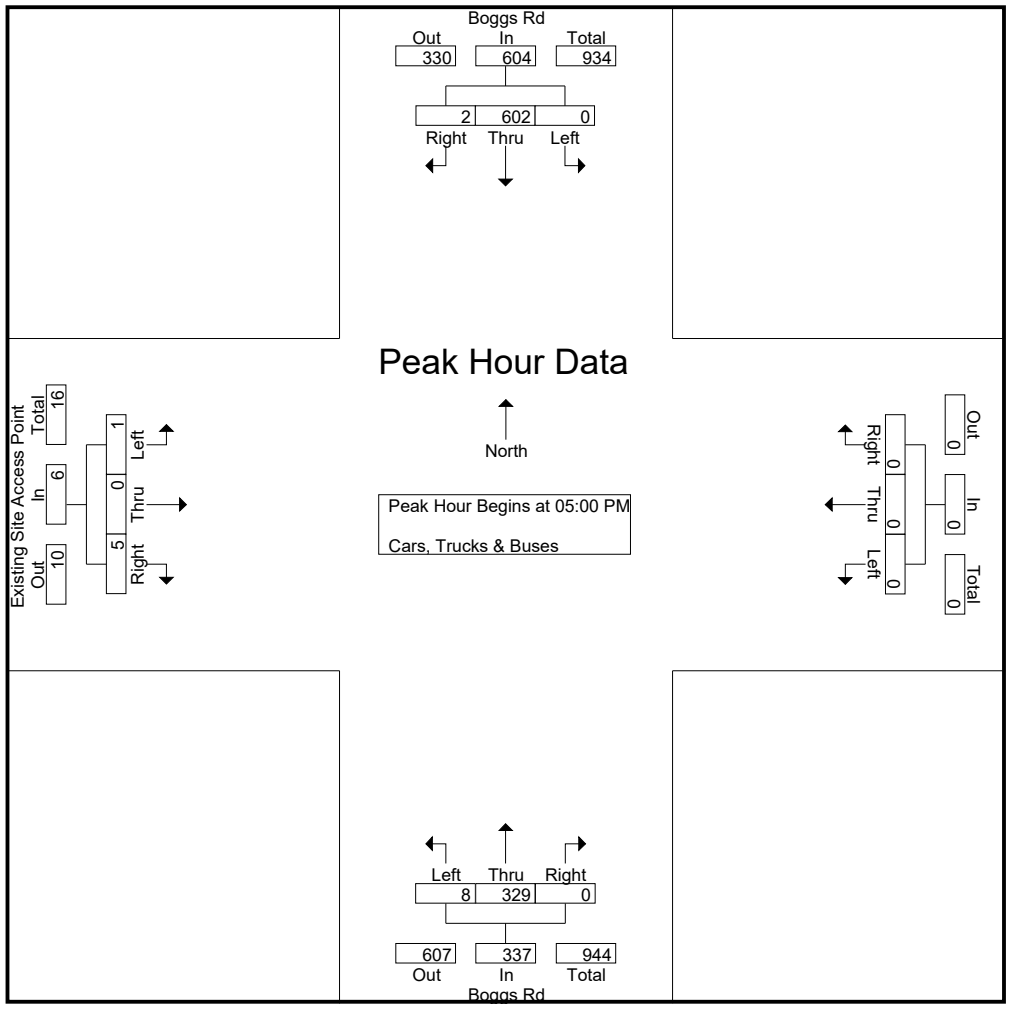
A & R Engineering, Inc.

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

TMC DATA
Boggs Rd @ Existing Site Access Point
7-9 am | 4-6 pm

File Name : 20220055
Site Code : 20220055
Start Date : 2/15/2022
Page No : 3

	Boggs Rd Northbound				Boggs Rd Southbound				Existing Site Access Point Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	**98**	0	**99**	0	165	**1**	166	**1**	0	0	1	0	0	0	0	**266**
05:15 PM	**3**	77	0	80	0	**174**	0	**174**	0	0	**2**	**2**	0	0	0	0	256
05:30 PM	1	66	0	67	0	150	1	151	0	0	1	1	0	0	0	0	219
05:45 PM	3	88	0	91	0	113	0	113	0	0	2	2	0	0	0	0	206
Total Volume	8	329	0	337	0	602	2	604	1	0	5	6	0	0	0	0	947
% App. Total	2.4	97.6	0		0	99.7	0.3		16.7	0	83.3		0	0	0		
PHF	.667	.839	.000	.851	.000	.865	.500	.868	.250	.000	.625	.750	.000	.000	.000	.000	.890



GRTA Letter of Understanding

LETTER OF UNDERSTANDING

April 21, 2022

Anna Forgey
Brand Properties
3328 Peachtree Road NE
Atlanta, GA 30326

RE: **Satellite Boulevard** (**DRI#: 3650)**

Dear Anna Forgey:

The purpose of this Letter of Understanding is to document the discussions during the Methodology Meeting held virtually on April 18, 2022 regarding **Satellite Boulevard** Development of Regional Impact (DRI). The *GRTA DRI Review Procedures*, as well as the inputs and parameters documented in this Letter of Understanding and the revised Methodology Meeting Packet, shall be adhered to in preparing the GRTA required Transportation Study.

PROJECT OVERVIEW

- The proposed site is located to the northwest of the intersection of Satellite Boulevard and Boggs Road in Gwinnett County, Georgia.
- The proposed development includes 648 multi-family housing units, 64 multifamily rental cottages units and 25,000 square feet of commercial retail space.
- The projected build-out is one phase to be completed by 2025.
- The proposed development includes two full site accesses and one right-in right-out access along Satellite Boulevard and one full site access Boggs Road.
- The DRI trigger for this development is a rezoning.
- The vehicular trip generation is estimated to be 4,193 net daily trips based on the *ITE Trip Generation Manual 11th edition.*
- The applicant is applying for approval under GRTA's non-expedited Traffic Impact Study review process.

STUDY NETWORK

1. Satellite Boulevard and Urgent Care Driveway / Existing Access
2. Boggs Road at existing access
3. Satellite Boulevard at Highlands at Sweetwater Creek Driveway
4. Satellite Boulevard and Boggs Road
5. Satellite Boulevard and Evergreen Boulevard

METHODOLOGY MEETING PACKET INPUTS & PARAMETERS

- The Site Plan shall meet all the applicable requirements in Section 7.1 of the *GRTA DRI Review Procedures*.
- All Study Network intersections shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions, and (3) future "build" conditions as specified in the *GRTA DRI Review Procedures*.
- This DRI shall be modeled and reviewed in one phase to be completed by 2025.

- The Level of Service (LOS) standard for all analysis shall be LOS D unless specified otherwise in Section 3.2.2.1. For example, a LOS E standard is allowed if the existing LOS for the intersection or approach is a LOS F.

- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account as required in Section 3.2.2.

- The trip generation calculations in the revised Methodology Meeting Packet shall be used in the Transportation Study. Alt mode and mixed-use reductions are allowed for this site. Pass-by reductions shall not exceed 15% of a roadway's traffic volume standard established in Appendix 7.2.

- The trip assignment approach in the revised Methodology Meeting Packet shall be utilized for all Study Network intersection movements.

- The applicant shall research TIP, STIP, RTP and GDOT's construction work program, as well as any local government and transit operator plans (SPLOST, CIP, etc.), to determine the open date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. Programmed transportation projects anticipated to open on or before the Build Out year of the DRI Project shall be modeled as completed in the No-Build and Build conditions unless approved otherwise.

- A 1.0% annual traffic Background Growth Rate shall be used for all roadways.

- Capacity analysis shall be based on turning movement counts collected not more than 12-months prior to the date of the actual DRI submittal to GRTA, unless specified otherwise. As specified in Section 2.3, turning movement counts shall be collected while local schools are in session, on a Tuesday, Wednesday or Thursday (unless approved otherwise) and not during holiday periods (weeks of July 4th, Thanksgiving and +/- 5 days of Christmas).

- COVID-19: The transportation analysis shall utilize existing turning movement count data when available during COVID. All counts older than a year shall be grown by the Background Growth Rate unless approved otherwise. If new counts are required, a control count location where existing count data is available shall be used for developing traffic growth extrapolation rates. The traffic engineer shall submit the proposed growth rates to GRTA, GDOT and local government stakeholders for input and GRTA approval before submitting the Transportation Study.

- If the *GRTA DRI Review Procedures* requires an Enhanced Focus Area for Heavy Vehicles or an Enhanced Focus Area for Dense Urban Environments, the Transportation Study shall incorporate the inputs and parameters agreed to at the Methodology Meeting and documented in the revised Methodology Meeting Packet. These inputs may include a Heavy Vehicle modeling percentages, a Heavy Vehicle route map, a pedestrian crosswalk delay adjustment and a bus blockage adjustment factor.

ADDITIONAL REQUIREMENTS

All applicable requirements of the *GRTA DRI Review Procedures* must be met for the Transportation Study to be considered complete. The *GRTA DRI Review Procedures* are located on GRTA's DRI website: https://www.srta.ga.gov/programs-projects/dev-of-regional-impact/ Contact GRTA staff if you have any questions on these requirements.

The Transportation Study shall also include as attachments the native LOS modeling file (i.e., Synchro modeling files) as well as the modeling reports (PDFs) for all Study Network intersections for the Existing, No-Build and Build conditions for all phases. The PDF reports shall be numbered (in page headers) and organized in order according to the Study Network numbering sequence in this Letter of Understanding. The reports shall also be organized in the following sequence: *Existing condition AM, Existing condition PM, No-build condition AM, No-Build condition PM, Build condition AM, Build condition PM*. If improvements are modeled, those PDFs shall be labeled as such and follow the appropriate condition's applicable peak period.

The Transportation Study appendices shall also include all turning movement count data, regardless of if using historic data or newly collected turning movement counts.

When documenting any Queue Length impacts required in Section 3.2.3.6, the TIS Executive Summary shall also note any individual *movements* not meeting the LOS standard where the DRI Project adds trips in the Build condition and exceeds available storage capacity for that movement.

When identifying mitigations in the existing, no-build and build conditions, the mitigations identified in preceding conditions shall not be modeled as complete when conducting the LOS analysis. The same mitigation may still be proposed as mitigation in the subsequent condition but it shall not be included as completed in the default analysis. For example, a turn lane may be identified as a needed improvement in the no-build condition. The turn lane should not be modeled as completed in the build condition. The turn lane should only be modeled as complete in the no-build with improvements condition and the build with improvements condition.

DRI REVIEW PACKAGE SUBMITTAL

GRTA will begin reviewing the DRI once the DRI Review Package is submitted and deemed complete. The DRI Review Package includes: the permitting Local Government inputting both Department of Community Affairs (DCA) forms into the DCA DRI website; and the **Traffic Engineer submittal of the GRTA Transportation Study (including LOS appendices, traffic count data and any other required attachments) and Site Plan to GRTA staff and ALL stakeholders included in the CC list of this Letter of Understanding**.

All DRI Review Packages shall be submitted electronically via email to all stakeholders in the CC list of the Letter of Understanding. If the DRI Review Package total file size is greater than 10 MB, the DRI Review Package shall be submitted via email with a FTP link provided for downloading the files.

Please contact me if you have any questions about the Letter of Understanding or the *GRTA DRI Review Procedures*.

Sincerely,

Elizabeth Davis
Transit and Transportation Planner

Cc:

Donald Shockey, ARC
Aries Little, ARC
Aries Little, ARC
Elizabeth Davis, GRTA\ATL
December Weir, GRTA\ATL
Jerry Oberholtzer, Gwinnett County
China Thomas, Gwinnett County
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Abdul Amer, A&E Engineering
Naila Amer, A&E Engineering
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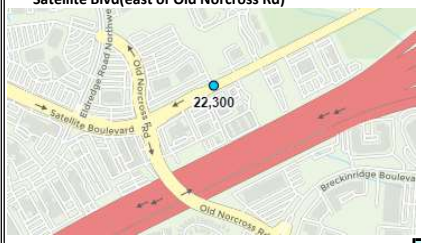
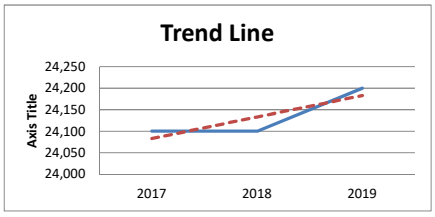
Anna Forgey, Brand Properties
Matt Kaczenski, PEC
Kenneth Wood, PEC

Linear Regression of Daily Traffic

Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
Satellite Blvd(east of Old Norcro	0.2%	0.75	135-0581	00200100	24,100	24,100	24,200
Boggs Rd(north of Satellite Blvd	0.4%	0.75	135-0527	00055200	12,000	12,000	12,100
Boggs Rd(south of Breckinridge	-0.4%	0.43	135-0525	00055200	22,700	22,400	22,500
SR 120(west of Meadow Church	0.2%	0.75	135-0163	00012000	22,400	22,400	22,500
Weighted Average	**0.1%**	0.06	Sum of Count Stations =		81,200	80,900	81,300

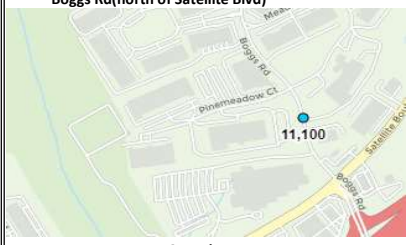
Location	Traffic Counter	RCLINK	2017	2018	2019
Satellite Blvd(east of Old Norcross Rd)	135-0581	00200100	24,100	24,100	24,200

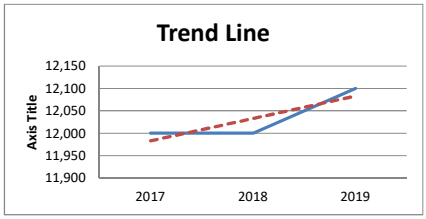




Growth Rate	0.2%	Intercept	-76,767	Slope	50.00
Trend Line			24,083	24,133	24,183

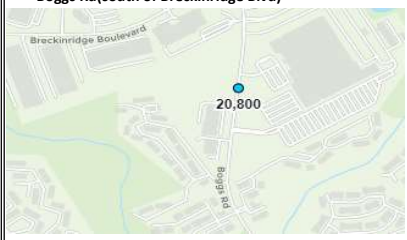
Location	Traffic Counter	RCLINK	2017	2018	2019
Boggs Rd(north of Satellite Blvd)	135-0527	00055200	12,000	12,000	12,100

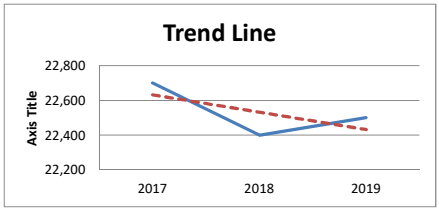




Growth Rate	0.4%	Intercept	-88,867	Slope	50.00
Trend Line			11,983	12,033	12,083

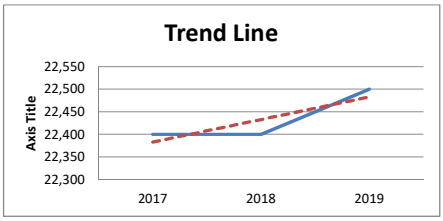
Location	Traffic Counter	RCLINK	2017	2018	2019
Boggs Rd(south of Breckinridge Blvd)	135-0525	00055200	22,700	22,400	22,500





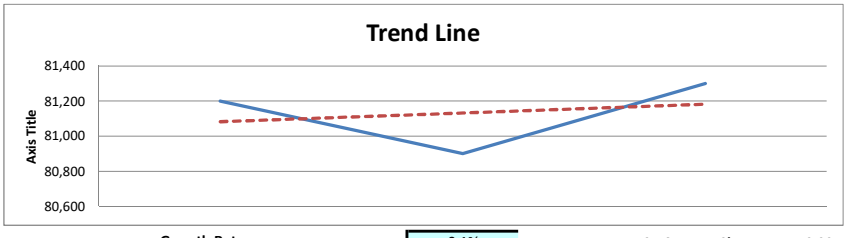
Growth Rate	-0.4%	Intercept	224,333	Slope	-100.00
Trend Line			22,633	22,533	22,433

Location	Traffic Counter	RCLINK	2017	2018	2019
SR 120(west of Meadow Church Rd)	135-0163	00012000	22,400	22,400	22,500



Growth Rate	0.2%	Intercept	-78,467	Slope	50.00
Trend Line			22,383	22,433	22,483

Weighted Average	2017	2018	2019
Sum of Count Stations	81,200	80,900	81,300



Growth Rate	0.1%	Intercept	-19,767	Slope	50.00
Trend Line			81,083	81,133	81,183

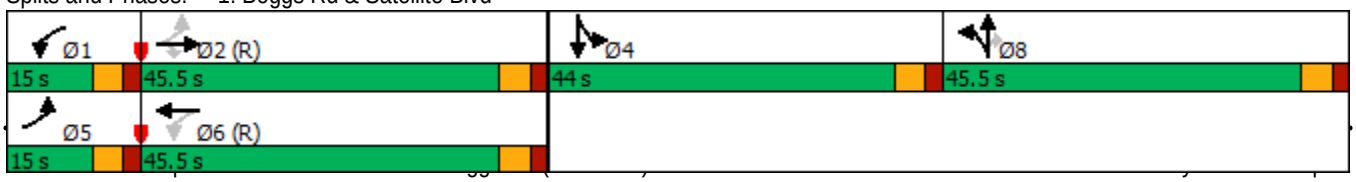
Existing Intersection Analysis

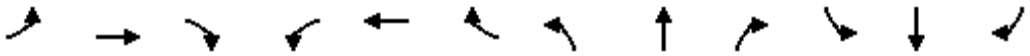
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	100	210	119	104	909	894	357	161	15	268
Future Volume (vph)	100	210	119	104	909	894	357	161	15	268
Lane Group Flow (vph)	110	231	131	114	1008	491	883	177	16	480
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.0	44.0
Total Split (s)	15.0	45.5	45.5	15.0	45.5	45.5	45.5	45.5	44.0	44.0
Total Split (%)	10.0%	30.3%	30.3%	10.0%	30.3%	30.3%	30.3%	30.3%	29.3%	29.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	C-Min	Min	Min	Min	None	None
v/c Ratio	0.70	0.24	0.25	0.29	1.06	0.84	0.73	0.27	0.06	0.80
Control Delay	55.8	43.9	7.6	34.7	98.6	58.1	46.6	11.7	51.2	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	43.9	7.6	34.7	98.6	58.1	46.6	11.7	51.2	59.3
Queue Length 50th (ft)	73	94	0	75	~573	480	409	29	14	199
Queue Length 95th (ft)	#142	132	53	124	#713	#771	534	93	35	251
Internal Link Dist (ft)		1475			914		417			312
Turn Bay Length (ft)	195		525	160		210			185	
Base Capacity (vph)	161	950	521	397	949	587	1202	660	454	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.24	0.25	0.29	1.06	0.84	0.73	0.27	0.04	0.52

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	210	119	104	909	8	894	357	161	15	268	168
Future Volume (veh/h)	100	210	119	104	909	8	894	357	161	15	268	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	231	0	114	999	9	982	392	177	16	295	185
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	1300		512	1325	12	950	499	423	299	356	217
Arrive On Green	0.05	0.37	0.00	0.05	0.37	0.37	0.27	0.27	0.27	0.17	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3609	33	3563	1870	1585	1781	2120	1294
Grp Volume(v), veh/h	110	231	0	114	492	516	982	392	177	16	246	234
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1781	1870	1585	1781	1777	1637
Q Serve(g_s), s	5.8	6.6	0.0	6.0	36.3	36.3	40.0	29.2	13.8	1.1	20.0	20.8
Cycle Q Clear(g_c), s	5.8	6.6	0.0	6.0	36.3	36.3	40.0	29.2	13.8	1.1	20.0	20.8
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	209	1300		512	653	685	950	499	423	299	299	275
V/C Ratio(X)	0.53	0.18		0.22	0.75	0.75	1.03	0.79	0.42	0.05	0.82	0.85
Avail Cap(c_a), veh/h	231	1300		531	653	685	950	499	423	457	456	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	32.3	0.0	27.2	41.5	41.5	55.0	51.0	45.4	52.4	60.3	60.6
Incr Delay (d2), s/veh	2.0	0.3	0.0	0.2	7.9	7.5	38.2	9.3	1.4	0.1	7.2	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.9	0.0	2.5	16.9	17.7	22.5	14.7	5.5	0.5	9.5	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	32.6	0.0	27.5	49.4	49.1	93.2	60.3	46.8	52.5	67.4	70.5
LnGrp LOS	C	C		C	D	D	F	E	D	D	E	E
Approach Vol, veh/h		341	A		1122			1551			496	
Approach Delay, s/veh		33.2			47.0			79.6			68.4	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.4	60.4		30.7	13.2	60.6		45.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	40.0		38.5	9.5	40.0		40.0				
Max Q Clear Time (g_c+I1), s	8.0	8.6		22.8	7.8	38.3		42.0				
Green Ext Time (p_c), s	0.0	2.6		2.4	0.0	1.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		63.1	
HCM 6th LOS		E	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	431	4	4	1840	10	0	0	0	0	0	1
Future Vol, veh/h	2	431	4	4	1840	10	0	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	454	4	4	1937	11	0	0	0	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1948	0	0	458	0	0	1435	2414	227	2176	2407	969
Stage 1	-	-	-	-	-	-	458	458	-	1945	1945	-
Stage 2	-	-	-	-	-	-	977	1956	-	231	462	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	297	-	-	1099	-	-	94	32	776	26	33	253
Stage 1	-	-	-	-	-	-	552	565	-	67	110	-
Stage 2	-	-	-	-	-	-	269	109	-	751	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	297	-	-	1099	-	-	93	32	776	26	33	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	93	32	-	26	33	-
Stage 1	-	-	-	-	-	-	548	561	-	67	110	-
Stage 2	-	-	-	-	-	-	267	109	-	746	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	19.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	297	-	-	1099	-	-	-	253
HCM Lane V/C Ratio	-	0.007	-	-	0.004	-	-	-	0.004
HCM Control Delay (s)	0	17.2	-	-	8.3	-	-	0	19.3
HCM Lane LOS	A	C	-	-	A	-	-	A	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	391	1834	15	39	49
Future Vol, veh/h	9	391	1834	15	39	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	407	1910	16	41	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1910	0	-	0	2132	955
Stage 1	-	-	-	-	1910	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	307	-	-	-	42	259
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	307	-	-	-	41	259
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	794	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	47.2
HCM LOS			E

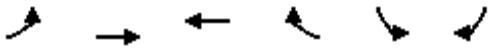
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	307	-	-	-	87	259
HCM Lane V/C Ratio	0.031	-	-	-	0.467	0.197
HCM Control Delay (s)	17.1	-	-	-	78.4	22.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2	0.7

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	64	376	1754	35	44
Future Volume (vph)	64	376	1754	35	44
Lane Group Flow (vph)	66	388	1927	36	45
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	15.0	96.2	81.2	23.8	23.8
Total Split (%)	12.5%	80.2%	67.7%	19.8%	19.8%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.33	0.13	0.70	0.31	0.31
Control Delay	6.1	1.7	10.1	59.4	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	1.7	10.1	59.4	20.3
Queue Length 50th (ft)	6	20	381	27	0
Queue Length 95th (ft)	15	34	564	61	37
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	240	3078	2763	269	279
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.13	0.70	0.13	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	376	1754	115	35	44
Future Volume (veh/h)	64	376	1754	115	35	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	388	1808	0	36	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	275	3104	2809		62	
Arrive On Green	0.04	0.87	0.79	0.00	0.03	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	66	388	1808	0	36	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.7	1.9	26.0	0.0	2.4	0.0
Cycle Q Clear(g_c), s	0.7	1.9	26.0	0.0	2.4	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	275	3104	2809		62	
V/C Ratio(X)	0.24	0.13	0.64		0.58	
Avail Cap(c_a), veh/h	350	3104	2809		272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	5.9	1.1	5.4	0.0	57.0	0.0
Incr Delay (d2), s/veh	0.4	0.1	1.1	0.0	8.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.2	6.8	0.0	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	1.2	6.5	0.0	65.3	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		454	1808	A	36	A
Approach Delay, s/veh		1.9	6.5		65.3	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.3		9.7	9.9	100.4
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		90.7		18.3	9.5	75.7
Max Q Clear Time (g_c+I1), s		3.9		4.4	2.7	28.0
Green Ext Time (p_c), s		5.3		0.0	0.1	36.7

Intersection Summary	
HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	3	388	440	0
Future Vol, veh/h	0	1	3	388	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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	3	408	463	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	673	232	463	0	-	0
Stage 1	463	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	389	770	1095	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	388	770	1095	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.1	0
HCM LOS	A		

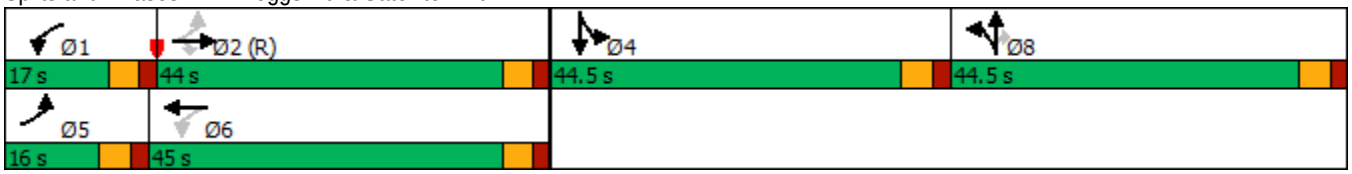
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1095	-	-	770	-	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-	-
HCM Control Delay (s)	8.3	-	0	9.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

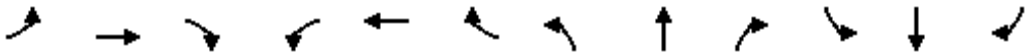
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	158	753	528	206	531	213	198	161	24	539
Future Volume (vph)	158	753	528	206	531	213	198	161	24	539
Lane Group Flow (vph)	174	827	580	226	594	147	305	177	26	710
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	16.0	44.0	44.0	17.0	45.0	44.5	44.5	44.5	44.5	44.5
Total Split (%)	10.7%	29.3%	29.3%	11.3%	30.0%	29.7%	29.7%	29.7%	29.7%	29.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.46	0.81	0.71	0.62	0.46	0.57	0.57	0.44	0.06	0.86
Control Delay	28.9	57.7	12.3	39.9	40.1	65.9	61.5	10.1	43.2	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	57.7	12.3	39.9	40.1	65.9	61.5	10.1	43.2	65.4
Queue Length 50th (ft)	94	401	51	140	234	148	154	0	20	344
Queue Length 95th (ft)	168	#532	206	#321	339	217	193	64	45	413
Internal Link Dist (ft)		1475			914		417			312
Turn Bay Length (ft)	195		525	160		210			185	
Base Capacity (vph)	379	1017	819	362	1293	418	869	542	460	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.81	0.71	0.62	0.46	0.35	0.35	0.33	0.06	0.78

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	753	528	206	531	9	213	198	161	24	539	107
Future Volume (veh/h)	158	753	528	206	531	9	213	198	161	24	539	107
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	827	0	226	584	10	252	192	177	26	592	118
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1414		327	1446	25	549	288	244	401	664	132
Arrive On Green	0.07	0.40	0.00	0.08	0.40	0.40	0.15	0.15	0.15	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3575	61	3563	1870	1585	1781	2954	587
Grp Volume(v), veh/h	174	827	0	226	290	304	252	192	177	26	355	355
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1859	1781	1870	1585	1781	1777	1765
Q Serve(g_s), s	8.6	27.4	0.0	11.5	17.4	17.5	9.7	14.5	16.0	1.7	29.1	29.2
Cycle Q Clear(g_c), s	8.6	27.4	0.0	11.5	17.4	17.5	9.7	14.5	16.0	1.7	29.1	29.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	410	1414		327	719	752	549	288	244	401	400	397
V/C Ratio(X)	0.42	0.59		0.69	0.40	0.40	0.46	0.67	0.73	0.06	0.89	0.89
Avail Cap(c_a), veh/h	410	1414		327	719	752	926	486	412	463	462	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	35.5	0.0	27.5	31.8	31.8	57.8	59.8	60.4	45.7	56.3	56.4
Incr Delay (d2), s/veh	0.7	1.8	0.0	6.1	0.8	0.7	1.3	5.6	8.4	0.1	17.2	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	12.0	0.0	5.3	7.5	7.9	4.4	7.2	6.9	0.8	14.7	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	37.2	0.0	33.6	32.6	32.5	59.0	65.4	68.9	45.8	73.5	74.2
LnGrp LOS	C	D		C	C	C	E	E	E	D	E	E
Approach Vol, veh/h		1001	A		820			621			736	
Approach Delay, s/veh		35.2			32.8			63.8			72.9	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	65.2		39.2	16.0	66.2		28.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	11.5	38.5		39.0	10.5	39.5		39.0				
Max Q Clear Time (g_c+I1), s	13.5	29.4		31.2	10.6	19.5		18.0				
Green Ext Time (p_c), s	0.0	5.2		2.5	0.0	5.9		5.1				

Intersection Summary		
HCM 6th Ctrl Delay		48.9
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1468	9	7	785	8	3	0	10	3	0	5
Future Vol, veh/h	1	1468	9	7	785	8	3	0	10	3	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1562	10	7	835	9	3	0	11	3	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	844	0	0	1572	0	0	1996	2422	781	1632	2423	418
Stage 1	-	-	-	-	-	-	1564	1564	-	849	849	-
Stage 2	-	-	-	-	-	-	432	858	-	783	1574	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	788	-	-	415	-	-	36	32	338	67	32	584
Stage 1	-	-	-	-	-	-	117	171	-	322	375	-
Stage 2	-	-	-	-	-	-	572	372	-	353	169	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	788	-	-	415	-	-	35	31	338	64	31	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	31	-	64	31	-
Stage 1	-	-	-	-	-	-	117	171	-	322	369	-
Stage 2	-	-	-	-	-	-	557	366	-	341	169	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	41.3	31.1
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	113	788	-	-	415	-	-	64	584
HCM Lane V/C Ratio	0.122	0.001	-	-	0.018	-	-	0.05	0.009
HCM Control Delay (s)	41.3	9.6	-	-	13.8	-	-	64.2	11.2
HCM Lane LOS	E	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	1452	759	34	26	23
Future Vol, veh/h	37	1452	759	34	26	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	1561	816	37	28	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	816	0	-	0	1677	408
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	861	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	807	-	-	-	86	593
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	374	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	807	-	-	-	82	593
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	374	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.6
HCM LOS			C

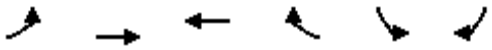
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	807	-	-	-	208	593
HCM Lane V/C Ratio	0.049	-	-	-	0.134	0.042
HCM Control Delay (s)	9.7	-	-	-	25	11.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	36	1370	766	119	56
Future Volume (vph)	36	1370	766	119	56
Lane Group Flow (vph)	38	1457	832	127	60
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	17.0	90.0	73.0	30.0	30.0
Total Split (%)	14.2%	75.0%	60.8%	25.0%	25.0%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.08	0.52	0.32	0.62	0.25
Control Delay	3.6	5.5	7.1	63.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	5.5	7.1	63.0	13.8
Queue Length 50th (ft)	5	171	120	95	0
Queue Length 95th (ft)	15	265	181	153	39
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	556	2803	2587	361	370
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.52	0.32	0.35	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	1370	766	16	119	56
Future Volume (veh/h)	36	1370	766	16	119	56
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	1457	815	0	127	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	562	2917	2648		156	
Arrive On Green	0.03	0.82	0.75	0.00	0.09	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	38	1457	815	0	127	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.5	14.9	9.1	0.0	8.4	0.0
Cycle Q Clear(g_c), s	0.5	14.9	9.1	0.0	8.4	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	562	2917	2648		156	
V/C Ratio(X)	0.07	0.50	0.31		0.82	
Avail Cap(c_a), veh/h	679	2917	2648		364	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	3.2	3.3	5.1	0.0	53.8	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.3	0.0	9.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.2	2.7	0.0	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.3	3.9	5.4	0.0	63.6	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1495	815	A	127	A
Approach Delay, s/veh		3.9	5.4		63.6	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		104.0		16.0	9.1	94.9
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		84.5		24.5	11.5	67.5
Max Q Clear Time (g_c+I1), s		16.9		10.4	2.5	11.1
Green Ext Time (p_c), s		34.5		0.2	0.0	13.2

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	8	329	602	2
Future Vol, veh/h	1	5	8	329	602	2
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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	6	9	370	676	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	880	339	678	0	-	0
Stage 1	677	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	287	657	910	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	657	910	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	910	-	380	657	-	-
HCM Lane V/C Ratio	0.01	-	0.003	0.009	-	-
HCM Control Delay (s)	9	-	14.5	10.5	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

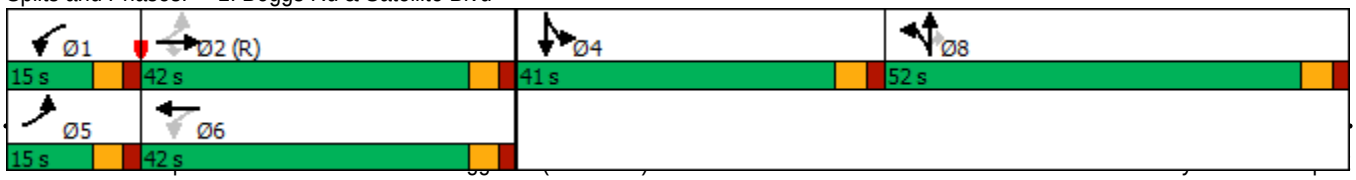
Future “No-Build” Intersection Analysis

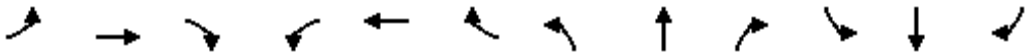
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	103	216	123	107	936	910	365	166	15	275
Future Volume (vph)	103	216	123	107	936	910	365	166	15	275
Lane Group Flow (vph)	113	237	135	118	1038	500	901	182	16	492
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	15.0	42.0	42.0	15.0	42.0	52.0	52.0	52.0	41.0	41.0
Total Split (%)	10.0%	28.0%	28.0%	10.0%	28.0%	34.7%	34.7%	34.7%	27.3%	27.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.71	0.27	0.27	0.32	1.17	0.82	0.72	0.26	0.06	0.80
Control Delay	59.7	46.6	8.2	37.5	138.3	54.7	44.4	10.1	50.7	59.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	46.6	8.2	37.5	138.3	54.7	44.4	10.1	50.7	59.7
Queue Length 50th (ft)	78	100	0	81	~650	475	407	25	13	206
Queue Length 95th (ft)	#151	140	56	133	#791	#754	531	87	35	258
Internal Link Dist (ft)		1475			914		417			312
Turn Bay Length (ft)	195		525	160		210			185	
Base Capacity (vph)	161	885	497	372	884	610	1251	688	418	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.27	0.27	0.32	1.17	0.82	0.72	0.26	0.04	0.58

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	216	123	107	936	8	910	365	166	15	275	173
Future Volume (veh/h)	103	216	123	107	936	8	910	365	166	15	275	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	237	0	118	1029	9	1000	401	182	16	302	190
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1137		460	1162	10	1090	572	485	303	360	221
Arrive On Green	0.06	0.32	0.00	0.06	0.32	0.32	0.31	0.31	0.31	0.17	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3610	32	3563	1870	1585	1781	2116	1297
Grp Volume(v), veh/h	113	237	0	118	506	532	1000	401	182	16	252	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1781	1870	1585	1781	1777	1637
Q Serve(g_s), s	6.3	7.3	0.0	6.6	40.6	40.6	40.6	28.4	13.5	1.1	20.6	21.4
Cycle Q Clear(g_c), s	6.3	7.3	0.0	6.6	40.6	40.6	40.6	28.4	13.5	1.1	20.6	21.4
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.79
Lane Grp Cap(c), veh/h	174	1137		460	572	600	1090	572	485	303	303	279
V/C Ratio(X)	0.65	0.21		0.26	0.89	0.89	0.92	0.70	0.38	0.05	0.83	0.86
Avail Cap(c_a), veh/h	189	1137		471	572	600	1104	580	491	422	421	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	37.2	0.0	31.4	48.3	48.3	50.2	46.0	40.8	52.1	60.2	60.5
Incr Delay (d2), s/veh	6.8	0.4	0.0	0.3	16.3	15.7	12.4	4.8	1.0	0.1	9.8	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.2	0.0	2.9	20.1	21.0	19.5	13.7	5.4	0.5	9.9	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	37.6	0.0	31.7	64.5	63.9	62.6	50.7	41.8	52.2	70.0	73.7
LnGrp LOS	D	D		C	E	E	E	D	D	D	E	E
Approach Vol, veh/h		350	A		1156			1583			508	
Approach Delay, s/veh		39.9			60.9			57.2			71.2	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	53.5		31.0	13.8	53.8		51.4				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	36.5		35.5	9.5	36.5		46.5				
Max Q Clear Time (g_c+I1), s	8.6	9.3		23.4	8.3	42.6		42.6				
Green Ext Time (p_c), s	0.0	2.6		2.2	0.0	0.0		3.3				

Intersection Summary		
HCM 6th Ctrl Delay	58.7	
HCM 6th LOS	E	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Future Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	467	4	4	1995	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1995	0	0	471	0	0	1473	2470	234	2237	2474	998
Stage 1	-	-	-	-	-	-	467	467	-	2003	2003	-
Stage 2	-	-	-	-	-	-	1006	2003	-	234	471	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	258	103	-	748	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	30	-	23	29	-
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	257	103	-	748	558	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	284	-	-	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	0	0	-	-	8.3	-	-	0	0
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	401	1888	15	40	50
Future Vol, veh/h	9	401	1888	15	40	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	418	1967	16	42	52

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	1967	0	-	0	2194	984			
Stage 1	-	-	-	-	1967	-			
Stage 2	-	-	-	-	227	-			
Critical Hdwy	4.14	-	-	-	6.84	6.94			
Critical Hdwy Stg 1	-	-	-	-	5.84	-			
Critical Hdwy Stg 2	-	-	-	-	5.84	-			
Follow-up Hdwy	2.22	-	-	-	3.52	3.32			
Pot Cap-1 Maneuver	292	-	-	-	~ 38	248			
Stage 1	-	-	-	-	95	-			
Stage 2	-	-	-	-	789	-			
Platoon blocked, %		-	-	-					
Mov Cap-1 Maneuver	292	-	-	-	~ 37	248			
Mov Cap-2 Maneuver	-	-	-	-	81	-			
Stage 1	-	-	-	-	92	-			
Stage 2	-	-	-	-	789	-			

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	292	-	-	-	81	248
HCM Lane V/C Ratio	0.032	-	-	-	0.514	0.21
HCM Control Delay (s)	17.7	-	-	-	89.3	23.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	0.8

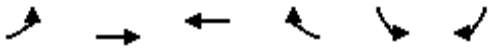
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	66	385	1806	36	45
Future Volume (vph)	66	385	1806	36	45
Lane Group Flow (vph)	68	397	1984	37	46
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	15.0	96.2	81.2	23.8	23.8
Total Split (%)	12.5%	80.2%	67.7%	19.8%	19.8%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.36	0.13	0.72	0.31	0.31
Control Delay	8.6	1.7	10.8	59.4	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	1.7	10.8	59.4	20.4
Queue Length 50th (ft)	6	21	407	28	0
Queue Length 95th (ft)	24	35	612	62	37
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	229	3076	2759	269	280
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.13	0.72	0.14	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	385	1806	118	36	45
Future Volume (veh/h)	66	385	1806	118	36	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	397	1862	0	37	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	264	3102	2806		63	
Arrive On Green	0.04	0.87	0.79	0.00	0.04	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	68	397	1862	0	37	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.7	1.9	27.8	0.0	2.5	0.0
Cycle Q Clear(g_c), s	0.7	1.9	27.8	0.0	2.5	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	264	3102	2806		63	
V/C Ratio(X)	0.26	0.13	0.66		0.59	
Avail Cap(c_a), veh/h	339	3102	2806		272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	6.6	1.1	5.6	0.0	57.0	0.0
Incr Delay (d2), s/veh	0.5	0.1	1.3	0.0	8.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	7.3	0.0	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	1.2	6.8	0.0	65.4	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		465	1862	A	37	A
Approach Delay, s/veh		2.0	6.8		65.4	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.2		9.8	10.0	100.3
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		90.7		18.3	9.5	75.7
Max Q Clear Time (g_c+I1), s		3.9		4.5	2.7	29.8
Green Ext Time (p_c), s		5.4		0.0	0.1	36.6

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	453	0
Future Vol, veh/h	0	0	0	400	453	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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	421	477	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	239	477	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	380	762	1082	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	762	1082	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

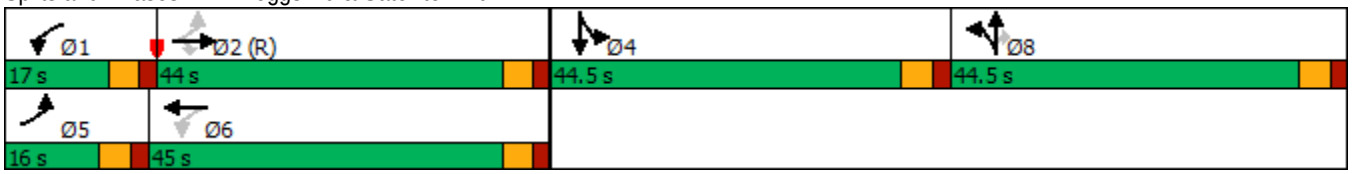
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1082	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

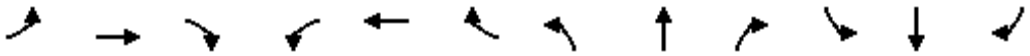
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	163	776	541	212	547	211	196	166	25	550
Future Volume (vph)	163	776	541	212	547	211	196	166	25	550
Lane Group Flow (vph)	179	853	595	233	611	146	301	182	27	725
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	16.0	44.0	44.0	17.0	45.0	44.5	44.5	44.5	44.5	44.5
Total Split (%)	10.7%	29.3%	29.3%	11.3%	30.0%	29.7%	29.7%	29.7%	29.7%	29.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.49	0.87	0.74	0.64	0.48	0.57	0.56	0.45	0.06	0.87
Control Delay	29.7	62.8	14.4	44.9	41.1	65.9	61.5	10.1	43.0	65.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	62.8	14.4	44.9	41.1	65.9	61.5	10.1	43.0	65.2
Queue Length 50th (ft)	99	426	67	161	247	147	152	0	20	349
Queue Length 95th (ft)	173	#560	235	#354	350	215	191	65	47	423
Internal Link Dist (ft)		1475			914		417			312
Turn Bay Length (ft)	195		525	160		210			185	
Base Capacity (vph)	371	977	804	364	1271	418	869	546	460	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.87	0.74	0.64	0.48	0.35	0.35	0.33	0.06	0.80

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	776	541	212	547	9	211	196	166	25	550	110
Future Volume (veh/h)	163	776	541	212	547	9	211	196	166	25	550	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	853	0	233	601	10	250	190	182	27	604	121
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	397	1391		313	1424	24	558	293	248	407	675	135
Arrive On Green	0.07	0.39	0.00	0.08	0.40	0.40	0.16	0.16	0.16	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3577	59	3563	1870	1585	1781	2951	590
Grp Volume(v), veh/h	179	853	0	233	298	313	250	190	182	27	363	362
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1781	1870	1585	1781	1777	1764
Q Serve(g_s), s	9.0	28.8	0.0	11.5	18.2	18.2	9.5	14.3	16.4	1.8	29.7	29.9
Cycle Q Clear(g_c), s	9.0	28.8	0.0	11.5	18.2	18.2	9.5	14.3	16.4	1.8	29.7	29.9
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	397	1391		313	707	740	558	293	248	407	406	403
V/C Ratio(X)	0.45	0.61		0.74	0.42	0.42	0.45	0.65	0.73	0.07	0.89	0.90
Avail Cap(c_a), veh/h	397	1391		313	707	740	926	486	412	463	462	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	36.6	0.0	29.8	32.7	32.7	57.4	59.4	60.2	45.3	56.1	56.2
Incr Delay (d2), s/veh	0.8	2.0	0.0	9.2	0.9	0.8	1.2	5.1	8.6	0.1	18.0	18.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	12.6	0.0	5.8	7.9	8.2	4.3	7.1	7.1	0.8	15.1	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	38.6	0.0	39.0	33.5	33.5	58.6	64.4	68.8	45.4	74.1	74.8
LnGrp LOS	C	D		D	C	C	E	E	E	D	E	E
Approach Vol, veh/h		1032	A		844			622			752	
Approach Delay, s/veh		36.5			35.0			63.4			73.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	64.2		39.8	16.0	65.2		29.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	11.5	38.5		39.0	10.5	39.5		39.0				
Max Q Clear Time (g_c+I1), s	13.5	30.8		31.9	11.0	20.2		18.4				
Green Ext Time (p_c), s	0.0	4.7		2.4	0.0	6.0		5.1				

Intersection Summary			
HCM 6th Ctrl Delay		49.8	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Future Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1609	10	7	861	0	3	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1619	0	0	2054	2484	805	1680	2494	431
Stage 1	-	-	-	-	-	-	1609	1609	-	875	875	-
Stage 2	-	-	-	-	-	-	445	875	-	805	1619	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	398	-	-	32	29	325	62	29	573
Stage 1	-	-	-	-	-	-	109	162	-	310	365	-
Stage 2	-	-	-	-	-	-	562	365	-	342	160	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	398	-	-	32	28	325	59	28	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	28	-	59	28	-
Stage 1	-	-	-	-	-	-	109	162	-	310	358	-
Stage 2	-	-	-	-	-	-	552	358	-	331	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	44.9	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	776	-	-	398	-	-	-	-
HCM Lane V/C Ratio	0.133	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	44.9	0	-	-	14.2	-	-	0	0
HCM Lane LOS	E	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1495	777	35	27	24
Future Vol, veh/h	38	1495	777	35	27	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	1608	835	38	29	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	835	0	-	0	1721	418
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	886	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	794	-	-	-	80	584
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	794	-	-	-	76	584
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.1
HCM LOS			C

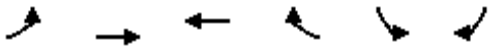
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	794	-	-	-	201	584
HCM Lane V/C Ratio	0.051	-	-	-	0.144	0.044
HCM Control Delay (s)	9.8	-	-	-	25.9	11.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	37	1410	784	123	58
Future Volume (vph)	37	1410	784	123	58
Lane Group Flow (vph)	39	1500	851	131	62
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	17.0	90.0	73.0	30.0	30.0
Total Split (%)	14.2%	75.0%	60.8%	25.0%	25.0%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.08	0.54	0.33	0.63	0.26
Control Delay	3.7	5.8	7.3	63.1	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	5.8	7.3	63.1	13.7
Queue Length 50th (ft)	5	183	125	98	0
Queue Length 95th (ft)	15	282	189	157	39
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	544	2796	2578	361	372
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.54	0.33	0.36	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1410	784	16	123	58
Future Volume (veh/h)	37	1410	784	16	123	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1500	834	0	131	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	551	2909	2638		160	
Arrive On Green	0.03	0.82	0.74	0.00	0.09	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	39	1500	834	0	131	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.6	15.9	9.5	0.0	8.7	0.0
Cycle Q Clear(g_c), s	0.6	15.9	9.5	0.0	8.7	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	551	2909	2638		160	
V/C Ratio(X)	0.07	0.52	0.32		0.82	
Avail Cap(c_a), veh/h	667	2909	2638		364	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.4	5.2	0.0	53.6	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	0.0	9.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	2.8	0.0	4.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	4.1	5.5	0.0	63.4	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1539	834	A	131	A
Approach Delay, s/veh		4.1	5.5		63.4	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.7		16.3	9.1	94.6
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		84.5		24.5	11.5	67.5
Max Q Clear Time (g_c+I1), s		17.9		10.7	2.6	11.5
Green Ext Time (p_c), s		35.9		0.3	0.0	13.6

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	339	620	0
Future Vol, veh/h	0	0	0	339	620	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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	381	697	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	888	349	697	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	283	647	895	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	647	895	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	895	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

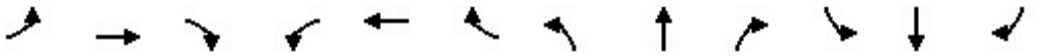
Future “No-Build” Intersection Analysis with Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	103	216	123	107	936	910	365	166	15	275	173
Future Volume (vph)	103	216	123	107	936	910	365	166	15	275	173
Lane Group Flow (vph)	113	237	135	118	1038	1000	401	182	16	302	190
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	8	8		4	4	
Permitted Phases	2		2	6				8			4
Detector Phase	5	2	2	1	6	8	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.5	15.0	15.0	4.5	15.0	15.0	15.0	15.0	6.0	6.0	6.0
Minimum Split (s)	10.0	41.0	41.0	10.0	41.0	39.5	39.5	39.5	39.5	39.5	39.5
Total Split (s)	15.0	33.0	33.0	15.0	33.0	38.0	38.0	38.0	44.0	44.0	44.0
Total Split (%)	11.5%	25.4%	25.4%	11.5%	25.4%	29.2%	29.2%	29.2%	33.8%	33.8%	33.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None	None
v/c Ratio	0.63	0.25	0.26	0.29	1.10	0.55	0.59	0.26	0.07	0.66	0.56
Control Delay	46.6	40.8	8.1	31.9	103.9	33.7	36.8	4.6	48.3	60.6	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	40.8	8.1	31.9	103.9	33.7	36.8	4.6	48.3	60.6	19.6
Queue Length 50th (ft)	68	89	0	72	~615	214	247	0	12	130	29
Queue Length 95th (ft)	#130	129	54	121	#752	273	371	48	34	172	101
Internal Link Dist (ft)		661			914		417			312	
Turn Bay Length (ft)	195		525	160		210			185		
Base Capacity (vph)	186	944	521	416	946	1820	679	693	524	1048	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.25	0.26	0.28	1.10	0.55	0.59	0.26	0.03	0.29	0.33

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	216	123	107	936	8	910	365	166	15	275	173
Future Volume (veh/h)	103	216	123	107	936	8	910	365	166	15	275	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	237	0	118	1029	9	1000	401	182	16	302	190
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	1354		538	1382	12	1233	459	389	266	531	237
Arrive On Green	0.05	0.38	0.00	0.06	0.38	0.38	0.25	0.25	0.25	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3610	32	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	113	237	0	118	506	532	1000	401	182	16	302	190
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1865	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	5.0	5.8	0.0	5.2	32.0	32.0	24.4	26.8	12.7	1.0	10.3	15.1
Cycle Q Clear(g_c), s	5.0	5.8	0.0	5.2	32.0	32.0	24.4	26.8	12.7	1.0	10.3	15.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	1354		538	680	714	1233	459	389	266	531	237
V/C Ratio(X)	0.50	0.18		0.22	0.74	0.74	0.81	0.87	0.47	0.06	0.57	0.80
Avail Cap(c_a), veh/h	260	1354		571	680	714	1256	468	396	528	1052	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	26.7	0.0	22.3	34.6	34.6	46.2	47.1	41.8	47.5	51.4	53.4
Incr Delay (d2), s/veh	1.7	0.3	0.0	0.2	5.4	5.1	4.6	17.5	1.9	0.1	1.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.4	0.0	2.1	14.3	15.0	10.4	14.3	5.1	0.4	4.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	27.0	0.0	22.5	40.0	39.7	50.8	64.6	43.7	47.6	52.4	59.7
LnGrp LOS	C	C		C	D	D	D	E	D	D	D	E
Approach Vol, veh/h		350	A		1156			1583			508	
Approach Delay, s/veh		27.6			38.1			53.5			55.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.7	55.0		24.9	12.4	55.3		37.4				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	27.5		38.5	9.5	27.5		32.5				
Max Q Clear Time (g_c+I1), s	7.2	7.8		17.1	7.0	34.0		28.8				
Green Ext Time (p_c), s	0.1	2.3		2.3	0.1	0.0		3.1				

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Future Vol, veh/h	0	444	4	4	1895	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	0	-	-	-	-	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	467	4	4	1995	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1995	0	0	471	0	0	1473	2470	234	2237	2474	998
Stage 1	-	-	-	-	-	-	467	467	-	2003	2003	-
Stage 2	-	-	-	-	-	-	1006	2003	-	234	471	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	258	103	-	748	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	1087	-	-	88	30	768	23	29	242
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	30	-	23	29	-
Stage 1	-	-	-	-	-	-	545	560	-	61	103	-
Stage 2	-	-	-	-	-	-	257	103	-	748	558	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	284	-	-	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	0	0	-	-	8.3	-	-	0	0
HCM Lane LOS	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	401	1888	15	40	50
Future Vol, veh/h	9	401	1888	15	40	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage,-#		0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	418	1967	16	42	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1967	0	-	0	2194	984
Stage 1	-	-	-	-	1967	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	292	-	-	-	~ 38	248
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	292	-	-	-	~ 37	248
Mov Cap-2 Maneuver	-	-	-	-	81	-
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	789	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	52.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	292	-	-	-	81	248
HCM Lane V/C Ratio	0.032	-	-	-	0.514	0.21
HCM Control Delay (s)	17.7	-	-	-	89.3	23.3
HCM Lane LOS	C	-	-	-	F	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.2	0.8

Notes

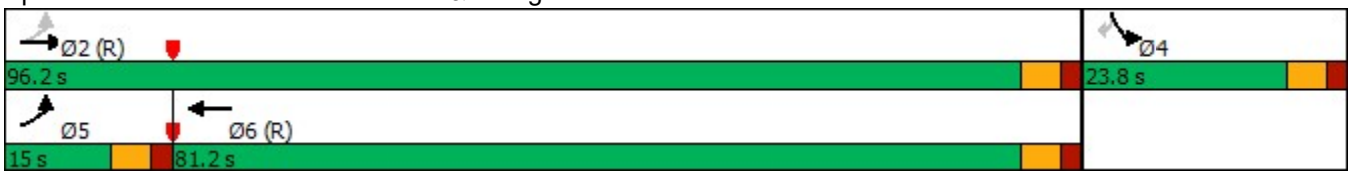
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

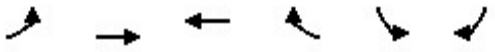
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	66	385	1806	36	45
Future Volume (vph)	66	385	1806	36	45
Lane Group Flow (vph)	68	397	1984	37	46
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	15.0	96.2	81.2	23.8	23.8
Total Split (%)	12.5%	80.2%	67.7%	19.8%	19.8%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.36	0.13	0.72	0.31	0.31
Control Delay	8.6	1.7	10.8	59.4	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	1.7	10.8	59.4	20.4
Queue Length 50th (ft)	6	21	407	28	0
Queue Length 95th (ft)	24	35	612	62	37
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	229	3076	2759	269	280
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.13	0.72	0.14	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	385	1806	118	36	45
Future Volume (veh/h)	66	385	1806	118	36	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	397	1862	0	37	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	264	3102	2806		63	
Arrive On Green	0.04	0.87	0.79	0.00	0.04	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	68	397	1862	0	37	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.7	1.9	27.8	0.0	2.5	0.0
Cycle Q Clear(g_c), s	0.7	1.9	27.8	0.0	2.5	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	264	3102	2806		63	
V/C Ratio(X)	0.26	0.13	0.66		0.59	
Avail Cap(c_a), veh/h	339	3102	2806		272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	6.6	1.1	5.6	0.0	57.0	0.0
Incr Delay (d2), s/veh	0.5	0.1	1.3	0.0	8.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.2	7.3	0.0	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	1.2	6.8	0.0	65.4	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		465	1862	A	37	A
Approach Delay, s/veh		2.0	6.8		65.4	
Approach LOS		A	A		E	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	110.2		9.8	10.0	100.3
Change Period (Y+Rc), s	5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s	90.7		18.3	9.5	75.7
Max Q Clear Time (g_c+I1), s	3.9		4.5	2.7	29.8
Green Ext Time (p_c), s	5.4		0.0	0.1	36.6

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	453	0
Future Vol, veh/h	0	0	0	400	453	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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	421	477	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	239	477	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	380	762	1082	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	762	1082	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

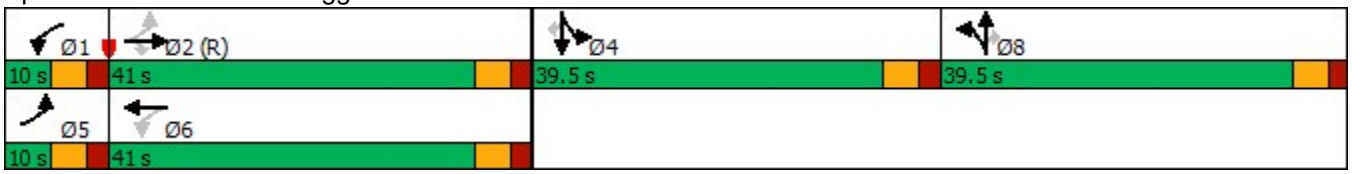
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1082	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	163	776	541	212	547	211	196	166	25	550	110
Future Volume (vph)	163	776	541	212	547	211	196	166	25	550	110
Lane Group Flow (vph)	179	853	595	233	611	232	215	182	27	604	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	8	8		4	4	
Permitted Phases	2		2	6				8			4
Detector Phase	5	2	2	1	6	8	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.5	15.0	15.0	4.5	15.0	15.0	15.0	15.0	6.0	6.0	6.0
Minimum Split (s)	10.0	41.0	41.0	10.0	41.0	39.5	39.5	39.5	39.5	39.5	39.5
Total Split (s)	10.0	41.0	41.0	10.0	41.0	39.5	39.5	39.5	39.5	39.5	39.5
Total Split (%)	7.7%	31.5%	31.5%	7.7%	31.5%	30.4%	30.4%	30.4%	30.4%	30.4%	30.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None	None
v/c Ratio	0.51	0.88	0.72	0.72	0.53	0.25	0.62	0.41	0.07	0.78	0.28
Control Delay	32.7	57.1	11.2	47.6	39.2	44.3	55.2	8.3	38.6	55.3	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	57.1	11.2	47.6	39.2	44.3	55.2	8.3	38.6	55.3	8.0
Queue Length 50th (ft)	89	363	38	141	232	59	168	0	18	253	0
Queue Length 95th (ft)	#192	#471	174	#433	304	78	232	58	42	305	48
Internal Link Dist (ft)		661			914		417			312	
Turn Bay Length (ft)	195		525	160		210			185		
Base Capacity (vph)	348	966	821	323	1158	1305	487	548	462	925	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.88	0.72	0.72	0.53	0.18	0.44	0.33	0.06	0.65	0.24

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	776	541	212	547	9	211	196	166	25	550	110
Future Volume (veh/h)	163	776	541	212	547	9	211	196	166	25	550	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	853	0	233	601	10	232	215	182	27	604	121
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	1532		280	1542	26	816	304	257	361	720	321
Arrive On Green	0.03	0.43	0.00	0.03	0.43	0.43	0.16	0.16	0.16	0.20	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3577	59	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	179	853	0	233	298	313	232	215	182	27	604	121
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	4.5	23.4	0.0	4.5	14.9	14.9	5.3	14.1	14.1	1.6	21.2	8.6
Cycle Q Clear(g_c), s	4.5	23.4	0.0	4.5	14.9	14.9	5.3	14.1	14.1	1.6	21.2	8.6
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	1532		280	766	802	816	304	257	361	720	321
V/C Ratio(X)	0.48	0.56		0.83	0.39	0.39	0.28	0.71	0.71	0.07	0.84	0.38
Avail Cap(c_a), veh/h	373	1532		280	766	802	1314	489	415	466	929	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	27.7	0.0	38.2	25.3	25.3	47.8	51.5	51.5	42.0	49.8	44.7
Incr Delay (d2), s/veh	1.0	1.5	0.0	18.9	0.7	0.7	0.4	6.3	7.4	0.1	5.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	9.8	0.0	6.5	6.2	6.5	2.2	7.0	6.0	0.7	9.7	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	29.1	0.0	57.1	26.0	25.9	48.2	57.9	58.9	42.0	55.2	45.5
LnGrp LOS	C	C		E	C	C	D	E	E	D	E	D
Approach Vol, veh/h		1032	A		844			629			752	
Approach Delay, s/veh		28.9			34.6			54.6			53.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	61.5		31.8	10.0	61.5		26.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	4.5	35.5		34.0	4.5	35.5		34.0				
Max Q Clear Time (g_c+I1), s	6.5	25.4		23.2	6.5	16.9		16.1				
Green Ext Time (p_c), s	0.0	5.9		3.1	0.0	5.9		5.0				

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Future Vol, veh/h	0	1512	9	7	809	0	3	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	0	-	-	-	-	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1609	10	7	861	0	3	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1619	0	0	2054	2484	805	1680	2494	431
Stage 1	-	-	-	-	-	-	1609	1609	-	875	875	-
Stage 2	-	-	-	-	-	-	445	875	-	805	1619	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	398	-	-	32	29	325	62	29	573
Stage 1	-	-	-	-	-	-	109	162	-	310	365	-
Stage 2	-	-	-	-	-	-	562	365	-	342	160	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	398	-	-	32	28	325	59	28	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	28	-	59	28	-
Stage 1	-	-	-	-	-	-	109	162	-	310	358	-
Stage 2	-	-	-	-	-	-	552	358	-	331	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	44.9	0
HCM LOS			E	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	776	-	-	398	-	-	-	-
HCM Lane V/C Ratio	0.133	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	44.9	0	-	-	14.2	-	-	0	0
HCM Lane LOS	E	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	1495	777	35	27	24
Future Vol, veh/h	38	1495	777	35	27	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage,-#		0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	1608	835	38	29	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	835	0	-	0	1721	418
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	886	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	794	-	-	-	80	584
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	794	-	-	-	76	584
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	363	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.1
HCM LOS			C

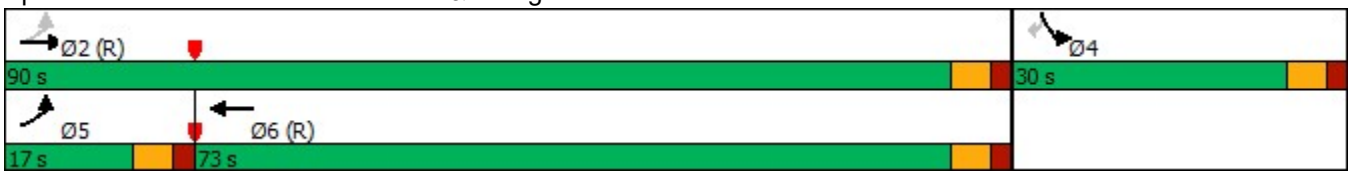
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	794	-	-	-	201	584
HCM Lane V/C Ratio	0.051	-	-	-	0.144	0.044
HCM Control Delay (s)	9.8	-	-	-	25.9	11.4
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

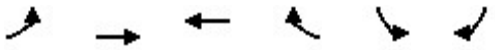
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	37	1410	784	123	58
Future Volume (vph)	37	1410	784	123	58
Lane Group Flow (vph)	39	1500	851	131	62
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	17.0	90.0	73.0	30.0	30.0
Total Split (%)	14.2%	75.0%	60.8%	25.0%	25.0%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.08	0.54	0.33	0.63	0.26
Control Delay	3.7	5.8	7.3	63.1	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	5.8	7.3	63.1	13.7
Queue Length 50th (ft)	5	183	125	98	0
Queue Length 95th (ft)	15	282	189	157	39
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	544	2796	2578	361	372
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.54	0.33	0.36	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1410	784	16	123	58
Future Volume (veh/h)	37	1410	784	16	123	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1500	834	0	131	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	551	2909	2638		160	
Arrive On Green	0.03	0.82	0.74	0.00	0.09	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	39	1500	834	0	131	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.6	15.9	9.5	0.0	8.7	0.0
Cycle Q Clear(g_c), s	0.6	15.9	9.5	0.0	8.7	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	551	2909	2638		160	
V/C Ratio(X)	0.07	0.52	0.32		0.82	
Avail Cap(c_a), veh/h	667	2909	2638		364	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.4	5.2	0.0	53.6	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	0.0	9.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	2.8	0.0	4.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	4.1	5.5	0.0	63.4	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1539	834	A	131	A
Approach Delay, s/veh		4.1	5.5		63.4	
Approach LOS		A	A		E	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	103.7		16.3	9.1	94.6
Change Period (Y+Rc), s	5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s	84.5		24.5	11.5	67.5
Max Q Clear Time (g_c+I1), s	17.9		10.7	2.6	11.5
Green Ext Time (p_c), s	35.9		0.3	0.0	13.6

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	339	620	0
Future Vol, veh/h	0	0	0	339	620	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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	381	697	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	888	349	697	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	283	647	895	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	647	895	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	895	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	0	0	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

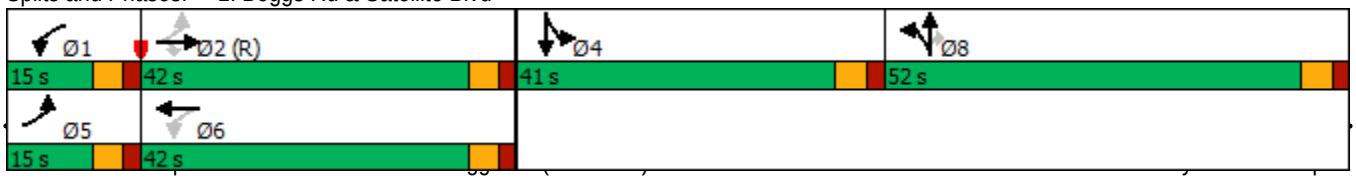
Future “Build” Intersections Analysis

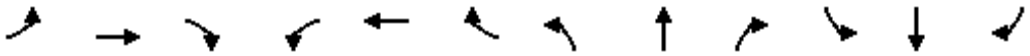
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	106	232	203	107	943	946	374	166	22	309
Future Volume (vph)	106	232	203	107	943	946	374	166	22	309
Lane Group Flow (vph)	116	255	223	118	1047	520	931	182	24	538
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	15.0	42.0	42.0	15.0	42.0	52.0	52.0	52.0	41.0	41.0
Total Split (%)	10.0%	28.0%	28.0%	10.0%	28.0%	34.7%	34.7%	34.7%	27.3%	27.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.73	0.29	0.40	0.34	1.21	0.88	0.77	0.27	0.08	0.81
Control Delay	61.4	47.3	7.6	38.0	153.2	62.6	47.9	11.4	49.0	60.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	47.3	7.6	38.0	153.2	62.6	47.9	11.4	49.0	60.8
Queue Length 50th (ft)	80	107	0	81	~661	524	442	29	20	234
Queue Length 95th (ft)	#156	150	68	133	#801	#836	570	94	45	288
Internal Link Dist (ft)		304			914		417			312
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	161	867	555	355	864	590	1208	666	418	847
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.29	0.40	0.33	1.21	0.88	0.77	0.27	0.06	0.64

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	232	203	107	943	10	946	374	166	22	309	180
Future Volume (veh/h)	106	232	203	107	943	10	946	374	166	22	309	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	255	0	118	1036	11	1040	411	182	24	340	198
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	1079		433	1096	12	1100	577	489	326	398	228
Arrive On Green	0.06	0.30	0.00	0.06	0.30	0.30	0.31	0.31	0.31	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3602	38	3563	1870	1585	1781	2179	1244
Grp Volume(v), veh/h	116	255	0	118	511	536	1040	411	182	24	276	262
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1863	1781	1870	1585	1781	1777	1646
Q Serve(g_s), s	6.7	8.1	0.0	6.8	42.1	42.1	42.8	29.2	13.5	1.7	22.5	23.2
Cycle Q Clear(g_c), s	6.7	8.1	0.0	6.8	42.1	42.1	42.8	29.2	13.5	1.7	22.5	23.2
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	163	1079		433	541	567	1100	577	489	326	325	301
V/C Ratio(X)	0.71	0.24		0.27	0.95	0.95	0.95	0.71	0.37	0.07	0.85	0.87
Avail Cap(c_a), veh/h	173	1079		442	541	567	1104	580	491	422	421	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	39.2	0.0	33.0	51.0	51.0	50.6	45.9	40.5	50.8	59.3	59.6
Incr Delay (d2), s/veh	12.0	0.5	0.0	0.3	26.2	25.4	16.1	5.1	1.0	0.1	12.2	15.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.6	0.0	2.9	22.2	23.1	21.0	14.1	5.3	0.7	11.1	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	39.7	0.0	33.3	77.1	76.3	66.8	51.0	41.5	50.9	71.5	75.0
LnGrp LOS	D	D		C	E	E	E	D	D	D	E	E
Approach Vol, veh/h		371	A		1165			1633			562	
Approach Delay, s/veh		43.4			72.3			60.0			72.2	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	51.0		32.9	14.1	51.1		51.8				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	9.5	36.5		35.5	9.5	36.5		46.5				
Max Q Clear Time (g_c+I1), s	8.8	10.1		25.2	8.7	44.1		44.8				
Green Ext Time (p_c), s	0.0	2.8		2.2	0.0	0.0		1.5				

Intersection Summary			
HCM 6th Ctrl Delay		64.0	
HCM 6th LOS		E	

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	33.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	488	4	4	1929	16	0	1	0	55	2	21
Future Vol, veh/h	14	488	4	4	1929	16	0	1	0	55	2	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	514	4	4	2031	17	0	1	0	58	2	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2048	0	0	518	0	0	1569	2600	257	2327	2587	1016
Stage 1	-	-	-	-	-	-	544	544	-	2039	2039	-
Stage 2	-	-	-	-	-	-	1025	2056	-	288	548	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	271	-	-	1044	-	-	75	24	742	~ 20	25	236
Stage 1	-	-	-	-	-	-	491	517	-	58	99	-
Stage 2	-	-	-	-	-	-	252	97	-	695	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	271	-	-	1044	-	-	61	23	742	~ 18	24	236
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	23	-	~ 18	24	-
Stage 1	-	-	-	-	-	-	464	489	-	~ 55	99	-
Stage 2	-	-	-	-	-	-	223	97	-	655	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	168.9	$ 1093.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	23	271	-	-	1044	-	-	18	236
HCM Lane V/C Ratio	0.046	0.054	-	-	0.004	-	-	3.333	0.094
HCM Control Delay (s)	168.9	19	-	-	8.5	-	-	$ 1488.7	21.8
HCM Lane LOS	F	C	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	8	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	418	1937	20	81	71
Future Vol, veh/h	20	418	1937	20	81	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	435	2018	21	84	74

Major/Minor	Major1			Major2		
Conflicting Flow All	2018	0	-	0	2278	1009
Stage 1	-	-	-	-	2018	-
Stage 2	-	-	-	-	260	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	278	-	-	-	~ 34	238
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	278	-	-	-	~ 31	238
Mov Cap-2 Maneuver	-	-	-	-	~ 72	-
Stage 1	-	-	-	-	~ 82	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	151.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	278	-	-	-	72	238
HCM Lane V/C Ratio	0.075	-	-	-	1.172	0.311
HCM Control Delay (s)	19	-	-	-	260.6	26.8
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	0.2	-	-	-	6.5	1.3

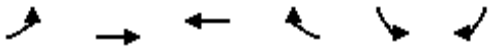
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	66	411	1872	38	45
Future Volume (vph)	66	411	1872	38	45
Lane Group Flow (vph)	68	424	2057	39	46
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	15.0	96.2	81.2	23.8	23.8
Total Split (%)	12.5%	80.2%	67.7%	19.8%	19.8%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.38	0.14	0.75	0.32	0.31
Control Delay	12.0	1.8	11.6	59.7	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	1.8	11.6	59.7	20.2
Queue Length 50th (ft)	6	22	447	29	0
Queue Length 95th (ft)	35	37	672	65	37
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	217	3073	2756	269	280
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.14	0.75	0.14	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	411	1872	123	38	45
Future Volume (veh/h)	66	411	1872	123	38	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	424	1930	0	39	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	251	3099	2803		65	
Arrive On Green	0.04	0.87	0.79	0.00	0.04	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	68	424	1930	0	39	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.7	2.1	30.1	0.0	2.6	0.0
Cycle Q Clear(g_c), s	0.7	2.1	30.1	0.0	2.6	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	251	3099	2803		65	
V/C Ratio(X)	0.27	0.14	0.69		0.60	
Avail Cap(c_a), veh/h	325	3099	2803		272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	7.6	1.1	5.9	0.0	57.0	0.0
Incr Delay (d2), s/veh	0.6	0.1	1.4	0.0	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.2	7.9	0.0	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.2	1.2	7.3	0.0	65.6	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		492	1930	A	39	A
Approach Delay, s/veh		2.2	7.3		65.6	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.1		9.9	10.0	100.2
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		90.7		18.3	9.5	75.7
Max Q Clear Time (g_c+I1), s		4.1		4.6	2.7	32.1
Green Ext Time (p_c), s		5.8		0.0	0.1	36.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	48	14	400	453	7
Future Vol, veh/h	18	48	14	400	453	7
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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	51	15	421	477	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	722	242	484	0	-	0
Stage 1	481	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	362	759	1075	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	357	759	1075	-	-	-
Mov Cap-2 Maneuver	459	-	-	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1075	-	459	759	-	-
HCM Lane V/C Ratio	0.014	-	0.041	0.067	-	-
HCM Control Delay (s)	8.4	-	13.2	10.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	541	2035	22	0	21
Future Vol, veh/h	0	541	2035	22	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	588	2212	24	0	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1106
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	0	205
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	205
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

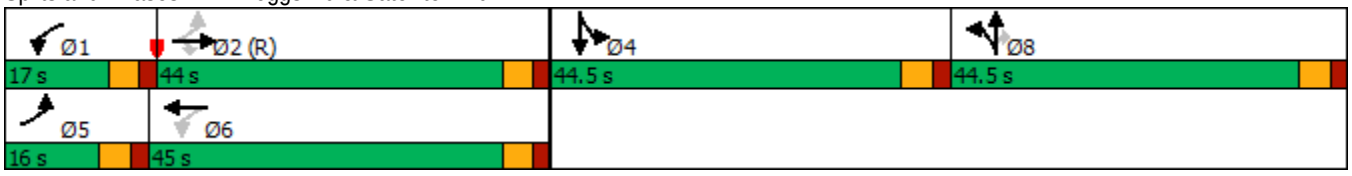
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	205
HCM Lane V/C Ratio	-	-	0.111
HCM Control Delay (s)	-	-	24.7
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.4

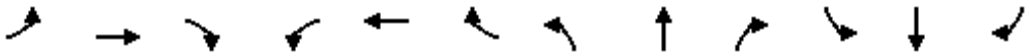
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	170	787	597	212	564	297	218	166	30	574
Future Volume (vph)	170	787	597	212	564	297	218	166	30	574
Lane Group Flow (vph)	187	865	656	233	634	186	380	182	33	757
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA
Protected Phases	5	2		1	6	8	8		4	4
Permitted Phases	2		2	6				8		
Detector Phase	5	2	2	1	6	8	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	44.5	44.5	44.5	44.5	44.5
Total Split (s)	16.0	44.0	44.0	17.0	45.0	44.5	44.5	44.5	44.5	44.5
Total Split (%)	10.7%	29.3%	29.3%	11.3%	30.0%	29.7%	29.7%	29.7%	29.7%	29.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.58	0.95	0.84	0.71	0.55	0.61	0.60	0.41	0.08	0.88
Control Delay	37.3	73.5	22.5	50.4	45.8	63.1	58.7	8.7	42.9	66.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	73.5	22.5	50.4	45.8	63.1	58.7	8.7	42.9	66.3
Queue Length 50th (ft)	112	441	153	167	281	186	190	0	25	364
Queue Length 95th (ft)	193	#574	349	#419	365	256	227	62	54	446
Internal Link Dist (ft)		304			914		417			312
Turn Bay Length (ft)	195			160		210			185	
Base Capacity (vph)	324	915	783	329	1146	418	865	546	460	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.95	0.84	0.71	0.55	0.44	0.44	0.33	0.07	0.83

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	787	597	212	564	13	297	218	166	30	574	115
Future Volume (veh/h)	170	787	597	212	564	13	297	218	166	30	574	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	865	0	233	620	14	326	240	182	33	631	126
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	1299		288	1323	30	623	327	277	420	697	139
Arrive On Green	0.07	0.37	0.00	0.08	0.37	0.37	0.17	0.17	0.17	0.24	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3553	80	3563	1870	1585	1781	2953	589
Grp Volume(v), veh/h	187	865	0	233	310	324	326	240	182	33	379	378
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1856	1781	1870	1585	1781	1777	1764
Q Serve(g_s), s	9.9	30.6	0.0	11.5	19.9	19.9	12.5	18.2	16.1	2.2	31.1	31.2
Cycle Q Clear(g_c), s	9.9	30.6	0.0	11.5	19.9	19.9	12.5	18.2	16.1	2.2	31.1	31.2
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	363	1299		288	662	691	623	327	277	420	419	416
V/C Ratio(X)	0.52	0.67		0.81	0.47	0.47	0.52	0.73	0.66	0.08	0.90	0.91
Avail Cap(c_a), veh/h	363	1299		288	662	691	926	486	412	463	462	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	39.9	0.0	34.1	35.8	35.8	56.2	58.6	57.7	44.6	55.7	55.7
Incr Delay (d2), s/veh	1.3	2.7	0.0	15.7	1.1	1.1	1.5	6.6	5.5	0.1	19.9	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	13.6	0.0	6.5	8.7	9.1	5.6	9.1	6.8	1.0	16.0	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	42.6	0.0	49.9	36.9	36.9	57.6	65.2	63.2	44.7	75.6	76.1
LnGrp LOS	C	D		D	D	D	E	E	E	D	E	E
Approach Vol, veh/h		1052	A		867			748			790	
Approach Delay, s/veh		40.3			40.4			61.4			74.6	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.0	60.3		40.9	16.0	61.3		31.7				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	11.5	38.5		39.0	10.5	39.5		39.0				
Max Q Clear Time (g_c+I1), s	13.5	32.6		33.2	11.9	21.9		20.2				
Green Ext Time (p_c), s	0.0	3.8		2.2	0.0	6.0		6.0				

Intersection Summary			
HCM 6th Ctrl Delay		52.7	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	1548	9	7	842	39	3	2	10	39	2	15
Future Vol, veh/h	33	1548	9	7	842	39	3	2	10	39	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	145	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1647	10	7	896	41	3	2	11	41	2	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	937	0	0	1657	0	0	2180	2668	824	1805	2637	448
Stage 1	-	-	-	-	-	-	1717	1717	-	910	910	-
Stage 2	-	-	-	-	-	-	463	951	-	895	1727	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	727	-	-	385	-	-	26	22	316	50	23	558
Stage 1	-	-	-	-	-	-	93	143	-	296	352	-
Stage 2	-	-	-	-	-	-	548	336	-	302	142	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	727	-	-	385	-	-	22	21	316	42	22	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	22	21	-	42	22	-
Stage 1	-	-	-	-	-	-	89	136	-	282	346	-
Stage 2	-	-	-	-	-	-	519	330	-	273	135	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	91.1	242.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	57	727	-	-	385	-	-	40	558
HCM Lane V/C Ratio	0.28	0.048	-	-	0.019	-	-	1.09	0.029
HCM Control Delay (s)	91.1	10.2	-	-	14.5	-	-	$ 326.5	11.6
HCM Lane LOS	F	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-	-	4.3	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	1535	812	48	56	39
Future Vol, veh/h	65	1535	812	48	56	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	1651	873	52	60	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	873	0	-	0	1839	437
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	966	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	768	-	-	-	67	567
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	330	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	768	-	-	-	61	567
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	330	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	25.3
HCM LOS			D

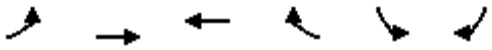
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	768	-	-	-	180	567
HCM Lane V/C Ratio	0.091	-	-	-	0.335	0.074
HCM Control Delay (s)	10.2	-	-	-	34.7	11.9
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4	0.2

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	37	1472	831	127	58
Future Volume (vph)	37	1472	831	127	58
Lane Group Flow (vph)	39	1566	904	135	62
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	17.0	91.0	74.0	29.0	29.0
Total Split (%)	14.2%	75.8%	61.7%	24.2%	24.2%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.08	0.56	0.35	0.64	0.25
Control Delay	3.8	6.2	7.5	63.2	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	6.2	7.5	63.2	13.5
Queue Length 50th (ft)	5	199	136	101	0
Queue Length 95th (ft)	16	308	206	161	39
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	520	2789	2571	346	359
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.56	0.35	0.39	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1472	831	19	127	58
Future Volume (veh/h)	37	1472	831	19	127	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1566	884	0	135	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	525	2900	2630		164	
Arrive On Green	0.03	0.82	0.74	0.00	0.09	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	39	1566	884	0	135	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.6	17.4	10.3	0.0	8.9	0.0
Cycle Q Clear(g_c), s	0.6	17.4	10.3	0.0	8.9	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	525	2900	2630		164	
V/C Ratio(X)	0.07	0.54	0.34		0.82	
Avail Cap(c_a), veh/h	642	2900	2630		349	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	3.5	3.6	5.4	0.0	53.5	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	0.0	9.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.9	3.1	0.0	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	4.4	5.7	0.0	63.3	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1605	884	A	135	A
Approach Delay, s/veh		4.3	5.7		63.3	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.4		16.6	9.1	94.3
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s		85.5		23.5	11.5	68.5
Max Q Clear Time (g_c+I1), s		19.4		10.9	2.6	12.3
Green Ext Time (p_c), s		38.2		0.3	0.0	14.8

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	34	32	339	620	17
Future Vol, veh/h	13	34	32	339	620	17
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	0	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	38	36	381	697	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	970	358	716	0	-	0
Stage 1	707	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	251	638	880	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	241	638	880	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	757	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	880	-	347	638	-	-
HCM Lane V/C Ratio	0.041	-	0.042	0.06	-	-
HCM Control Delay (s)	9.3	-	15.8	11	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1553	884	52	0	15
Future Vol, veh/h	0	1553	884	52	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1688	961	57	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	481
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	0	531
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	531
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	531
HCM Lane V/C Ratio	-	-	0.031
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

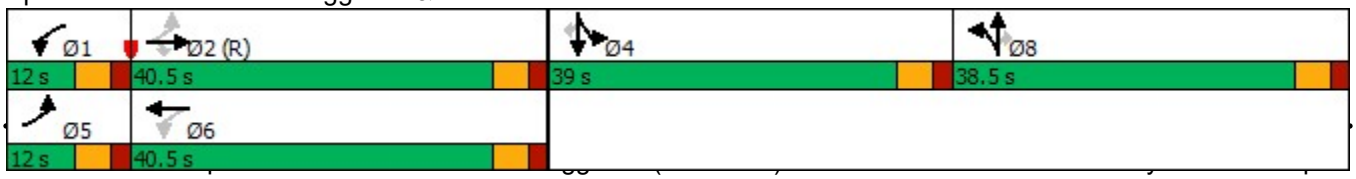
Future “Build” Intersections Analysis with Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	106	232	203	107	943	946	374	166	22	309	180
Future Volume (vph)	106	232	203	107	943	946	374	166	22	309	180
Lane Group Flow (vph)	116	255	223	118	1047	1040	411	182	24	340	198
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	8	8		4	4	
Permitted Phases	2		2	6				8			4
Detector Phase	5	2	2	1	6	8	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	15.0	15.0	6.0	6.0	6.0
Minimum Split (s)	15.0	42.5	42.5	15.0	41.5	39.0	39.0	39.0	44.5	44.5	44.5
Total Split (s)	12.0	40.5	40.5	12.0	40.5	38.5	38.5	38.5	39.0	39.0	39.0
Total Split (%)	9.2%	31.2%	31.2%	9.2%	31.2%	29.6%	29.6%	29.6%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None	None
v/c Ratio	0.74	0.25	0.36	0.29	1.02	0.61	0.65	0.28	0.10	0.67	0.61
Control Delay	58.8	37.0	6.3	30.6	78.2	37.5	41.8	5.4	47.2	59.3	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	37.0	6.3	30.6	78.2	37.5	41.8	5.4	47.2	59.3	30.5
Queue Length 50th (ft)	66	89	0	68	~527	246	279	1	18	144	66
Queue Length 95th (ft)	#157	127	62	115	#664	313	416	53	42	188	143
Internal Link Dist (ft)		304			914		417			312	
Turn Bay Length (ft)	195			160		210			185		
Base Capacity (vph)	156	1036	621	403	1029	1701	635	659	456	911	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.25	0.36	0.29	1.02	0.61	0.65	0.28	0.05	0.37	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	232	203	107	943	10	946	374	166	22	309	180
Future Volume (veh/h)	106	232	203	107	943	10	946	374	166	22	309	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	255	0	118	1036	11	1040	411	182	24	340	198
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1337		513	1355	14	1256	467	396	275	549	245
Arrive On Green	0.05	0.38	0.00	0.05	0.38	0.38	0.25	0.25	0.25	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3602	38	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	116	255	0	118	511	536	1040	411	182	24	340	198
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1863	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	5.2	6.3	0.0	5.3	32.7	32.7	25.5	27.5	12.6	1.5	11.6	15.7
Cycle Q Clear(g_c), s	5.2	6.3	0.0	5.3	32.7	32.7	25.5	27.5	12.6	1.5	11.6	15.7
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	1337		513	668	701	1256	467	396	275	549	245
V/C Ratio(X)	0.55	0.19		0.23	0.76	0.76	0.83	0.88	0.46	0.09	0.62	0.81
Avail Cap(c_a), veh/h	211	1337		513	668	701	1275	475	402	459	916	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	27.2	0.0	23.1	35.5	35.5	46.1	46.9	41.3	47.1	51.4	53.1
Incr Delay (d2), s/veh	3.0	0.3	0.0	0.2	6.2	5.9	5.2	18.0	1.8	0.1	1.1	6.2
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	4.1	4.8	0.0	3.9	21.0	21.8	16.3	21.0	8.7	1.2	8.9	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	27.6	0.0	23.3	41.7	41.4	51.3	64.9	43.1	47.2	52.5	59.3
LnGrp LOS	C	C		C	D	D	D	E	D	D	D	E
Approach Vol, veh/h		371	A		1165			1633			562	
Approach Delay, s/veh		28.7			39.7			53.8			54.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	54.4		25.6	12.0	54.4		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	6.5	35.0		33.5	6.5	35.0		33.0				
Max Q Clear Time (g_c+I1), s	7.3	8.3		17.7	7.2	34.7		29.5				
Green Ext Time (p_c), s	0.0	2.8		2.4	0.0	0.2		3.0				

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	33.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	488	4	4	1929	16	0	1	0	55	2	21
Future Vol, veh/h	14	488	4	4	1929	16	0	1	0	55	2	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	0	-	-	-	-	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	514	4	4	2031	17	0	1	0	58	2	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2048	0	0	518	0	0	1569	2600	257	2327	2587	1016
Stage 1	-	-	-	-	-	-	544	544	-	2039	2039	-
Stage 2	-	-	-	-	-	-	1025	2056	-	288	548	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	271	-	-	1044	-	-	75	24	742	~ 20	25	236
Stage 1	-	-	-	-	-	-	491	517	-	58	99	-
Stage 2	-	-	-	-	-	-	252	97	-	695	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	271	-	-	1044	-	-	61	23	742	~ 18	24	236
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	23	-	~ 18	24	-
Stage 1	-	-	-	-	-	-	464	489	-	~ 55	99	-
Stage 2	-	-	-	-	-	-	223	97	-	655	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	168.9	$ 1093.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	23	271	-	-	1044	-	-	18	236
HCM Lane V/C Ratio	0.046	0.054	-	-	0.004	-	-	3.333	0.094
HCM Control Delay (s)	168.9	19	-	-	8.5	-	-	$ 1488.7	21.8
HCM Lane LOS	F	C	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	8	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	418	1937	20	81	71
Future Vol, veh/h	20	418	1937	20	81	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	435	2018	21	84	74

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2018	0	-	0	2278	1009
Stage 1	-	-	-	-	2018	-
Stage 2	-	-	-	-	260	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	278	-	-	-	~ 34	238
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	760	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	278	-	-	-	~ 31	238
Mov Cap-2 Maneuver	-	-	-	-	~ 72	-
Stage 1	-	-	-	-	~ 82	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	151.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	278	-	-	-	72	238
HCM Lane V/C Ratio	0.075	-	-	-	1.172	0.311
HCM Control Delay (s)	19	-	-	-	260.6	26.8
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	0.2	-	-	-	6.5	1.3

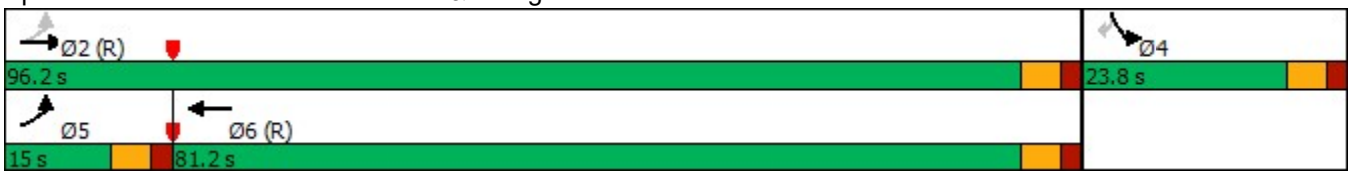
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

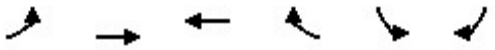
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	66	411	1872	38	45
Future Volume (vph)	66	411	1872	38	45
Lane Group Flow (vph)	68	424	2057	39	46
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	15.0	96.2	81.2	23.8	23.8
Total Split (%)	12.5%	80.2%	67.7%	19.8%	19.8%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.38	0.14	0.75	0.32	0.31
Control Delay	12.0	1.8	11.6	59.7	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	1.8	11.6	59.7	20.2
Queue Length 50th (ft)	6	22	447	29	0
Queue Length 95th (ft)	35	37	672	65	37
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	217	3073	2756	269	280
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.14	0.75	0.14	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	411	1872	123	38	45
Future Volume (veh/h)	66	411	1872	123	38	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	424	1930	0	39	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	251	3099	2803		65	
Arrive On Green	0.04	0.87	0.79	0.00	0.04	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	68	424	1930	0	39	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.7	2.1	30.1	0.0	2.6	0.0
Cycle Q Clear(g_c), s	0.7	2.1	30.1	0.0	2.6	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	251	3099	2803		65	
V/C Ratio(X)	0.27	0.14	0.69		0.60	
Avail Cap(c_a), veh/h	325	3099	2803		272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	7.6	1.1	5.9	0.0	57.0	0.0
Incr Delay (d2), s/veh	0.6	0.1	1.4	0.0	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.4	12.5	0.0	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.2	1.2	7.3	0.0	65.6	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		492	1930	A	39	A
Approach Delay, s/veh		2.2	7.3		65.6	
Approach LOS		A	A		E	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	110.1		9.9	10.0	100.2
Change Period (Y+Rc), s	5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s	90.7		18.3	9.5	75.7
Max Q Clear Time (g_c+I1), s	4.1		4.6	2.7	32.1
Green Ext Time (p_c), s	5.8		0.0	0.1	36.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	48	14	400	453	7
Future Vol, veh/h	18	48	14	400	453	7
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	0	25	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	51	15	421	477	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	718	239	484	0	-	0
Stage 1	477	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	364	762	1075	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	762	1075	-	-	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1075	-	460	762	-	-
HCM Lane V/C Ratio	0.014	-	0.041	0.066	-	-
HCM Control Delay (s)	8.4	-	13.2	10.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	541	2035	22	0	21
Future Vol, veh/h	0	541	2035	22	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage,#	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	588	2212	24	0	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1106
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	0	176
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	176
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	28.5
HCM LOS			D

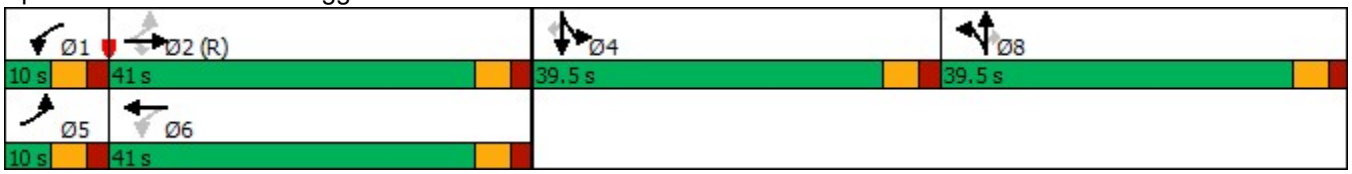
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	176
HCM Lane V/C Ratio	-	-	0.13
HCM Control Delay (s)	-	-	28.5
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	170	787	597	212	564	297	218	166	30	574	115
Future Volume (vph)	170	787	597	212	564	297	218	166	30	574	115
Lane Group Flow (vph)	187	865	656	233	634	326	240	182	33	631	126
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6	8	8		4	4	
Permitted Phases	2		2	6				8			4
Detector Phase	5	2	2	1	6	8	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.5	15.0	15.0	4.5	15.0	15.0	15.0	15.0	6.0	6.0	6.0
Minimum Split (s)	10.0	41.0	41.0	10.0	41.5	39.0	39.0	39.0	39.0	39.0	39.0
Total Split (s)	10.0	41.0	41.0	10.0	41.0	39.5	39.5	39.5	39.5	39.5	39.5
Total Split (%)	7.7%	31.5%	31.5%	7.7%	31.5%	30.4%	30.4%	30.4%	30.4%	30.4%	30.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	Min	Min	Min	Min	None	None	None
v/c Ratio	0.58	0.90	0.80	0.82	0.59	0.32	0.63	0.39	0.08	0.80	0.28
Control Delay	37.8	58.3	17.0	58.5	42.2	43.8	54.0	7.8	38.4	55.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	58.3	17.0	58.5	42.2	43.8	54.0	7.8	38.4	55.6	7.9
Queue Length 50th (ft)	98	370	93	149	249	82	185	0	22	263	0
Queue Length 95th (ft)	#249	#483	273	#436	316	105	257	58	49	320	49
Internal Link Dist (ft)		304			914		417			312	
Turn Bay Length (ft)	195			160		210			185		
Base Capacity (vph)	320	966	819	284	1066	1305	487	548	462	925	507
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.90	0.80	0.82	0.59	0.25	0.49	0.33	0.07	0.68	0.25

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Boggs Rd & Satellite Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	787	597	212	564	13	297	218	166	30	574	115
Future Volume (veh/h)	170	787	597	212	564	13	297	218	166	30	574	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	865	0	233	620	14	326	240	182	33	631	126
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	1445		255	1444	33	903	336	285	374	746	333
Arrive On Green	0.03	0.41	0.00	0.03	0.41	0.41	0.18	0.18	0.18	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3553	80	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	187	865	0	233	310	324	326	240	182	33	631	126
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1856	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	4.5	24.8	0.0	4.5	16.3	16.3	7.4	15.7	13.8	1.9	22.2	8.9
Cycle Q Clear(g_c), s	4.5	24.8	0.0	4.5	16.3	16.3	7.4	15.7	13.8	1.9	22.2	8.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	1445		255	722	754	903	336	285	374	746	333
V/C Ratio(X)	0.55	0.60		0.91	0.43	0.43	0.36	0.71	0.64	0.09	0.85	0.38
Avail Cap(c_a), veh/h	340	1445		255	722	754	1314	489	415	466	929	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	30.3	0.0	42.1	27.7	27.7	46.8	50.2	49.4	41.3	49.3	44.1
Incr Delay (d2), s/veh	1.9	1.8	0.0	34.4	0.9	0.8	0.5	5.9	5.0	0.1	6.1	0.7
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	4.9	15.9	0.0	12.4	11.2	11.6	5.5	12.3	9.7	1.5	15.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	32.1	0.0	76.5	28.6	28.6	47.3	56.1	54.4	41.4	55.4	44.8
LnGrp LOS	C	C		E	C	C	D	E	D	D	E	D
Approach Vol, veh/h		1052	A		867			748			790	
Approach Delay, s/veh		32.2			41.5			51.8			53.1	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	58.3		32.8	10.0	58.3		28.9				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	4.5	35.5		34.0	4.5	35.5		34.0				
Max Q Clear Time (g_c+I1), s	6.5	26.8		24.2	6.5	18.3		17.7				
Green Ext Time (p_c), s	0.0	5.2		3.1	0.0	5.9		5.7				

Intersection Summary	
HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	1548	9	7	842	39	3	2	10	39	2	15
Future Vol, veh/h	33	1548	9	7	842	39	3	2	10	39	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	135	25	-	0	-	-	-	-	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1647	10	7	896	41	3	2	11	41	2	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	937	0	0	1657	0	0	2180	2668	824	1805	2637	448
Stage 1	-	-	-	-	-	-	1717	1717	-	910	910	-
Stage 2	-	-	-	-	-	-	463	951	-	895	1727	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	727	-	-	385	-	-	26	22	316	50	23	558
Stage 1	-	-	-	-	-	-	93	143	-	296	352	-
Stage 2	-	-	-	-	-	-	548	336	-	302	142	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	727	-	-	385	-	-	22	21	316	42	22	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	22	21	-	42	22	-
Stage 1	-	-	-	-	-	-	89	136	-	282	346	-
Stage 2	-	-	-	-	-	-	519	330	-	273	135	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	91.1	242.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	57	727	-	-	385	-	-	40	558
HCM Lane V/C Ratio	0.28	0.048	-	-	0.019	-	-	1.09	0.029
HCM Control Delay (s)	91.1	10.2	-	-	14.5	-	-	$ 326.5	11.6
HCM Lane LOS	F	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	0.2	-	-	0.1	-	-	4.3	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	65	1535	812	48	56	39
Future Vol, veh/h	65	1535	812	48	56	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	25	-	-	135	45	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	1651	873	52	60	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	873	0	-	0	1839	437
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	966	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	768	-	-	-	67	567
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	330	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	768	-	-	-	61	567
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	330	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	25.3
HCM LOS			D

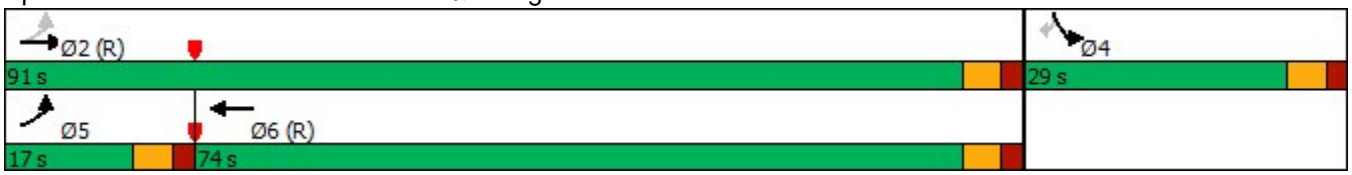
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	768	-	-	-	180	567
HCM Lane V/C Ratio	0.091	-	-	-	0.335	0.074
HCM Control Delay (s)	10.2	-	-	-	34.7	11.9
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4	0.2

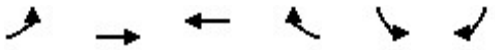
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	37	1472	831	127	58
Future Volume (vph)	37	1472	831	127	58
Lane Group Flow (vph)	39	1566	904	135	62
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	15.0	15.0	6.0	6.0
Minimum Split (s)	15.0	23.5	28.5	23.5	23.5
Total Split (s)	17.0	91.0	74.0	29.0	29.0
Total Split (%)	14.2%	75.8%	61.7%	24.2%	24.2%
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?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.08	0.56	0.35	0.64	0.25
Control Delay	3.8	6.2	7.5	63.2	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	6.2	7.5	63.2	13.5
Queue Length 50th (ft)	5	199	136	101	0
Queue Length 95th (ft)	16	308	206	161	39
Internal Link Dist (ft)		719	1190	490	
Turn Bay Length (ft)	125				
Base Capacity (vph)	520	2789	2571	346	359
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.56	0.35	0.39	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 4: Satellite Blvd & Evergreen Blvd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1472	831	19	127	58
Future Volume (veh/h)	37	1472	831	19	127	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1566	884	0	135	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	525	2900	2630		164	
Arrive On Green	0.03	0.82	0.74	0.00	0.09	0.00
Sat Flow, veh/h	1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h	39	1566	884	0	135	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	0	1781	1585
Q Serve(g_s), s	0.6	17.4	10.3	0.0	8.9	0.0
Cycle Q Clear(g_c), s	0.6	17.4	10.3	0.0	8.9	0.0
Prop In Lane	1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	525	2900	2630		164	
V/C Ratio(X)	0.07	0.54	0.34		0.82	
Avail Cap(c_a), veh/h	642	2900	2630		349	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	3.5	3.6	5.4	0.0	53.5	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.3	0.0	9.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	7.0	5.6	0.0	7.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	4.4	5.7	0.0	63.3	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1605	884	A	135	A
Approach Delay, s/veh		4.3	5.7		63.3	
Approach LOS		A	A		E	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	103.4		16.6	9.1	94.3
Change Period (Y+Rc), s	5.5		5.5	5.5	5.5
Max Green Setting (Gmax), s	85.5		23.5	11.5	68.5
Max Q Clear Time (g_c+I1), s	19.4		10.9	2.6	12.3
Green Ext Time (p_c), s	38.2		0.3	0.0	14.8

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	34	32	339	620	17
Future Vol, veh/h	13	34	32	339	620	17
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	0	25	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	38	36	381	697	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	960	349	716	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	254	647	880	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	244	647	880	-	-	-
Mov Cap-2 Maneuver	350	-	-	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	757	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	880	-	350	647	-	-
HCM Lane V/C Ratio	0.041	-	0.042	0.059	-	-
HCM Control Delay (s)	9.3	-	15.7	10.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↱		↱
Traffic Vol, veh/h	0	1553	884	52	0	15
Future Vol, veh/h	0	1553	884	52	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	175	-	0
Veh in Median Storage,#	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1688	961	57	0	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	481
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	0	454
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	454
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	454
HCM Lane V/C Ratio	-	-	0.036
HCM Control Delay (s)	-	-	13.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Traffic Volume Worksheets

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

1. Satellite Blvd @ Boggs Rd

A.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	13	881	357	161	1412	0	15	268	168	451	0	100	210	119	429	0	104	909	8	1021
Removed Existing Driveway Trips:	0	-10	-3	0	-13	0	0	-1	0	-1	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	13	897	365	166	1441	0	15	275	173	463	0	103	216	123	442	0	107	936	8	1051
Total New Trips:	0	36	9	0	45	0	7	34	7	48	0	3	16	80	99	0	0	7	2	9
Future 2025 Traffic Volumes:	13	933	374	166	1486	0	22	309	180	511	0	106	232	203	541	0	107	943	10	1060

P.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	40	173	198	161	572	0	24	539	107	670	0	158	753	528	1439	0	206	531	9	746
Removed Existing Driveway Trips:	0	-8	-8	0	-16	0	0	-5	0	-5	0	0	0	-3	-3	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	41	170	196	166	573	0	25	550	110	685	0	163	776	541	1480	0	212	547	9	768
Total New Trips:	0	86	22	0	108	0	5	24	5	34	0	7	11	56	74	0	0	17	4	21
Future 2025 Traffic Volumes:	41	256	218	166	681	0	30	574	115	719	0	170	787	597	1554	0	212	564	13	789

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

2. Satellite @ Existing Drwy2 E

A.M. Peak Hour

	Children's Healthcare of Atlanta Driveway					Existing Eastern Site Driveway 2					Satellite Boulevard					Satellite Boulevard				
	Northbound					**Southbound**					**Eastbound**					**Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	1	1	0	2	431	4	437	0	4	1840	10	1854
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	-1	-1	0	-2	0	0	-2	0	0	0	-10	-10
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	444	4	448	0	4	1895	0	1899
Total New Trips:	0	0	1	0	1	0	55	2	21	78	0	14	44	0	58	0	0	34	16	50
Future 2025 Traffic Volumes:	0	0	1	0	1	0	55	2	21	78	0	14	488	4	506	0	4	1929	16	1949

P.M. Peak Hour

	Children's Healthcare of Atlanta Driveway					Existing Eastern Site Driveway 2					Satellite Boulevard					Satellite Boulevard				
	Northbound					**Southbound**					**Eastbound**					**Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	3	0	10	13	0	3	0	5	8	0	1	1468	9	1478	0	7	785	8	800
Removed Existing Driveway Trips:	0	0	0	0	0	0	-3	0	-5	-8	0	-1	0	0	-1	0	0	0	-8	-8
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	3	0	10	13	0	0	0	0	0	0	0	1512	9	1521	0	7	809	0	816
Total New Trips:	0	0	2	0	2	0	39	2	15	56	0	33	36	0	69	0	0	33	39	72
Future 2025 Traffic Volumes:	0	3	2	10	15	0	39	2	15	56	0	33	1548	9	1590	0	7	842	39	888

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

3. Satellite @ Existing Drwy1 W

A.M. Peak Hour

	- Northbound					Highlands at Sweetwater Creek Drwy (Existing Western Site Driveway 1) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	39	0	49	88	0	9	391	0	400	0	0	1834	15	1849
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	-2	0	0	-1	0	-1
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	40	0	50	90	0	9	401	0	410	0	0	1888	15	1903
Total New Trips:	0	0	0	0	0	0	41	0	21	62	0	11	17	0	28	0	0	49	5	54
Future 2025 Traffic Volumes:	0	0	0	0	0	0	81	0	71	152	0	20	418	0	438	0	0	1937	20	1957

P.M. Peak Hour

	- Northbound					Highlands at Sweetwater Creek Drwy (Existing Western Site Driveway 1) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	26	0	23	49	0	37	1452	0	1489	0	0	759	34	793
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	-1	0	0	-5	0	-5
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	27	0	24	51	0	38	1495	0	1533	0	0	777	35	812
Total New Trips:	0	0	0	0	0	0	29	0	15	44	0	27	40	0	67	0	0	35	13	48
Future 2025 Traffic Volumes:	0	0	0	0	0	0	56	0	39	95	0	65	1535	0	1600	0	0	812	48	860

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

4. Satellite @ Evergreen Blvd

A.M. Peak Hour

	- Northbound					Evergreen Boulevard Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	35	0	44	79	0	64	376	0	440	0	0	1754	115	1869
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	-2	0	-2	0	0	-1	0	-1
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	36	0	45	81	0	66	385	0	451	0	0	1806	118	1924
Total New Trips:	0	0	0	0	0	0	2	0	0	2	0	0	26	0	26	0	0	66	5	71
Future 2025 Traffic Volumes:	0	0	0	0	0	0	38	0	45	83	0	66	411	0	477	0	0	1872	123	1995

P.M. Peak Hour

	- Northbound					Evergreen Boulevard Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	119	0	56	175	0	36	1370	0	1406	0	0	766	16	782
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	-1	0	0	-5	0	-5
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	123	0	58	181	0	37	1410	0	1447	0	0	784	16	800
Total New Trips:	0	0	0	0	0	0	4	0	0	4	0	0	62	0	62	0	0	47	3	50
Future 2025 Traffic Volumes:	0	0	0	0	0	0	127	0	58	185	0	37	1472	0	1509	0	0	831	19	850

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

5. Boggs Rd @ Existing Drwy

A.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Existing Site Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	3	388	0	391	0	0	440	0	440	0	0	0	1	1	0	0	0	0	0
Removed Existing Driveway Trips:	0	-3	0	0	-3	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	400	0	400	0	0	453	0	453	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	14	0	0	14	0	0	0	7	7	0	18	0	48	66	0	0	0	0	0
Future 2025 Traffic Volumes:	0	14	400	0	414	0	0	453	7	460	0	18	0	48	66	0	0	0	0	0

P.M. Peak Hour

	Boggs Road Northbound					Boggs Road Southbound					Existing Site Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	8	329	0	337	0	0	602	2	604	0	1	0	5	6	0	0	0	0	0
Removed Existing Driveway Trips:	0	-8	0	0	-8	0	0	0	-2	-2	0	-1	0	-5	-6	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	339	0	339	0	0	620	0	620	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	32	0	0	32	0	0	0	17	17	0	13	0	34	47	0	0	0	0	0
Future 2025 Traffic Volumes:	0	32	339	0	371	0	0	620	17	637	0	13	0	34	47	0	0	0	0	0

22-034 Mixed-Use Development at Satellite Boulevard and Boggs Road - Gwinnett County, GA

Traffic Volumes

A&R Engineering
April 2022

6. Satellite @ New RIRO Drwy

A.M. Peak Hour

Condition	- Northbound					Proposed Site Driveway (Right-in/Right-out) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	429	0	429	0	0	1958	0	1958
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-10	0	-10
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	442	0	442	0	0	2006	0	2006
Total New Trips:	0	0	0	0	0	0	0	0	21	21	0	0	99	0	99	0	0	29	22	51
Future 2025 Traffic Volumes:	0	0	0	0	0	0	0	0	21	21	0	0	541	0	541	0	0	2035	22	2057

P.M. Peak Hour

Condition	- Northbound					Proposed Site Driveway (Right-in/Right-out) Southbound					Satellite Boulevard Eastbound					Satellite Boulevard Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2022 Traffic Counts:	0	0	0	0	0	0	0	0	0	0	0	0	1439	0	1439	0	0	811	0	811
Removed Existing Driveway Trips:	0	0	0	0	0	0	0	0	0	0	0	0	-3	0	-3	0	0	-8	0	-8
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2025 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	1479	0	1479	0	0	827	0	827
Total New Trips:	0	0	0	0	0	0	0	0	15	15	0	0	74	0	74	0	0	57	52	109
Future 2025 Traffic Volumes:	0	0	0	0	0	0	0	0	15	15	0	0	1553	0	1553	0	0	884	52	936