DEVELOPMENT OF REGIONAL IMPACT
(DRI #3206)
TRAFFIC STUDY
FOR
CHOSEWOOD DEVELOPMENT

ATLANTA, GEORGIA

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A & R Project # 20-037

EXECUTIVE SUMMARY

Traffic impacts were evaluated for the traffic from the proposed Chosewood development that will be located to the southwest of the intersection of Boulevard SE at Englewood Avenue in Atlanta, Georgia. The development will consist of 1,180 multifamily units and 20,000 sf of retail space.

Site Access Configuration

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

- Site Driveway 1: Full-access driveway on Englewood Avenue
- Site Driveway 2: Full-access northern driveway on Boulevard SE
- Site Driveway 3: Full-access southern driveway on Boulevard SE, aligned with Custer Avenue
- Site Driveway 4: Full-access driveway on Cassanova Street, east of Park Avenue
- Site Driveway 5: Full-access driveway on Cassanova Street, west of Park Avenue

Study Intersections

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

1. Boulevard SE at Atlanta Avenue
2. Boulevard SE at Englewood Avenue
3. Boulevard SE at Burroughs Street
4. Boulevard SE at Custer Avenue
5. Boulevard SE at Cassanova Street
6. Boulevard SE at McDonough Boulevard
7. Englewood Avenue at Hill Street
8. Englewood Avenue at Grant Street
9. Cassanova Street at Gault Street
10. Cassanova Street at Park Avenue
11. US 23/SR 42 (Moreland Avenue) at Custer Avenue
12. McDonough Boulevard at Sawtell Avenue

Planned Improvement Projects

TABLE 5 – PLANNED AND PROGRAMMED IMPROVEMENTS

Project ID	Project	Type of Improvement	Network Year	Source
-	Englewood Ave Pedestrian Improvements	Sidewalk improvements along Englewood Ave from Hill St to the Boulevard Crossing Park	TBA	City of Atlanta
-	Englewood Sidewalk	Sidewalk installation on Englewood Ave from Hill St to Boulevard	TBA	City of Atlanta
-	Englewood Ave Bike Lanes	Stripe Englewood Avenue to provide bike lanes from Hill Street to Boulevard	TBA	City of Atlanta
-	Boulevard SE	Reduction of travel lanes from 4 to 3 with TWLTL on Boulevard	2023	City of Atlanta

Boulevard SE is currently a 4-lane roadway near the proposed development. A City of Atlanta improvement project ("Boulevard SE Project") is proposing to make Boulevard SE into a 3-lane roadway

(1 southbound lane, 1 northbound lane, 1 two way turn lane). These improvements are included in both the future “No-Build” and “Build” study network lane geometry.

Analysis Results

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, both of which account for increases in annual growth of through traffic. The results of the analysis indicate that after the Boulevard SE project is completed, all study intersections will operate at a level-of-service “D” or better in the “Build” scenario after implementing recommendations at the intersection of Boulevard SE and Custer Avenue.

Recommendations for Access Configuration

- Site driveways 1, 2, 4, and 5 are recommended to consist of one entering lane and one exiting lane and to be stop-controlled on the driveway approach.
- Site driveway 3/ Custer Avenue at Boulevard SE:

  Site driveway 3 will form the eastbound approach (fourth leg) at the existing intersection of Custer Avenue and Boulevard SE. The improvements listed below are based on the assumption that the City of Atlanta Boulevard SE project will be complete, and Boulevard SE will be a 3-lane roadway prior to the proposed development’s full buildout.

  - Traffic signal is to be modified to accommodate an eastbound approach (driveway approach) which should include one entering lane and two exiting lanes (left turn lane and shared through/right turn lane)
  - Modify traffic signal to remove the northbound right turn overlap phase
  - Restripe westbound approach lane geometry to accommodate a westbound left turn lane and shared through/right turn lane within the existing available asphalt (30 ft)
  - Modify traffic signal to add westbound protected, permissive phase
  - Modify traffic signal to add southbound protected, permissive left turn phase
  - Traffic signal is to be improved by accommodating pedestrian movements at all approaches
  - Intersection to be ADA compliant with handicap ramps
  - Relocate controller cabinet from the southwest corner
  - Establish fiberoptic interconnect to adjacent signalized intersections

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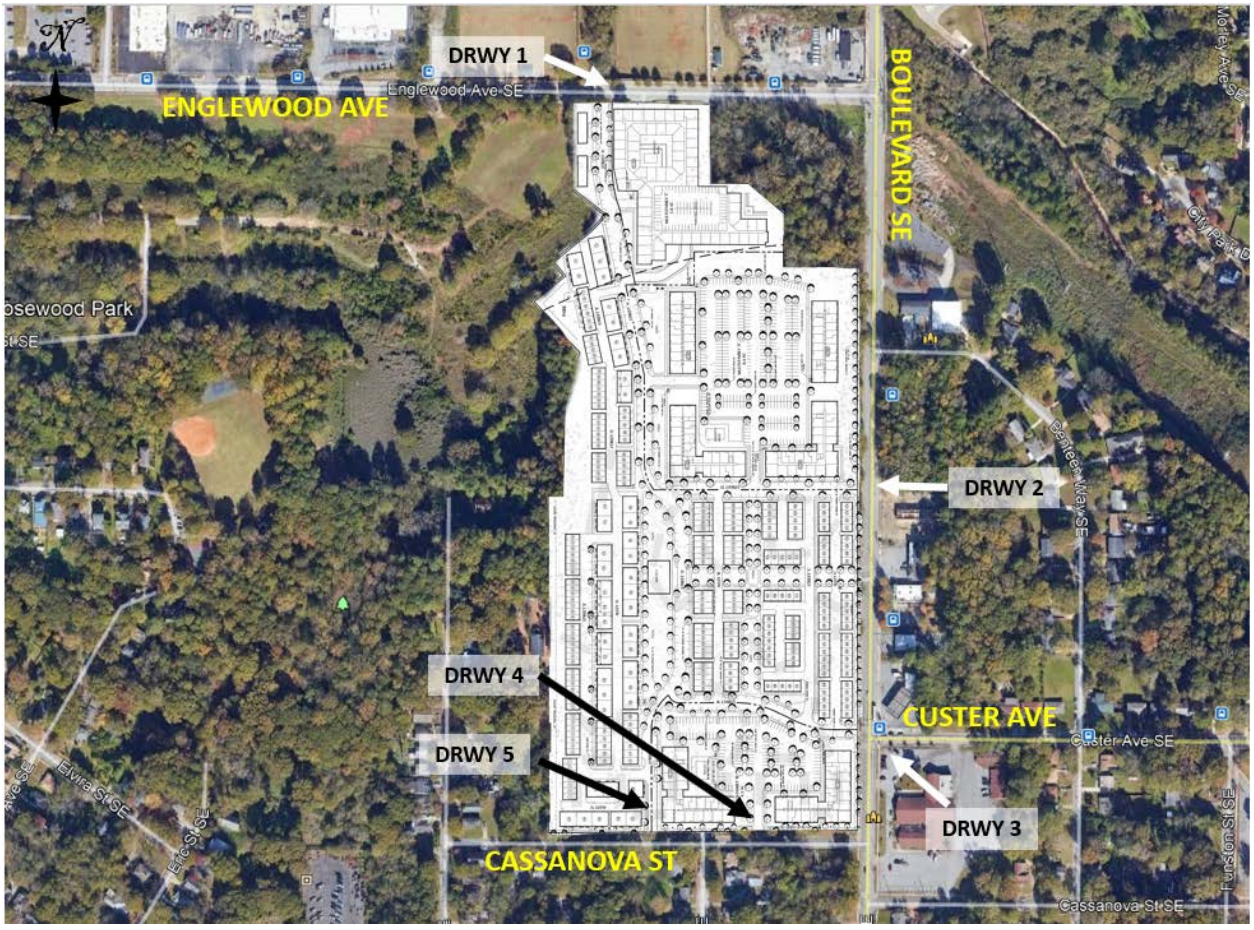
INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed Chosewood development located to the southwest of the intersection of Boulevard SE at Englewood Avenue in Atlanta, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The proposed development will consist of 1,180 multifamily units and 20,000 sf of retail space.



The development proposes access at the following locations:

- Site Driveway 1: Full-access driveway on Englewood Avenue
- Site Driveway 2: Full-access northern driveway on Boulevard SE
- Site Driveway 3: Full-access southern driveway on Boulevard SE, aligned with Custer Avenue
- Site Driveway 4: Full-access driveway on Cassanova Street, east of Park Avenue
- Site Driveway 5: Full-access driveway on Cassanova Street, west of Park Avenue

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. Boulevard SE at Atlanta Avenue

2. Boulevard SE at Englewood Avenue
3. Boulevard SE at Burroughs Street
4. Boulevard SE at Custer Avenue
5. Boulevard SE at Cassanova Street
6. Boulevard SE at McDonough Boulevard
7. Englewood Avenue at Hill Street
8. Englewood Avenue at Grant Street
9. Cassanova Street at Gault Street
10. Cassanova Street at Park Avenue
11. US 23/SR 42 (Moreland Avenue) at Custer Avenue
12. McDonough Boulevard at Sawtell Avenue

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 GRTA, GDOT, Fulton County and the City of Atlanta:

1. Boulevard SE at Atlanta Avenue
2. Boulevard SE at Englewood Avenue
3. Boulevard SE at Burroughs Street
4. Boulevard SE at Custer Avenue
5. Boulevard SE at Cassanova Street
6. Boulevard SE at McDonough Boulevard
7. Englewood Avenue at Hill Street
8. Englewood Avenue at Grant Street
9. Cassanova Street at Gault Street
10. Cassanova Street at Park Avenue
11. US 23/SR 42 (Moreland Avenue) at Custer Avenue
12. McDonough Boulevard at Sawtell Avenue

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.

Existing Roadway Facilities

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

Boulevard SE

Boulevard SE is a north-south, four-lane, undivided roadway with a posted speed limit of 25 mph in the vicinity of the site. GDOT traffic counts (Station ID's 121-5588 & 121-5589) indicate that the daily traffic volume on Boulevard SE in 2019 was 8,690 vehicles per day north of Englewood Avenue and 20,700 vehicles per day north of Berne Street. GDOT classifies Boulevard SE as an Urban Minor Arterial roadway.

Atlanta Avenue

Atlanta Avenue is an east-west, two-lane, undivided roadway with a posted speed limit of 30 mph in the vicinity of the site. To the east of Boulevard SE, Atlanta Avenue has a posted speed limit of 25 mph. GDOT traffic counts (Station ID's 121-6234 & 121-6232) indicate that the daily traffic volume on Atlanta Avenue in 2019 was 3,400 vehicles per day east of Cherokee Avenue and 1,310 vehicles per day east of Fraser Street. GDOT classifies Atlanta Avenue as an Urban Minor Collector roadway.

Englewood Avenue

Englewood Avenue is an east-west, two-lane, undivided roadway with a posted speed limit of 25 mph in the vicinity of the site. GDOT traffic counts (Station ID 121-6190) indicate that the daily traffic volume on Englewood Avenue in 2019 was 1,470 vehicles per day west of Boulevard SE. GDOT classifies Englewood Avenue as an Urban Minor Collector roadway.

Burroughs Street

Burroughs Street is an east-west, two-lane, undivided, local roadway with a posted speed limit of 25 mph.

Custer Avenue

Custer Avenue is an east-west, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID's 121-6192 & 089-3947) indicate that the daily traffic volume on Custer Avenue in 2019 was 3,730 vehicles per day east of Fisher Road and 8,900 vehicles per day west of Jandras Lane. GDOT classifies Custer Avenue as an Urban Minor Collector roadway.

Cassanova Street

Cassanova Street is an east-west, two-lane, undivided, local roadway without any posted speed limit.

McDonough Boulevard

McDonough Boulevard is an east-west, two-lane, undivided roadway in the vicinity of the site. GDOT traffic counts (Station ID's 121-5224 & 121-5226) indicate that the daily traffic volume on McDonough Boulevard in 2019 was 9,250 vehicles per day southeast of Moreland Drive and 11,600 vehicles per day southeast of Grant Street. GDOT classifies McDonough Boulevard as an Urban Minor Arterial roadway.

Hill Street

Hill Street is a north-south, two-lane, undivided roadway with a posted speed limit of 30 mph in the vicinity of the site. GDOT traffic counts (Station ID 121-6186) indicate that the daily traffic volume on Hill Street in 2019 was 2,540 vehicles per day south of Farrington Avenue. GDOT classifies Hill Street as an Urban Minor Collector roadway.

Grant Street

Grant Street is a north-south, two-lane, undivided roadway with a posted speed limit of 25 mph.

Gault Street

Gault Street is a north-south, two-lane, undivided roadway with a posted speed limit of 25 mph. GDOT traffic counts (Station ID 121-8431) indicate that the daily traffic volume on Gault Street in 2019 was 220 vehicles per day north of McDonough Boulevard. GDOT classifies Gault Street as an Urban Local roadway.

Park Avenue

Park Avenue is a north-south, two-lane, undivided roadway with a posted speed limit of 25 mph.

Sawtell Avenue

Sawtell Avenue is a north-south, four-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID 121-5228) indicate that the daily traffic volume on Sawtell Avenue in 2019 was 7,400 vehicles per day northeast of Richmond Avenue. GDOT classifies Sawtell Avenue as an Urban Minor Collector roadway.

US 23/SR 42 (Moreland Avenue)

US 23/SR 42 (Moreland Avenue) is a north-south, four-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. To the south of Custer Avenue, US 23/SR 42 (Moreland Avenue) is a five-lane roadway with a two-way left-turn lane. GDOT traffic counts (Station ID's 121-5225 & 121-5227) indicate that the daily traffic volume on US 23/SR 42 (Moreland Avenue) in 2019 was 28,200 vehicles per day north of McDonough Boulevard and 29,400 vehicles per day north of Delaware Avenue. GDOT classifies US 23/SR 42 (Moreland Avenue) as an Urban Principal Arterial roadway.

Existing Bicycle and Pedestrian Facilities

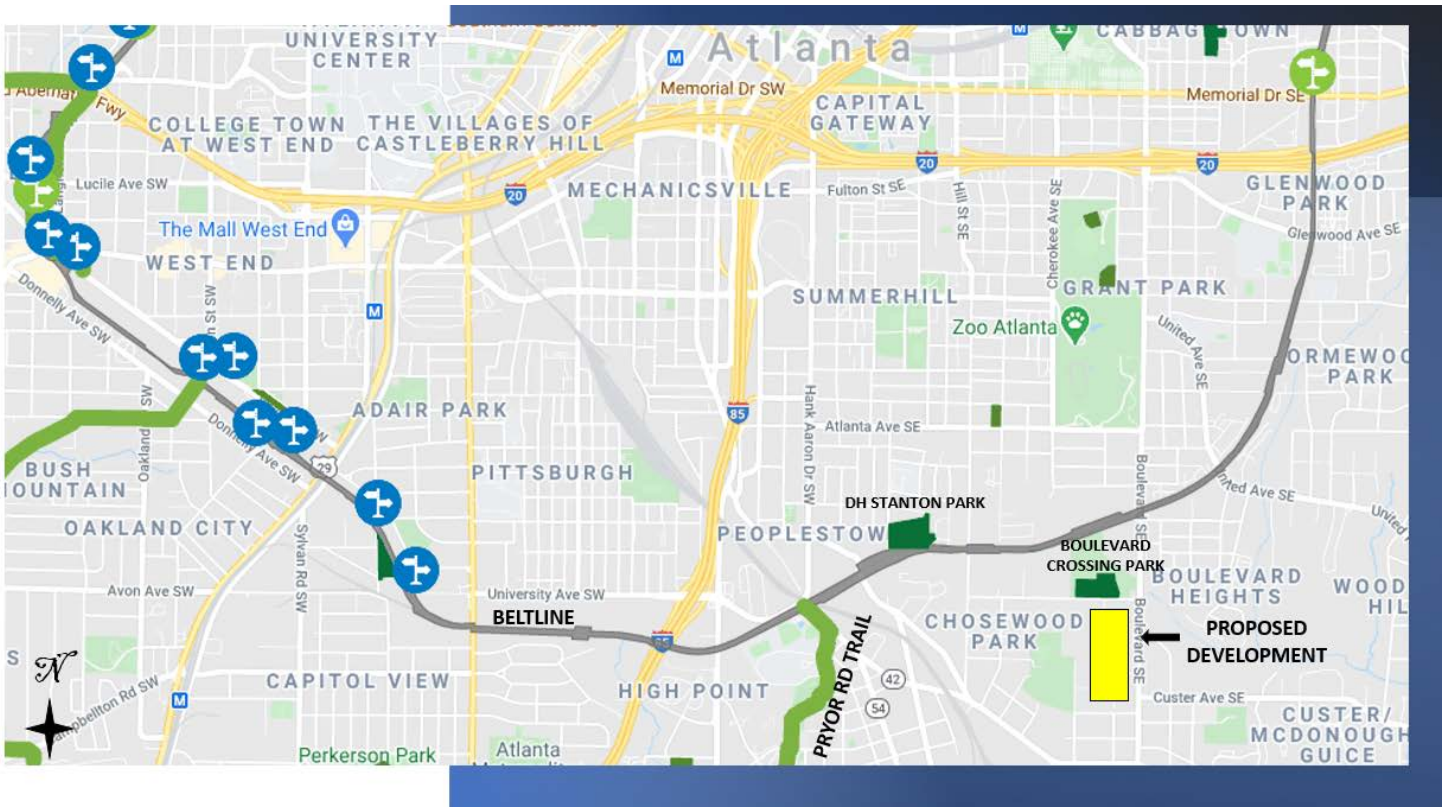
The following is a brief description of each of the bicycle and pedestrian facilities located in proximity to the site:

Nearby local or regional trails

- Atlanta BeltLine Trail passes through Hill Street, north of Englewood Avenue and continues eastward towards Hamilton Avenue. However, there are no access points to the BeltLine located in the proximity of the study network. BeltLine access locations in relation to the proposed development are shown in the image below.
- Pryor Road Trail branches off the Atlanta BeltLine at University Avenue SW and McDonough Blouvard to the west of the proposed development and continues south towards Pryor Road, to the south of Meldon Avenue.

Nearby Parks

- Boulevard Crossing Park is located to the north of the proposed development at Englewood Avenue.
- DH Stanton Park is located to the northwest of the proposed development to the East of Hill Street.



Bicycle paths or sidewalks

Sidewalks and pedestrian facilities are present along the following roadways in the study network:

- Boulevard SE: both sides of the roadway
- Atlanta Avenue: both sides of the roadway
- Englewood Avenue: both sides of the roadway
- Burroughs Street: both sides of the roadway
- Custer Avenue: portions of roadway have sidewalks on both sides of the roadway
- Cassanova Street: north side of the road for major part of the roadway
- McDonough Boulevard: both sides of the roadway
- Hill Street: both sides of the roadway
- Grant Street: both sides of the roadway
- Park Avenue: both sides of the road
- Sawtell Avenue: both or one side of the road intermittently
- US 23/SR 42 (Moreland Avenue): both sides of the road

No bike paths are present along the following roadways in the study network. The Boulevard SE project includes plans to install bike paths on Boulevard SE.

Existing Transit Facilities

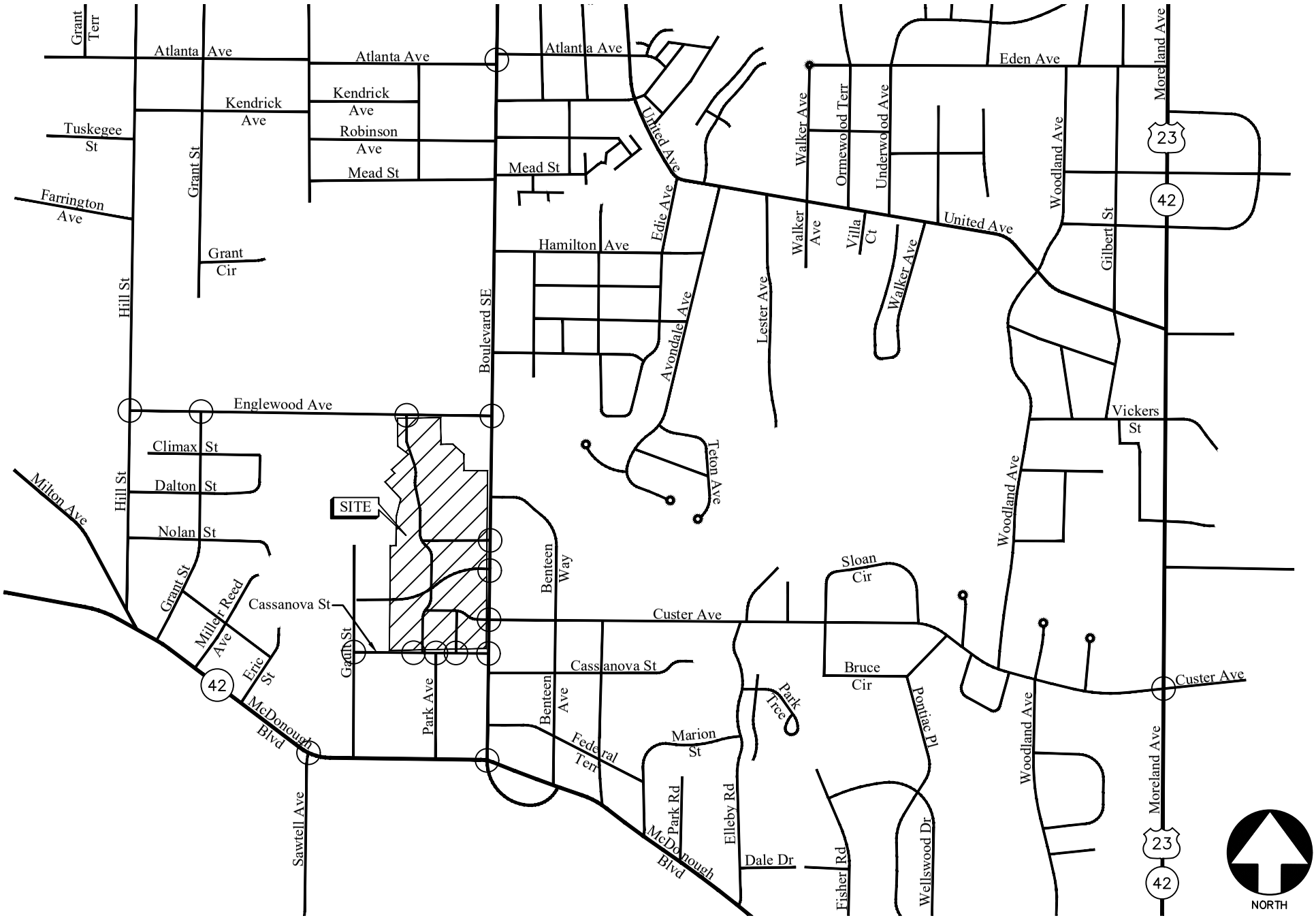
Following MARTA bus routes are available in the vicinity of the site.

Route 49 McDonough Boulevard

This route operates North/South from Five Points Station to Metro Transition Ctr. along McDonough Blvd. and Moreland Ave. Select trips via Englewood Ave. Points of Interest: GA State Stadium and Thomasville Recreation Center. Bus stops for this route are available on Boulevard SE and Englewood SE in the immediate vicinity of the site.

Route 4 Moreland Avenue

This route operates North/South from Inman Park/Reynoldstown station along Moreland Ave. to the Leila Valley, Thomasville Heights, and Rebel Forest neighborhoods. Points of Interest: the Edgewood Retail District, Moreland Plaza.



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

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

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

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

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

Source: Highway Capacity Manual

Signalized Intersections

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

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

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

Level-of-service	Average Control Delay (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Source: Highway Capacity Manual

EXISTING 2020 TRAFFIC ANALYSIS

Existing Traffic Volumes

Traffic counts were obtained at the following study intersections:

1. Boulevard SE at Atlanta Avenue*
2. Boulevard SE at Englewood Avenue*
3. Boulevard SE at Burroughs Street*
4. Boulevard SE at Custer Avenue*
5. Boulevard SE at Cassanova Street*
6. Boulevard SE at McDonough Boulevard*
7. Englewood Avenue at Hill Street
8. Englewood Avenue at Grant Street
9. Cassanova Street at Gault Street
10. Cassanova Street at Park Avenue
11. US 23/SR 42 (Moreland Avenue) at Custer Avenue
12. McDonough Boulevard at Sawtell Avenue

For the six intersections on Boulevard SE (marked with an * in the list above), AM and PM peak hour volumes from 2019 were obtained from the "Traffic Engineering Report for South Boulevard Concept Study" and are shown in Figure 2. For the remaining intersections, new turning movement counts were collected on Tuesday, October 6, 2020 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 unadjusted volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 3.

The 2019 volumes, shown in Figure 2, were increased for one year at a growth rate of 3.5 percent for intersections on and north of Englewood Avenue and at 2 percent for intersections south of Englewood Avenue to obtain the current year 2020 AM and PM peak hour volumes. These projected 2020 volumes are shown in Figure 4.

Due to the unusual/low traffic pattern because of Covid-19, the recently collected counts could not be used directly in the study. Based on historical, GDOT and recently collected counts, the new volumes in Figure 3 were increased using the following adjustment factors:

- Intersections near Boulevard SE at McDonough Boulevard control count (grow by 130% in the AM peak hour and 41% in the PM peak hour)
    - Custer Avenue at Moreland Avenue
    - McDonough Blvd at Sawtell Avenue
- Intersections near Custer Avenue control count (grown by 11% in the AM peak hour and 14% in the PM peak hour)
    - Gault Street at Cassanova Street
    - Cassanova Street at Park Avenue
- Intersections near Englewood Avenue control count (grown 54% in the AM peak hour and 21% in the PM peak hour)

    - Grant Street at Englewood Avenue
- Intersections near Boulevard and Englewood control count (grown 115% in the AM peak hour and 5% in the PM peak hour)
    - Englewood Avenue at Hill Street SE

The adjusted peak hour volumes that are used in the analyses are shown in Figure 4.

Existing Traffic Operations

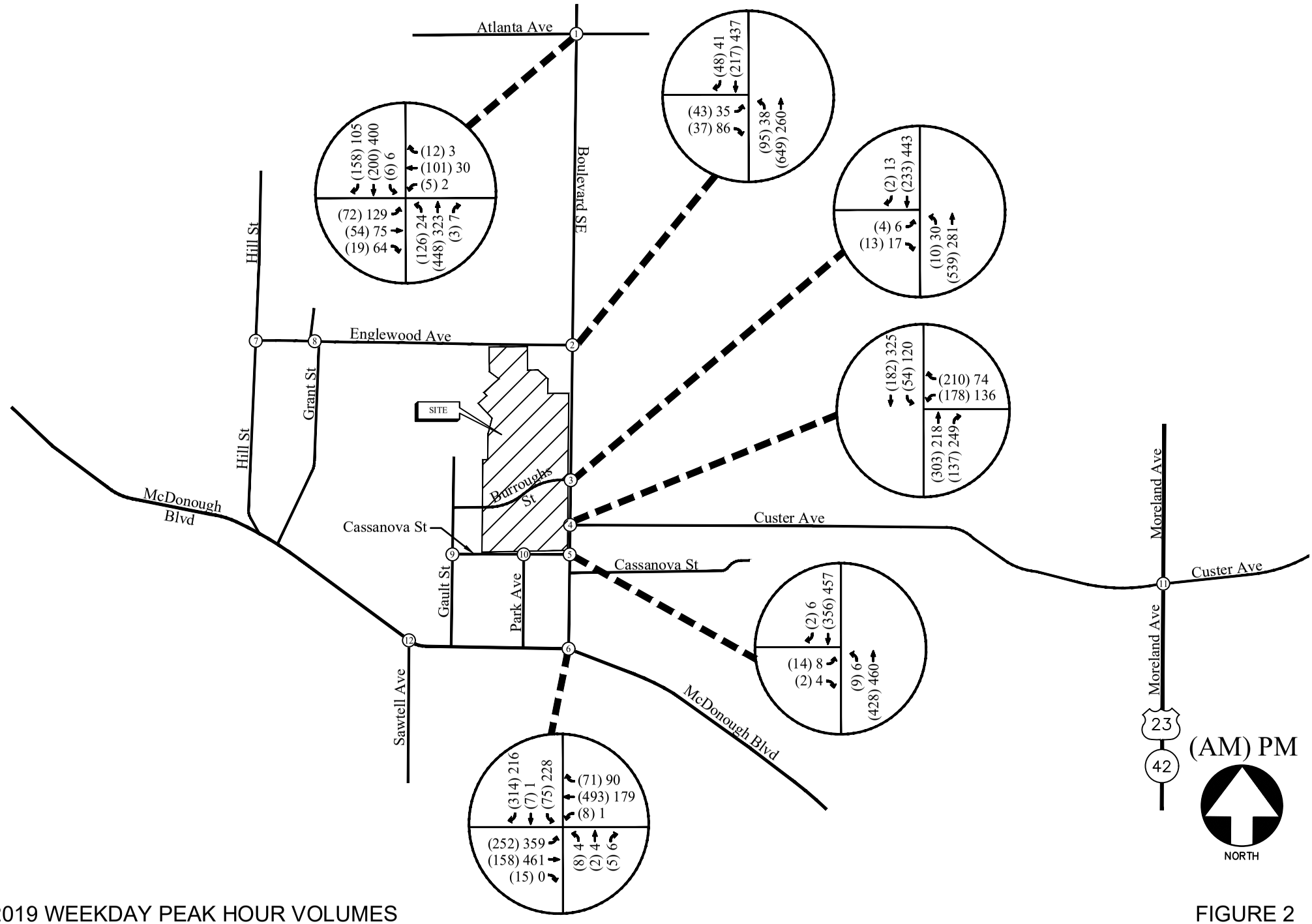
Existing 2020 traffic operations were analyzed at the study intersections in accordance with the HCM methodology using the volumes in Figure 4. The results of the analyses are shown in Table 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	**Boulevard SE @ Atlanta Ave**	Signalized	**C (24.6)**	**C (23.5)**
	-Eastbound Approach		E (63.3)	E (60.0)
	-Westbound Approach		E (62.0)	E (64.6)
	-Northbound Approach		B (17.4)	B (11.2)
	-Southbound Approach		A (8.5)	A (10.0)
2	**Boulevard SE @ Englewood Ave**	Signalized	**A (5.2)**	**A (9.5)**
	-Eastbound Approach		E (61.4)	E (60.6)
	-Northbound Approach		A (0.5)	A (0.2)
	-Southbound Approach		A (1.4)	A (2.4)
3	**Boulevard SE @ Burroughs St**	Stop Controlled on EB Approach		
	-Eastbound Approach		B (10.1)	B (11.4)
	-Northbound Left		A (7.8)	A (8.5)
4	**Boulevard SE @ Custer Ave**	Signalized	**C (27.6)**	**B (13.2)**
	-Westbound Approach		D (49.6)	E (58.5)
	-Northbound Approach		B (10.5)	A (4.7)
	-Southbound Approach		C (23.2)	A (0.6)
5	**Boulevard SE @ Cassanova St**	Stop Controlled on EB Approach		
	-Eastbound Approach		B (14.2)	B (14.0)
	-Northbound Left		A (8.2)	A (8.4)
6	**Boulevard SE @ McDonough Blvd**	Signalized	**C (31.3)**	**C (33.9)**
	-Eastbound Approach		A (8.2)	B (15.3)
	-Westbound Approach		B (19.6)	C (27.4)
	-Northbound Approach		D (36.9)	C (33.1)
	-Southbound Approach		E (72.8)	E (72.1)
7	**Englewood Ave @ Hill St**	Stop Controlled on WB Approach		
	-Westbound Approach		A (9.8)	A (9.9)
	-Southbound Left		A (7.6)	A (7.5)
8	**Englewood Ave @ Grant St**	Stop Controlled on NB and SB Approaches		
	-Eastbound Left		A (7.6)	A (7.4)
	-Westbound Left		A (7.3)	A (7.4)
	-Northbound Approach		B (12.4)	A (9.3)
	-Southbound Approach		A (9.9)	B (10.5)
9	**Cassanova St @ Gault St**	Stop Controlled on WB Approach		
	-Westbound Approach		A (8.5)	A (8.7)

	-Southbound Left		A (7.2)	A (7.3)
10	**Cassanova St @ Park Ave** -Eastbound Approach -Westbound Approach -Northbound Approach	3-Way Stop Controlled	**A (6.9)** A (6.9) A (7.0) A (6.4)	**A (7.0)** A (7.0) A (7.1) A (6.4)
11	**US 23/SR 42 (Moreland Ave) @ Custer Ave** -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	**B (17.6)** E (66.0) E (73.2) B (14.7) B (10.7)	**C (30.0)** E (68.9) F (89.7) B (19.4) B (19.7)
12	**McDonough Blvd @ Sawtell Ave** -Eastbound Approach -Westbound Approach -Northbound Approach	Signalized	**A (5.6)** A (4.3) A (2.0) E (67.4)	**A (6.1)** A (4.9) A (2.2) E (66.9)

The results of existing traffic operations analysis indicate that all the study intersections are operating at level-of-service "D" or better in both the AM and PM peak hours. The existing traffic control and lane geometry for the intersections are shown in Figure 5.



2019 WEEKDAY PEAK HOUR VOLUMES

FIGURE 2

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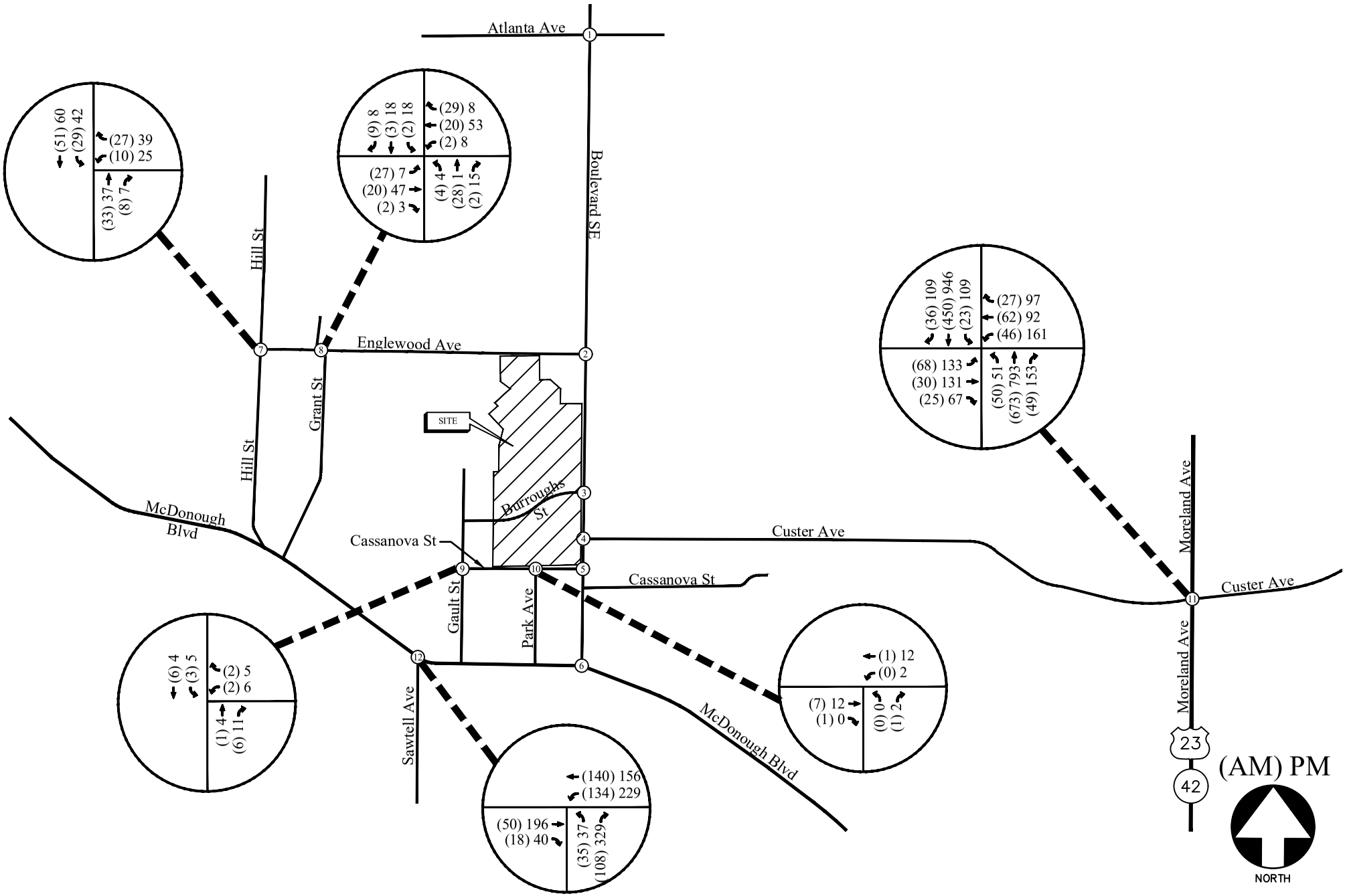
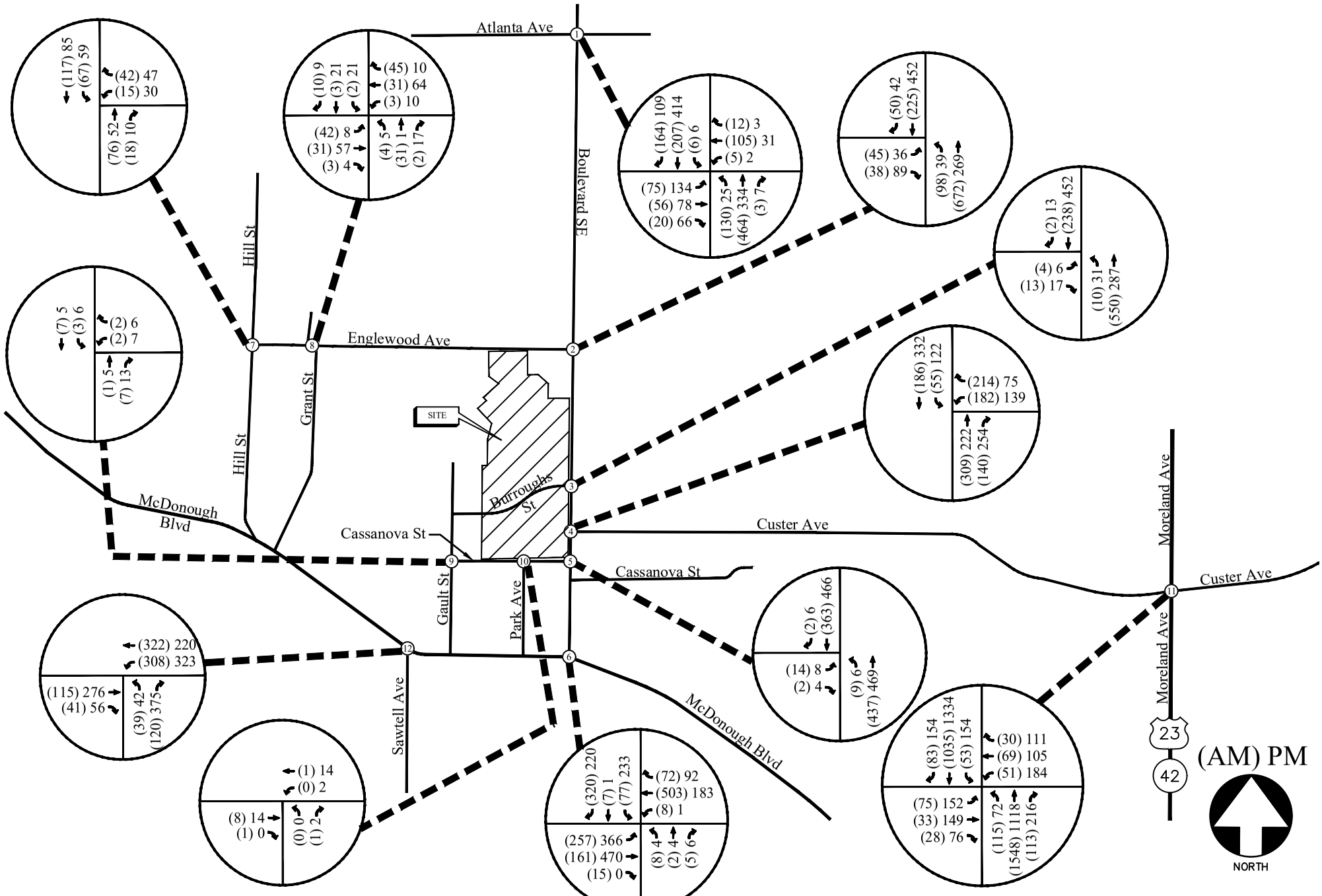


2020 WEEKDAY PEAK HOUR VOLUMES
(UNADJUSTED COUNTS)

FIGURE 3
A&R Engineering Inc.



ADJUSTED / PROJECTED 2020 EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 4

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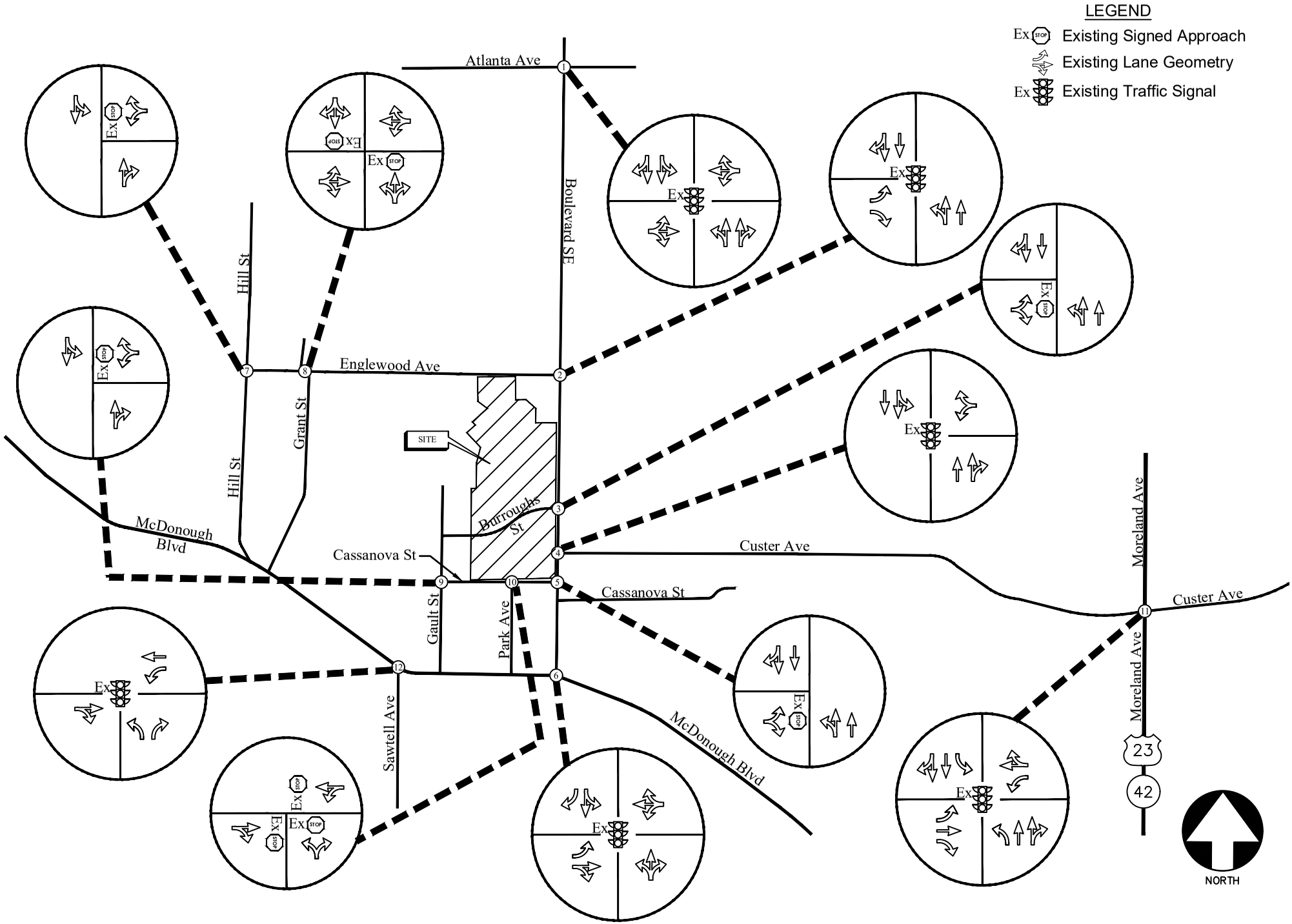


EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 5

A&R Engineering Inc.

PROJECT DESCRIPTION

The proposed Chosewood development will be located to the southwest of the intersection of Boulevard SE at Englewood Avenue in Atlanta, Georgia. The development will consist of 1,180 multifamily units and 20,000 sf of shopping center space.

The development proposes access at the following locations:

- Site Driveway 1: Full-access driveway on Englewood Avenue
- Site Driveway 2: Full-access northern driveway on Boulevard SE
- Site Driveway 3: Full-access southern driveway on Boulevard SE, aligned with Custer Avenue
- Site Driveway 4: Full-access driveway on Cassanova Street, east of Park Avenue
- Site Driveway 5: Full-access driveway on Cassanova Street, west of Park Avenue

Site Plan

A site plan is shown in Figure 6. A larger size drawing and a digital copy of the site plan are also provided with this report.

Planned Bicycle and Pedestrian Facilities

The on and/or off-site provisions for non-motorized travel included in the planned construction of the proposed development are as follows:

- The proposed development will be comprised of residential and retail uses.
- Pedestrian connections are proposed between the mixed-uses on the site.
- The development plan includes several design elements that enhance the character and quality the site by incorporating building orientation, parking locations, bicycle and pedestrian facilities, a mix of land uses.
- The convenience and flexibility of the site benefit from public access to adjacent streets and internal connectivity between some of the parcels.

Consistency with Adopted Comprehensive Plan

Chosewood development aligns with the City of Atlanta's Adopted Comprehensive Plan (2016) by encouraging the following:

1. Support the growth of existing businesses in metro Atlanta by providing a source of employment and housing for people who work in the City of Atlanta
2. Develops a neighborhood/activity center that is attractive to residents
3. Effectively promotes metro Atlanta as a place to live, work, visit and do business in a coordinated and cohesive manner
4. Provides basic retail services that are an unmet need in many areas of the City of Atlanta
5. Provides neighborhood stabilization to the area of proposed development

Project Phasing

This project has been evaluated for the complete build-out of the development in 2024.

Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 10th 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: *ITE 220 – Multifamily Housing* and *ITE 820 – Shopping Center*. Due to the nature of the development, pass-by and mixed-use reductions have been applied per ITE standards. Due to the presence of public transit and the Beltline Trail near the proposed site, a 4 percent alternate mode reduction was also applied. The calculated total trip generation for the proposed development is shown in Table 4.

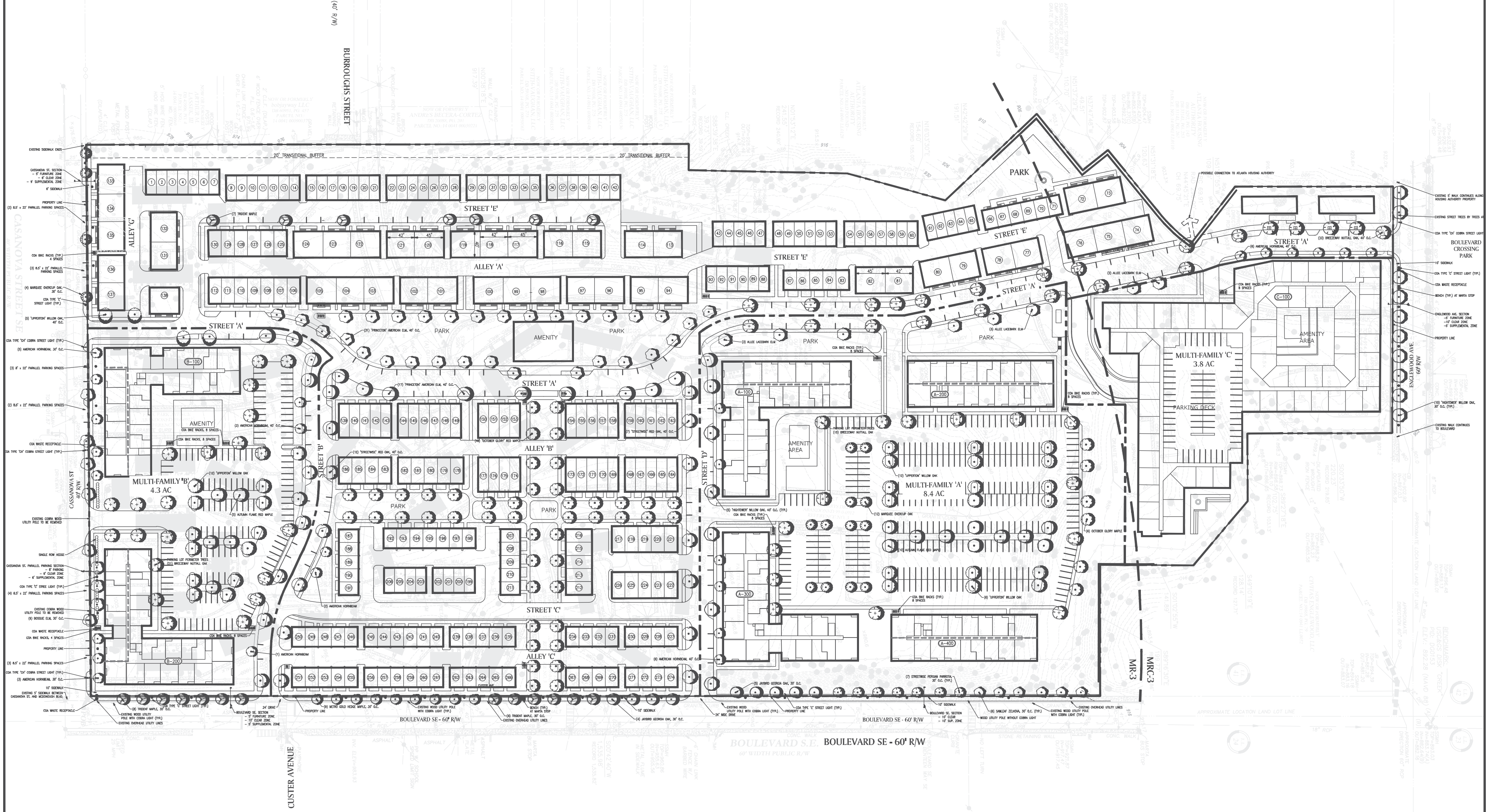
TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	2-way
ITE 220 – Multifamily Housing	1,180 Units	114	384	498	334	197	531	8,880
Mixed-Use Reduction		-7	-9	-16	-10	-7	-17	-202
Alternate Mode Reduction (4%)		-4	-15	-19	-13	-8	-21	-347
ITE 820 – Shopping Center	20,000 sf	100	62	162	79	86	165	2,012
Mixed-Use Reduction		-9	-7	-16	-7	-10	-17	-202
Pass-by Trips (0%) 34%		0	0	0	-24	-26	-50	-500*
Alternate Mode Reduction (4%)		-4	-2	-6	-2	-2	-4	-52
Total Trips (without Reductions)		214	446	660	413	283	696	10,892
New External Trips (with Reductions)		**190**	**413**	**603**	**357**	**230**	**587**	**9,589**

*pass-by trips (AM) PM; 24 Hour pass-by trips estimated by considering PM pass-by as 10% of daily

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, existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes, shown in Table 4, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 7. Pass-by volumes have also been distributed based on existing travel patterns and are shown in Figure 8.



PRELIMINARY SITE PLAN - OVERALL

0 30 60 120 240
SCALE: 1 = 60

LAND PLANNERS
ENGINEERS • SURVEYORS
TRANSPORTATION
LANDSCAPE ARCHITECTS
85-A MILL STREET
SUITE 300
ROSWELL, GEORGIA 30075
VOICE 770.650.7685
FAX 770.650.7684

PAULSON MITCHELL INCORPORATED

COA#PEF001716 • EXP. • 6/30/2020

PROJECT:

CHOSEWOOD TRACT

ENGLEWOOD AVENUE SOUTHEAST AND BOULEVARD SOUTHEAST
CITY OF ATLANTA
FULTON COUNTY, GA

FOR:

EMPIRE

5775 GLENRIDGE DRIVE
BUILDING D, SUITE 350
ATLANTA, GA 30328

ZONING INFORMATION

ZONING RESEARCH DATE: --/--/--

ZONING CLASSIFICATION

JURISDICTION:	CITY OF ATLANTA
EX. ZONING:	MRC-3 & MRC-3-C
PR. ZONING:	--

BUILDING SETBACKS

FRONT:	--'
SIDE:	--'
REAR:	--'

BUFFERS

ADJ. TO RESIDENTIAL:	20'
ADJ. TO PUBLIC SPACE:	20'
ADJ. TO ARTERIAL STREET:	20'

BUILDING SUMMARY

MAX. BUILDING HT.:	
MAX. BUILDING COVERAGE:	

PARKING SUMMARY

RETAIL REQ.:	-- SPACES/1,000 S.F.
RESTAURANT REQ.:	-- SPACES/1,000 S.F.
STANDARD STALL DIMENSIONS:	--' x --'
COMPACT STALL DIMENSIONS:	--' x --'
COMPACT STALLS ALLOWED:	--%
MIN. 90'/60' DRIVE WIDTH:	--'/--'

LANDSCAPE REGULATIONS

TREE DENSITY:	-- UNITS/ACRE
ISLAND REQ.:	--ISLAND/-- SPACES
MIN. ISLAND SIZE/WIDTH:	-- S.F./--'
GREENSPACE %:	--%

FEMA MAP

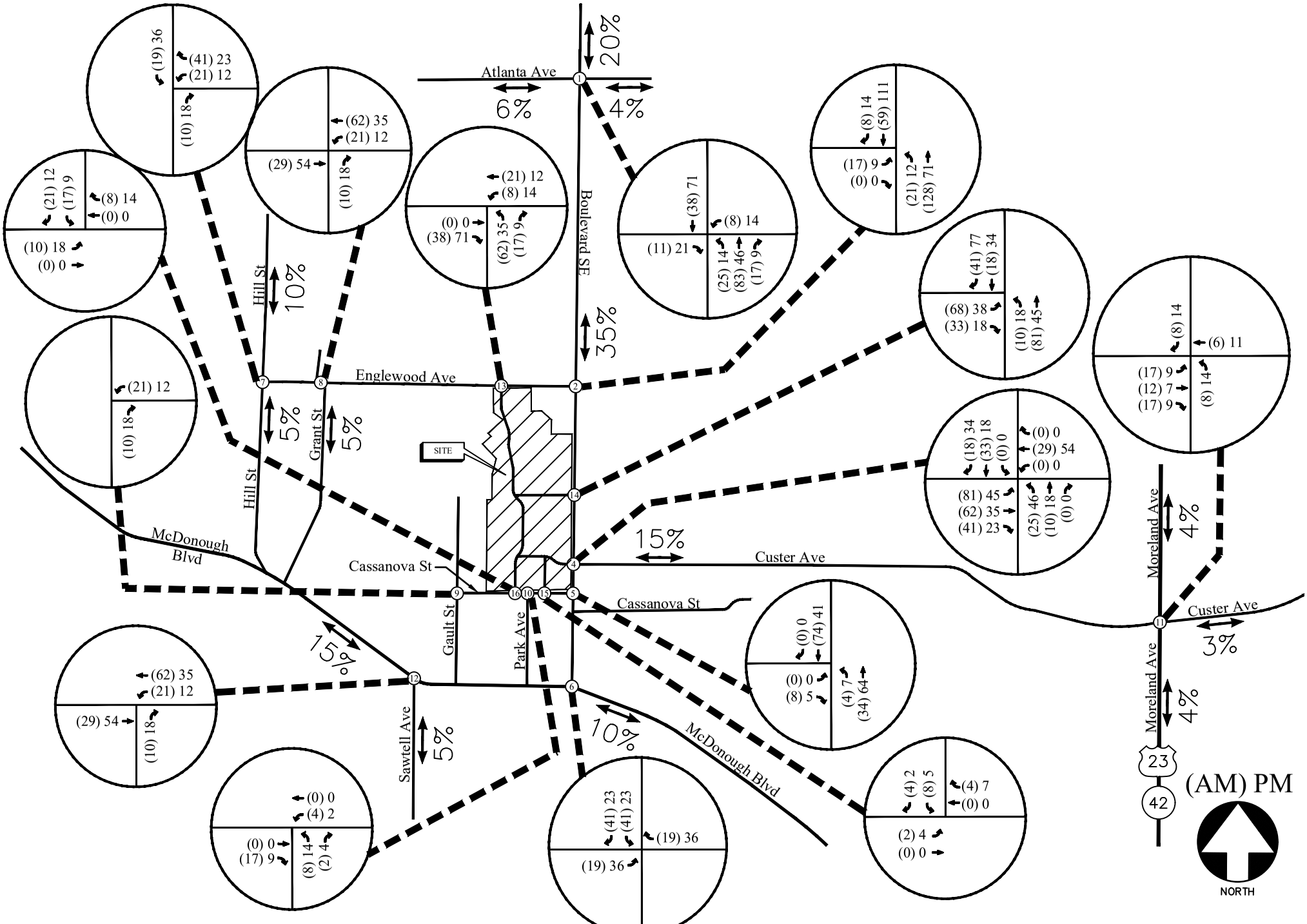
FIRM PANEL #: 13121C0376G & 13121C0378F

DRAWING RECORD

DRAWN BY: --

2019262 08.31.20
PS-17.dwg
PRELIMINARY SITE PLAN

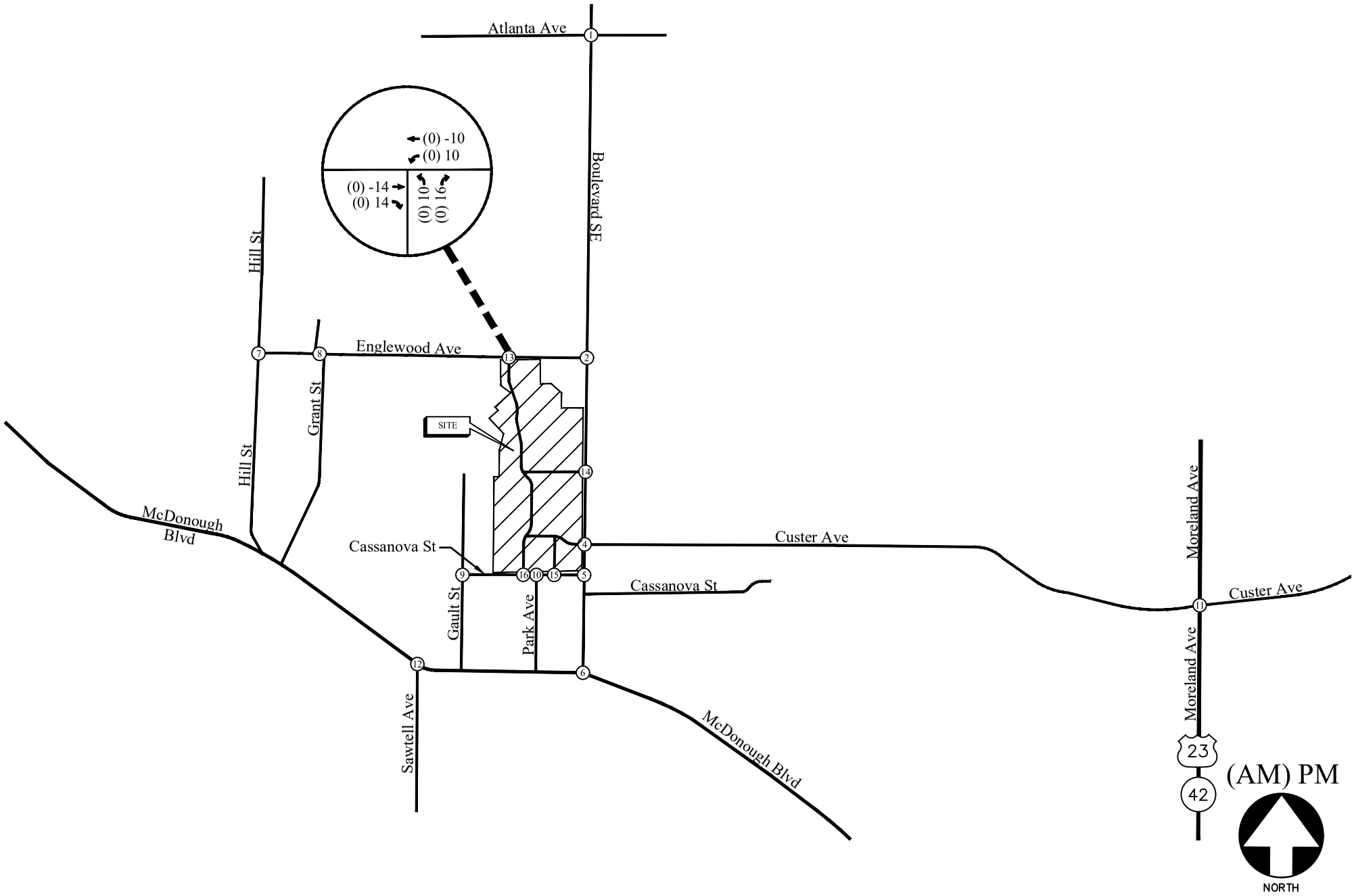
SHEET PS-17o



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.



SITE PEAK HOUR PASS-BY VOLUMES

FIGURE 8

A&R Engineering Inc.

FUTURE 2024 TRAFFIC ANALYSIS

The future 2024 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 (Figure 4) plus increases for annual growth of through traffic.

Annual Traffic Growth

A growth factor was estimated based on historical trends from 2016 through 2018 along select facilities in the study network where such data is available from the Georgia Department of Transportation. There was a consistent growth of 1.7% was determined after reviewing the historical trends in traffic for the surrounding area. The adjacent developments that are planned to be completed by 2024 were also considered when determining the appropriate growth factor for study intersections:

1. 1015 Boulevard SE – 321 unit multi-family development
2. 680 Hamilton – 270 unit multi-family development
3. Skylark on Boulevard SE – 319 unit multi-family development / retail
4. Atlanta Housing Project – 826 unit multi-family development (assuming half will be built by 2024)
5. 55 Milton – 138 unit multi-family development
6. 72 Milton – 378 unit multi-family development
7. 125 Milton– 318 unit multi-family development

Given that a majority of the developments listed above are on or north of the proposed Chosewood development, a growth rate of 3.5% for study intersections on or north of Englewood Avenue and a growth rate of 2% for study intersections south of Englewood was used. These growth factors were applied to the existing traffic volumes between collector and arterial roadways to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting future "No-Build" volumes on the roadway are shown in Figure 9.

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

Project ID	Project	Type of Improvement	Network Year	Source
-	Englewood Ave Pedestrian Improvements	Sidewalk improvements along Englewood Ave from Hill St to the Boulevard Crossing Park	TBA	City of Atlanta
-	Englewood Sidewalk	Sidewalk installation on Englewood Ave from Hill St to Boulevard	TBA	City of Atlanta
-	Englewood Ave Bike Lanes	Stripe Englewood Avenue to provide bike lanes from Hill Street to Boulevard	TBA	City of Atlanta
-	Boulevard SE	Reduction of travel lanes from 4 to 3 with TWLTL on Boulevard	2023	City of Atlanta

Boulevard SE is currently a 4-lane roadway near the proposed development. A City of Atlanta improvement project ("Boulevard SE Project") is proposing to make Boulevard SE into a 3-lane roadway (1 southbound lane, 1 northbound lane, 1 two way turn lane). These improvements are included in both the future "No-Build" and "Build" study network lane geometry.

Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 7) and pass-by volumes (Figure 8) were added to base traffic volumes (Figure 9) to calculate the future traffic volumes after the construction of the development. The total future traffic volumes are shown in Figure 10.

Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figure 9 and Figure 10, respectively. Both scenarios include the planned improvement project on Boulevard SE (reduction of lanes). The results of the future traffic operations analysis are shown below in Table 6.

TABLE 6 – FUTURE INTERSECTION OPERATIONS

Intersection		Future Condition: LOS (Delay)			
		NO-BUILD		BUILD*	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Boulevard SE @ Atlanta Ave**	**C (25.5)**	**C (28.2)**	**C (27.9)**	**C (31.4)**
	-Eastbound Approach	E (64.3)	E (65.5)	E (67.8)	E (71.5)
	-Westbound Approach	E (61.1)	E (65.2)	E (61.8)	E (69.7)
	-Northbound Approach	B (16.3)	B (13.8)	C (20.6)	B (16.3)
	-Southbound Approach	B (12.8)	B (16.1)	B (14.3)	B (19.1)
2	**Boulevard SE @ Englewood Ave**	**A (5.8)**	**B (15.1)**	**A (6.1)**	**A (9.8)**
	-Eastbound Approach	E (63.2)	E (60.2)	E (62.4)	E (59.9)
	-Northbound Approach	A (1.0)	B (14.9)	A (1.4)	A (0.6)
	-Southbound Approach	A (1.7)	A (3.8)	A (2.1)	A (4.5)
3	**Boulevard SE @ Burroughs St**				
	-Eastbound Approach	B (10.8)	B (12.4)	-	-
	-Northbound Left	A (7.8)	A (8.6)		
4	**Boulevard SE @ Custer Ave / Site Drwy 3 (S)**	**C (33.0)**	**B (14.2)**	**C (27.6)**	**B (19.6)**
	-Eastbound Approach	-	-	C (55.3)	E (59.9)
	-Westbound Approach	E (55.7)	E (58.0)	D (43.0)	D (46.8)
	-Northbound Approach	B (15.5)	A (6.9)	B (19.1)	B (14.7)
	-Southbound Approach	C (28.2)	A (1.0)	A (2.7)	A (2.9)
5	**Boulevard SE @ Cassanova St**				
	-Eastbound Approach	B (14.1)	B (14.0)	B (14.3)	B (14.3)
	-Northbound Left	A (8.3)	A (8.5)	A (8.5)	A (8.7)
6	**Boulevard SE @ McDonough Blvd**	**C (32.4)**	**C (24.0)**	**D (36.7)**	**C (26.5)**
	-Eastbound Approach	B (10.7)	B (12.7)	B (14.4)	B (14.9)
	-Westbound Approach	C (24.8)	C (23.9)	C (30.0)	C (29.0)
	-Northbound Approach	D (38.0)	C (32.2)	D (36.7)	C (30.6)
	-Southbound Approach	E (66.7)	D (44.5)	E (65.8)	D (45.0)
7	**Englewood Ave @ Hill St**				
	-Westbound Approach	A (10.0)	B (10.3)	B (11.1)	B (11.2)
	-Southbound Left	A (7.6)	A (7.5)	A (7.7)	A (7.6)
8	**Englewood Ave @ Grant St**				
	-Eastbound Left	A (7.7)	A (7.5)	A (8.0)	A (7.6)
	-Westbound Left	A (7.4)	A (7.4)	A (7.5)	A (7.6)

	-Northbound Approach	B (13.3)	A (9.4)	C (16.7)	A (10.0)
	-Southbound Approach	B (10.1)	B (10.9)	B (11.8)	B (12.7)
9	**Cassanova St @ Gault St**				
	-Westbound Approach	A (8.5)	A (8.7)	A (8.8)	A (8.9)
	-Southbound Left	A (7.3)	A (7.3)	A (7.3)	A (7.3)
10	**Cassanova St @ Park Ave**	**A (7.0)**	**A (7.0)**	**A (6.9)**	**A (7.0)**
	-Eastbound Approach	A (7.0)	A (7.0)	A (6.8)	A (6.9)
	-Westbound Approach	A (7.0)	A (7.1)	A (7.2)	A (7.1)
	-Northbound Approach	A (6.4)	A (6.4)	A (7.1)	A (7.1)
11	**US 23/SR 42 (Moreland Ave) @ Custer Ave**	**B (19.7)**	**C (34.1)**	**C (21.4)**	**D (35.1)**
	-Eastbound Approach	E (65.3)	E (70.8)	E (66.1)	E (71.9)
	-Westbound Approach	E (72.8)	F (115.2)	E (72.7)	F (114.5)
	-Northbound Approach	B (17.6)	C (21.5)	B (18.7)	C (22.1)
	-Southbound Approach	B (12.2)	C (22.2)	B (13.2)	C (23.1)
12	**McDonough Blvd @ Sawtell Ave**	**A (5.7)**	**A (6.4)**	**A (5.5)**	**A (6.4)**
	-Eastbound Approach	A (4.6)	A (5.3)	A (4.9)	A (5.7)
	-Westbound Approach	A (2.1)	A (2.4)	A (2.3)	A (2.6)
	-Northbound Approach	E (68.3)	E (67.7)	E (68.3)	E (67.7)
13	**Englewood Ave @ Site Drwy 1**				
	-Westbound Left	-	-	A (7.5)	A (7.7)
	-Northbound Approach			B (11.0)	B (10.7)
14	**Boulevard SE @ Site Drwy 2 (N)**				
	-Eastbound Approach	-	-	C (16.4)	C (15.5)
	-Northbound Left			A (8.0)	A (9.0)
15	**Cassanova St @ Site Drwy 4 (E)**				
	-Eastbound Left	-	-	A (7.2)	A (7.3)
	-Southbound Approach			A (8.6)	A (8.7)
16	**Cassanova St @ Site Drwy 5 (W)**				
	-Eastbound Left	-	-	A (7.3)	A (7.3)
	-Southbound Approach			A (8.7)	A (8.7)

**includes recommended improvements in Build Scenario*

The results of the future traffic operations analysis indicate that in both the future "No-Build" and "Build" conditions, all the study intersections will operate at level-of-service "D" or better in both the AM and PM peak hours. Recommendations on traffic control and lane geometry are shown graphically in Figure 11.

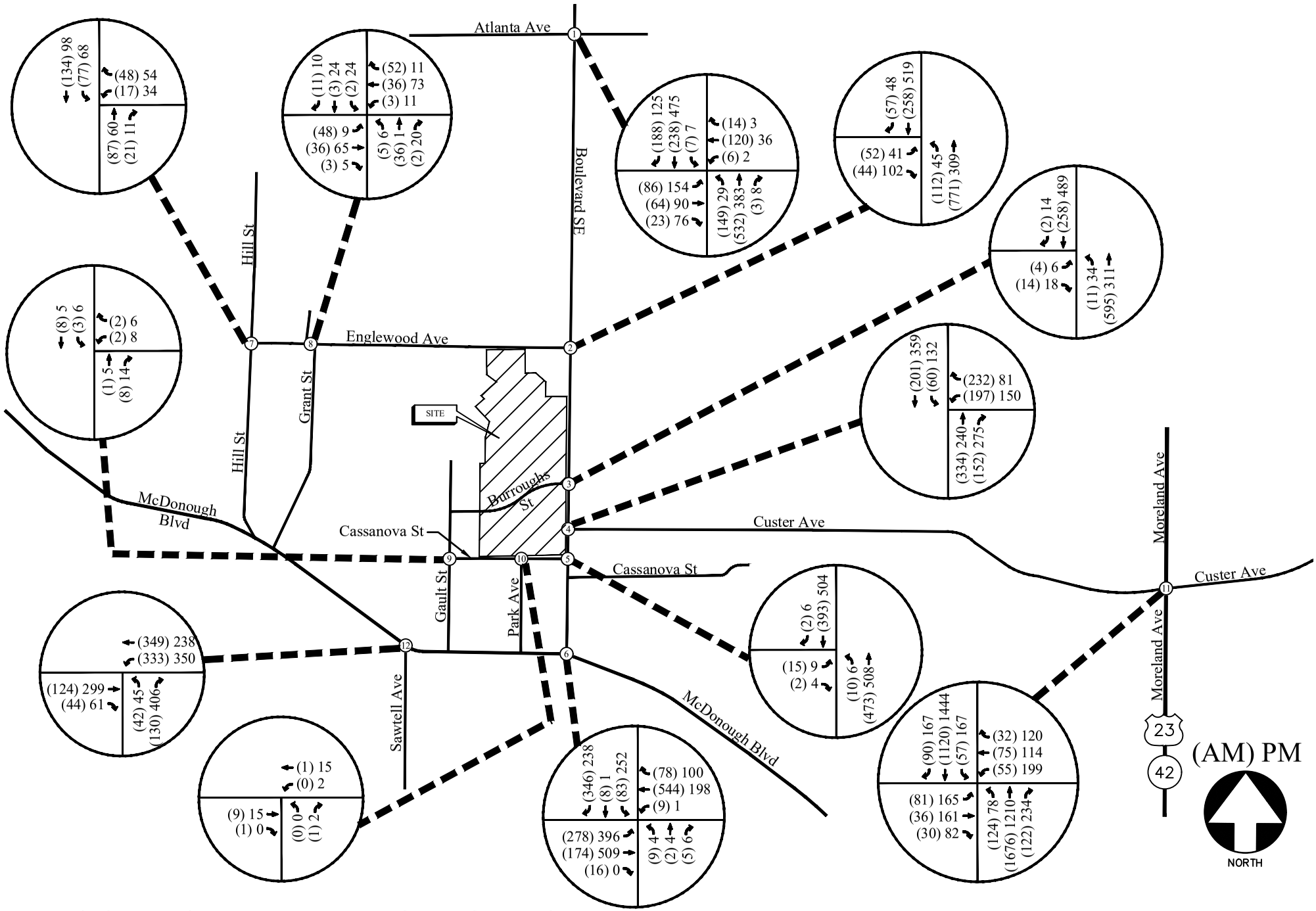
Recommendations for Access Configuration

- Site driveways 1, 2, 4, and 5 are recommended to consist of one entering lane and one exiting lane and to be stop-controlled on the driveway approach.

- Site driveway 3/ Custer Avenue at Boulevard SE:

  Site driveway 3 will form the eastbound approach (fourth leg) at the existing intersection of Custer Avenue and Boulevard SE. The improvements listed below are based on the assumption that the City of Atlanta Boulevard SE project will be complete, and Boulevard SE will be a 3-lane roadway prior to the proposed development's full buildout.

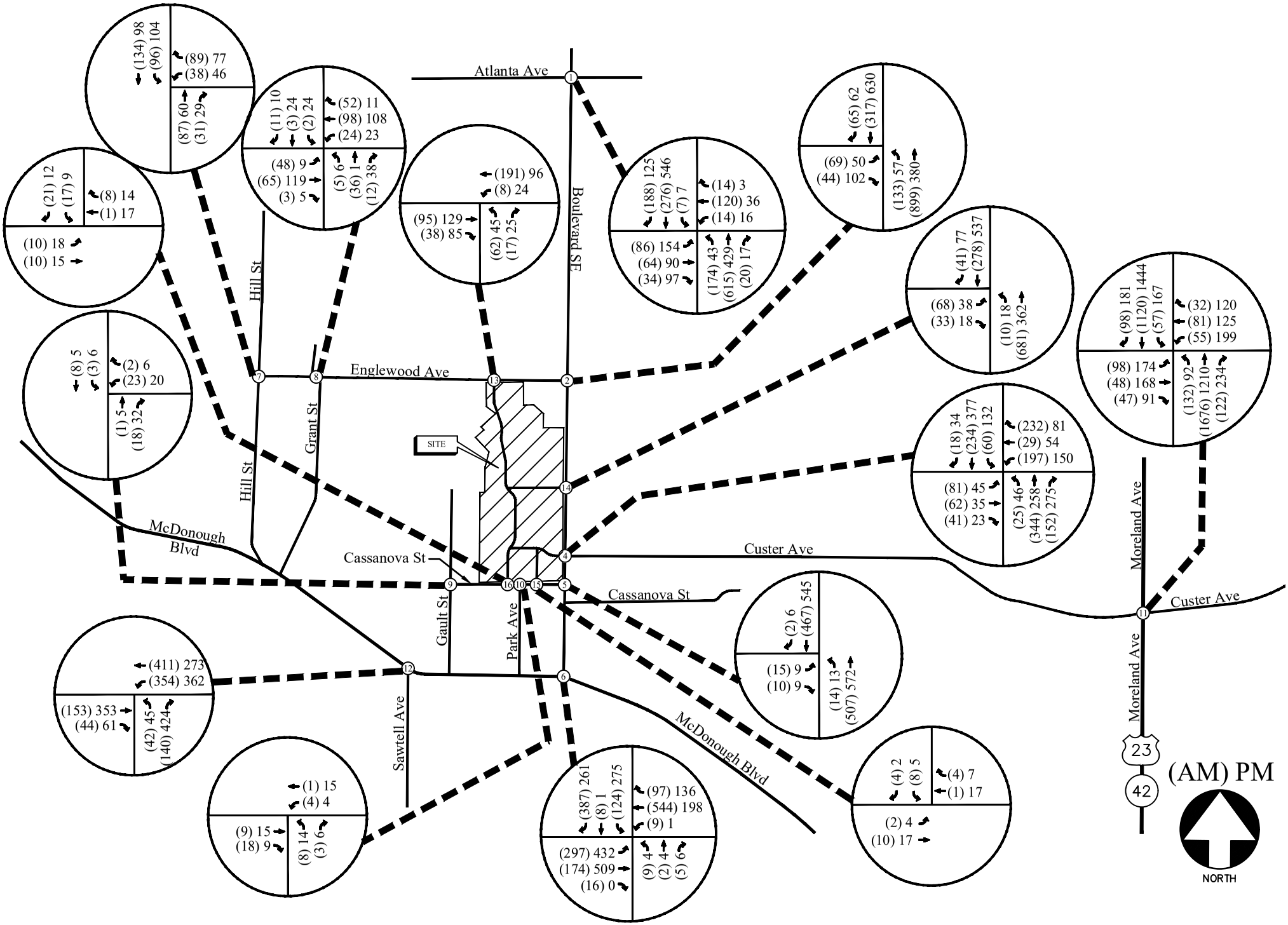
- Traffic signal is to be modified to accommodate an eastbound approach (driveway approach) which should include one entering lane and two exiting lanes (left turn lane and shared through/right turn lane)
- Modify traffic signal to remove the northbound right turn overlap phase
- Restripe westbound approach lane geometry to accommodate a westbound left turn lane and shared through/right turn lane within the existing available asphalt (30 ft)
- Modify traffic signal to add westbound protected, permissive phase
- Modify traffic signal to add southbound protected, permissive left turn phase
- Traffic signal is to be improved by accommodating pedestrian movements at all approaches
- Intersection to be ADA compliant with handicap ramps
- Relocate controller cabinet from the southwest corner
- Establish fiberoptic interconnect to adjacent signalized intersections



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 9

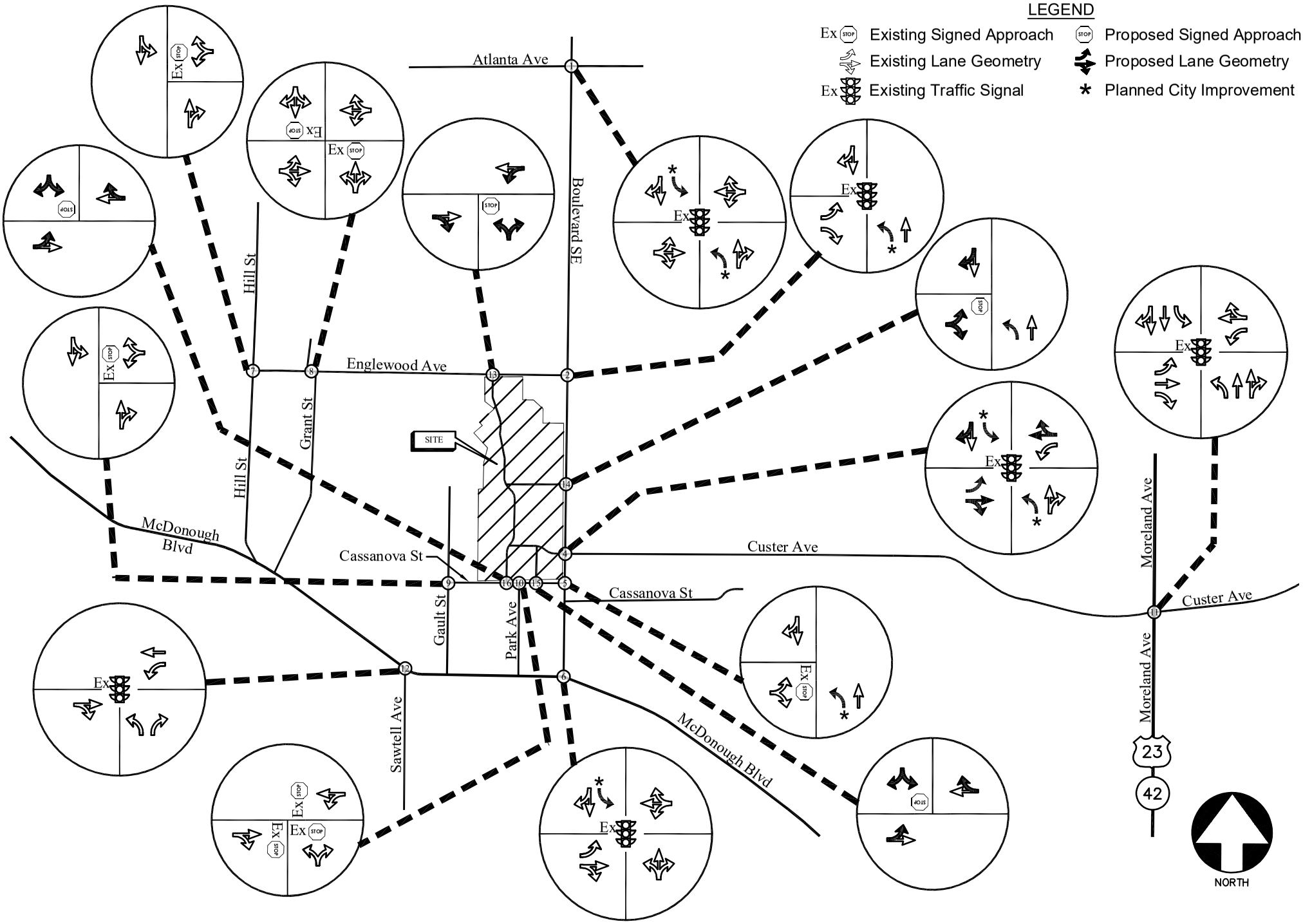
A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 10

A&R Engineering Inc.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 11

A&R Engineering Inc.

CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the traffic from the proposed Chosewood development that will be located to the southwest of the intersection of Boulevard SE at Englewood Avenue in Atlanta, Georgia. The development will consist of 1,180 multifamily units and 20,000 sf of retail space.

Site Access Configuration

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

- Site Driveway 1: Full-access driveway on Englewood Avenue
- Site Driveway 2: Full-access northern driveway on Boulevard SE
- Site Driveway 3: Full-access southern driveway on Boulevard SE, aligned with Custer Avenue
- Site Driveway 4: Full-access driveway on Cassanova Street, east of Park Avenue
- Site Driveway 5: Full-access driveway on Cassanova Street, west of Park Avenue

Study Intersections

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

13. Boulevard SE at Atlanta Avenue
14. Boulevard SE at Englewood Avenue
15. Boulevard SE at Burroughs Street
16. Boulevard SE at Custer Avenue
17. Boulevard SE at Cassanova Street
18. Boulevard SE at McDonough Boulevard
19. Englewood Avenue at Hill Street
20. Englewood Avenue at Grant Street
21. Cassanova Street at Gault Street
22. Cassanova Street at Park Avenue
23. US 23/SR 42 (Moreland Avenue) at Custer Avenue
24. McDonough Boulevard at Sawtell Avenue

Planned Improvement Projects

TABLE 5 – PLANNED AND PROGRAMMED IMPROVEMENTS

Project ID	Project	Type of Improvement	Network Year	Source
-	Englewood Ave Pedestrian Improvements	Sidewalk improvements along Englewood Ave from Hill St to the Boulevard Crossing Park	TBA	City of Atlanta
-	Englewood Sidewalk	Sidewalk installation on Englewood Ave from Hill St to Boulevard	TBA	City of Atlanta
-	Englewood Ave Bike Lanes	Stripe Englewood Avenue to provide bike lanes from Hill Street to Boulevard	TBA	City of Atlanta
-	Boulevard SE	Reduction of travel lanes from 4 to 3 with TWLTL on Boulevard	2023	City of Atlanta

Boulevard SE is currently a 4-lane roadway near the proposed development. A City of Atlanta improvement project ("Boulevard SE Project") is proposing to make Boulevard SE into a 3-lane roadway (1 southbound lane, 1 northbound lane, 1 two way turn lane). These improvements are included in both the future "No-Build" and "Build" study network lane geometry.

Analysis Results

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic. The results of the analysis indicate that after the Boulevard SE project is completed, all study intersections will operate at a level-of-service "D" or better in the "Build" scenario after implementing recommendations at the intersection of Boulevard SE and Custer Avenue.

Recommendations for Access Configuration

- Site driveways 1, 2, 4, and 5 are recommended to consist of one entering lane and one exiting lane and to be stop-controlled on the driveway approach.
- Site driveway 3/ Custer Avenue at Boulevard SE:

  Site driveway 3 will form the eastbound approach (fourth leg) at the existing intersection of Custer Avenue and Boulevard SE. The improvements listed below are based on the assumption that the City of Atlanta Boulevard SE project will be complete, and Boulevard SE will be a 3-lane roadway prior to the proposed development's full buildout.

  - Traffic signal is to be modified to accommodate an eastbound approach (driveway approach) which should include one entering lane and two exiting lanes (left turn lane and shared through/right turn lane)
  - Modify traffic signal to remove the northbound right turn overlap phase
  - Restripe westbound approach lane geometry to accommodate a westbound left turn lane and shared through/right turn lane within the existing available asphalt (30 ft)
  - Modify traffic signal to add westbound protected, permissive phase
  - Modify traffic signal to add southbound protected, permissive left turn phase
  - Traffic signal is to be improved by accommodating pedestrian movements at all approaches
  - Intersection to be ADA compliant with handicap ramps
  - Relocate controller cabinet from the southwest corner
  - Establish fiberoptic interconnect to adjacent signalized intersections

Appendix

Existing Intersection Traffic Counts

A & R Engineering, Inc.

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

TMC DATA
Englewood Ave @ Hill Street
7-9 am | 4-6 pm

File Name : 20200175
Site Code : 20200175
Start Date : 10/6/2020
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hill St Northbound				Hill St Southbound				Eastbound				Englewood Ave 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	3	5	8	7	6	0	13	0	0	0	0	2	0	6	8	29
07:15 AM	0	4	4	8	4	4	0	8	0	0	0	0	0	0	7	7	23
07:30 AM	0	8	6	14	9	5	0	14	0	0	0	0	2	0	6	8	36
07:45 AM	0	7	2	9	7	8	0	15	0	0	0	0	5	0	8	13	37
Total	0	22	17	39	27	23	0	50	0	0	0	0	9	0	27	36	125
08:00 AM	0	10	5	15	8	11	0	19	0	0	0	0	2	0	9	11	45
08:15 AM	0	5	0	5	6	18	0	24	0	0	0	0	0	0	5	5	34
08:30 AM	0	11	1	12	8	14	0	22	0	0	0	0	3	0	5	8	42
08:45 AM	0	12	3	15	6	9	0	15	0	0	0	0	1	0	4	5	35
Total	0	38	9	47	28	52	0	80	0	0	0	0	6	0	23	29	156
*** BREAK ***																	
04:00 PM	0	2	2	4	8	12	0	20	0	0	0	0	5	0	7	12	36
04:15 PM	0	10	1	11	15	10	0	25	0	0	0	0	3	0	15	18	54
04:30 PM	0	12	4	16	15	13	0	28	0	0	0	0	10	0	9	19	63
04:45 PM	0	11	0	11	6	11	0	17	0	0	0	0	5	0	11	16	44
Total	0	35	7	42	44	46	0	90	0	0	0	0	23	0	42	65	197
05:00 PM	0	8	1	9	10	11	0	21	0	0	0	0	5	0	9	14	44
05:15 PM	0	6	2	8	11	25	0	36	0	0	0	0	5	0	10	15	59
05:30 PM	0	3	2	5	11	12	0	23	0	0	0	0	2	0	7	9	37
05:45 PM	0	4	3	7	11	11	0	22	0	0	0	0	1	0	9	10	39
Total	0	21	8	29	43	59	0	102	0	0	0	0	13	0	35	48	179
Grand Total	0	116	41	157	142	180	0	322	0	0	0	0	51	0	127	178	657
Apprch %	0	73.9	26.1		44.1	55.9	0		0	0	0		28.7	0	71.3		
Total %	0	17.7	6.2	23.9	21.6	27.4	0	49	0	0	0	0	7.8	0	19.3	27.1	

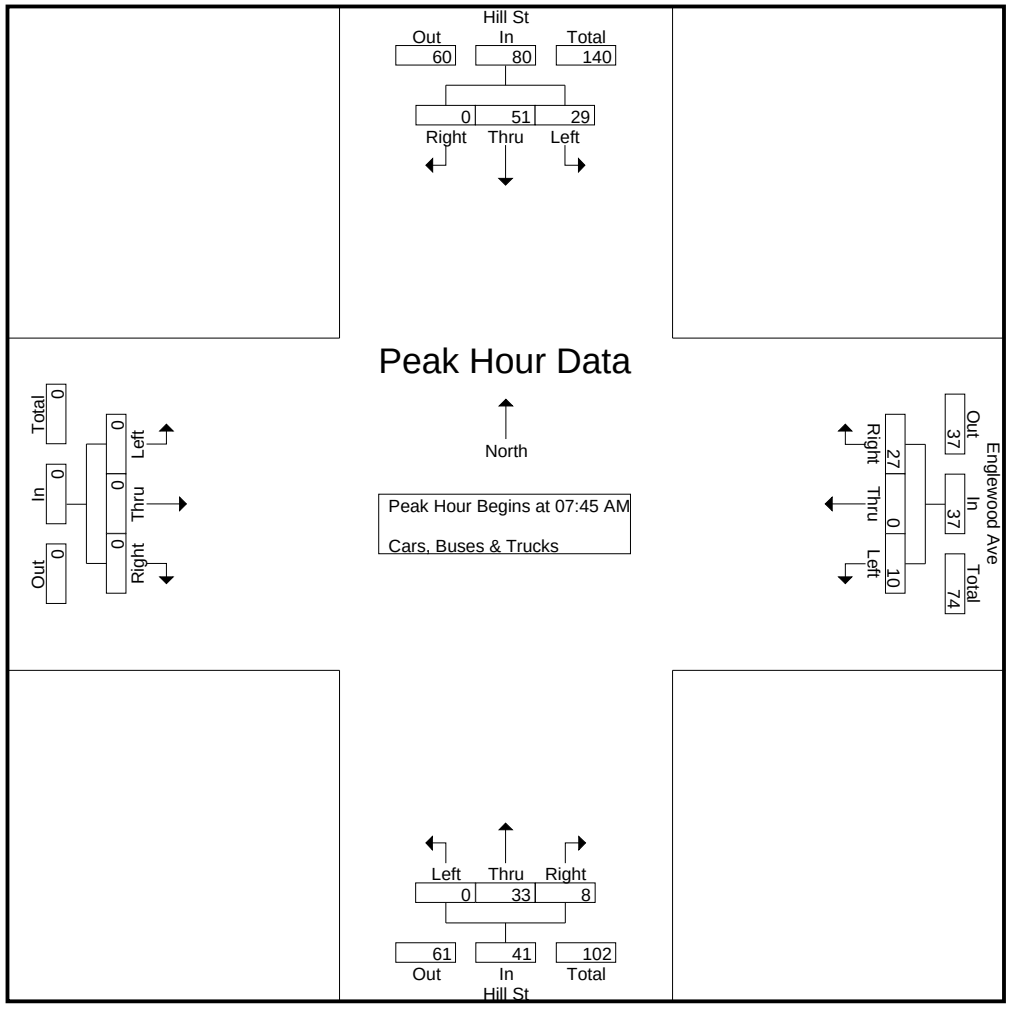
A & R Engineering, Inc.

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

TMC DATA
Englewood Ave @ Hill Street
7-9 am | 4-6 pm

File Name : 20200175
Site Code : 20200175
Start Date : 10/6/2020
Page No : 2

	Hill St Northbound				Hill St Southbound				Eastbound				Englewood Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	7	2	9	7	8	0	15	0	0	0	0	**5**	0	8	**13**	37
08:00 AM	0	10	**5**	**15**	**8**	11	0	19	0	0	0	0	2	0	**9**	11	**45**
08:15 AM	0	5	0	5	6	**18**	0	**24**	0	0	0	0	0	0	5	5	34
08:30 AM	0	**11**	1	12	8	14	0	22	0	0	0	0	3	0	5	8	42
Total Volume	0	33	8	41	29	51	0	80	0	0	0	0	10	0	27	37	158
% App. Total	0	80.5	19.5		36.2	63.8	0		0	0	0		27	0	73		
PHF	.000	.750	.400	.683	.906	.708	.000	.833	.000	.000	.000	.000	.500	.000	.750	.712	.878



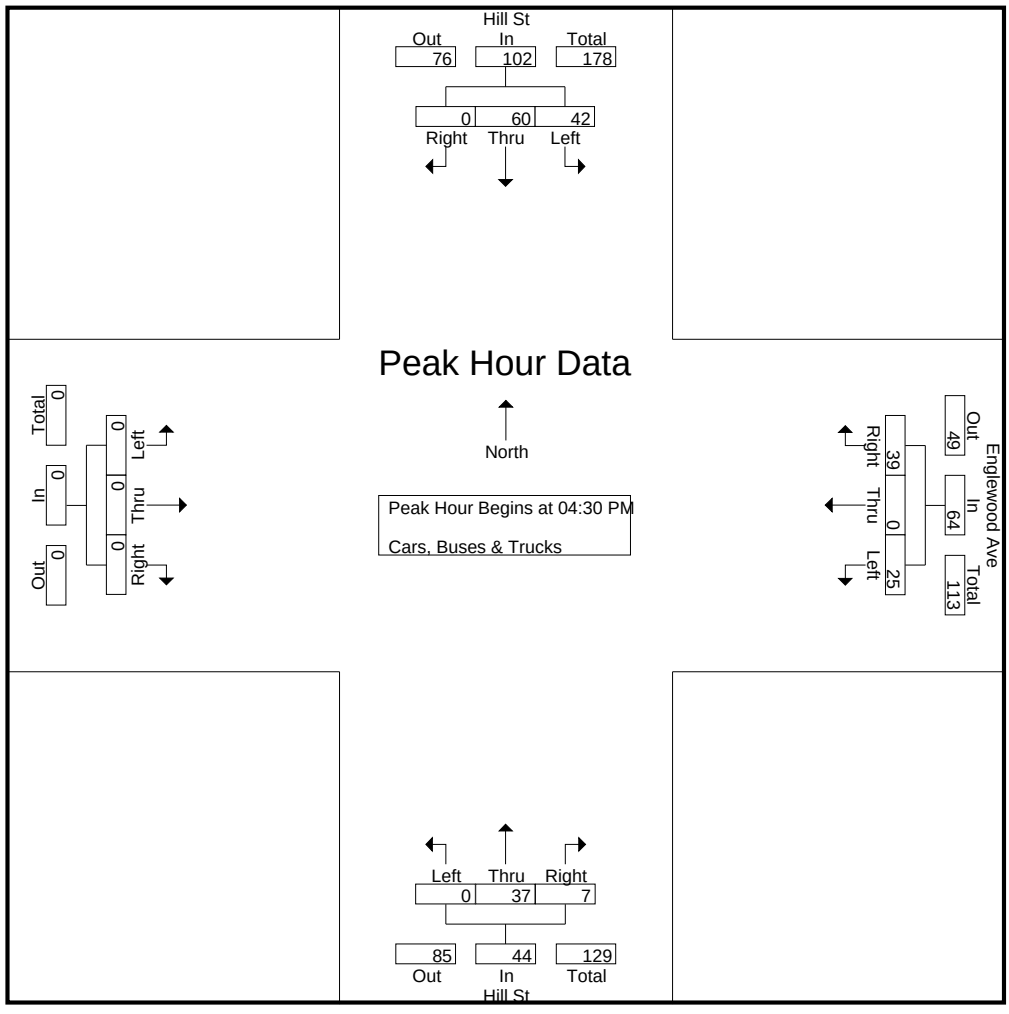
A & R Engineering, Inc.

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

TMC DATA
Englewood Ave @ Hill Street
7-9 am | 4-6 pm

File Name : 20200175
Site Code : 20200175
Start Date : 10/6/2020
Page No : 3

	Hill St Northbound				Hill St Southbound				Eastbound				Englewood Ave 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 04:30 PM																	
04:30 PM	0	**12**	**4**	**16**	**15**	13	0	28	0	0	0	0	**10**	0	9	**19**	**63**
04:45 PM	0	11	0	11	6	11	0	17	0	0	0	0	5	0	**11**	16	44
05:00 PM	0	8	1	9	10	11	0	21	0	0	0	0	5	0	9	14	44
05:15 PM	0	6	2	8	11	**25**	0	**36**	0	0	0	0	5	0	10	15	59
Total Volume	0	37	7	44	42	60	0	102	0	0	0	0	25	0	39	64	210
% App. Total	0	84.1	15.9		41.2	58.8	0		0	0	0		39.1	0	60.9		
PHF	.000	.771	.438	.688	.700	.600	.000	.708	.000	.000	.000	.000	.625	.000	.886	.842	.833



A & R Engineering, Inc.

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

TMC DATA
Grant St @ Englewood Ave
7-9 am | 4-6 pm

File Name : 20200176
Site Code : 20200176
Start Date : 10/6/2020
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Grant St Northbound				Grant St Southbound				Englewood Ave Eastbound				Englewood Ave 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	1	19	0	20	0	0	3	3	13	5	0	18	0	4	22	26	67
07:15 AM	1	2	0	3	0	1	2	3	1	1	1	3	0	5	2	7	16
07:30 AM	0	4	1	5	1	1	2	4	7	4	0	11	1	4	2	7	27
07:45 AM	2	3	1	6	1	1	2	4	6	10	1	17	1	7	3	11	38
Total	4	28	2	34	2	3	9	14	27	20	2	49	2	20	29	51	148
08:00 AM	2	1	3	6	5	0	1	6	3	5	0	8	3	9	2	14	34
08:15 AM	0	1	0	1	3	0	2	5	3	8	0	11	2	4	1	7	24
08:30 AM	1	0	2	3	1	1	1	3	0	7	1	8	2	3	0	5	19
08:45 AM	1	0	3	4	2	1	3	6	1	6	1	8	1	6	0	7	25
Total	4	2	8	14	11	2	7	20	7	26	2	35	8	22	3	33	102
*** BREAK ***																	
04:00 PM	0	0	5	5	9	9	0	18	2	12	1	15	1	11	5	17	55
04:15 PM	0	0	3	3	1	1	1	3	1	12	0	13	3	15	0	18	37
04:30 PM	0	1	3	4	4	7	5	16	3	15	2	20	3	18	2	23	63
04:45 PM	4	0	4	8	4	1	2	7	1	8	0	9	1	9	1	11	35
Total	4	1	15	20	18	18	8	44	7	47	3	57	8	53	8	69	190
05:00 PM	1	0	1	2	2	0	3	5	1	8	1	10	6	12	1	19	36
05:15 PM	0	1	5	6	1	0	0	1	1	12	1	14	8	15	0	23	44
05:30 PM	0	0	6	6	2	0	1	3	0	12	0	12	4	8	1	13	34
05:45 PM	0	1	3	4	1	1	0	2	0	11	0	11	6	11	1	18	35
Total	1	2	15	18	6	1	4	11	2	43	2	47	24	46	3	73	149
Grand Total	13	33	40	86	37	24	28	89	43	136	9	188	42	141	43	226	589
Apprch %	15.1	38.4	46.5		41.6	27	31.5		22.9	72.3	4.8		18.6	62.4	19		
Total %	2.2	5.6	6.8	14.6	6.3	4.1	4.8	15.1	7.3	23.1	1.5	31.9	7.1	23.9	7.3	38.4	

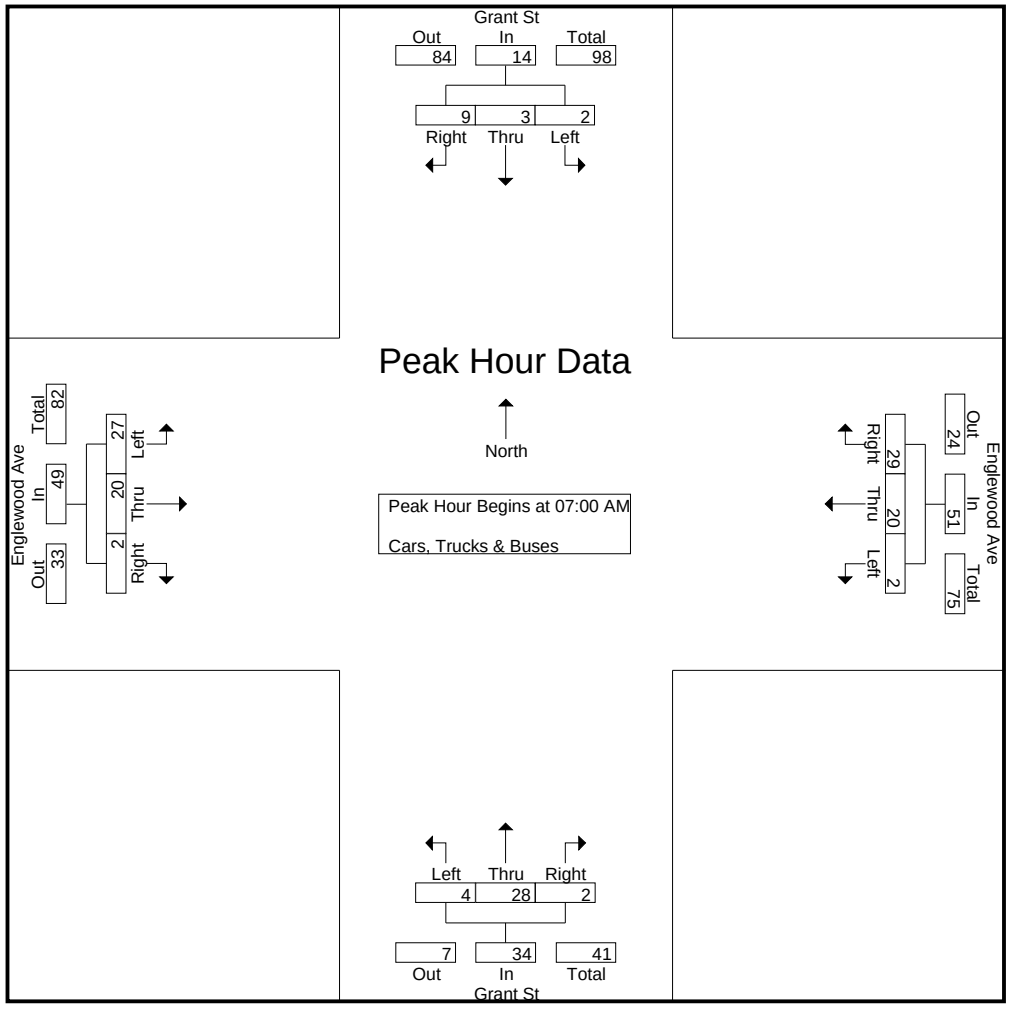
A & R Engineering, Inc.

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

TMC DATA
Grant St @ Englewood Ave
7-9 am | 4-6 pm

File Name : 20200176
Site Code : 20200176
Start Date : 10/6/2020
Page No : 2

	Grant St Northbound				Grant St Southbound				Englewood Ave Eastbound				Englewood Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	**19**	0	**20**	0	0	**3**	3	**13**	5	0	**18**	0	4	**22**	**26**	**67**
07:15 AM	1	2	0	3	0	**1**	2	3	1	1	**1**	3	0	5	2	7	16
07:30 AM	0	4	**1**	5	**1**	1	2	**4**	7	4	0	11	**1**	4	2	7	27
07:45 AM	**2**	3	1	6	1	1	2	4	6	**10**	1	17	1	**7**	3	11	38
Total Volume	4	28	2	34	2	3	9	14	27	20	2	49	2	20	29	51	148
% App. Total	11.8	82.4	5.9		14.3	21.4	64.3		55.1	40.8	4.1		3.9	39.2	56.9		
PHF	.500	.368	.500	.425	.500	.750	.750	.875	.519	.500	.500	.681	.500	.714	.330	.490	.552



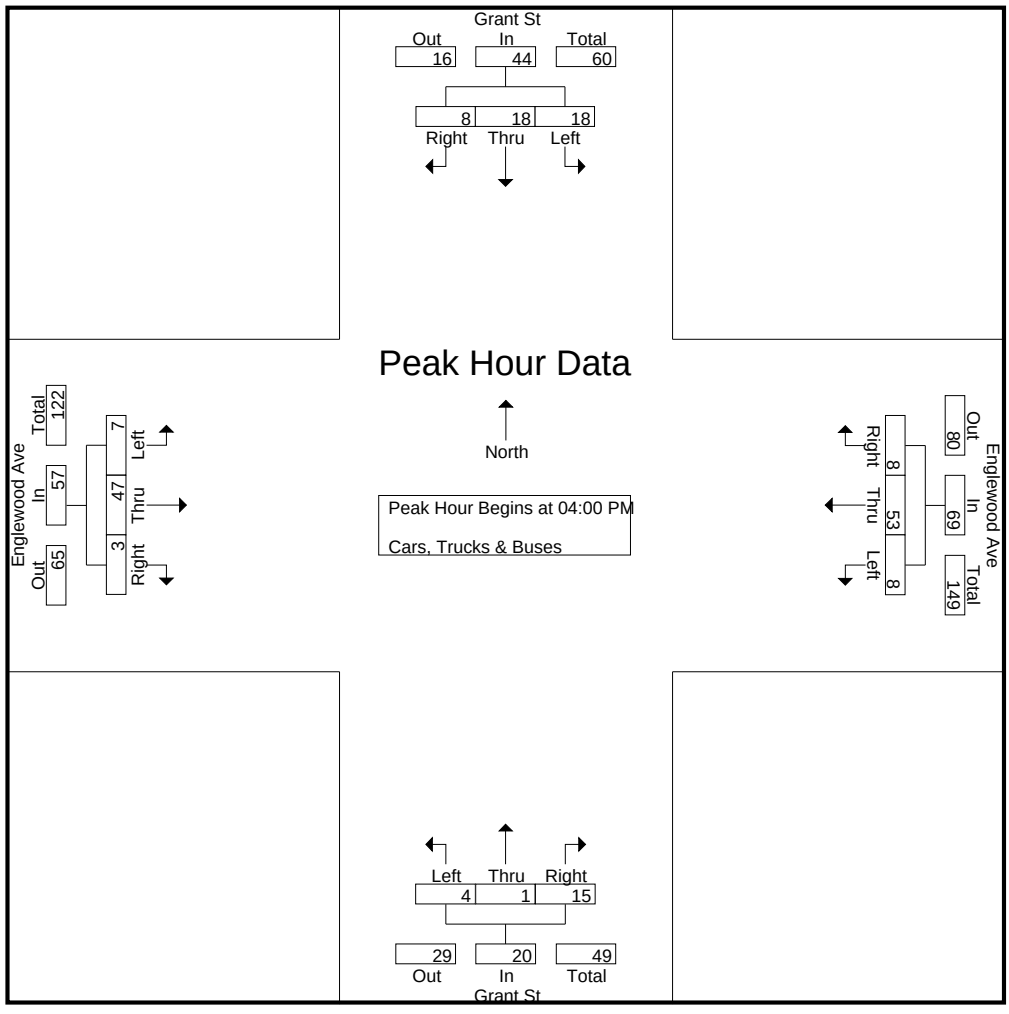
A & R Engineering, Inc.

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

TMC DATA
Grant St @ Englewood Ave
7-9 am | 4-6 pm

File Name : 20200176
Site Code : 20200176
Start Date : 10/6/2020
Page No : 3

	Grant St Northbound				Grant St Southbound				Englewood Ave Eastbound				Englewood Ave Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**5**	5	**9**	**9**	0	**18**	2	12	1	15	1	11	**5**	17	55
04:15 PM	0	0	3	3	1	1	1	3	1	12	0	13	**3**	15	0	18	37
04:30 PM	0	**1**	3	4	4	7	**5**	16	**3**	**15**	**2**	**20**	3	**18**	2	**23**	**63**
04:45 PM	**4**	0	4	**8**	4	1	2	7	1	8	0	9	1	9	1	11	35
Total Volume	4	1	15	20	18	18	8	44	7	47	3	57	8	53	8	69	190
% App. Total	20	5	75		40.9	40.9	18.2		12.3	82.5	5.3		11.6	76.8	11.6		
PHF	.250	.250	.750	.625	.500	.500	.400	.611	.583	.783	.375	.713	.667	.736	.400	.750	.754



A & R Engineering, Inc.

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

TMC DATA
Gault St @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200177
Site Code : 20200177
Start Date : 10/7/2020
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Gault St Northbound				Gault St Southbound				Eastbound				Cassanova St 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	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15 AM	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	3
07:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
Total	0	1	4	5	2	1	0	3	0	0	0	0	1	0	0	1	9
08:00 AM	0	0	3	3	0	1	0	1	0	0	0	0	1	0	0	1	5
08:15 AM	0	1	3	4	1	1	0	2	0	0	0	0	1	0	1	2	8
08:30 AM	0	0	0	0	1	3	0	4	0	0	0	0	0	0	1	1	5
08:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
Total	0	1	6	7	3	5	0	8	0	0	0	0	3	0	2	5	20
*** BREAK ***																	
04:00 PM	0	0	4	4	1	1	0	2	0	0	0	0	0	0	3	3	9
04:15 PM	0	3	3	6	2	2	0	4	0	0	0	0	3	0	1	4	14
04:30 PM	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	1	3
04:45 PM	0	1	4	5	1	0	0	1	0	0	0	0	2	0	1	3	9
Total	0	4	11	15	5	4	0	9	0	0	0	0	6	0	5	11	35
05:00 PM	0	1	2	3	1	1	0	2	0	0	0	0	1	0	1	2	7
05:15 PM	0	2	0	2	2	0	0	2	0	0	0	0	2	0	0	2	6
05:30 PM	0	1	0	1	1	1	0	2	0	0	0	0	2	0	4	6	9
05:45 PM	0	2	1	3	1	1	0	2	0	0	0	0	1	0	1	2	7
Total	0	6	3	9	5	3	0	8	0	0	0	0	6	0	6	12	29
Grand Total	0	12	24	36	15	13	0	28	0	0	0	0	16	0	13	29	93
Apprch %	0	33.3	66.7		53.6	46.4	0		0	0	0		55.2	0	44.8		
Total %	0	12.9	25.8	38.7	16.1	14	0	30.1	0	0	0	0	17.2	0	14	31.2	

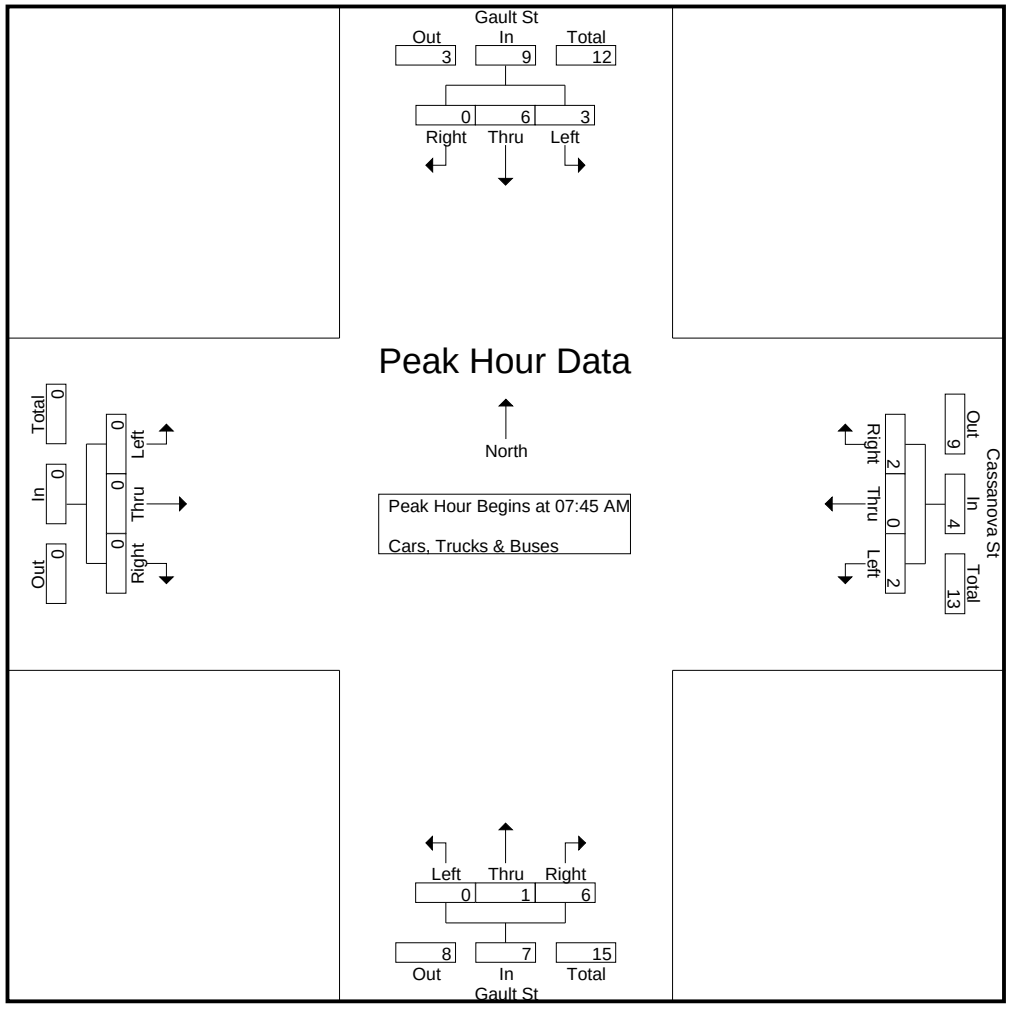
A & R Engineering, Inc.

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

TMC DATA
Gault St @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200177
Site Code : 20200177
Start Date : 10/7/2020
Page No : 2

	Gault St Northbound				Gault St Southbound				Eastbound				Cassanova St 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	**1**	1	0	2	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	**3**	3	0	1	0	1	0	0	0	0	**1**	0	0	1	5
08:15 AM	0	**1**	3	**4**	1	1	0	2	0	0	0	0	1	0	**1**	**2**	**8**
08:30 AM	0	0	0	0	1	**3**	0	**4**	0	0	0	0	0	0	1	1	5
Total Volume	0	1	6	7	3	6	0	9	0	0	0	0	2	0	2	4	20
% App. Total	0	14.3	85.7		33.3	66.7	0		0	0	0		50	0	50		
PHF	.000	.250	.500	.438	.750	.500	.000	.563	.000	.000	.000	.000	.500	.000	.500	.500	.625



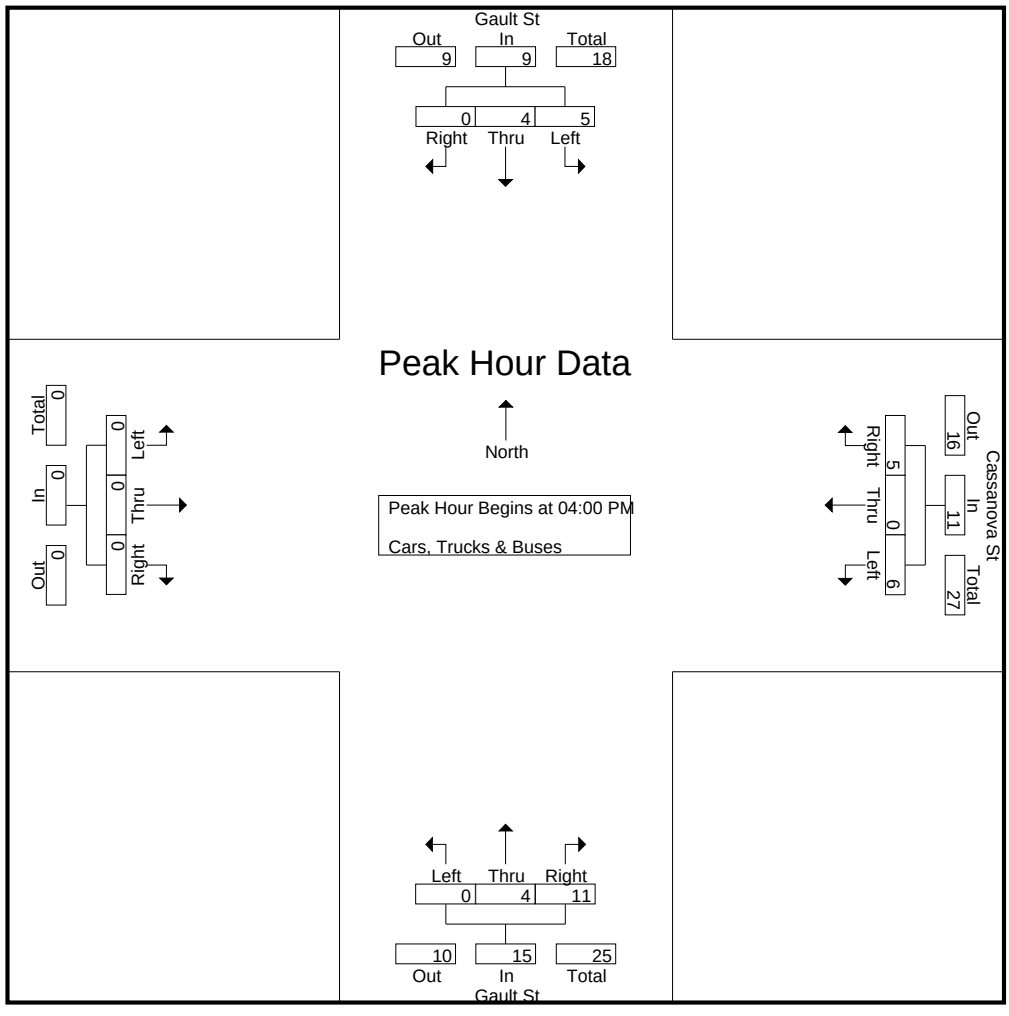
A & R Engineering, Inc.

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

TMC DATA
Gault St @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200177
Site Code : 20200177
Start Date : 10/7/2020
Page No : 3

	Gault St Northbound				Gault St Southbound				Eastbound				Cassanova St Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	**4**	4	1	1	0	2	0	0	0	0	0	0	**3**	3	9
04:15 PM	0	**3**	3	**6**	**2**	**2**	0	**4**	0	0	0	0	**3**	0	1	**4**	**14**
04:30 PM	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	1	3
04:45 PM	0	1	4	5	1	0	0	1	0	0	0	0	2	0	1	3	9
Total Volume	0	4	11	15	5	4	0	9	0	0	0	0	6	0	5	11	35
% App. Total	0	26.7	73.3		55.6	44.4	0		0	0	0		54.5	0	45.5		
PHF	.000	.333	.688	.625	.625	.500	.000	.563	.000	.000	.000	.000	.500	.000	.417	.688	.625



A & R Engineering, Inc.

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

TMC DATA
Park Ave @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200178
Site Code : 20200178
Start Date : 10/6/2020
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Park Ave Northbound				Southbound				Cassanova St Eastbound				Cassanova St Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	4	0	4	0	1	0	1	5
07:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	1	1	0	0	0	0	0	7	1	8	0	1	0	1	10
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	1	4
08:45 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	0	1	1	0	0	0	0	0	6	1	7	0	2	0	2	10
*** BREAK ***																	
04:00 PM	2	0	0	2	0	0	0	0	0	3	1	4	0	0	0	0	6
04:15 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	4	0	4	6
04:30 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	3	0	3	7
04:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	1	3	0	4	7
Total	2	0	1	3	0	0	0	0	0	11	1	12	1	10	0	11	26
05:00 PM	0	0	2	2	0	0	0	0	0	3	0	3	0	1	0	1	6
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	1	5	0	6	8
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	3	4
05:45 PM	0	0	1	1	0	0	0	0	0	4	1	5	1	3	0	4	10
Total	0	0	3	3	0	0	0	0	0	10	1	11	3	11	0	14	28
Grand Total	2	0	6	8	0	0	0	0	0	34	4	38	4	24	0	28	74
Apprch %	25	0	75		0	0	0		0	89.5	10.5		14.3	85.7	0		
Total %	2.7	0	8.1	10.8	0	0	0	0	0	45.9	5.4	51.4	5.4	32.4	0	37.8	

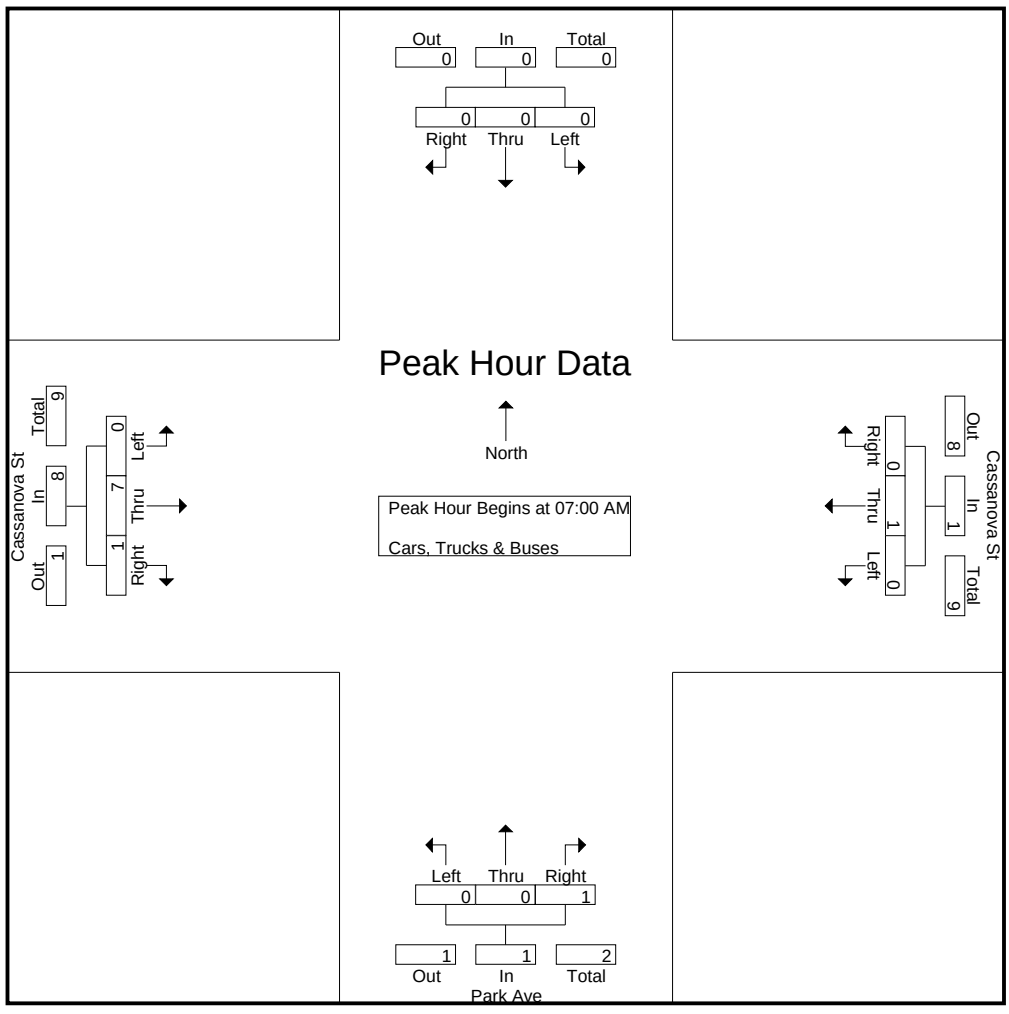
A & R Engineering, Inc.

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

TMC DATA
Park Ave @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200178
Site Code : 20200178
Start Date : 10/6/2020
Page No : 2

	Park Ave Northbound				Southbound				Cassanova St Eastbound				Cassanova St 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	1	**1**	2	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	**4**	0	**4**	0	**1**	0	**1**	**5**
07:30 AM	0	0	**1**	**1**	0	0	0	0	0	1	0	1	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	1	1	0	0	0	0	0	7	1	8	0	1	0	1	10
% App. Total	0	0	100		0	0	0		0	87.5	12.5		0	100	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.438	.250	.500	.000	.250	.000	.250	.500



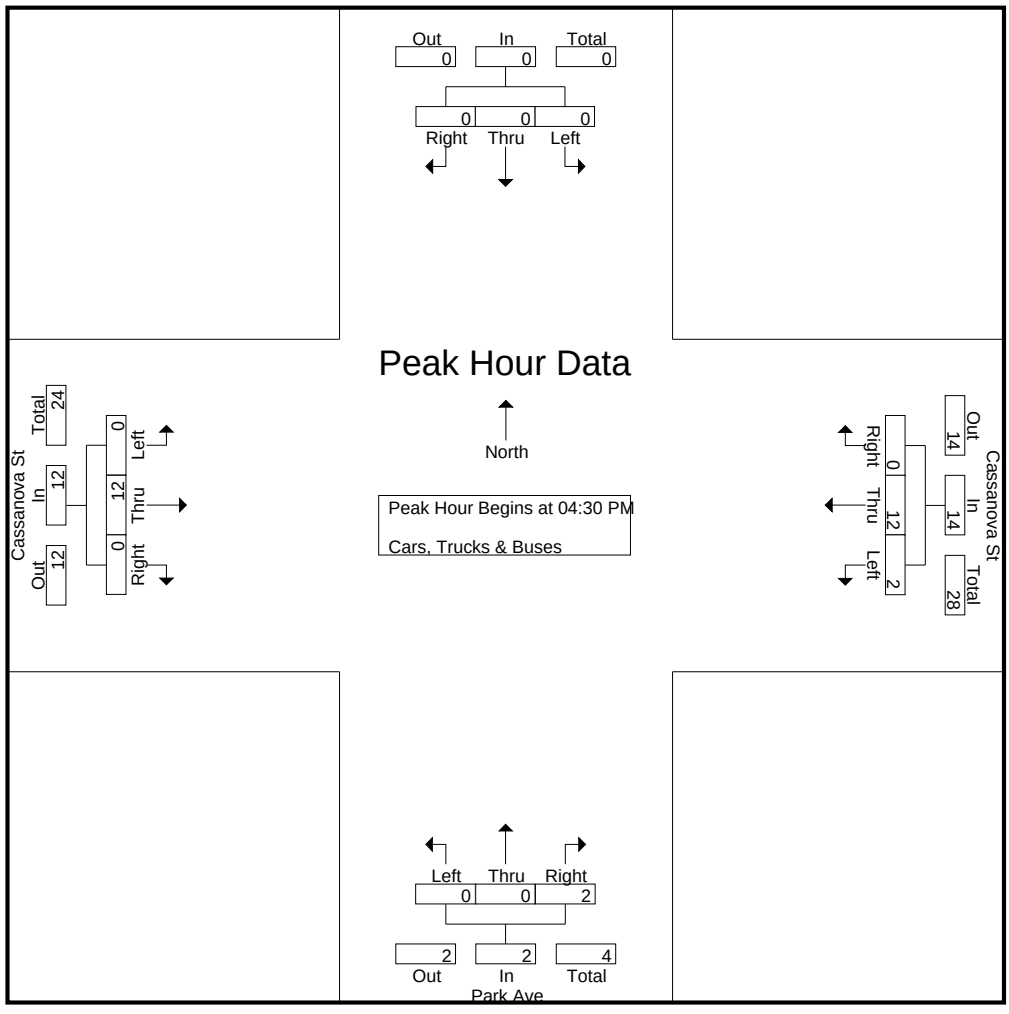
A & R Engineering, Inc.

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

TMC DATA
Park Ave @ Cassanova St
7-9 am | 4-6 pm

File Name : 20200178
Site Code : 20200178
Start Date : 10/6/2020
Page No : 3

	Park Ave Northbound				Southbound				Cassanova St Eastbound				Cassanova St 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 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	**4**	0	**4**	0	3	0	3	7
04:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	**1**	3	0	4	7
05:00 PM	0	0	**2**	**2**	0	0	0	0	0	3	0	3	0	1	0	1	6
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	1	**5**	0	**6**	**8**
Total Volume	0	0	2	2	0	0	0	0	0	12	0	12	2	12	0	14	28
% App. Total	0	0	100		0	0	0		0	100	0		14.3	85.7	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.750	.000	.750	.500	.600	.000	.583	.875



A & R Engineering, Inc.

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

TMC DATA
SR 42 (Moreland Ave) @ Custer Ave
7-9 am | 4-6 pm

File Name : 20200179
Site Code : 20200179
Start Date : 10/6/2020
Page No : 1

Groups Printed- Cars, Trucks & Buses

	SR 42 (Moreland Ave) Northbound				SR 42 (Moreland Ave) Southbound				Custer Ave Eastbound				Custer Ave 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	7	154	8	169	7	91	5	103	7	8	5	20	9	11	8	28	320
07:15 AM	11	151	6	168	5	115	9	129	7	9	1	17	16	3	6	25	339
07:30 AM	17	190	13	220	5	118	3	126	13	7	8	28	12	21	7	40	414
07:45 AM	12	178	15	205	4	122	6	132	18	3	4	25	11	15	7	33	395
Total	47	673	42	762	21	446	23	490	45	27	18	90	48	50	28	126	1468
08:00 AM	13	167	14	194	6	102	13	121	12	10	7	29	9	9	8	26	370
08:15 AM	8	138	7	153	8	108	14	130	25	10	6	41	14	17	5	36	360
08:30 AM	4	153	13	170	5	91	15	111	13	7	4	24	14	14	8	36	341
08:45 AM	5	127	17	149	7	98	14	119	12	10	2	24	15	7	6	28	320
Total	30	585	51	666	26	399	56	481	62	37	19	118	52	47	27	126	1391
*** BREAK ***																	
04:00 PM	16	221	38	275	26	243	24	293	27	32	26	85	36	23	28	87	740
04:15 PM	13	162	34	209	28	226	31	285	38	33	12	83	41	25	20	86	663
04:30 PM	6	223	44	273	26	223	24	273	38	27	16	81	53	19	31	103	730
04:45 PM	16	187	37	240	29	254	30	313	30	39	13	82	31	25	18	74	709
Total	51	793	153	997	109	946	109	1164	133	131	67	331	161	92	97	350	2842
05:00 PM	10	173	42	225	27	232	22	281	39	51	20	110	46	29	23	98	714
05:15 PM	11	160	36	207	37	235	28	300	36	47	14	97	35	19	25	79	683
05:30 PM	7	149	28	184	26	171	28	225	38	37	11	86	46	25	24	95	590
05:45 PM	15	156	33	204	25	193	28	246	31	36	12	79	40	33	23	96	625
Total	43	638	139	820	115	831	106	1052	144	171	57	372	167	106	95	368	2612
Grand Total	171	2689	385	3245	271	2622	294	3187	384	366	161	911	428	295	247	970	8313
Apprch %	5.3	82.9	11.9		8.5	82.3	9.2		42.2	40.2	17.7		44.1	30.4	25.5		
Total %	2.1	32.3	4.6	39	3.3	31.5	3.5	38.3	4.6	4.4	1.9	11	5.1	3.5	3	11.7	

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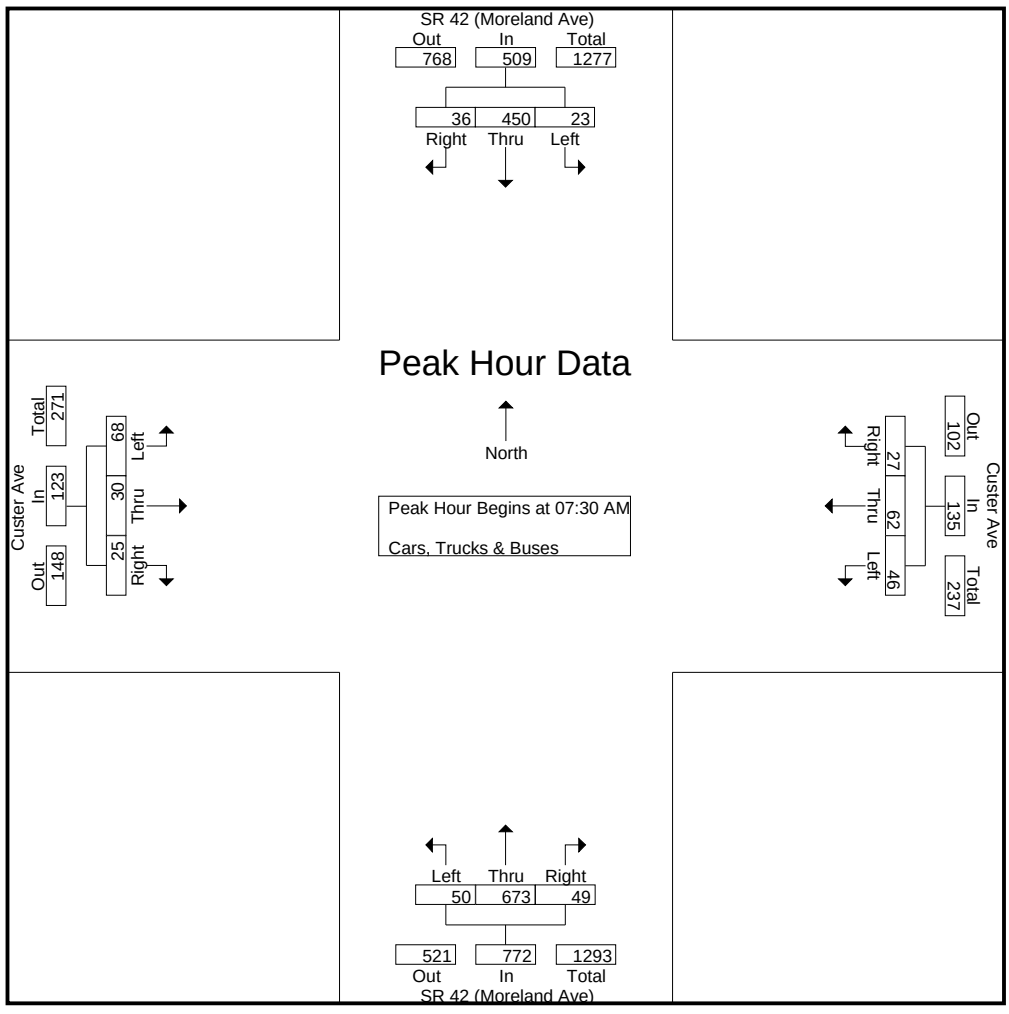
TMC DATA
SR 42 (Moreland Ave) @ Custer Ave
7-9 am | 4-6 pm

File Name : 20200179
Site Code : 20200179
Start Date : 10/6/2020
Page No : 2

	SR 42 (Moreland Ave) Northbound				SR 42 (Moreland Ave) Southbound				Custer Ave Eastbound				Custer Ave 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**17**	**190**	13	**220**	5	118	3	126	13	7	**8**	28	12	**21**	7	**40**	**414**
07:45 AM	12	178	**15**	205	4	**122**	6	**132**	18	3	4	25	11	15	7	33	395
08:00 AM	13	167	14	194	6	102	13	121	12	**10**	7	29	9	9	**8**	26	370
08:15 AM	8	138	7	153	**8**	108	**14**	130	**25**	10	6	**41**	**14**	17	5	36	360
Total Volume	50	673	49	772	23	450	36	509	68	30	25	123	46	62	27	135	1539
% App. Total	6.5	87.2	6.3		4.5	88.4	7.1		55.3	24.4	20.3		34.1	45.9	20		
PHF	.735	.886	.817	.877	.719	.922	.643	.964	.680	.750	.781	.750	.821	.738	.844	.844	.929



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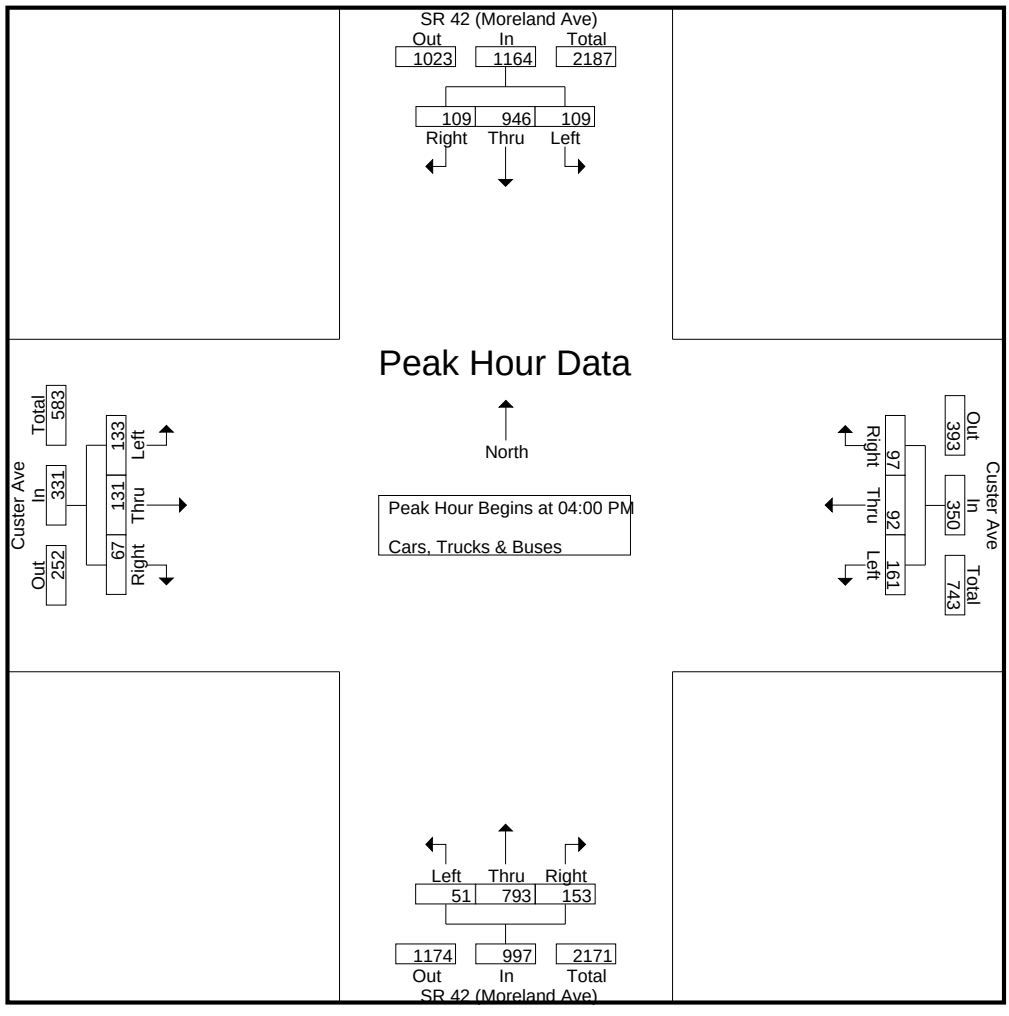
	SR 42 (Moreland Ave) Northbound				SR 42 (Moreland Ave) Southbound				Custer Ave Eastbound				Custer Ave Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**16**	221	38	**275**	26	243	24	293	27	32	**26**	**85**	36	23	28	87	**740**
04:15 PM	13	162	34	209	28	226	**31**	285	**38**	33	12	83	41	**25**	20	86	663
04:30 PM	6	**223**	**44**	273	26	223	24	273	38	27	16	81	**53**	19	**31**	**103**	730
04:45 PM	16	187	37	240	**29**	**254**	30	**313**	30	**39**	13	82	31	25	18	74	709
Total Volume	51	793	153	997	109	946	109	1164	133	131	67	331	161	92	97	350	2842
% App. Total	5.1	79.5	15.3		9.4	81.3	9.4		40.2	39.6	20.2		46	26.3	27.7		
PHF	.797	.889	.869	.906	.940	.931	.879	.930	.875	.840	.644	.974	.759	.920	.782	.850	.960



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TMC DATA
SR 42 (McDonough Blvd @ Sawtell Ave
7-9 am | 4-6 pm

File Name : 20200180
Site Code : 20200180
Start Date : 10/6/2020
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Sawtell Ave Northbound				Southbound				SR 42 (McDonough Blvd) Eastbound				SR 42 (McDonough 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	8	0	16	24	0	0	0	0	0	10	3	13	29	20	0	49	86
07:15 AM	9	0	24	33	0	0	0	0	0	6	6	12	27	36	0	63	108
07:30 AM	10	0	38	48	0	0	0	0	0	15	4	19	37	43	0	80	147
07:45 AM	8	0	30	38	0	0	0	0	0	19	5	24	41	41	0	82	144
Total	35	0	108	143	0	0	0	0	0	50	18	68	134	140	0	274	485
08:00 AM	4	0	5	9	0	0	0	0	0	1	1	2	6	3	0	9	20
08:15 AM	3	0	18	21	0	0	0	0	0	9	3	12	18	20	0	38	71
08:30 AM	4	0	7	11	0	0	0	0	0	5	4	9	15	9	0	24	44
08:45 AM	11	0	18	29	0	0	0	0	0	8	5	13	34	41	0	75	117
Total	22	0	48	70	0	0	0	0	0	23	13	36	73	73	0	146	252
*** BREAK ***																	
04:00 PM	7	0	69	76	0	0	0	0	0	40	8	48	66	32	0	98	222
04:15 PM	10	0	36	46	0	0	0	0	0	38	13	51	65	35	0	100	197
04:30 PM	6	0	90	96	0	0	0	0	0	48	17	65	59	51	0	110	271
04:45 PM	11	0	69	80	0	0	0	0	0	48	7	55	50	31	0	81	216
Total	34	0	264	298	0	0	0	0	0	174	45	219	240	149	0	389	906
05:00 PM	9	0	91	100	0	0	0	0	0	41	11	52	57	40	0	97	249
05:15 PM	11	0	79	90	0	0	0	0	0	59	5	64	63	34	0	97	251
05:30 PM	10	0	80	90	0	0	0	0	0	53	7	60	71	34	0	105	255
05:45 PM	7	0	67	74	0	0	0	0	0	33	11	44	68	27	0	95	213
Total	37	0	317	354	0	0	0	0	0	186	34	220	259	135	0	394	968
Grand Total	128	0	737	865	0	0	0	0	0	433	110	543	706	497	0	1203	2611
Apprch %	14.8	0	85.2		0	0	0		0	79.7	20.3		58.7	41.3	0		
Total %	4.9	0	28.2	33.1	0	0	0	0	0	16.6	4.2	20.8	27	19	0	46.1	

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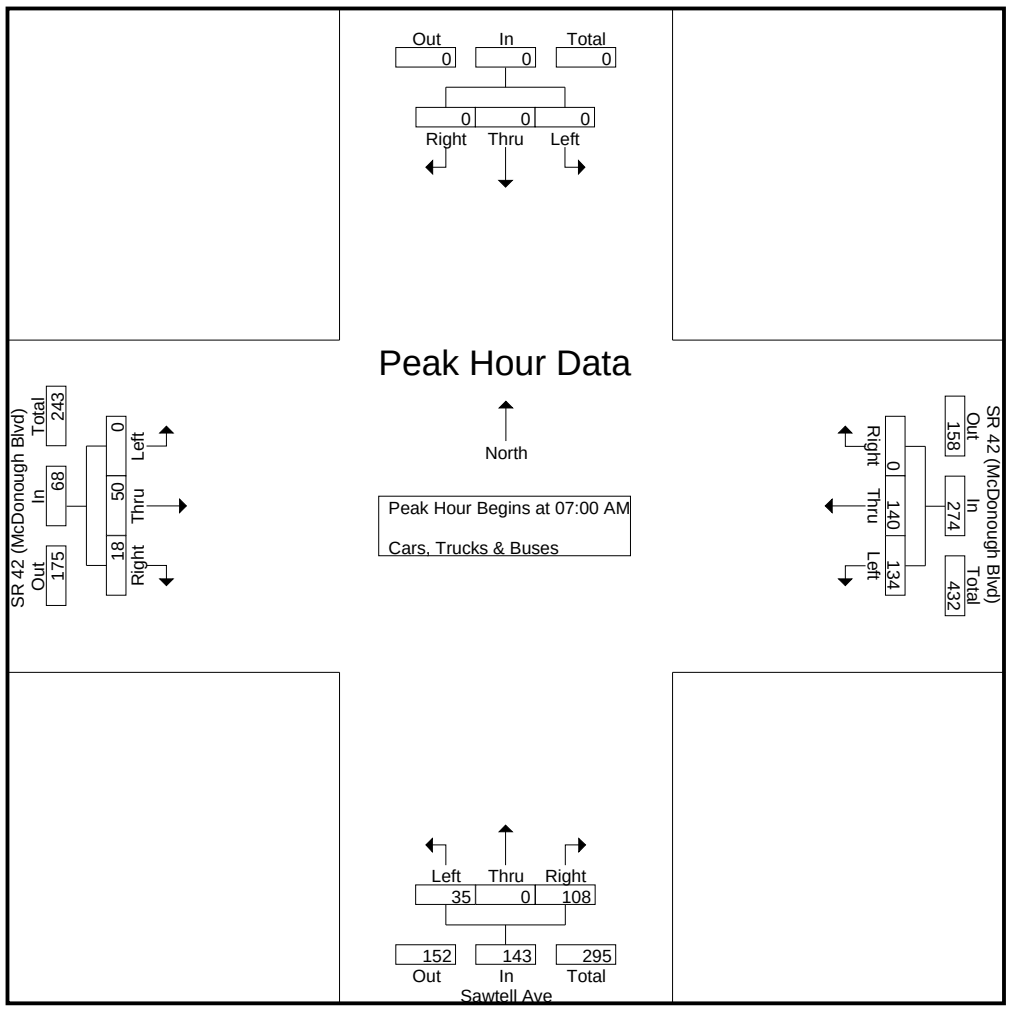
	Sawtell Ave Northbound				Southbound				SR 42 (McDonough Blvd) Eastbound				SR 42 (McDonough Blvd) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	8	0	16	24	0	0	0	0	0	10	3	13	29	20	0	49	86
07:15 AM	9	0	24	33	0	0	0	0	0	6	**6**	12	27	36	0	63	108
07:30 AM	**10**	0	**38**	**48**	0	0	0	0	0	15	4	19	37	**43**	0	80	**147**
07:45 AM	8	0	30	38	0	0	0	0	0	**19**	5	**24**	**41**	41	0	**82**	144
Total Volume	35	0	108	143	0	0	0	0	0	50	18	68	134	140	0	274	485
% App. Total	24.5	0	75.5		0	0	0		0	73.5	26.5		48.9	51.1	0		
PHF	.875	.000	.711	.745	.000	.000	.000	.000	.000	.658	.750	.708	.817	.814	.000	.835	.825



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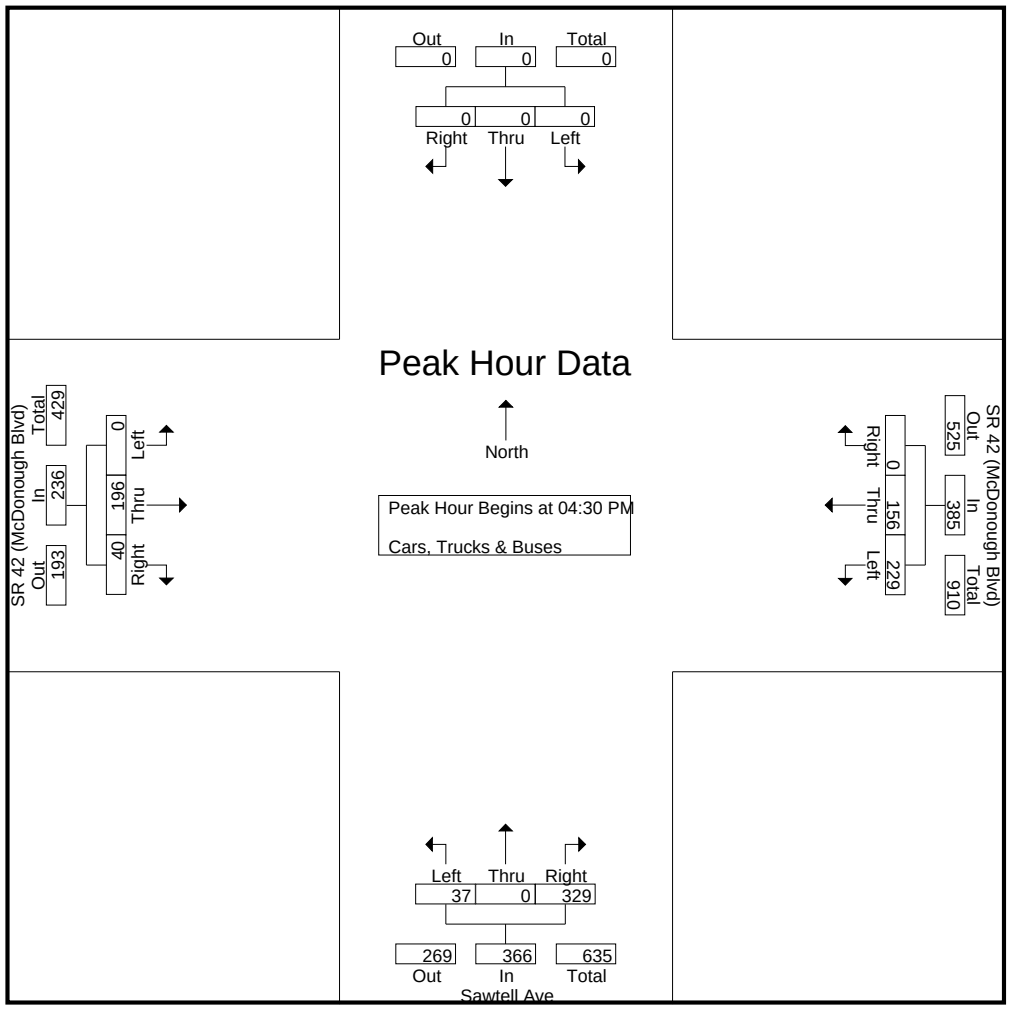
	Sawtell Ave Northbound				Southbound				SR 42 (McDonough Blvd) Eastbound				SR 42 (McDonough Blvd) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	6	0	90	96	0	0	0	0	0	48	**17**	**65**	59	**51**	0	**110**	**271**
04:45 PM	**11**	0	69	80	0	0	0	0	0	48	7	55	50	31	0	81	216
05:00 PM	9	0	**91**	**100**	0	0	0	0	0	41	11	52	57	40	0	97	249
05:15 PM	11	0	79	90	0	0	0	0	0	**59**	5	64	**63**	34	0	97	251
Total Volume	37	0	329	366	0	0	0	0	0	196	40	236	229	156	0	385	987
% App. Total	10.1	0	89.9		0	0	0		0	83.1	16.9		59.5	40.5	0		
PHF	.841	.000	.904	.915	.000	.000	.000	.000	.000	.831	.588	.908	.909	.765	.000	.875	.911



GRTA Letter of Understanding

REVISED LETTER OF UNDERSTANDING

November 5, 2020

Kevin Norton, Empire Communities
5775 Glenridge Drive
Building D, Suite 350
Atlanta, GA 30328

RE: **DRI #TBD Choosewood Park DRI**

Dear Mr. Norton:

The purpose of this letter is to inform you of the GRTA staff recommendation regarding your request for expedited review of DRI #TBD Choosewood Park Development of Regional Impact (DRI). Based on the information presented during the Pre-Review Meeting held virtually on September 28, 2020 and the post-methodology meeting packet received from A&R Engineering on October 9, 2020, the DRI will be approved for expedited review under the DRI Procedures and Principles for GRTA Development of Regional Impact Review Section 3-102.F., Livable Centers Initiative. A Trip Generation and Access Analysis are required as part of the review under these criteria. Some of the following items were discussed in the meeting and should assist you and your team in preparing the DRI Review Package. Additional information may be requested for submittal in conjunction with DRI Review Package. Please see the notes below for this basic information.

Project Overview

- This proposed project is located in the City of Atlanta, south of Englewood Drive, west of Boulevard SE, north of Cassanova Street and east of Gault Street.
- The proposed development consists of approximately 1,180 multi-family units and 20,000 SF of retail.
- The development site plan proposes one full access driveway on Englewood Avenue, two full access driveways on Boulevard SE, and two full access driveways on Casanova Street.
- Trip generation is estimated at 9,605 gross daily trips based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition, 2017.*
- The project will be built in one phase, to be completed by 2024.

Methodology for Analysis

- All intersections identified as within the study network shall be analyzed during the AM and PM peak period for (1) existing conditions, (2) future “no-build” conditions and (3) future “build” conditions. This DRI shall be reviewed in one phase completed by 2024.
- A 3.75% annual background traffic rate shall be used for all roadways on or north of Engelwood Avenue and a 2% annual background traffic rate shall be used for all roadways south of Englewood Avenue.
- During the COVID19 response, capacity analysis shall be based on turning movement counts approved by the local government and Georgia Department of Transportation. All counts, if older than a year old, shall be grown by the background growth traffic rate annually unless otherwise specified.
- The Level of Service (LOS) standard for all analysis shall be LOS D unless the existing LOS if F in which the LOS standard shall be LOS E. A LOS E is allowable for Boulevard SE given the planned road diet project will reduce the existing roadway’s capacity.

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

- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis. This information shall also be included in the site plan analysis. Programmed projects to be included in the analysis include the road diet project for Boulevard SE which shall be included as completed by the build out year in the transportation analysis.

STUDY NETWORK

1. Boulevard SE at Atlanta Avenue
2. Boulevard SE at Englewood Avenue
3. Boulevard SE at Custer Avenue
4. Boulevard SE at Cassanova Street
5. Boulevard SE at McDonough Boulevard
6. Englewood Avenue at Hill Street SE
7. Grant Street at Englewood Avenue
8. Gault Street at Cassanova Street
9. Cassanova Street at Park Avenue
10. Custer Avenue at Moreland Avenue
11. McDonough Boulevard at Sawtell Avenue

Note: The specific study network intersections shall incorporate changes to the final site unless approved otherwise.

TRAFFIC COUNTS

The following traffic count data and approaches shall be used for study network intersections, as follows:

The following study network intersections shall use data from the City of Atlanta's 2019 Boulevard SE Concept Study, grown at the approved background growth rate to the existing condition and future conditions:

1. Boulevard SE at Atlanta Avenue
2. Boulevard SE at Englewood Avenue
3. Boulevard SE at Custer Avenue
4. Boulevard SE at Cassanova Street
5. Boulevard SE at McDonough Boulevard

The following study network intersections shall base traffic counts on current day turning movement counts grown by percentage increases. The percentage increase shall be based on the following control counts that extrapolate current reduced traffic rates during COVID to historic count data that is grown with a background growth rate.

Intersections near Boulevard at Englewood control count (Grow 115% in the AM peak, 5% in the PM peak):
6. Englewood Avenue at Hill Street SE

Intersections near Englewood Avenue control count (Grow 54% in the AM peak, 21% in the PM peak):
7. Grant Street at Englewood Avenue

Intersections near Custer Avenue control count (Grow 11% in the AM peak, 14% in the PM peak):

8. Gault Street at Cassanova Street
9. Cassanova Street at Park Avenue

Intersections near Boulevard at McDonough control count (Grow 130% in the AM peak, 41% in the PM peak):

10. Custer Avenue at Moreland Avenue
11. McDonough Boulevard at Sawtell Avenue

ADDITIONAL INFORMATION

Every roadway segment and intersection listed above will be analyzed for "required improvements." If the existing LOS for the segment or intersection is below the applicable level of service for a particular time period (e.g., A.M. peak period, P.M. peak period, etc.), then the measured LOS service for that segment and time periods is the standard by which the "base" and "future" traffic conditions will be designed. For example, if the City's LOS standard is LOS D, but an intersection or segment currently operates at LOS E for a certain peak period, then the LOS standard for that intersection or segment for "base" and "future" conditions becomes LOS E (only for that intersection and only for that peak period). The "base" is the phase year traffic without the development traffic (also called future "no-build" conditions) and the "future" is the phase year with the development traffic (also called future "build" conditions). As required in the technical guidelines, specific "required improvements" will be identified to bring the "base" LOS and "future" LOS for every roadway segment and intersection up to the applicable LOS standard. If the existing LOS for the segment or intersection is LOS F, then the future "no-build' and future "build" LOS standard will be LOS E. The improvements required to achieve the desired LOS standard will be provided in a table and graphic within the study. The traffic study should indicate the existing roadway laneage at each studied intersection as well as the laneage required (to meet the LOS standard) for future "no-build" and future "build" conditions. The improvements may include both programmed improvements and improvements identified in the study.

The planned and programmed improvement should indicate the project sponsor, the anticipated funding by source (federal, state, city/county, developer, CID, etc.), the year open-to-traffic, and estimate of the total project cost. All other required improvements identified in the study should, to the extent known, identify the cost, sponsor, funding, and timing. If any of these elements are not known, please state as "unknown."

The future "no-build" and the future "build" analyses should NOT automatically include/assume the additional lanes/capacity associated with planned and programmed improvement projects unless those roadway projects are currently under construction. Instead, the traffic consultant should recommend the additional laneage required to satisfy the level of service standard.

DRI REVIEW PACKAGE CHECKLIST

Please use the DRI Review Package Checklist to help you prepare your GRTA DRI Review Package for expedited review of your application. The Checklist reflects the understandings set forth in this letter, and is incorporated into this letter by reference.

The site plan shall be prepared in accordance with Section 4-104 of the DRI Review Package Technical Guidelines and it shall be dated, and shall be at a scale of 1"= 200' or larger (showing more detail). The site plan shall be consistent with GRTA's Site Plan Information Guidelines, which represents the minimum required information on site plans.

The applicant shall indicate on the site plans all adjacent land uses, current zoning, and future land use as indicated on the future land use map. Additionally, all existing and proposed sidewalks, existing and proposed pedestrian trails, and existing and proposed roadway laneage should be indicated on the site plan.

DRI REVIEW PACKAGE SUBMITTAL

At the time you are ready to submit your DRI Review Package to GRTA, please note the following:

- Provide one (1) paper copy of all materials – of the Transportation analysis and of the Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
  - Provide a PDF of each document
  - Provide the native format for each document
    - .dwg is the preferred CAD format (AutoCAD)

- .doc is the preferred word processing format (Word)
- .xls is the preferred spreadsheet format (Excel)
- .sy8, .sy9, sy10 are the preferred capacity analysis format (Synchro)

As part of the completeness certification process, please have your consultant forward one copy of the completed GRTA DRI Review Package (traffic analysis, site plan, CD) to the GDOT District Office, Regional Commission and local government Planning & Development and Transportation group (contact information provided below). GRTA shall be copied on each of the transmittal letters. During the COVID19 response, please submit the information above to all stakeholders electronically. In addition, physically mail the information above to those listed below whenever you feel comfortable going to a mailing facility.

Expedited Review Recommendation

Once the DRI Review Package, along with the DCA Additional Information Form, has been submitted and determined complete, GRTA staff will make a recommendation regarding your request for expedited review under Section 2-202.B of the *Procedures and Principles for GRTA Development of Regional Impact Review*.

DRI Review Package should be copied to the following in addition to GRTA:

GRTA	ATLANTA REGIONAL COMMISSION	CITY OF ATLANTA	CITY OF ATLANTA	GDOT DISTRICT 7
Andrew Spiliotis 245 Peachtree Center Ave. Suite 2200 Atlanta, GA 30303	Greg Giuffrida International Tower 229 Peachtree St. NE Suite 100 Atlanta, GA 30303	Monique Forte 55 Trinity Ave. SW Atlanta, GA 30303	Mark Tai 55 Trinity Ave. SW Atlanta, GA 30303	Justin Hatch 5025 New Peachtree Road. NE Chamblee, GA 30341

If you have any questions, please feel free to contact me (404) 893-6171 or by email at aspiliotis@srta.ga.gov.

Sincerely,

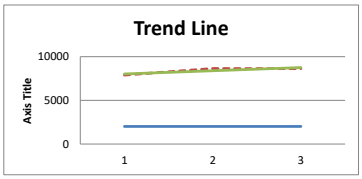
Andrew Spiliotis, Transportation Planner
GRTA

cc:
Jon West, DCA
Andrew Smith, ARC
Greg Giuffrida, ARC
Marquitrice Mangum, ARC
Aries Little, ARC
Annie Gillespie, GRTA
Parker Martin, GRTA
Greg Floyd, MARTA
Charles Rosa, MARTA
Corentin Auguin, MARTA
Paul DeNard, GDOT
Justin Hatch, GDOT
Josh Montefusco, GDOT
Megan Wilson, GDOT
Daniel Parker, GDOT
Monique Forte, City of Atlanta
Lenise Lyons, City of Atlanta
Nathaniel Hoelzel, City of Atlanta
Betty Smoot Madison, City of Atlanta
Nursef Kedir, City of Atlanta
Mark Tai, City of Atlanta
Desmond Cole, City of Atlanta
Nathan Brown, City of Atlanta
Shaun Green, Atlanta Beltline
Lynette Reid, Atlanta Beltline
Abdul Amer, A&R Engineering
Naila Amer, A&R Engineering
Morgan Walraven, A&R Engineering
Kevin Norton, Empire Communities

Linear Regression of Daily Traffic

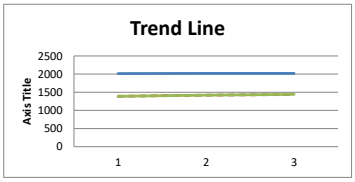
Location	Growth Rate	R Squared	Station ID	Route	2016	2017	2018
Boulevard SE (North of Englewo	4.4%	0.74	121-5588	52003	7,900	8,640	8,630
Englewood Ave (East of Mailing	1.8%	0.99	121-6190	145303	1,390	1,420	1,440
Boulevard SE (North of Berne St	0.0%		121-5589	5203	18,500	18,500	18,500
Atlanta Ave SE (East of Cheroke	-0.3%	0.08	121-6234	222603	3,350	3,280	3,330
Hill St (South of Farrington Ave)	8.7%	0.83	121-6186	354103	2,100	2,450	2,490
Weighted Average	**1.7%**	0.81	Sum of Count Stations =		33,240	34,290	34,390

Location	Traffic Counter	RCLINK	2016	2017	2018
Boulevard SE (North of Englewood Ave)	121-5588	52003	7,900	8,640	8,630



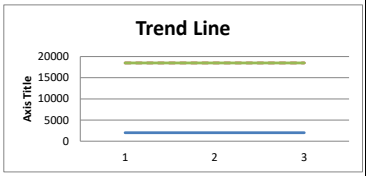
Growth Rate	4.4%	Intercept	-727,815	Slope	365.00
Trend Line			8,025	8,390	8,755

Location	Traffic Counter	RCLINK	2016	2017	2018
Englewood Ave (East of Mailing Avenue SE)	121-6190	145303	1,390	1,420	1,440



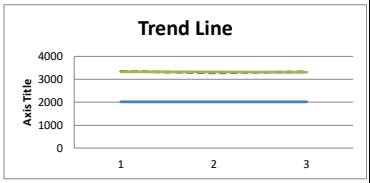
Growth Rate	1.8%	Intercept	-49,008	Slope	25.00
Trend Line			1,392	1,417	1,442

Location	Traffic Counter	RCLINK	2016	2017	2018
Boulevard SE (North of Berne St SE)	121-5589	5203	18,500	18,500	18,500



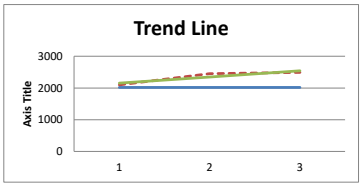
Growth Rate	0.0%	Intercept	18,500	Slope	0.00
Trend Line			18,500	18,500	18,500

Location	Traffic Counter	RCLINK	2016	2017	2018
Atlanta Ave SE (East of Cherokee Ave SE)	121-6234	222603	3,350	3,280	3,330



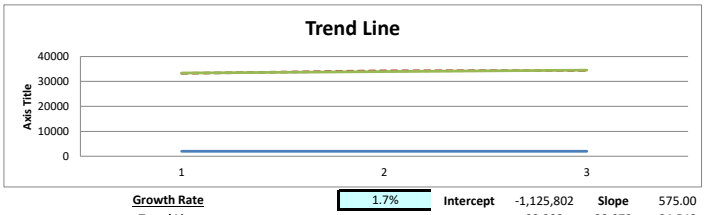
Growth Rate	-0.3%	Intercept	23,490	Slope	-10.00
Trend Line			3,330	3,320	3,310

Location	Traffic Counter	RCLINK	2016	2017	2018
Hill St (South of Farrington Ave)	121-6186	354103	2,100	2,450	2,490



Growth Rate	8.7%	Intercept	-390,968	Slope	195.00
Trend Line			2,152	2,347	2,542

Weighted Average	2016	2017	2018
Sum of Count Stations	33,240	34,290	34,390



Growth Rate	1.7%	Intercept	-1,125,802	Slope	575.00
Trend Line			33,398	33,973	34,548

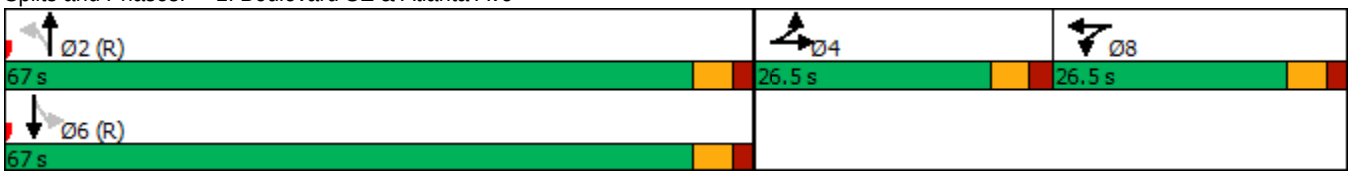
Existing Intersection Analysis

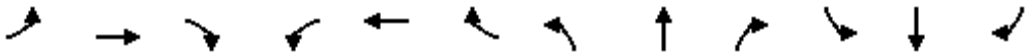
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	105	130	464	6	207
Future Volume (vph)	56	105	130	464	6	207
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	26.5	26.5	67.0	67.0	67.0	67.0
Total Split (%)	22.1%	22.1%	55.8%	55.8%	55.8%	55.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 102 (85%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 1: Boulevard SE & Atlanta Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	56	20	5	105	12	130	464	3	6	207	164
Future Volume (veh/h)	75	56	20	5	105	12	130	464	3	6	207	164
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	0.90	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	84	63	22	6	118	13	146	521	3	7	233	184
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	75	26	7	147	16	221	737	4	46	1231	917
Arrive On Green	0.11	0.11	0.11	0.09	0.09	0.09	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	887	665	232	80	1581	174	281	1122	6	23	1875	1396
Grp Volume(v), veh/h	169	0	0	137	0	0	670	0	0	233	0	191
Grp Sat Flow(s),veh/h/ln	1784	0	0	1835	0	0	1409	0	0	1844	0	1451
Q Serve(g_s), s	11.1	0.0	0.0	8.8	0.0	0.0	30.5	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s	11.1	0.0	0.0	8.8	0.0	0.0	36.7	0.0	0.0	5.9	0.0	6.3
Prop In Lane	0.50		0.13	0.04		0.09	0.22		0.00	0.03		0.96
Lane Grp Cap(c), veh/h	202	0	0	170	0	0	962	0	0	1242	0	953
V/C Ratio(X)	0.84	0.00	0.00	0.81	0.00	0.00	0.70	0.00	0.00	0.19	0.00	0.20
Avail Cap(c_a), veh/h	312	0	0	321	0	0	962	0	0	1242	0	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	0.0	53.4	0.0	0.0	13.2	0.0	0.0	8.1	0.0	8.1
Incr Delay (d2), s/veh	11.2	0.0	0.0	8.6	0.0	0.0	4.2	0.0	0.0	0.3	0.0	0.5
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	5.6	0.0	0.0	4.5	0.0	0.0	12.2	0.0	0.0	2.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	0.0	0.0	62.0	0.0	0.0	17.4	0.0	0.0	8.4	0.0	8.6
LnGrp LOS	E	A	A	E	A	A	B	A	A	A	A	A
Approach Vol, veh/h		169			137			670			424	
Approach Delay, s/veh		63.3			62.0			17.4			8.5	
Approach LOS		E			E			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.3		19.1		84.3		16.6				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		61.5		21.0		61.5		21.0				
Max Q Clear Time (g_c+I1), s		38.7		13.1		8.3		10.8				
Green Ext Time (p_c), s		9.6		0.5		6.3		0.5				

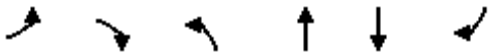
Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	45	38	98	672	225
Future Volume (vph)	45	38	98	672	225
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	31.0	31.0	89.0	89.0	89.0
Total Split (%)	25.8%	25.8%	74.2%	74.2%	74.2%
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
Total Lost Time (s)	5.5	5.5		5.5	5.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	38	98	672	225	50
Future Volume (veh/h)	45	38	98	672	225	50
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	46	39	101	693	232	52
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	84	75	365	2445	2494	548
Arrive On Green	0.05	0.05	1.00	1.00	0.86	0.86
Sat Flow, veh/h	1781	1585	380	2923	2989	637
Grp Volume(v), veh/h	46	39	397	397	141	143
Grp Sat Flow(s),veh/h/ln	1781	1585	1601	1617	1777	1756
Q Serve(g_s), s	3.0	2.9	0.0	0.0	1.4	1.5
Cycle Q Clear(g_c), s	3.0	2.9	0.0	0.0	1.4	1.5
Prop In Lane	1.00	1.00	0.25			0.36
Lane Grp Cap(c), veh/h	84	75	1417	1393	1530	1512
V/C Ratio(X)	0.55	0.52	0.28	0.28	0.09	0.09
Avail Cap(c_a), veh/h	379	337	1417	1393	1530	1512
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	55.9	0.0	0.0	1.3	1.3
Incr Delay (d2), s/veh	5.5	5.6	0.5	0.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	0.2	0.2	0.4	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	61.4	61.4	0.5	0.5	1.4	1.4
LnGrp LOS	E	E	A	A	A	A
Approach Vol, veh/h	85			794	284	
Approach Delay, s/veh	61.4			0.5	1.4	
Approach LOS	E			A	A	

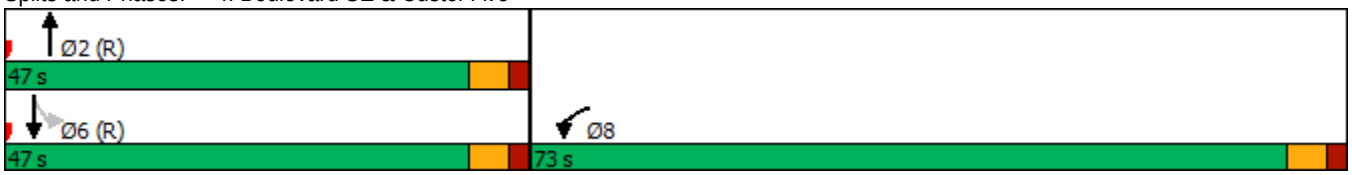
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		108.9		11.1		108.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		83.5		25.5		83.5
Max Q Clear Time (g_c+I1), s		2.0		5.0		3.5
Green Ext Time (p_c), s		14.6		0.2		3.9

Intersection Summary	
HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	182	309	55	186
Future Volume (vph)	182	309	55	186
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5
Total Split (s)	73.0	47.0	47.0	47.0
Total Split (%)	60.8%	39.2%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5		5.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 29 (24%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 4: Boulevard SE & Custer Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	182	214	309	140	55	186
Future Volume (veh/h)	182	214	309	140	55	186
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	202	238	343	156	61	207
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	219	258	1487	664	372	1403
Arrive On Green	0.29	0.29	0.62	0.62	0.21	0.21
Sat Flow, veh/h	765	901	2482	1067	526	2339
Grp Volume(v), veh/h	441	0	254	245	129	139
Grp Sat Flow(s),veh/h/ln	1670	0	1777	1678	1163	1617
Q Serve(g_s), s	30.8	0.0	7.5	7.8	7.1	8.5
Cycle Q Clear(g_c), s	30.8	0.0	7.5	7.8	14.8	8.5
Prop In Lane	0.46	0.54		0.64	0.47	
Lane Grp Cap(c), veh/h	477	0	1106	1045	768	1007
V/C Ratio(X)	0.92	0.00	0.23	0.23	0.17	0.14
Avail Cap(c_a), veh/h	939	0	1106	1045	768	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	10.0	10.0	24.4	21.4
Incr Delay (d2), s/veh	8.0	0.0	0.5	0.5	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	0.0	3.1	3.0	3.6	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.6	0.0	10.5	10.5	24.9	21.6
LnGrp LOS	D	A	B	B	C	C
Approach Vol, veh/h	441		499			268
Approach Delay, s/veh	49.6		10.5			23.2
Approach LOS	D		B			C

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		80.2			80.2	39.8
Change Period (Y+Rc), s		5.5			5.5	5.5
Max Green Setting (Gmax), s		41.5			41.5	67.5
Max Q Clear Time (g_c+I1), s		9.8			16.8	32.8
Green Ext Time (p_c), s		6.7			3.2	1.5

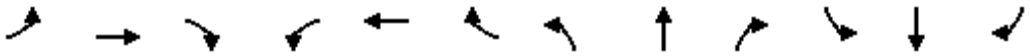
Intersection Summary		
HCM 6th Ctrl Delay	27.6	
HCM 6th LOS	C	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	257	161	8	503	8	2	77	7	320
Future Volume (vph)	257	161	8	503	8	2	77	7	320
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		6		8		4	
Permitted Phases	2		6		8		4		4
Detector Phase	5	2	6	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5	23.5
Total Split (s)	21.0	88.0	67.0	67.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	17.5%	73.3%	55.8%	55.8%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0		0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5		5.5	5.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 92 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	161	15	8	503	72	8	2	5	77	7	320
Future Volume (veh/h)	257	161	15	8	503	72	8	2	5	77	7	320
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	268	168	16	8	524	75	8	2	5	80	7	333
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	1156	110	35	893	127	161	46	80	347	28	350
Arrive On Green	0.08	0.69	0.69	0.56	0.56	0.56	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	1681	160	8	1591	226	520	208	364	1312	127	1585
Grp Volume(v), veh/h	268	0	184	607	0	0	15	0	0	87	0	333
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1825	0	0	1091	0	0	1439	0	1585
Q Serve(g_s), s	7.3	0.0	4.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	24.9
Cycle Q Clear(g_c), s	7.3	0.0	4.2	26.1	0.0	0.0	6.0	0.0	0.0	6.0	0.0	24.9
Prop In Lane	1.00		0.09	0.01		0.12	0.53		0.33	0.92		1.00
Lane Grp Cap(c), veh/h	543	0	1266	1054	0	0	287	0	0	375	0	350
V/C Ratio(X)	0.49	0.00	0.15	0.58	0.00	0.00	0.05	0.00	0.00	0.23	0.00	0.95
Avail Cap(c_a), veh/h	630	0	1266	1054	0	0	287	0	0	375	0	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	0.0	6.5	17.3	0.0	0.0	36.8	0.0	0.0	38.7	0.0	46.1
Incr Delay (d2), s/veh	0.7	0.0	0.2	2.3	0.0	0.0	0.1	0.0	0.0	0.3	0.0	35.5
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	2.7	0.0	1.6	11.1	0.0	0.0	0.4	0.0	0.0	2.2	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	6.8	19.6	0.0	0.0	36.9	0.0	0.0	39.1	0.0	81.6
LnGrp LOS	A	A	A	B	A	A	D	A	A	D	A	F
Approach Vol, veh/h		452			607			15			420	
Approach Delay, s/veh		8.2			19.6			36.9			72.8	
Approach LOS		A			B			D			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		88.0		32.0	15.2	72.8		32.0				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		82.5		26.5	15.5	61.5		26.5				
Max Q Clear Time (g_c+I1), s		6.2		26.9	9.3	28.1		8.0				
Green Ext Time (p_c), s		2.3		0.0	0.4	9.0		0.0				

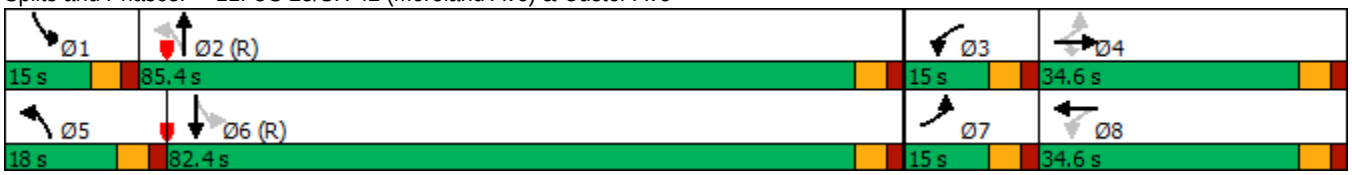
Intersection Summary												
HCM 6th Ctrl Delay			31.3									
HCM 6th LOS			C									

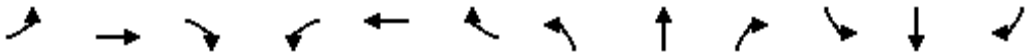
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	75	33	28	51	69	115	1548	53	1035
Future Volume (vph)	75	33	28	51	69	115	1548	53	1035
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	15.0	34.6	34.6	15.0	34.6	18.0	85.4	15.0	82.4
Total Split (%)	10.0%	23.1%	23.1%	10.0%	23.1%	12.0%	56.9%	10.0%	54.9%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	33	28	51	69	30	115	1548	113	53	1035	83
Future Volume (veh/h)	75	33	28	51	69	30	115	1548	113	53	1035	83
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	81	35	30	55	74	0	124	1665	122	57	1113	89
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	131	111	186	101		371	2402	174	216	2373	190
Arrive On Green	0.05	0.07	0.07	0.04	0.05	0.00	0.03	0.71	0.71	0.03	0.71	0.71
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	3359	244	1781	3333	266
Grp Volume(v), veh/h	81	35	30	55	74	0	124	874	913	57	593	609
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1826	1781	1777	1822
Q Serve(g_s), s	6.4	2.7	2.7	4.3	5.8	0.0	2.9	41.4	42.8	1.3	21.6	21.7
Cycle Q Clear(g_c), s	6.4	2.7	2.7	4.3	5.8	0.0	2.9	41.4	42.8	1.3	21.6	21.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.13	1.00		0.15
Lane Grp Cap(c), veh/h	164	131	111	186	101		371	1270	1306	216	1265	1297
V/C Ratio(X)	0.49	0.27	0.27	0.30	0.73		0.33	0.69	0.70	0.26	0.47	0.47
Avail Cap(c_a), veh/h	181	363	307	231	363		460	1270	1306	275	1265	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	66.1	66.1	63.8	69.9	0.0	7.4	12.0	12.2	12.7	9.3	9.3
Incr Delay (d2), s/veh	2.3	1.1	1.3	0.9	9.7	0.0	0.5	3.1	3.1	0.6	1.2	1.2
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	1.3	1.1	2.0	3.1	0.0	1.0	15.4	16.3	0.6	8.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	67.2	67.4	64.6	79.5	0.0	7.9	15.0	15.3	13.4	10.6	10.6
LnGrp LOS	E	E	E	E	E		A	B	B	B	B	B
Approach Vol, veh/h		146			129	A		1911			1259	
Approach Delay, s/veh		66.0			73.2			14.7			10.7	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	112.7	11.2	16.0	10.5	112.3	13.6	13.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	79.9	9.5	29.1	12.5	76.9	9.5	29.1
Max Q Clear Time (g_c+I1), s	3.3	44.8	6.3	4.7	4.9	23.7	8.4	7.8
Green Ext Time (p_c), s	0.0	28.5	0.0	0.2	0.2	21.9	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

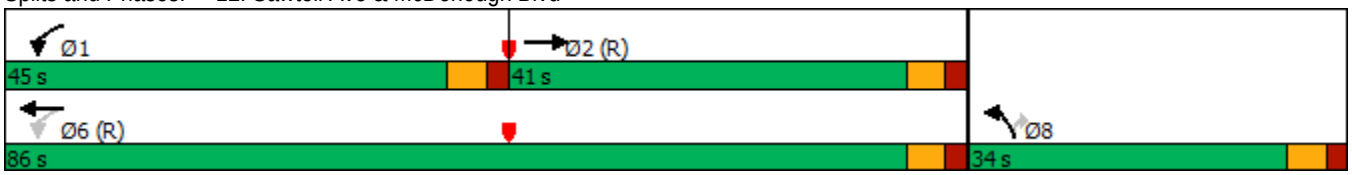
Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	115	308	322	39	120
Future Volume (vph)	115	308	322	39	120
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	41.0	45.0	86.0	34.0	34.0
Total Split (%)	34.2%	37.5%	71.7%	28.3%	28.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 59 (49%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	115	41	308	322	39	120
Future Volume (veh/h)	115	41	308	322	39	120
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	140	50	376	393	48	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	991	354	1047	1624	71	
Arrive On Green	0.75	0.75	0.07	0.87	0.04	0.00
Sat Flow, veh/h	1316	470	1781	1870	1781	1585
Grp Volume(v), veh/h	0	190	376	393	48	0
Grp Sat Flow(s),veh/h/ln	0	1786	1781	1870	1781	1585
Q Serve(g_s), s	0.0	3.5	5.2	4.2	3.2	0.0
Cycle Q Clear(g_c), s	0.0	3.5	5.2	4.2	3.2	0.0
Prop In Lane		0.26	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1345	1047	1624	71	
V/C Ratio(X)	0.00	0.14	0.36	0.24	0.68	
Avail Cap(c_a), veh/h	0	1345	1510	1624	423	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.1	2.2	1.3	56.8	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.4	10.6	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	0.0	1.2	1.1	0.8	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.3	2.4	1.7	67.4	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	190			769	48	A
Approach Delay, s/veh	4.3			2.0	67.4	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.8	95.9				109.7	10.3
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	39.5	35.5				80.5	28.5
Max Q Clear Time (g_c+I1), s	7.2	5.5				6.2	5.2
Green Ext Time (p_c), s	1.2	2.1				5.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

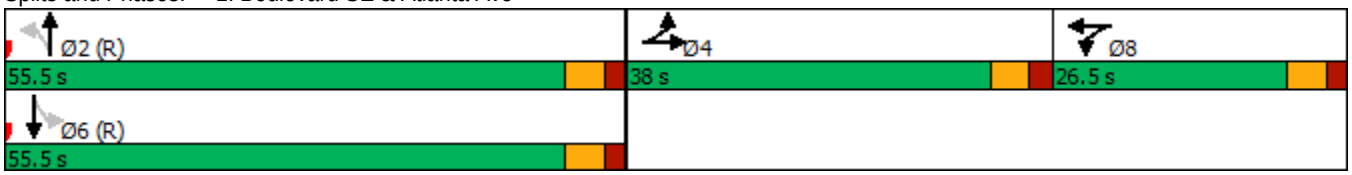
Notes

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

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	78	31	25	334	6	414
Future Volume (vph)	78	31	25	334	6	414
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	38.0	26.5	55.5	55.5	55.5	55.5
Total Split (%)	31.7%	22.1%	46.3%	46.3%	46.3%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0		0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 29 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Boulevard SE & Atlanta Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	78	66	2	31	3	25	334	7	6	414	109
Future Volume (veh/h)	134	78	66	2	31	3	25	334	7	6	414	109
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	0.90	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	141	82	69	2	33	3	26	352	7	6	436	115
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	93	78	3	57	5	76	954	18	38	1733	449
Arrive On Green	0.19	0.19	0.19	0.04	0.04	0.04	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	847	492	414	97	1597	145	70	1497	29	11	2720	705
Grp Volume(v), veh/h	292	0	0	38	0	0	385	0	0	300	0	257
Grp Sat Flow(s),veh/h/ln	1753	0	0	1839	0	0	1596	0	0	1861	0	1575
Q Serve(g_s), s	19.4	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5
Cycle Q Clear(g_c), s	19.4	0.0	0.0	2.4	0.0	0.0	13.0	0.0	0.0	8.3	0.0	8.5
Prop In Lane	0.48		0.24	0.05		0.08	0.07		0.02	0.02		0.45
Lane Grp Cap(c), veh/h	332	0	0	66	0	0	1049	0	0	1216	0	1004
V/C Ratio(X)	0.88	0.00	0.00	0.58	0.00	0.00	0.37	0.00	0.00	0.25	0.00	0.26
Avail Cap(c_a), veh/h	475	0	0	322	0	0	1049	0	0	1216	0	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	0.0	56.9	0.0	0.0	10.2	0.0	0.0	9.4	0.0	9.4
Incr Delay (d2), s/veh	12.7	0.0	0.0	7.7	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.6
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	9.6	0.0	0.0	1.3	0.0	0.0	5.0	0.0	0.0	3.5	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	0.0	0.0	64.6	0.0	0.0	11.2	0.0	0.0	9.9	0.0	10.1
LnGrp LOS	E	A	A	E	A	A	B	A	A	A	A	B
Approach Vol, veh/h		292			38			385			557	
Approach Delay, s/veh		60.0			64.6			11.2			10.0	
Approach LOS		E			E			B			A	

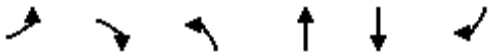
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		28.2		82.0		9.8				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		50.0		32.5		50.0		21.0				
Max Q Clear Time (g_c+I1), s		15.0		21.4		10.5		4.4				
Green Ext Time (p_c), s		5.5		1.3		8.1		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	36	89	39	269	452
Future Volume (vph)	36	89	39	269	452
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	45.0	45.0	75.0	75.0	75.0
Total Split (%)	37.5%	37.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	89	39	269	452	42
Future Volume (veh/h)	36	89	39	269	452	42
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	40	98	43	296	497	46
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	142	127	322	2272	2725	251
Arrive On Green	0.08	0.08	1.00	1.00	0.83	0.83
Sat Flow, veh/h	1781	1585	344	2828	3383	303
Grp Volume(v), veh/h	40	98	170	169	268	275
Grp Sat Flow(s),veh/h/ln	1781	1585	1469	1617	1777	1816
Q Serve(g_s), s	2.5	7.3	0.0	0.0	3.7	3.7
Cycle Q Clear(g_c), s	2.5	7.3	0.0	0.0	3.7	3.7
Prop In Lane	1.00	1.00	0.25			0.17
Lane Grp Cap(c), veh/h	142	127	1255	1339	1472	1504
V/C Ratio(X)	0.28	0.77	0.14	0.13	0.18	0.18
Avail Cap(c_a), veh/h	586	522	1255	1339	1472	1504
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	54.1	0.0	0.0	2.1	2.1
Incr Delay (d2), s/veh	1.1	9.6	0.2	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.3	0.1	0.1	1.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.0	63.7	0.2	0.2	2.4	2.4
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	138			339	543	
Approach Delay, s/veh	60.6			0.2	2.4	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		104.9		15.1		104.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		69.5		39.5		69.5
Max Q Clear Time (g_c+I1), s		2.0		9.3		5.7
Green Ext Time (p_c), s		5.0		0.4		8.3

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	139	222	122	332
Future Volume (vph)	139	222	122	332
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5
Total Split (s)	50.0	70.0	70.0	70.0
Total Split (%)	41.7%	58.3%	58.3%	58.3%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.5	5.5		5.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 33 (28%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 4: Boulevard SE & Custer Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	139	75	222	254	122	332
Future Volume (veh/h)	139	75	222	254	122	332
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	149	81	239	273	131	357
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	170	93	1339	1195	527	1545
Arrive On Green	0.15	0.15	0.75	0.75	1.00	1.00
Sat Flow, veh/h	1101	599	1870	1585	635	2135
Grp Volume(v), veh/h	231	0	239	273	215	273
Grp Sat Flow(s),veh/h/ln	1708	0	1777	1585	1068	1617
Q Serve(g_s), s	15.9	0.0	4.6	6.1	1.7	0.0
Cycle Q Clear(g_c), s	15.9	0.0	4.6	6.1	7.8	0.0
Prop In Lane	0.65	0.35		1.00	0.61	
Lane Grp Cap(c), veh/h	264	0	1339	1195	853	1219
V/C Ratio(X)	0.88	0.00	0.18	0.23	0.25	0.22
Avail Cap(c_a), veh/h	633	0	1339	1195	853	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	0.0	4.2	4.4	0.2	0.0
Incr Delay (d2), s/veh	8.9	0.0	0.3	0.4	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	1.6	2.0	0.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.5	0.0	4.5	4.8	0.9	0.4
LnGrp LOS	E	A	A	A	A	A
Approach Vol, veh/h	231		512			488
Approach Delay, s/veh	58.5		4.7			0.6
Approach LOS	E		A			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		96.0			96.0	24.0
Change Period (Y+Rc), s		5.5			5.5	5.5
Max Green Setting (Gmax), s		64.5			64.5	44.5
Max Q Clear Time (g_c+I1), s		8.1			9.8	17.9
Green Ext Time (p_c), s		8.0			8.0	0.7

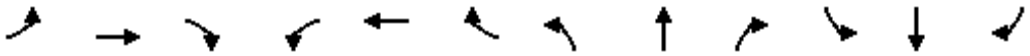
Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	366	470	1	183	4	4	233	1	220
Future Volume (vph)	366	470	1	183	4	4	233	1	220
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		6		8		4	
Permitted Phases	2		6		8		4		4
Detector Phase	5	2	6	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5	23.5
Total Split (s)	34.0	76.0	42.0	42.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	28.3%	63.3%	35.0%	35.0%	36.7%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0		0.0		0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5		5.5	5.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	470	0	1	183	92	4	4	6	233	1	220
Future Volume (veh/h)	366	470	0	1	183	92	4	4	6	233	1	220
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	0	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	377	485	0	1	189	95	4	4	6	240	1	227
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	0	2	2	2	2	2	2	2	2	2
Cap, veh/h	681	1099	0	30	468	234	39	41	31	236	1	509
Arrive On Green	0.14	0.59	0.00	0.40	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	1870	0	1	1175	588	0	129	96	549	2	1585
Grp Volume(v), veh/h	377	485	0	285	0	0	14	0	0	241	0	227
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1764	0	0	225	0	0	551	0	1585
Q Serve(g_s), s	14.2	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6
Cycle Q Clear(g_c), s	14.2	17.3	0.0	13.9	0.0	0.0	38.5	0.0	0.0	38.5	0.0	13.6
Prop In Lane	1.00		0.00	0.00		0.33	0.29		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	681	1099	0	733	0	0	111	0	0	237	0	509
V/C Ratio(X)	0.55	0.44	0.00	0.39	0.00	0.00	0.13	0.00	0.00	1.02	0.00	0.45
Avail Cap(c_a), veh/h	849	1099	0	733	0	0	111	0	0	237	0	509
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	13.8	0.0	25.9	0.0	0.0	32.6	0.0	0.0	45.6	0.0	32.3
Incr Delay (d2), s/veh	0.7	1.3	0.0	1.6	0.0	0.0	0.5	0.0	0.0	63.3	0.0	0.6
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	5.7	7.4	0.0	6.1	0.0	0.0	0.3	0.0	0.0	11.4	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	15.1	0.0	27.4	0.0	0.0	33.1	0.0	0.0	108.9	0.0	32.9
LnGrp LOS	B	B	A	C	A	A	C	A	A	F	A	C
Approach Vol, veh/h		862			285			14			468	
Approach Delay, s/veh		15.3			27.4			33.1			72.1	
Approach LOS		B			C			C			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		76.0		44.0	22.7	53.3		44.0				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		70.5		38.5	28.5	36.5		38.5				
Max Q Clear Time (g_c+I1), s		19.3		40.5	16.2	15.9		40.5				
Green Ext Time (p_c), s		7.1		0.0	0.9	3.0		0.0				

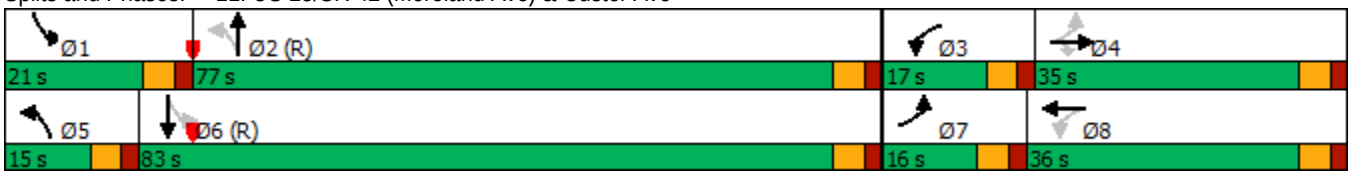
Intersection Summary												
HCM 6th Ctrl Delay			33.9									
HCM 6th LOS			C									

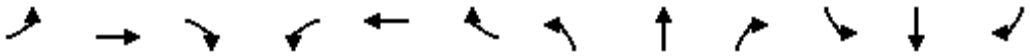
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	152	149	76	184	105	72	1118	154	1334
Future Volume (vph)	152	149	76	184	105	72	1118	154	1334
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	16.0	35.0	35.0	17.0	36.0	15.0	77.0	21.0	83.0
Total Split (%)	10.7%	23.3%	23.3%	11.3%	24.0%	10.0%	51.3%	14.0%	55.3%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	149	76	184	105	111	72	1118	216	154	1334	154
Future Volume (veh/h)	152	149	76	184	105	111	72	1118	216	154	1334	154
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	158	155	79	192	109	0	75	1165	225	160	1390	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	188	159	207	200		228	1871	359	282	2071	237
Arrive On Green	0.07	0.10	0.10	0.08	0.11	0.00	0.03	0.63	0.63	0.05	0.64	0.64
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	2974	571	1781	3214	367
Grp Volume(v), veh/h	158	155	79	192	109	0	75	693	697	160	764	786
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1768	1781	1777	1804
Q Serve(g_s), s	10.5	12.2	7.1	11.5	8.3	0.0	2.2	35.6	36.2	4.8	40.3	41.2
Cycle Q Clear(g_c), s	10.5	12.2	7.1	11.5	8.3	0.0	2.2	35.6	36.2	4.8	40.3	41.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.32	1.00		0.20
Lane Grp Cap(c), veh/h	239	188	159	207	200		228	1118	1112	282	1145	1162
V/C Ratio(X)	0.66	0.82	0.50	0.93	0.54		0.33	0.62	0.63	0.57	0.67	0.68
Avail Cap(c_a), veh/h	239	368	312	207	380		284	1118	1112	383	1145	1162
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	66.2	63.9	60.0	63.5	0.0	15.5	16.9	17.0	16.1	16.7	16.8
Incr Delay (d2), s/veh	6.5	8.8	2.4	43.2	2.3	0.0	0.8	2.6	2.7	1.8	3.1	3.2
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	1.1	6.3	3.0	4.2	4.1	0.0	0.9	14.3	14.5	1.9	16.1	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	74.9	66.2	103.2	65.8	0.0	16.3	19.5	19.7	17.8	19.7	20.0
LnGrp LOS	E	E	E	F	E		B	B	B	B	B	B
Approach Vol, veh/h		392			301	A		1465			1710	
Approach Delay, s/veh		68.9			89.7			19.4			19.7	
Approach LOS		E			F			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	99.9	17.0	20.6	10.3	102.1	16.0	21.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	15.5	71.5	11.5	29.5	9.5	77.5	10.5	30.5
Max Q Clear Time (g_c+I1), s	6.8	38.2	13.5	14.2	4.2	43.2	12.5	10.3
Green Ext Time (p_c), s	0.2	21.2	0.0	0.9	0.1	24.4	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	276	323	220	42	375
Future Volume (vph)	276	323	220	42	375
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	48.0	32.0	80.0	40.0	40.0
Total Split (%)	40.0%	26.7%	66.7%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	276	56	323	220	42	375
Future Volume (veh/h)	276	56	323	220	42	375
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	303	62	355	242	46	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1143	234	885	1626	70	
Arrive On Green	0.76	0.76	0.06	0.87	0.04	0.00
Sat Flow, veh/h	1507	308	1781	1870	1781	1585
Grp Volume(v), veh/h	0	365	355	242	46	0
Grp Sat Flow(s),veh/h/ln	0	1815	1781	1870	1781	1585
Q Serve(g_s), s	0.0	7.3	4.8	2.3	3.1	0.0
Cycle Q Clear(g_c), s	0.0	7.3	4.8	2.3	3.1	0.0
Prop In Lane		0.17	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1376	885	1626	70	
V/C Ratio(X)	0.00	0.27	0.40	0.15	0.66	
Avail Cap(c_a), veh/h	0	1376	1163	1626	512	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.4	2.5	1.2	56.9	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.3	0.2	10.1	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	0.0	2.4	1.0	0.4	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.9	2.8	1.4	66.9	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	365			597	46	A
Approach Delay, s/veh	4.9			2.2	66.9	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.3	96.5				109.8	10.2
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	26.5	42.5				74.5	34.5
Max Q Clear Time (g_c+I1), s	6.8	9.3				4.3	5.1
Green Ext Time (p_c), s	1.0	4.7				3.1	0.1

Intersection Summary		
HCM 6th Ctrl Delay		6.1
HCM 6th LOS		A

Notes

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

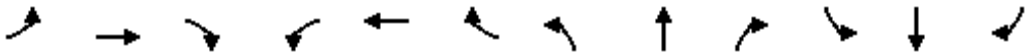
Future “No-Build” Intersection Analysis

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	64	120	149	532	7	238
Future Volume (vph)	64	120	149	532	7	238
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	28.0	26.5	65.5	65.5	65.5	65.5
Total Split (%)	23.3%	22.1%	54.6%	54.6%	54.6%	54.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Boulevard SE & Atlanta Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	64	23	6	120	14	149	532	3	7	238	188
Future Volume (veh/h)	86	64	23	6	120	14	149	532	3	7	238	188
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	0.90	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	97	72	26	7	135	16	167	598	3	8	267	211
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	85	31	9	164	19	507	1053	5	406	609	481
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	887	658	238	81	1566	186	916	1673	8	818	968	765
Grp Volume(v), veh/h	195	0	0	158	0	0	167	0	601	8	0	478
Grp Sat Flow(s),veh/h/ln	1783	0	0	1833	0	0	916	0	1682	818	0	1733
Q Serve(g_s), s	12.8	0.0	0.0	10.1	0.0	0.0	13.7	0.0	24.7	0.7	0.0	16.9
Cycle Q Clear(g_c), s	12.8	0.0	0.0	10.1	0.0	0.0	30.6	0.0	24.7	25.4	0.0	16.9
Prop In Lane	0.50		0.13	0.04		0.10	1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	229	0	0	192	0	0	507	0	1058	406	0	1090
V/C Ratio(X)	0.85	0.00	0.00	0.82	0.00	0.00	0.33	0.00	0.57	0.02	0.00	0.44
Avail Cap(c_a), veh/h	334	0	0	321	0	0	507	0	1058	406	0	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	0.0	52.6	0.0	0.0	19.2	0.0	12.8	20.2	0.0	11.4
Incr Delay (d2), s/veh	13.1	0.0	0.0	8.5	0.0	0.0	1.7	0.0	2.2	0.1	0.0	1.3
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	6.6	0.0	0.0	5.2	0.0	0.0	3.2	0.0	9.7	0.1	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	0.0	61.1	0.0	0.0	21.0	0.0	15.0	20.2	0.0	12.7
LnGrp LOS	E	A	A	E	A	A	C	A	B	C	A	B
Approach Vol, veh/h		195			158			768			486	
Approach Delay, s/veh		64.3			61.1			16.3			12.8	
Approach LOS		E			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		81.0		20.9		81.0		18.1				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		60.0		22.5		60.0		21.0				
Max Q Clear Time (g_c+I1), s		32.6		14.8		27.4		12.1				
Green Ext Time (p_c), s		10.7		0.6		7.3		0.5				

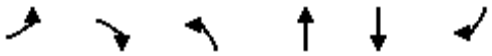
Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	52	44	112	771	258
Future Volume (vph)	52	44	112	771	258
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	26.0	26.0	94.0	94.0	94.0
Total Split (%)	21.7%	21.7%	78.3%	78.3%	78.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	52	44	112	771	258	57
Future Volume (veh/h)	52	44	112	771	258	57
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	54	45	115	795	266	59
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	86	76	935	1609	1275	283
Arrive On Green	0.05	0.05	1.00	1.00	0.86	0.86
Sat Flow, veh/h	1781	1585	1055	1870	1482	329
Grp Volume(v), veh/h	54	45	115	795	0	325
Grp Sat Flow(s),veh/h/ln	1781	1585	1055	1870	0	1811
Q Serve(g_s), s	3.6	3.3	0.5	0.0	0.0	3.7
Cycle Q Clear(g_c), s	3.6	3.3	4.2	0.0	0.0	3.7
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	86	76	935	1609	0	1558
V/C Ratio(X)	0.63	0.59	0.12	0.49	0.00	0.21
Avail Cap(c_a), veh/h	304	271	935	1609	0	1558
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	55.9	0.1	0.0	0.0	1.4
Incr Delay (d2), s/veh	7.4	7.0	0.3	1.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.5	0.1	0.5	0.0	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	63.4	63.0	0.3	1.1	0.0	1.7
LnGrp LOS	E	E	A	A	A	A
Approach Vol, veh/h	99			910	325	
Approach Delay, s/veh	63.2			1.0	1.7	
Approach LOS	E			A	A	

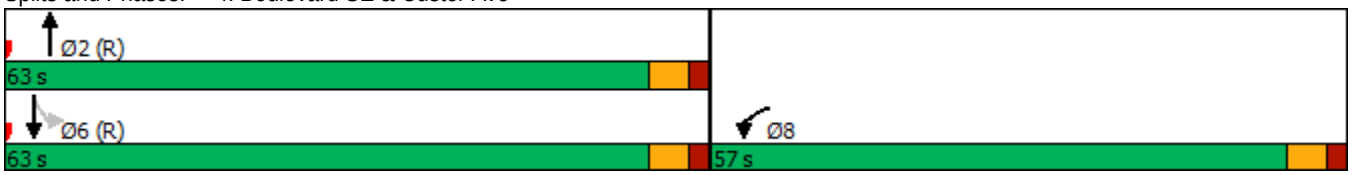
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		108.7		11.3		108.7
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		88.5		20.5		88.5
Max Q Clear Time (g_c+I1), s		6.2		5.6		5.7
Green Ext Time (p_c), s		20.5		0.2		4.9

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	197	334	60	201
Future Volume (vph)	197	334	60	201
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5
Total Split (s)	57.0	63.0	63.0	63.0
Total Split (%)	47.5%	52.5%	52.5%	52.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 15 (13%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 4: Boulevard SE & Custer Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	197	232	334	152	60	201
Future Volume (veh/h)	197	232	334	152	60	201
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	219	258	371	169	67	223
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	235	277	731	333	429	1125
Arrive On Green	0.31	0.31	0.60	0.60	0.20	0.20
Sat Flow, veh/h	765	901	1216	554	866	1870
Grp Volume(v), veh/h	478	0	0	540	67	223
Grp Sat Flow(s),veh/h/ln	1670	0	0	1771	866	1870
Q Serve(g_s), s	33.3	0.0	0.0	21.0	8.2	11.9
Cycle Q Clear(g_c), s	33.3	0.0	0.0	21.0	29.2	11.9
Prop In Lane	0.46	0.54		0.31	1.00	
Lane Grp Cap(c), veh/h	513	0	0	1065	429	1125
V/C Ratio(X)	0.93	0.00	0.00	0.51	0.16	0.20
Avail Cap(c_a), veh/h	717	0	0	1065	429	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	0.0	13.7	40.1	24.0
Incr Delay (d2), s/veh	15.3	0.0	0.0	1.7	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	0.0	0.0	8.8	2.0	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.7	0.0	0.0	15.5	40.9	24.4
LnGrp LOS	E	A	A	B	D	C
Approach Vol, veh/h	478		540			290
Approach Delay, s/veh	55.7		15.5			28.2
Approach LOS	E		B			C

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	77.6			77.6	42.4
Change Period (Y+Rc), s	5.5			5.5	5.5
Max Green Setting (Gmax), s	57.5			57.5	51.5
Max Q Clear Time (g_c+I1), s	23.0			31.2	35.3
Green Ext Time (p_c), s	8.4			3.4	1.5

Intersection Summary	
HCM 6th Ctrl Delay	33.0
HCM 6th LOS	C

Notes

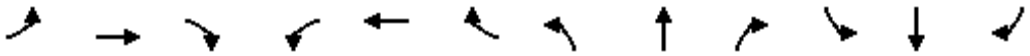
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	278	174	9	544	9	2	83	8
Future Volume (vph)	278	174	9	544	9	2	83	8
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5
Total Split (s)	22.0	84.0	62.0	62.0	36.0	36.0	36.0	36.0
Total Split (%)	18.3%	70.0%	51.7%	51.7%	30.0%	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
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5		5.5		5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 97 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	174	16	9	544	78	9	2	5	83	8	346
Future Volume (veh/h)	278	174	16	9	544	78	9	2	5	83	8	346
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	290	181	17	9	567	81	9	2	5	86	8	360
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	485	1114	105	35	834	118	60	19	15	326	9	384
Arrive On Green	0.09	0.66	0.66	0.52	0.52	0.52	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	1684	158	9	1591	225	55	76	60	1409	35	1556
Grp Volume(v), veh/h	290	0	198	657	0	0	16	0	0	86	0	368
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1825	0	0	191	0	0	1409	0	1590
Q Serve(g_s), s	8.6	0.0	4.9	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	27.2
Cycle Q Clear(g_c), s	8.6	0.0	4.9	32.0	0.0	0.0	27.6	0.0	0.0	8.0	0.0	27.2
Prop In Lane	1.00		0.09	0.01		0.12	0.56		0.31	1.00		0.98
Lane Grp Cap(c), veh/h	485	0	1219	987	0	0	94	0	0	326	0	392
V/C Ratio(X)	0.60	0.00	0.16	0.67	0.00	0.00	0.17	0.00	0.00	0.26	0.00	0.94
Avail Cap(c_a), veh/h	566	0	1219	987	0	0	103	0	0	337	0	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	7.7	21.2	0.0	0.0	37.1	0.0	0.0	37.1	0.0	44.3
Incr Delay (d2), s/veh	1.3	0.0	0.3	3.6	0.0	0.0	0.8	0.0	0.0	0.4	0.0	29.2
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	3.3	0.0	1.9	14.1	0.0	0.0	0.4	0.0	0.0	2.1	0.0	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	0.0	8.0	24.8	0.0	0.0	38.0	0.0	0.0	37.5	0.0	73.5
LnGrp LOS	B	A	A	C	A	A	D	A	A	D	A	E
Approach Vol, veh/h		488			657			16			454	
Approach Delay, s/veh		10.7			24.8			38.0			66.7	
Approach LOS		B			C			D			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		84.9		35.1	16.5	68.4		35.1				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		78.5		30.5	16.5	56.5		30.5				
Max Q Clear Time (g_c+I1), s		6.9		29.2	10.6	34.0		29.6				
Green Ext Time (p_c), s		2.5		0.4	0.4	8.4		0.0				

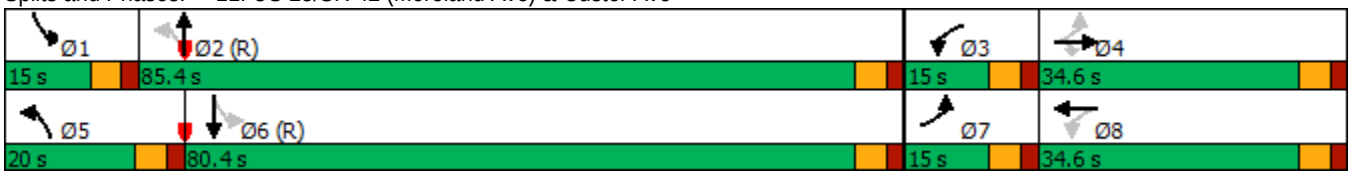
Intersection Summary												
HCM 6th Ctrl Delay			32.4									
HCM 6th LOS			C									

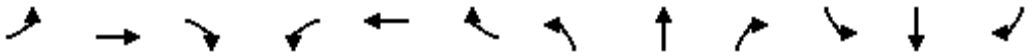
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	81	36	30	55	75	124	1676	57	1120
Future Volume (vph)	81	36	30	55	75	124	1676	57	1120
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	15.0	34.6	34.6	15.0	34.6	20.0	85.4	15.0	80.4
Total Split (%)	10.0%	23.1%	23.1%	10.0%	23.1%	13.3%	56.9%	10.0%	53.6%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	36	30	55	75	32	124	1676	122	57	1120	90
Future Volume (veh/h)	81	36	30	55	75	32	124	1676	122	57	1120	90
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	87	39	32	59	81	0	133	1802	131	61	1204	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	140	118	193	109		337	2378	171	186	2340	188
Arrive On Green	0.06	0.07	0.07	0.04	0.06	0.00	0.04	0.71	0.71	0.03	0.70	0.70
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	3362	242	1781	3331	268
Grp Volume(v), veh/h	87	39	32	59	81	0	133	942	991	61	641	660
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1827	1781	1777	1822
Q Serve(g_s), s	6.8	3.0	2.9	4.6	6.4	0.0	3.2	49.5	52.0	1.4	25.2	25.3
Cycle Q Clear(g_c), s	6.8	3.0	2.9	4.6	6.4	0.0	3.2	49.5	52.0	1.4	25.2	25.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.13	1.00		0.15
Lane Grp Cap(c), veh/h	170	140	118	193	109		337	1257	1292	186	1248	1280
V/C Ratio(X)	0.51	0.28	0.27	0.31	0.75		0.39	0.75	0.77	0.33	0.51	0.52
Avail Cap(c_a), veh/h	181	363	307	234	363		446	1257	1292	244	1248	1280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	65.6	65.5	63.0	69.6	0.0	8.7	13.7	14.0	17.5	10.4	10.4
Incr Delay (d2), s/veh	2.4	1.1	1.2	0.9	9.7	0.0	0.7	4.1	4.4	1.0	1.5	1.5
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	3.2	1.5	1.2	2.1	3.4	0.0	1.1	18.8	20.3	0.9	9.4	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	66.6	66.7	63.9	79.3	0.0	9.4	17.8	18.4	18.5	11.9	11.9
LnGrp LOS	E	E	E	E	E		A	B	B	B	B	B
Approach Vol, veh/h		158			140	A		2066			1362	
Approach Delay, s/veh		65.3			72.8			17.6			12.2	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	111.6	11.6	16.7	10.8	110.9	14.1	14.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	79.9	9.5	29.1	14.5	74.9	9.5	29.1
Max Q Clear Time (g_c+I1), s	3.4	54.0	6.6	5.0	5.2	27.3	8.8	8.4
Green Ext Time (p_c), s	0.0	23.1	0.0	0.2	0.2	23.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

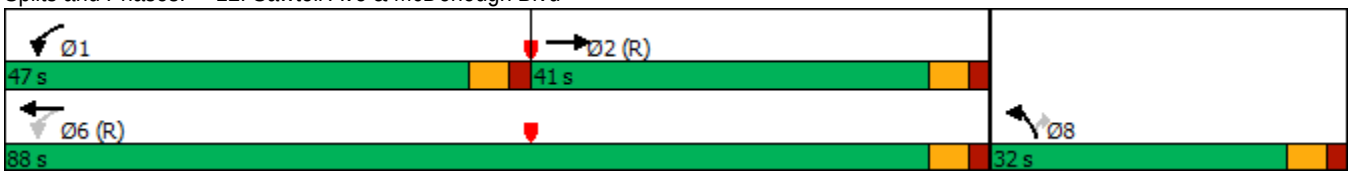
Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	124	333	349	42	130
Future Volume (vph)	124	333	349	42	130
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	41.0	47.0	88.0	32.0	32.0
Total Split (%)	34.2%	39.2%	73.3%	26.7%	26.7%
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	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	124	44	333	349	42	130
Future Volume (veh/h)	124	44	333	349	42	130
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	151	54	406	426	51	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	982	351	1034	1622	73	
Arrive On Green	0.75	0.75	0.08	0.87	0.04	0.00
Sat Flow, veh/h	1315	470	1781	1870	1781	1585
Grp Volume(v), veh/h	0	205	406	426	51	0
Grp Sat Flow(s),veh/h/ln	0	1786	1781	1870	1781	1585
Q Serve(g_s), s	0.0	3.9	5.7	4.7	3.4	0.0
Cycle Q Clear(g_c), s	0.0	3.9	5.7	4.7	3.4	0.0
Prop In Lane		0.26	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1333	1034	1622	73	
V/C Ratio(X)	0.00	0.15	0.39	0.26	0.70	
Avail Cap(c_a), veh/h	0	1333	1516	1622	393	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.4	2.3	1.4	56.8	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.4	11.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	1.2	0.9	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.6	2.5	1.8	68.3	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	205			832	51	A
Approach Delay, s/veh	4.6			2.1	68.3	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	14.5	95.1				109.6	10.4
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	41.5	35.5				82.5	26.5
Max Q Clear Time (g_c+I1), s	7.7	5.9				6.7	5.4
Green Ext Time (p_c), s	1.3	2.3				6.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Notes

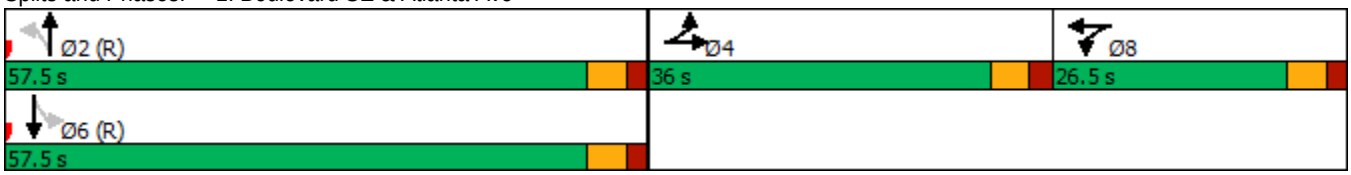
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

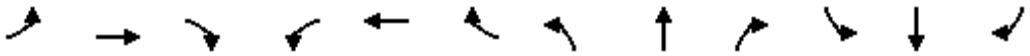
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	36	29	383	7	475
Future Volume (vph)	90	36	29	383	7	475
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	36.0	26.5	57.5	57.5	57.5	57.5
Total Split (%)	30.0%	22.1%	47.9%	47.9%	47.9%	47.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Boulevard SE & Atlanta Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	90	76	2	36	3	29	383	8	7	475	125
Future Volume (veh/h)	154	90	76	2	36	3	29	383	8	7	475	125
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	0.90	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	162	95	80	2	38	3	31	403	8	7	500	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	105	88	3	62	5	380	1006	20	534	873	230
Arrive On Green	0.21	0.21	0.21	0.04	0.04	0.04	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	843	494	416	86	1629	129	795	1645	33	975	1426	376
Grp Volume(v), veh/h	337	0	0	43	0	0	31	0	411	7	0	632
Grp Sat Flow(s),veh/h/ln	1753	0	0	1843	0	0	795	0	1677	975	0	1803
Q Serve(g_s), s	22.5	0.0	0.0	2.8	0.0	0.0	2.9	0.0	15.1	0.4	0.0	25.1
Cycle Q Clear(g_c), s	22.5	0.0	0.0	2.8	0.0	0.0	28.1	0.0	15.1	15.6	0.0	25.1
Prop In Lane	0.48		0.24	0.05		0.07	1.00		0.02	1.00		0.21
Lane Grp Cap(c), veh/h	373	0	0	70	0	0	380	0	1026	534	0	1103
V/C Ratio(X)	0.90	0.00	0.00	0.61	0.00	0.00	0.08	0.00	0.40	0.01	0.00	0.57
Avail Cap(c_a), veh/h	446	0	0	323	0	0	380	0	1026	534	0	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	0.0	56.8	0.0	0.0	22.3	0.0	12.0	16.0	0.0	13.9
Incr Delay (d2), s/veh	19.4	0.0	0.0	8.4	0.0	0.0	0.4	0.0	1.2	0.0	0.0	2.2
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	11.8	0.0	0.0	1.5	0.0	0.0	0.6	0.0	5.9	0.1	0.0	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.5	0.0	0.0	65.2	0.0	0.0	22.7	0.0	13.1	16.0	0.0	16.1
LnGrp LOS	E	A	A	E	A	A	C	A	B	B	A	B
Approach Vol, veh/h		337			43			442			639	
Approach Delay, s/veh		65.5			65.2			13.8			16.1	
Approach LOS		E			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		78.9		31.0		78.9		10.1				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		52.0		30.5		52.0		21.0				
Max Q Clear Time (g_c+I1), s		30.1		24.5		27.1		4.8				
Green Ext Time (p_c), s		5.3		1.0		9.1		0.1				

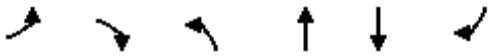
Intersection Summary												
HCM 6th Ctrl Delay			28.2									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	41	102	45	309	519
Future Volume (vph)	41	102	45	309	519
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	31.0	31.0	89.0	89.0	89.0
Total Split (%)	25.8%	25.8%	74.2%	74.2%	74.2%
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 Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	102	45	309	519	48
Future Volume (veh/h)	41	102	45	309	519	48
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	112	49	340	570	53
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	158	141	643	1533	1381	128
Arrive On Green	0.09	0.09	0.27	0.27	0.82	0.82
Sat Flow, veh/h	1781	1585	801	1870	1685	157
Grp Volume(v), veh/h	45	112	49	340	0	623
Grp Sat Flow(s),veh/h/ln	1781	1585	801	1870	0	1842
Q Serve(g_s), s	2.8	8.3	5.7	16.9	0.0	11.1
Cycle Q Clear(g_c), s	2.8	8.3	16.7	16.9	0.0	11.1
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	158	141	643	1533	0	1510
V/C Ratio(X)	0.28	0.80	0.08	0.22	0.00	0.41
Avail Cap(c_a), veh/h	379	337	643	1533	0	1510
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.1	53.6	18.3	14.1	0.0	2.9
Incr Delay (d2), s/veh	1.0	9.8	0.2	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.7	1.3	8.6	0.0	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.1	63.4	18.5	14.4	0.0	3.8
LnGrp LOS	D	E	B	B	A	A
Approach Vol, veh/h	157			389	623	
Approach Delay, s/veh	60.2			14.9	3.8	
Approach LOS	E			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		103.9		16.1		103.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		83.5		25.5		83.5
Max Q Clear Time (g_c+I1), s		18.9		10.3		13.1
Green Ext Time (p_c), s		5.8		0.4		11.7

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	150	240	132	359
Future Volume (vph)	150	240	132	359
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5
Total Split (s)	42.0	78.0	78.0	78.0
Total Split (%)	35.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 4: Boulevard SE & Custer Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	150	81	240	275	132	359
Future Volume (veh/h)	150	81	240	275	132	359
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	161	87	258	296	142	386
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	182	98	591	678	590	1391
Arrive On Green	0.16	0.16	0.74	0.74	1.00	1.00
Sat Flow, veh/h	1104	597	795	912	854	1870
Grp Volume(v), veh/h	249	0	0	554	142	386
Grp Sat Flow(s),veh/h/ln	1708	0	0	1706	854	1870
Q Serve(g_s), s	17.1	0.0	0.0	14.8	4.3	0.0
Cycle Q Clear(g_c), s	17.1	0.0	0.0	14.8	19.1	0.0
Prop In Lane	0.65	0.35		0.53	1.00	
Lane Grp Cap(c), veh/h	281	0	0	1269	590	1391
V/C Ratio(X)	0.88	0.00	0.00	0.44	0.24	0.28
Avail Cap(c_a), veh/h	519	0	0	1269	590	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	0.0	0.0	5.8	1.6	0.0
Incr Delay (d2), s/veh	9.0	0.0	0.0	1.1	1.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	5.2	0.5	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.0	0.0	0.0	6.9	2.5	0.5
LnGrp LOS	E	A	A	A	A	A
Approach Vol, veh/h	249		554			528
Approach Delay, s/veh	58.0		6.9			1.0
Approach LOS	E		A			A

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	94.7			94.7	25.3
Change Period (Y+Rc), s	5.5			5.5	5.5
Max Green Setting (Gmax), s	72.5			72.5	36.5
Max Q Clear Time (g_c+I1), s	16.8			21.1	19.1
Green Ext Time (p_c), s	10.0			8.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

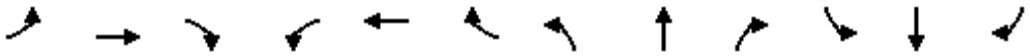
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	396	509	1	198	4	4	252	1
Future Volume (vph)	396	509	1	198	4	4	252	1
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5
Total Split (s)	32.0	76.0	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	26.7%	63.3%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	509	0	1	198	100	4	4	6	252	1	238
Future Volume (veh/h)	396	509	0	1	198	100	4	4	6	252	1	238
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	408	525	0	1	204	103	4	4	6	260	1	245
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	720	1182	0	30	520	261	99	102	122	352	2	437
Arrive On Green	0.14	0.63	0.00	0.44	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	1870	0	1	1173	590	220	369	441	1405	6	1580
Grp Volume(v), veh/h	408	525	0	308	0	0	14	0	0	260	0	246
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1763	0	0	1030	0	0	1405	0	1586
Q Serve(g_s), s	14.2	17.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	13.7	0.0	15.9
Cycle Q Clear(g_c), s	14.2	17.2	0.0	14.1	0.0	0.0	16.0	0.0	0.0	29.8	0.0	15.9
Prop In Lane	1.00		0.00	0.00		0.33	0.29		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	720	1182	0	812	0	0	323	0	0	352	0	438
V/C Ratio(X)	0.57	0.44	0.00	0.38	0.00	0.00	0.04	0.00	0.00	0.74	0.00	0.56
Avail Cap(c_a), veh/h	859	1182	0	812	0	0	389	0	0	415	0	509
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	11.3	0.0	22.5	0.0	0.0	32.2	0.0	0.0	44.7	0.0	37.2
Incr Delay (d2), s/veh	0.7	1.2	0.0	1.3	0.0	0.0	0.1	0.0	0.0	5.7	0.0	1.1
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	5.5	7.1	0.0	6.1	0.0	0.0	0.3	0.0	0.0	8.1	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	12.5	0.0	23.9	0.0	0.0	32.2	0.0	0.0	50.4	0.0	38.3
LnGrp LOS	B	B	A	C	A	A	C	A	A	D	A	D
Approach Vol, veh/h		933			308			14			506	
Approach Delay, s/veh		12.7			23.9			32.2			44.5	
Approach LOS		B			C			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		81.3		38.7	22.6	58.7		38.7				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		70.5		38.5	26.5	38.5		38.5				
Max Q Clear Time (g_c+I1), s		19.2		31.8	16.2	16.1		18.0				
Green Ext Time (p_c), s		8.0		1.4	1.0	3.4		0.0				

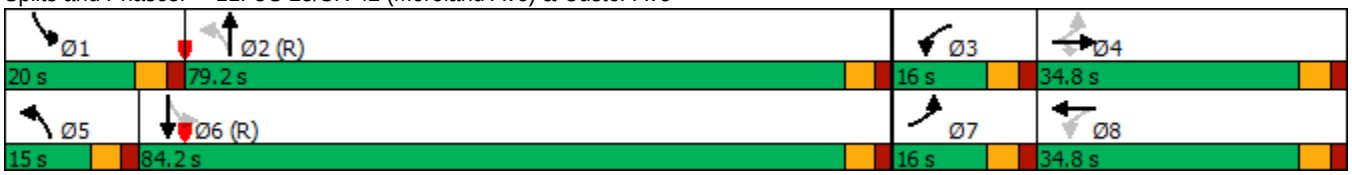
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

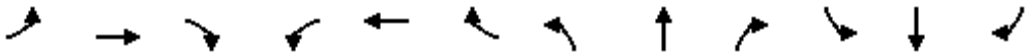
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	165	161	82	199	114	78	1210	167	1444
Future Volume (vph)	165	161	82	199	114	78	1210	167	1444
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	16.0	34.8	34.8	16.0	34.8	15.0	79.2	20.0	84.2
Total Split (%)	10.7%	23.2%	23.2%	10.7%	23.2%	10.0%	52.8%	13.3%	56.1%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	161	82	199	114	120	78	1210	234	167	1444	167
Future Volume (veh/h)	165	161	82	199	114	120	78	1210	234	167	1444	167
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	172	168	85	207	119	0	81	1260	244	174	1504	174
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	201	171	195	201		201	1861	357	258	2068	237
Arrive On Green	0.07	0.11	0.11	0.07	0.11	0.00	0.03	0.63	0.63	0.05	0.64	0.64
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	2974	570	1781	3213	368
Grp Volume(v), veh/h	172	168	85	207	119	0	81	748	756	174	825	853
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1768	1781	1777	1804
Q Serve(g_s), s	10.5	13.2	7.6	10.5	9.1	0.0	2.4	40.8	42.0	5.3	46.3	48.0
Cycle Q Clear(g_c), s	10.5	13.2	7.6	10.5	9.1	0.0	2.4	40.8	42.0	5.3	46.3	48.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.32	1.00		0.20
Lane Grp Cap(c), veh/h	233	201	171	195	201		201	1112	1106	258	1143	1161
V/C Ratio(X)	0.74	0.83	0.50	1.06	0.59		0.40	0.67	0.68	0.68	0.72	0.73
Avail Cap(c_a), veh/h	233	365	310	195	365		256	1112	1106	341	1143	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	65.6	63.1	61.1	63.8	0.0	18.6	18.1	18.4	20.5	17.8	18.1
Incr Delay (d2), s/veh	11.8	8.7	2.2	82.1	2.8	0.0	1.3	3.3	3.4	3.3	4.0	4.2
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	2.0	6.8	3.2	6.8	4.5	0.0	1.1	16.6	17.0	3.0	18.6	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	74.3	65.3	143.3	66.5	0.0	19.9	21.4	21.8	23.8	21.7	22.2
LnGrp LOS	E	E	E	F	E		B	C	C	C	C	C
Approach Vol, veh/h		425			326	A		1585			1852	
Approach Delay, s/veh		70.8			115.2			21.5			22.2	
Approach LOS		E			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	99.4	16.0	21.6	10.3	102.0	16.0	21.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	14.5	73.7	10.5	29.3	9.5	78.7	10.5	29.3
Max Q Clear Time (g_c+I1), s	7.3	44.0	12.5	15.2	4.4	50.0	12.5	11.1
Green Ext Time (p_c), s	0.2	21.3	0.0	0.9	0.1	22.9	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	299	350	238	45	406
Future Volume (vph)	299	350	238	45	406
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	47.0	34.0	81.0	39.0	39.0
Total Split (%)	39.2%	28.3%	67.5%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	299	61	350	238	45	406
Future Volume (veh/h)	299	61	350	238	45	406
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	329	67	385	262	49	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1134	231	860	1624	72	
Arrive On Green	0.75	0.75	0.07	0.87	0.04	0.00
Sat Flow, veh/h	1508	307	1781	1870	1781	1585
Grp Volume(v), veh/h	0	396	385	262	49	0
Grp Sat Flow(s),veh/h/ln	0	1815	1781	1870	1781	1585
Q Serve(g_s), s	0.0	8.3	5.3	2.6	3.3	0.0
Cycle Q Clear(g_c), s	0.0	8.3	5.3	2.6	3.3	0.0
Prop In Lane		0.17	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1364	860	1624	72	
V/C Ratio(X)	0.00	0.29	0.45	0.16	0.68	
Avail Cap(c_a), veh/h	0	1364	1158	1624	497	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.7	2.7	1.2	56.8	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.4	0.2	10.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	1.2	0.5	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.3	3.1	1.4	67.7	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	396			647	49	A
Approach Delay, s/veh	5.3			2.4	67.7	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	14.0	95.7				109.7	10.3
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	28.5	41.5				75.5	33.5
Max Q Clear Time (g_c+I1), s	7.3	10.3				4.6	5.3
Green Ext Time (p_c), s	1.1	5.1				3.4	0.1

Intersection Summary		
HCM 6th Ctrl Delay	6.4	
HCM 6th LOS	A	

Notes

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

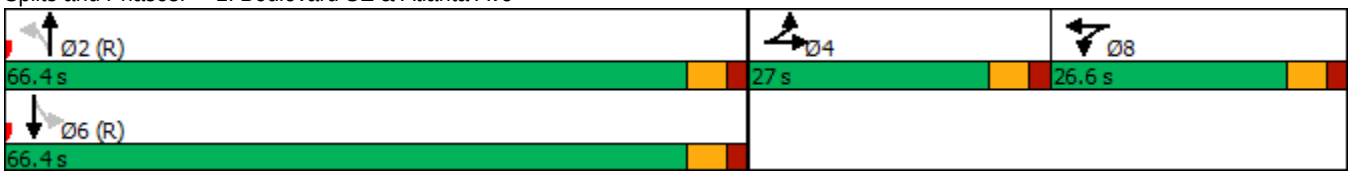
Future “Build” Intersections Analysis

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	64	120	174	615	7	276
Future Volume (vph)	64	120	174	615	7	276
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	27.0	26.6	66.4	66.4	66.4	66.4
Total Split (%)	22.5%	22.2%	55.3%	55.3%	55.3%	55.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

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

Splits and Phases: 1: Boulevard SE & Atlanta Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	64	34	14	120	14	174	615	20	7	276	188
Future Volume (veh/h)	86	64	34	14	120	14	174	615	20	7	276	188
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	0.90	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	97	72	38	16	135	16	196	691	22	8	310	211
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	83	44	19	163	19	460	1001	32	306	640	436
Arrive On Green	0.14	0.14	0.14	0.11	0.11	0.11	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	830	616	325	175	1479	175	881	1622	52	737	1037	706
Grp Volume(v), veh/h	207	0	0	167	0	0	196	0	713	8	0	521
Grp Sat Flow(s),veh/h/ln	1770	0	0	1830	0	0	881	0	1674	737	0	1743
Q Serve(g_s), s	13.7	0.0	0.0	10.7	0.0	0.0	18.8	0.0	34.1	0.9	0.0	19.6
Cycle Q Clear(g_c), s	13.7	0.0	0.0	10.7	0.0	0.0	38.3	0.0	34.1	35.0	0.0	19.6
Prop In Lane	0.47		0.18	0.10		0.10	1.00		0.03	1.00		0.40
Lane Grp Cap(c), veh/h	240	0	0	201	0	0	460	0	1033	306	0	1076
V/C Ratio(X)	0.86	0.00	0.00	0.83	0.00	0.00	0.43	0.00	0.69	0.03	0.00	0.48
Avail Cap(c_a), veh/h	317	0	0	322	0	0	460	0	1033	306	0	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	0.0	52.3	0.0	0.0	23.0	0.0	15.3	27.0	0.0	12.5
Incr Delay (d2), s/veh	17.0	0.0	0.0	9.5	0.0	0.0	2.9	0.0	3.8	0.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	0.0	5.5	0.0	0.0	4.3	0.0	13.6	0.2	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	0.0	0.0	61.8	0.0	0.0	25.9	0.0	19.1	27.1	0.0	14.1
LnGrp LOS	E	A	A	E	A	A	C	A	B	C	A	B
Approach Vol, veh/h		207			167			909			529	
Approach Delay, s/veh		67.8			61.8			20.6			14.3	
Approach LOS		E			E			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		79.6		21.7		79.6		18.7				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		60.9		21.5		60.9		21.1				
Max Q Clear Time (g_c+I1), s		40.3		15.7		37.0		12.7				
Green Ext Time (p_c), s		11.2		0.5		7.1		0.5				

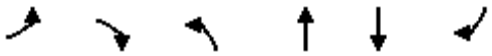
Intersection Summary												
HCM 6th Ctrl Delay			27.9									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	69	44	133	899	317
Future Volume (vph)	69	44	133	899	317
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	25.0	25.0	95.0	95.0	95.0
Total Split (%)	20.8%	20.8%	79.2%	79.2%	79.2%
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 Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	44	133	899	317	65
Future Volume (veh/h)	69	44	133	899	317	65
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	71	45	137	927	327	67
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	101	90	863	1593	1283	263
Arrive On Green	0.06	0.06	1.00	1.00	0.85	0.85
Sat Flow, veh/h	1781	1585	990	1870	1506	309
Grp Volume(v), veh/h	71	45	137	927	0	394
Grp Sat Flow(s),veh/h/ln	1781	1585	990	1870	0	1815
Q Serve(g_s), s	4.7	3.3	1.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s	4.7	3.3	5.9	0.0	0.0	4.9
Prop In Lane	1.00	1.00	1.00			0.17
Lane Grp Cap(c), veh/h	101	90	863	1593	0	1546
V/C Ratio(X)	0.71	0.50	0.16	0.58	0.00	0.25
Avail Cap(c_a), veh/h	289	258	863	1593	0	1546
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.6	55.0	0.1	0.0	0.0	1.7
Incr Delay (d2), s/veh	8.7	4.3	0.4	1.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.4	0.1	0.7	0.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.3	59.3	0.5	1.6	0.0	2.1
LnGrp LOS	E	E	A	A	A	A
Approach Vol, veh/h	116			1064	394	
Approach Delay, s/veh	62.4			1.4	2.1	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		107.7		12.3		107.7
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		89.5		19.5		89.5
Max Q Clear Time (g_c+I1), s		7.9		6.7		6.9
Green Ext Time (p_c), s		28.6		0.2		6.2

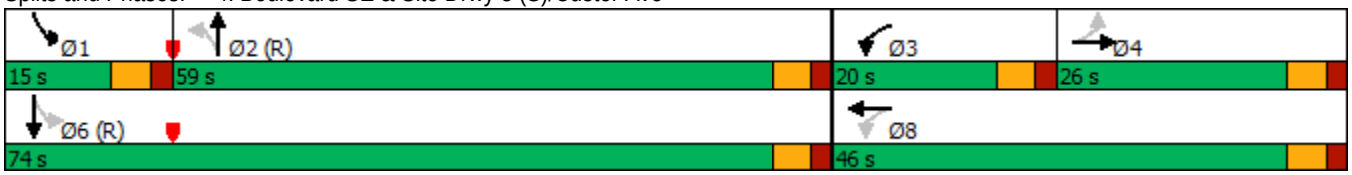
Intersection Summary		
HCM 6th Ctrl Delay		6.1
HCM 6th LOS		A

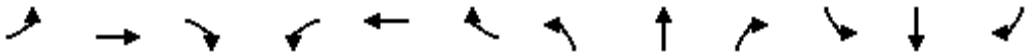
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	81	62	197	29	25	344	60	234
Future Volume (vph)	81	62	197	29	25	344	60	234
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	pm+pt	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	6.0	15.0	15.0	5.0	15.0
Minimum Split (s)	21.5	21.5	15.0	23.5	23.5	23.5	15.0	23.5
Total Split (s)	26.0	26.0	20.0	46.0	59.0	59.0	15.0	74.0
Total Split (%)	21.7%	21.7%	16.7%	38.3%	49.2%	49.2%	12.5%	61.7%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 4: Boulevard SE & Site Drwy 3 (S)/Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	62	41	197	29	232	25	344	152	60	234	18
Future Volume (veh/h)	81	62	41	197	29	232	25	344	152	60	234	18
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	90	69	46	219	32	258	28	382	169	67	260	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	107	72	326	48	386	671	683	302	431	1096	84
Arrive On Green	0.10	0.10	0.10	0.12	0.27	0.27	0.56	0.56	0.56	0.07	1.00	1.00
Sat Flow, veh/h	1089	1047	698	1781	178	1434	1099	1229	544	1781	1715	132
Grp Volume(v), veh/h	90	0	115	219	0	290	28	0	551	67	0	280
Grp Sat Flow(s),veh/h/ln	1089	0	1745	1781	0	1612	1099	0	1773	1781	0	1847
Q Serve(g_s), s	9.7	0.0	7.6	12.8	0.0	19.2	1.4	0.0	24.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	7.6	12.8	0.0	19.2	1.4	0.0	24.0	1.8	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.89	1.00		0.31	1.00		0.07
Lane Grp Cap(c), veh/h	172	0	179	326	0	434	671	0	985	431	0	1180
V/C Ratio(X)	0.52	0.00	0.64	0.67	0.00	0.67	0.04	0.00	0.56	0.16	0.00	0.24
Avail Cap(c_a), veh/h	246	0	298	326	0	544	671	0	985	506	0	1180
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	0.0	51.7	40.0	0.0	39.1	12.1	0.0	17.2	12.1	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	3.8	5.3	0.0	2.2	0.1	0.0	2.3	0.2	0.0	0.5
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	2.8	0.0	3.5	6.0	0.0	7.8	0.4	0.0	10.3	0.7	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	0.0	55.5	45.3	0.0	41.3	12.3	0.0	19.5	12.2	0.0	0.5
LnGrp LOS	E	A	E	D	A	D	B	A	B	B	A	A
Approach Vol, veh/h		205			509			579			347	
Approach Delay, s/veh		55.3			43.0			19.1			2.7	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	10.0	72.2	20.0	17.8		82.2		37.8				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5		5.5		5.5				
Max Green Setting (Gmax), s	9.5	53.5	14.5	20.5		68.5		40.5				
Max Q Clear Time (g_c+I1), s	3.8	26.0	14.8	11.7		2.0		21.2				
Green Ext Time (p_c), s	0.1	8.2	0.0	0.6		4.0		1.7				

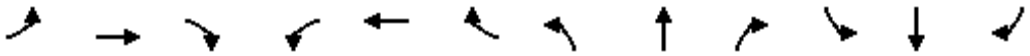
Intersection Summary												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	297	174	9	544	9	2	124	8
Future Volume (vph)	297	174	9	544	9	2	124	8
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5
Total Split (s)	21.0	82.0	61.0	61.0	38.0	38.0	38.0	38.0
Total Split (%)	17.5%	68.3%	50.8%	50.8%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 98 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	174	16	9	544	97	9	2	5	124	8	387
Future Volume (veh/h)	297	174	16	9	544	97	9	2	5	124	8	387
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	309	181	17	9	567	101	9	2	5	129	8	403
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	1073	101	35	753	133	58	18	13	350	8	422
Arrive On Green	0.10	0.64	0.64	0.49	0.49	0.49	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	1684	158	9	1537	271	41	67	49	1409	31	1559
Grp Volume(v), veh/h	309	0	198	677	0	0	16	0	0	129	0	411
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1816	0	0	158	0	0	1409	0	1590
Q Serve(g_s), s	9.9	0.0	5.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	30.5
Cycle Q Clear(g_c), s	9.9	0.0	5.2	36.2	0.0	0.0	30.9	0.0	0.0	12.2	0.0	30.5
Prop In Lane	1.00		0.09	0.01		0.15	0.56		0.31	1.00		0.98
Lane Grp Cap(c), veh/h	446	0	1174	921	0	0	90	0	0	350	0	431
V/C Ratio(X)	0.69	0.00	0.17	0.74	0.00	0.00	0.18	0.00	0.00	0.37	0.00	0.95
Avail Cap(c_a), veh/h	495	0	1174	921	0	0	90	0	0	350	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	8.8	24.8	0.0	0.0	35.7	0.0	0.0	36.4	0.0	43.0
Incr Delay (d2), s/veh	3.7	0.0	0.3	5.2	0.0	0.0	0.9	0.0	0.0	0.6	0.0	31.9
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	4.2	0.0	2.1	16.3	0.0	0.0	0.4	0.0	0.0	3.2	0.0	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	9.1	30.0	0.0	0.0	36.7	0.0	0.0	37.0	0.0	74.9
LnGrp LOS	B	A	A	C	A	A	D	A	A	D	A	E
Approach Vol, veh/h		507			677			16			540	
Approach Delay, s/veh		14.4			30.0			36.7			65.8	
Approach LOS		B			C			D			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		82.0		38.0	17.7	64.3		38.0				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		76.5		32.5	15.5	55.5		32.5				
Max Q Clear Time (g_c+I1), s		7.2		32.5	11.9	38.2		32.9				
Green Ext Time (p_c), s		2.5		0.0	0.3	7.5		0.0				

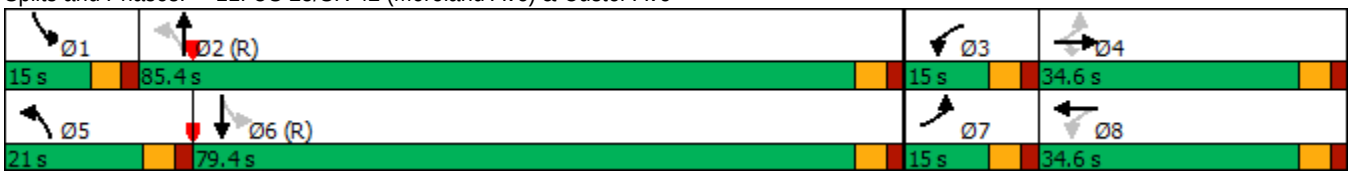
Intersection Summary												
HCM 6th Ctrl Delay			36.7									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	98	48	47	55	81	132	1676	57	1120
Future Volume (vph)	98	48	47	55	81	132	1676	57	1120
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	15.0	34.6	34.6	15.0	34.6	21.0	85.4	15.0	79.4
Total Split (%)	10.0%	23.1%	23.1%	10.0%	23.1%	14.0%	56.9%	10.0%	52.9%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	48	47	55	81	32	132	1676	122	57	1120	98
Future Volume (veh/h)	98	48	47	55	81	32	132	1676	122	57	1120	98
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	105	52	51	59	87	0	142	1802	131	61	1204	105
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	158	134	195	115		332	2347	169	181	2283	199
Arrive On Green	0.06	0.08	0.08	0.04	0.06	0.00	0.04	0.70	0.70	0.03	0.69	0.69
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	3362	242	1781	3307	288
Grp Volume(v), veh/h	105	52	51	59	87	0	142	942	991	61	646	663
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1827	1781	1777	1819
Q Serve(g_s), s	8.2	3.9	4.6	4.6	6.9	0.0	3.5	51.1	53.7	1.5	26.5	26.7
Cycle Q Clear(g_c), s	8.2	3.9	4.6	4.6	6.9	0.0	3.5	51.1	53.7	1.5	26.5	26.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.13	1.00		0.16
Lane Grp Cap(c), veh/h	181	158	134	195	115		332	1240	1275	181	1227	1256
V/C Ratio(X)	0.58	0.33	0.38	0.30	0.76		0.43	0.76	0.78	0.34	0.53	0.53
Avail Cap(c_a), veh/h	181	363	307	236	363		447	1240	1275	239	1227	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.2	64.7	65.0	62.6	69.3	0.0	9.6	14.6	15.0	18.6	11.3	11.3
Incr Delay (d2), s/veh	4.5	1.2	1.8	0.9	9.7	0.0	0.9	4.4	4.7	1.1	1.6	1.6
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	3.9	1.9	1.9	2.1	3.6	0.0	1.3	19.7	21.2	1.0	10.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.8	65.9	66.8	63.4	79.0	0.0	10.5	19.0	19.7	19.7	12.9	12.9
LnGrp LOS	E	E	E	E	E		B	B	B	B	B	B
Approach Vol, veh/h		208			146	A		2075			1370	
Approach Delay, s/veh		66.1			72.7			18.7			13.2	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	110.2	11.6	18.1	11.2	109.1	15.0	14.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	79.9	9.5	29.1	15.5	73.9	9.5	29.1
Max Q Clear Time (g_c+I1), s	3.5	55.7	6.6	6.6	5.5	28.7	10.2	8.9
Green Ext Time (p_c), s	0.0	21.7	0.0	0.3	0.2	23.3	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

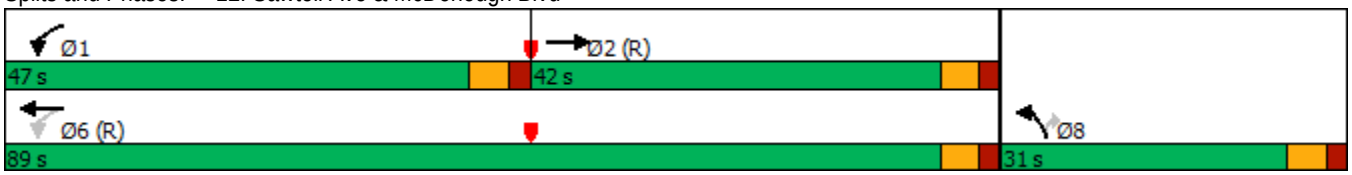
Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	153	354	411	42	140
Future Volume (vph)	153	354	411	42	140
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	42.0	47.0	89.0	31.0	31.0
Total Split (%)	35.0%	39.2%	74.2%	25.8%	25.8%
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	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	153	44	354	411	42	140
Future Volume (veh/h)	153	44	354	411	42	140
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	187	54	432	501	51	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1035	299	1002	1622	73	
Arrive On Green	0.74	0.74	0.08	0.87	0.04	0.00
Sat Flow, veh/h	1395	403	1781	1870	1781	1585
Grp Volume(v), veh/h	0	241	432	501	51	0
Grp Sat Flow(s),veh/h/ln	0	1798	1781	1870	1781	1585
Q Serve(g_s), s	0.0	4.8	6.2	5.8	3.4	0.0
Cycle Q Clear(g_c), s	0.0	4.8	6.2	5.8	3.4	0.0
Prop In Lane		0.22	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1334	1002	1622	73	
V/C Ratio(X)	0.00	0.18	0.43	0.31	0.70	
Avail Cap(c_a), veh/h	0	1334	1475	1622	379	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	4.6	2.4	1.4	56.8	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.5	11.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.4	1.1	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	4.9	2.7	1.9	68.3	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	241			933	51	A
Approach Delay, s/veh	4.9			2.3	68.3	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	15.1	94.5				109.6	10.4
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	41.5	36.5				83.5	25.5
Max Q Clear Time (g_c+I1), s	8.2	6.8				7.8	5.4
Green Ext Time (p_c), s	1.4	2.8				7.7	0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Notes

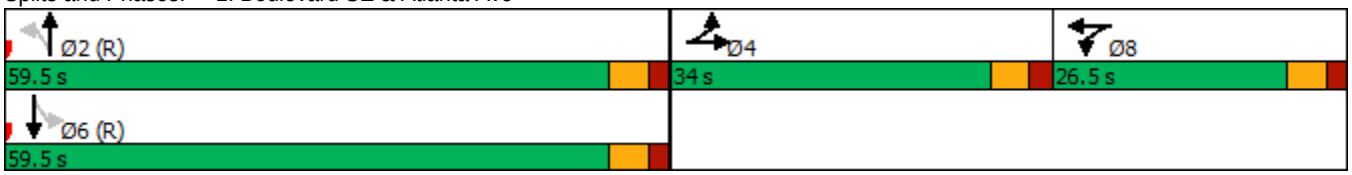
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	36	43	429	7	546
Future Volume (vph)	90	36	43	429	7	546
Turn Type	NA	NA	Perm	NA	Perm	NA
Protected Phases	4	8		2		6
Permitted Phases			2		6	
Detector Phase	4	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0	15.0
Minimum Split (s)	26.5	26.5	23.5	23.5	23.5	23.5
Total Split (s)	34.0	26.5	59.5	59.5	59.5	59.5
Total Split (%)	28.3%	22.1%	49.6%	49.6%	49.6%	49.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Boulevard SE & Atlanta Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	90	97	16	36	3	43	429	17	7	546	125
Future Volume (veh/h)	154	90	97	16	36	3	43	429	17	7	546	125
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	0.90	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	162	95	102	17	38	3	45	452	18	7	575	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	103	110	23	51	4	311	960	38	466	879	202
Arrive On Green	0.22	0.22	0.22	0.04	0.04	0.04	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	786	461	495	535	1197	94	741	1608	64	923	1472	338
Grp Volume(v), veh/h	359	0	0	58	0	0	45	0	470	7	0	707
Grp Sat Flow(s),veh/h/ln	1742	0	0	1827	0	0	741	0	1672	923	0	1810
Q Serve(g_s), s	24.2	0.0	0.0	3.8	0.0	0.0	5.1	0.0	18.9	0.5	0.0	31.0
Cycle Q Clear(g_c), s	24.2	0.0	0.0	3.8	0.0	0.0	36.1	0.0	18.9	19.4	0.0	31.0
Prop In Lane	0.45		0.28	0.29		0.05	1.00		0.04	1.00		0.19
Lane Grp Cap(c), veh/h	388	0	0	78	0	0	311	0	998	466	0	1081
V/C Ratio(X)	0.93	0.00	0.00	0.74	0.00	0.00	0.14	0.00	0.47	0.02	0.00	0.65
Avail Cap(c_a), veh/h	414	0	0	320	0	0	311	0	998	466	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.7	0.0	0.0	56.8	0.0	0.0	27.9	0.0	13.5	19.0	0.0	16.0
Incr Delay (d2), s/veh	25.9	0.0	0.0	12.9	0.0	0.0	1.0	0.0	1.6	0.1	0.0	3.1
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	13.2	0.0	0.0	2.0	0.0	0.0	1.0	0.0	7.5	0.1	0.0	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	0.0	0.0	69.7	0.0	0.0	28.9	0.0	15.1	19.0	0.0	19.1
LnGrp LOS	E	A	A	E	A	A	C	A	B	B	A	B
Approach Vol, veh/h		359			58			515			714	
Approach Delay, s/veh		71.5			69.7			16.3			19.1	
Approach LOS		E			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.2		32.2		77.2		10.6				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		54.0		28.5		54.0		21.0				
Max Q Clear Time (g_c+I1), s		38.1		26.2		33.0		5.8				
Green Ext Time (p_c), s		5.4		0.5		9.5		0.2				

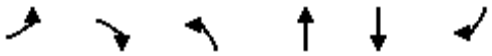
Intersection Summary												
HCM 6th Ctrl Delay			31.4									
HCM 6th LOS			C									

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	50	102	57	380	630
Future Volume (vph)	50	102	57	380	630
Turn Type	Prot	Perm	Perm	NA	NA
Protected Phases	4			2	6
Permitted Phases		4	2		
Detector Phase	4	4	2	2	6
Switch Phase					
Minimum Initial (s)	6.0	6.0	15.0	15.0	15.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5
Total Split (s)	28.0	28.0	92.0	92.0	92.0
Total Split (%)	23.3%	23.3%	76.7%	76.7%	76.7%
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 Optimize?					
Recall Mode	None	None	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2: Boulevard SE & Englewood Ave



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	102	57	380	630	62
Future Volume (veh/h)	50	102	57	380	630	62
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	55	112	63	418	692	68
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	158	141	549	1533	1374	135
Arrive On Green	0.09	0.09	1.00	1.00	0.82	0.82
Sat Flow, veh/h	1781	1585	706	1870	1676	165
Grp Volume(v), veh/h	55	112	63	418	0	760
Grp Sat Flow(s),veh/h/ln	1781	1585	706	1870	0	1841
Q Serve(g_s), s	3.5	8.3	1.9	0.0	0.0	15.2
Cycle Q Clear(g_c), s	3.5	8.3	17.1	0.0	0.0	15.2
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	158	141	549	1533	0	1509
V/C Ratio(X)	0.35	0.80	0.11	0.27	0.00	0.50
Avail Cap(c_a), veh/h	334	297	549	1533	0	1509
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.4	53.6	1.3	0.0	0.0	3.3
Incr Delay (d2), s/veh	1.3	9.8	0.4	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.7	0.2	0.2	0.0	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.7	63.4	1.7	0.4	0.0	4.5
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	167			481	760	
Approach Delay, s/veh	59.9			0.6	4.5	
Approach LOS	E			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		103.9		16.1		103.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		86.5		22.5		86.5
Max Q Clear Time (g_c+I1), s		19.1		10.3		17.2
Green Ext Time (p_c), s		7.8		0.4		16.4

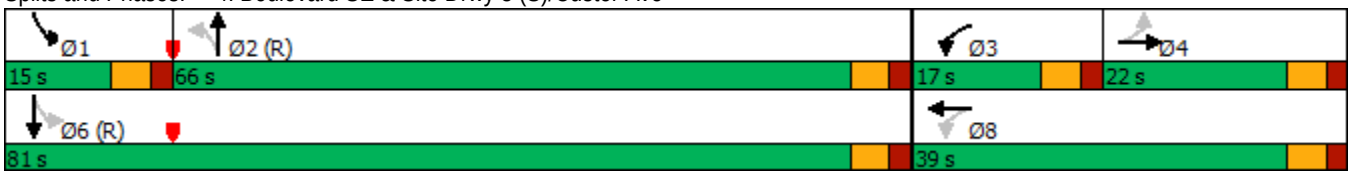
Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

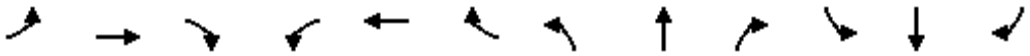
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	35	150	54	46	258	132	377
Future Volume (vph)	45	35	150	54	46	258	132	377
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	pm+pt	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	6.0	15.0	15.0	5.0	15.0
Minimum Split (s)	21.5	21.5	15.0	23.5	23.5	23.5	15.0	23.5
Total Split (s)	22.0	22.0	17.0	39.0	66.0	66.0	15.0	81.0
Total Split (%)	18.3%	18.3%	14.2%	32.5%	55.0%	55.0%	12.5%	67.5%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead		Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

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

Splits and Phases: 4: Boulevard SE & Site Drwy 3 (S)/Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	35	23	150	54	81	46	258	275	132	377	34
Future Volume (veh/h)	45	35	23	150	54	81	46	258	275	132	377	34
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	48	38	25	161	58	87	49	277	296	142	405	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	60	39	260	134	201	645	511	546	499	1198	109
Arrive On Green	0.06	0.06	0.06	0.10	0.20	0.20	0.62	0.62	0.62	0.09	1.00	1.00
Sat Flow, veh/h	1243	1053	693	1781	675	1013	947	827	884	1781	1688	154
Grp Volume(v), veh/h	48	0	63	161	0	145	49	0	573	142	0	442
Grp Sat Flow(s),veh/h/ln	1243	0	1746	1781	0	1688	947	0	1711	1781	0	1843
Q Serve(g_s), s	4.5	0.0	4.2	9.9	0.0	9.0	2.5	0.0	23.1	3.5	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	4.2	9.9	0.0	9.0	2.5	0.0	23.1	3.5	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.60	1.00		0.52	1.00		0.08
Lane Grp Cap(c), veh/h	131	0	99	260	0	335	645	0	1057	499	0	1308
V/C Ratio(X)	0.37	0.00	0.63	0.62	0.00	0.43	0.08	0.00	0.54	0.28	0.00	0.34
Avail Cap(c_a), veh/h	231	0	240	260	0	471	645	0	1057	558	0	1308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.5	0.0	55.4	45.7	0.0	42.2	9.2	0.0	13.2	9.3	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	6.6	4.5	0.0	0.9	0.2	0.0	2.0	0.3	0.0	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	1.5	0.0	2.1	4.7	0.0	3.8	0.6	0.0	9.3	1.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	0.0	61.9	50.2	0.0	43.0	9.5	0.0	15.2	9.6	0.0	0.7
LnGrp LOS	E	A	E	D	A	D	A	A	B	A	A	A
Approach Vol, veh/h		111			306			622			584	
Approach Delay, s/veh		59.9			46.8			14.7			2.9	
Approach LOS		E			D			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	11.0	79.6	17.0	12.3		90.7		29.3				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5		5.5		5.5				
Max Green Setting (Gmax), s	9.5	60.5	11.5	16.5		75.5		33.5				
Max Q Clear Time (g_c+I1), s	5.5	25.1	11.9	6.5		2.0		11.0				
Green Ext Time (p_c), s	0.1	10.0	0.0	0.3		7.1		0.7				

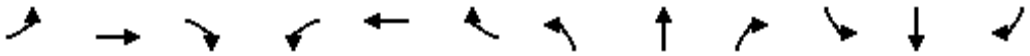
Intersection Summary												
HCM 6th Ctrl Delay			19.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	432	509	1	198	4	4	275	1
Future Volume (vph)	432	509	1	198	4	4	275	1
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	15.0	15.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	23.5	23.5	23.5	21.5	21.5	23.5	23.5
Total Split (s)	33.0	76.8	43.8	43.8	43.2	43.2	43.2	43.2
Total Split (%)	27.5%	64.0%	36.5%	36.5%	36.0%	36.0%	36.0%	36.0%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5		5.5	5.5	5.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 117 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 6: Boulevard SE & McDonough Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	509	0	1	198	136	4	4	6	275	1	261
Future Volume (veh/h)	432	509	0	1	198	136	4	4	6	275	1	261
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	445	525	0	1	204	140	4	4	6	284	1	269
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	671	1143	0	30	415	284	103	105	127	370	2	470
Arrive On Green	0.16	0.61	0.00	0.40	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	1870	0	1	1035	707	216	355	428	1405	6	1580
Grp Volume(v), veh/h	445	525	0	345	0	0	14	0	0	284	0	270
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1742	0	0	999	0	0	1405	0	1586
Q Serve(g_s), s	16.7	18.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	15.4	0.0	17.3
Cycle Q Clear(g_c), s	16.7	18.2	0.0	17.7	0.0	0.0	17.4	0.0	0.0	32.9	0.0	17.3
Prop In Lane	1.00		0.00	0.00		0.41	0.29		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	671	1143	0	729	0	0	336	0	0	370	0	471
V/C Ratio(X)	0.66	0.46	0.00	0.47	0.00	0.00	0.04	0.00	0.00	0.77	0.00	0.57
Avail Cap(c_a), veh/h	787	1143	0	729	0	0	360	0	0	394	0	498
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	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.4	12.6	0.0	26.8	0.0	0.0	30.5	0.0	0.0	44.1	0.0	35.7
Incr Delay (d2), s/veh	1.7	1.3	0.0	2.2	0.0	0.0	0.1	0.0	0.0	8.4	0.0	1.4
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	6.7	7.6	0.0	7.7	0.0	0.0	0.3	0.0	0.0	9.2	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	13.9	0.0	29.0	0.0	0.0	30.6	0.0	0.0	52.5	0.0	37.1
LnGrp LOS	B	B	A	C	A	A	C	A	A	D	A	D
Approach Vol, veh/h		970			345			14			554	
Approach Delay, s/veh		14.9			29.0			30.6			45.0	
Approach LOS		B			C			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.8		41.2	25.2	53.6		41.2				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		71.3		37.7	27.5	38.3		37.7				
Max Q Clear Time (g_c+I1), s		20.2		34.9	18.7	19.7		19.4				
Green Ext Time (p_c), s		8.0		0.8	1.0	3.6		0.0				

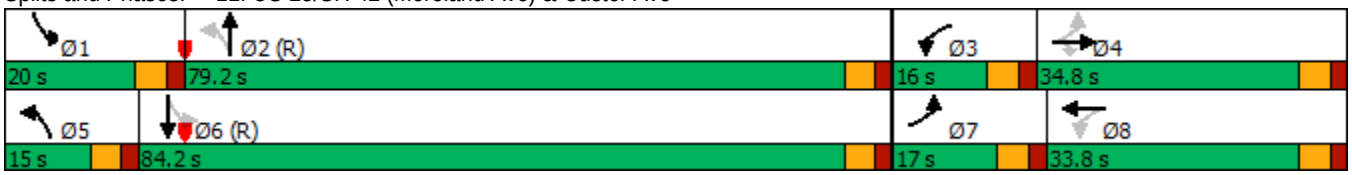
Intersection Summary												
HCM 6th Ctrl Delay			26.5									
HCM 6th LOS			C									

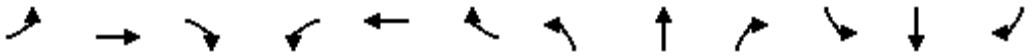
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	174	168	91	199	125	92	1210	167	1444
Future Volume (vph)	174	168	91	199	125	92	1210	167	1444
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	34.5	34.5	15.0	30.5	15.0	34.5	15.0	41.5
Total Split (s)	17.0	34.8	34.8	16.0	33.8	15.0	79.2	20.0	84.2
Total Split (%)	11.3%	23.2%	23.2%	10.7%	22.5%	10.0%	52.8%	13.3%	56.1%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 11: US 23/SR 42 (Moreland Ave) & Custer Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	168	91	199	125	120	92	1210	234	167	1444	181
Future Volume (veh/h)	174	168	91	199	125	120	92	1210	234	167	1444	181
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	181	175	95	207	130	0	96	1260	244	174	1504	189
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	209	177	195	196		196	1848	354	256	2032	252
Arrive On Green	0.08	0.11	0.11	0.07	0.10	0.00	0.03	0.62	0.62	0.05	0.64	0.64
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	2974	570	1781	3181	395
Grp Volume(v), veh/h	181	175	95	207	130	0	96	748	756	174	832	861
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1777	1768	1781	1777	1799
Q Serve(g_s), s	11.5	13.8	8.5	10.5	10.0	0.0	3.0	41.3	42.5	5.3	47.7	49.7
Cycle Q Clear(g_c), s	11.5	13.8	8.5	10.5	10.0	0.0	3.0	41.3	42.5	5.3	47.7	49.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.32	1.00		0.22
Lane Grp Cap(c), veh/h	233	209	177	195	196		196	1104	1098	256	1135	1149
V/C Ratio(X)	0.78	0.84	0.54	1.06	0.66		0.49	0.68	0.69	0.68	0.73	0.75
Avail Cap(c_a), veh/h	233	365	310	195	353		250	1104	1098	338	1135	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	65.3	63.0	61.4	64.6	0.0	20.5	18.6	18.8	21.0	18.4	18.8
Incr Delay (d2), s/veh	15.4	8.6	2.5	82.1	3.8	0.0	1.9	3.3	3.5	3.5	4.2	4.5
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	2.2	7.0	3.5	6.8	5.0	0.0	1.5	16.8	17.3	3.1	19.3	20.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.4	73.9	65.5	143.4	68.4	0.0	22.4	21.9	22.3	24.5	22.6	23.2
LnGrp LOS	E	E	E	F	E		C	C	C	C	C	C
Approach Vol, veh/h		451			337	A		1600			1867	
Approach Delay, s/veh		71.9			114.5			22.1			23.1	
Approach LOS		E			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	98.7	16.0	22.2	10.4	101.3	17.0	21.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	14.5	73.7	10.5	29.3	9.5	78.7	11.5	28.3
Max Q Clear Time (g_c+I1), s	7.3	44.5	12.5	15.8	5.0	51.7	13.5	12.0
Green Ext Time (p_c), s	0.2	21.0	0.0	1.0	0.1	21.9	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	35.1
HCM 6th LOS	D

Notes

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

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	353	362	273	45	424
Future Volume (vph)	353	362	273	45	424
Turn Type	NA	pm+pt	NA	Prot	Perm
Protected Phases	2	1	6	8	
Permitted Phases		6			8
Detector Phase	2	1	6	8	8
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	23.5	15.0	23.5	23.5	23.5
Total Split (s)	48.2	35.0	83.2	36.8	36.8
Total Split (%)	40.2%	29.2%	69.3%	30.7%	30.7%
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	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Min	None	C-Min	None	None

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 70 (58%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 12: Sawtell Ave & McDonough Blvd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	353	61	362	273	45	424
Future Volume (veh/h)	353	61	362	273	45	424
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	388	67	398	300	49	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1164	201	813	1624	72	
Arrive On Green	0.75	0.75	0.07	0.87	0.04	0.00
Sat Flow, veh/h	1554	268	1781	1870	1781	1585
Grp Volume(v), veh/h	0	455	398	300	49	0
Grp Sat Flow(s),veh/h/ln	0	1822	1781	1870	1781	1585
Q Serve(g_s), s	0.0	10.0	5.6	3.0	3.3	0.0
Cycle Q Clear(g_c), s	0.0	10.0	5.6	3.0	3.3	0.0
Prop In Lane		0.15	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1365	813	1624	72	
V/C Ratio(X)	0.00	0.33	0.49	0.18	0.68	
Avail Cap(c_a), veh/h	0	1365	1121	1624	465	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	5.0	3.1	1.2	56.8	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.5	0.3	10.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	1.2	0.6	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.7	3.5	1.5	67.7	0.0
LnGrp LOS	A	A	A	A	E	
Approach Vol, veh/h	455			698	49	A
Approach Delay, s/veh	5.7			2.6	67.7	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	14.3	95.4				109.7	10.3
Change Period (Y+Rc), s	5.5	5.5				5.5	5.5
Max Green Setting (Gmax), s	29.5	42.7				77.7	31.3
Max Q Clear Time (g_c+I1), s	7.6	12.0				5.0	5.3
Green Ext Time (p_c), s	1.2	6.0				4.0	0.1

Intersection Summary		
HCM 6th Ctrl Delay		6.4
HCM 6th LOS		A

Notes

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

Traffic Volume Worksheets

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

1. Blvd SE @ Atlanta Ave

A.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Atlanta Avenue Eastbound				Atlanta Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	126	448	3	577	6	200	158	364	72	54	19	145	5	101	12	118
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	130	464	3	597	6	207	164	377	75	56	20	151	5	105	12	122
No-Build 2024 Volumes:	149	532	3	684	7	238	188	433	86	64	23	173	6	120	14	140
Total New Trips:	25	83	17	125	0	38	0	38	0	0	11	11	8	0	0	8
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	174	615	20	809	7	276	188	471	86	64	34	184	14	120	14	148

P.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Atlanta Avenue Eastbound				Atlanta Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	24	323	7	354	6	400	105	511	129	75	64	268	2	30	3	35
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	25	334	7	366	6	414	109	529	134	78	66	278	2	31	3	36
No-Build 2024 Volumes:	29	383	8	420	7	475	125	607	154	90	76	320	2	36	3	41
Total New Trips:	14	46	9	69	0	71	0	71	0	0	21	21	14	0	0	14
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	43	429	17	489	7	546	125	678	154	90	97	341	16	36	3	55

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	130%	
PM Covid-19 Factor ((East-West):	41%	

20-037 Chosewood Development, Atlanta (Detailed DRI)

Traffic Volumes

A&R Engineering
November 2020

2. Blvd SE @ Englewood Ave

A.M. Peak Hour

Condition	Boulevard SE Northbound				Boulevard SE Southbound				Englewood Avenue Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	95	649	0	744	0	217	48	265	43	0	37	80	0	0	0	0
Existing 2020 Volumes during Covid-19:	25	227	0	252	0	151	19	170	20	0	15	35	0	0	0	0
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	98	672	0	770	0	225	50	275	45	0	38	83	0	0	0	0
No-Build 2024 Volumes:	112	771	0	883	0	258	57	315	52	0	44	96	0	0	0	0
Total New Trips:	21	128	0	149	0	59	8	67	17	0	0	17	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	133	899	0	1032	0	317	65	382	69	0	44	113	0	0	0	0

P.M. Peak Hour

Condition	Boulevard SE Northbound				Boulevard SE Southbound				Englewood Avenue Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	38	260	0	298	0	437	41	478	35	0	86	121	0	0	0	0
Existing 2020 Volumes during Covid-19:	36	256	0	292	0	387	36	423	33	0	36	69	0	0	0	0
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	39	269	0	308	0	452	42	494	36	0	89	125	0	0	0	0
No-Build 2024 Volumes:	45	309	0	354	0	519	48	567	41	0	102	143	0	0	0	0
Total New Trips:	12	71	0	83	0	111	14	125	9	0	0	9	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	57	380	0	437	0	630	62	692	50	0	102	152	0	0	0	0

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	54%	
PM Covid-19 Factor ((East-West):	21%	

20-037 Chosewood Development, Atlanta (Detailed DRI)

Traffic Volumes

A&R Engineering
November 2020

3. Blvd SE @ Burroughs St

A.M. Peak Hour

Condition	Boulevard SE Northbound				Boulevard SE Southbound				Burroughs Street Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	10	539	0	549	0	233	2	235	4	0	13	17	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	10	550	0	560	0	238	2	240	4	0	13	17	0	0	0	0
No-Build 2024 Volumes:	11	595	0	606	0	258	2	260	4	0	14	18	0	0	0	0
Total New Trips:	0	90	0	90	0	51	0	51	0	0	0	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	685	0	685	0	309	0	309	0	0	0	0	0	0	0	0

P.M. Peak Hour

Condition	Boulevard SE Northbound				Boulevard SE Southbound				Burroughs Street Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	30	281	0	311	0	443	13	456	6	0	17	23	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	31	287	0	318	0	452	13	465	6	0	17	23	0	0	0	0
No-Build 2024 Volumes:	34	311	0	345	0	489	14	503	6	0	18	24	0	0	0	0
Total New Trips:	0	63	0	63	0	52	0	52	0	0	0	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	374	0	374	0	541	0	541	0	0	0	0	0	0	0	0

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

4. Blvd SE @ Custer Ave

A.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Site Driveway (Southern) Eastbound				Custer Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	303	137	440	54	182	0	236	0	0	0	0	178	0	210	388
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	309	140	449	55	186	0	241	0	0	0	0	182	0	214	396
No-Build 2024 Volumes:	0	334	152	486	60	201	0	261	0	0	0	0	197	0	232	429
Total New Trips:	25	10	0	35	0	33	18	51	81	62	41	184	0	29	0	29
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	25	344	152	521	60	234	18	312	81	62	41	184	197	29	232	458

P.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Site Driveway (Southern) Eastbound				Custer Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	218	249	467	120	325	0	445	0	0	0	0	136	0	74	210
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	222	254	476	122	332	0	454	0	0	0	0	139	0	75	214
No-Build 2024 Volumes:	0	240	275	515	132	359	0	491	0	0	0	0	150	0	81	231
Total New Trips:	46	18	0	64	0	18	34	52	45	35	23	103	0	54	0	54
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	46	258	275	579	132	377	34	543	45	35	23	103	150	54	81	285

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

5. Blvd SE @ Cassanova St (N)

A.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Cassanova Street (North) Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	9	428	0	437	0	356	2	358	14	0	2	16	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	9	437	0	446	0	363	2	365	14	0	2	16	0	0	0	0
No-Build 2024 Volumes:	10	473	0	483	0	393	2	395	15	0	2	17	0	0	0	0
Total New Trips:	4	34	0	38	0	74	0	74	0	0	8	8	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	14	507	0	521	0	467	2	469	15	0	10	25	0	0	0	0

P.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Cassanova Street (North) Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	6	460	0	466	0	457	6	463	8	0	4	12	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	6	469	0	475	0	466	6	472	8	0	4	12	0	0	0	0
No-Build 2024 Volumes:	6	508	0	514	0	504	6	510	9	0	4	13	0	0	0	0
Total New Trips:	7	64	0	71	0	41	0	41	0	0	5	5	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	13	572	0	585	0	545	6	551	9	0	9	18	0	0	0	0

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

6. Blvd SE @ McDonough Blvd

A.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				McDonough Boulevard Eastbound				McDonough Boulevard Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	8	2	5	15	75	7	314	396	252	158	15	425	8	493	71	572
Existing 2020 Volumes during Covid-19:	0	0	0	0	73	0	91	164	90	96	0	186	0	180	93	273
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	8	2	5	15	77	7	320	404	257	161	15	433	8	503	72	583
No-Build 2024 Volumes:	9	2	5	16	83	8	346	437	278	174	16	468	9	544	78	631
Total New Trips:	0	0	0	0	41	0	41	82	19	0	0	19	0	0	19	19
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	9	2	5	16	124	8	387	519	297	174	16	487	9	544	97	650

P.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				McDonough Boulevard Eastbound				McDonough Boulevard Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	4	4	6	14	228	1	216	445	359	461	0	820	1	179	90	270
Existing 2020 Volumes during Covid-19:	0	0	0	0	182	0	179	361	225	252	0	477	0	178	117	295
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	4	4	6	14	233	1	220	454	366	470	0	836	1	183	92	276
No-Build 2024 Volumes:	4	4	6	14	252	1	238	491	396	509	0	905	1	198	100	299
Total New Trips:	0	0	0	0	23	0	23	46	36	0	0	36	0	0	36	36
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	4	4	6	14	275	1	261	537	432	509	0	941	1	198	136	335

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	130%	
PM Covid-19 Factor ((East-West):	41%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

7. Englewood Ave @ Hill St

A.M. Peak Hour

Condition	Hill Street Northbound				Hill Street Southbound				- Eastbound				Englewood Avenue Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	33	8	41	29	51	0	80	0	0	0	0	10	0	27	37
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	0	76	18	94	67	117	0	184	0	0	0	0	15	0	42	57
No-Build 2024 Volumes:	0	87	21	108	77	134	0	211	0	0	0	0	17	0	48	65
Total New Trips:	0	0	10	10	19	0	0	19	0	0	0	0	21	0	41	62
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	87	31	118	96	134	0	230	0	0	0	0	38	0	89	127

P.M. Peak Hour

Condition	Hill Street Northbound				Hill Street Southbound				- Eastbound				Englewood Avenue Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	37	7	44	42	60	0	102	0	0	0	0	25	0	39	64
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	0	52	10	62	59	85	0	144	0	0	0	0	30	0	47	77
No-Build 2024 Volumes:	0	60	11	71	68	98	0	166	0	0	0	0	34	0	54	88
Total New Trips:	0	0	18	18	36	0	0	36	0	0	0	0	12	0	23	35
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	60	29	89	104	98	0	202	0	0	0	0	46	0	77	123

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	54%	
PM Covid-19 Factor ((East-West):	21%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

8. Englewood Ave @ Grant St

A.M. Peak Hour

Condition	Grant Street Northbound				Grant Street Southbound				Englewood Avenue Eastbound				Englewood Avenue Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	4	28	2	34	2	3	9	14	27	20	2	49	2	20	29	51
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	4	31	2	37	2	3	10	15	42	31	3	76	3	31	45	79
No-Build 2024 Volumes:	5	36	2	43	2	3	11	16	48	36	3	87	3	36	52	91
Total New Trips:	0	0	10	10	0	0	0	0	0	29	0	29	21	62	0	83
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	5	36	12	53	2	3	11	16	48	65	3	116	24	98	52	174

P.M. Peak Hour

Condition	Grant Street Northbound				Grant Street Southbound				Englewood Avenue Eastbound				Englewood Avenue Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	4	1	15	20	18	18	8	44	7	47	3	57	8	53	8	69
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	5	1	17	23	21	21	9	51	8	57	4	69	10	64	10	84
No-Build 2024 Volumes:	6	1	20	27	24	24	10	58	9	65	5	79	11	73	11	95
Total New Trips:	0	0	18	18	0	0	0	0	0	54	0	54	12	35	0	47
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	6	1	38	45	24	24	10	58	9	119	5	133	23	108	11	142

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	11%	
PM Covid-19 Factor (North-South):	14%	
AM Covid-19 Factor (East-West):	54%	
PM Covid-19 Factor ((East-West):	21%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

9. Cassanova St @ Gault St

A.M. Peak Hour

	Gault Street Northbound				Gault Street Southbound				- Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	1	6	7	3	6	0	9	0	0	0	0	2	0	2	4
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	1	7	8	3	7	0	10	0	0	0	0	2	0	2	4
No-Build 2024 Volumes:	0	1	8	9	3	8	0	11	0	0	0	0	2	0	2	4
Total New Trips:	0	0	10	10	0	0	0	0	0	0	0	0	21	0	0	21
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	1	18	19	3	8	0	11	0	0	0	0	23	0	2	25

P.M. Peak Hour

	Gault Street Northbound				Gault Street Southbound				- Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	4	11	15	5	4	0	9	0	0	0	0	6	0	5	11
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	5	13	18	6	5	0	11	0	0	0	0	7	0	6	13
No-Build 2024 Volumes:	0	5	14	19	6	5	0	11	0	0	0	0	8	0	6	14
Total New Trips:	0	0	18	18	0	0	0	0	0	0	0	0	12	0	0	12
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	5	32	37	6	5	0	11	0	0	0	0	20	0	6	26

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	11%	
PM Covid-19 Factor (North-South):	14%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

10. Cassanova St @ Park Ave

A.M. Peak Hour

	Park Avenue Northbound				- Southbound				Cassanova Street Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	1	1	0	0	0	0	0	7	1	8	0	1	0	1
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	1	1	0	0	0	0	0	8	1	9	0	1	0	1
No-Build 2024 Volumes:	0	0	1	1	0	0	0	0	0	9	1	10	0	1	0	1
Total New Trips:	8	0	2	10	0	0	0	0	0	0	17	17	4	0	0	4
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	8	0	3	11	0	0	0	0	0	9	18	27	4	1	0	5

P.M. Peak Hour

	Park Avenue Northbound				- Southbound				Cassanova Street Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	2	2	0	0	0	0	0	12	0	12	2	12	0	14
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	2	2	0	0	0	0	0	14	0	14	2	14	0	16
No-Build 2024 Volumes:	0	0	2	2	0	0	0	0	0	15	0	15	2	15	0	17
Total New Trips:	14	0	4	18	0	0	0	0	0	0	9	9	2	0	0	2
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	14	0	6	20	0	0	0	0	0	15	9	24	4	15	0	19

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	11%	
PM Covid-19 Factor (North-South):	14%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)

Traffic Volumes

A&R Engineering
November 2020

11. US 23 @ Custer Ave

A.M. Peak Hour

	US 23/SR 42 (Moreland Avenue) Northbound				US 23/SR 42 (Moreland Avenue) Southbound				Custer Avenue Eastbound				Custer Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	50	673	49	772	23	450	36	509	68	30	25	123	46	62	27	135
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	115	1548	113	1776	53	1035	83	1171	75	33	28	136	51	69	30	150
No-Build 2024 Volumes:	124	1676	122	1922	57	1120	90	1267	81	36	30	147	55	75	32	162
Total New Trips:	8	0	0	8	0	0	8	8	17	12	17	46	0	6	0	6
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	132	1676	122	1930	57	1120	98	1275	98	48	47	193	55	81	32	168

P.M. Peak Hour

	US 23/SR 42 (Moreland Avenue) Northbound				US 23/SR 42 (Moreland Avenue) Southbound				Custer Avenue Eastbound				Custer Avenue Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	51	793	153	997	109	946	109	1164	133	131	67	331	161	92	97	350
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	72	1118	216	1406	154	1334	154	1642	152	149	76	377	184	105	111	400
No-Build 2024 Volumes:	78	1210	234	1522	167	1444	167	1778	165	161	82	408	199	114	120	433
Total New Trips:	14	0	0	14	0	0	14	14	9	7	9	25	0	11	0	11
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	92	1210	234	1536	167	1444	181	1792	174	168	91	433	199	125	120	444

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

12. McDonough Blvd @ Sawtell

A.M. Peak Hour

	Sawtell Avenue Northbound				- Southbound				McDonough Boulevard Eastbound				McDonough Boulevard Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	35	0	108	143	0	0	0	0	0	50	18	68	134	140	0	274
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	39	0	120	159	0	0	0	0	0	115	41	156	308	322	0	630
No-Build 2024 Volumes:	42	0	130	172	0	0	0	0	0	124	44	168	333	349	0	682
Total New Trips:	0	0	10	10	0	0	0	0	0	29	0	29	21	62	0	83
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	42	0	140	182	0	0	0	0	0	153	44	197	354	411	0	765

P.M. Peak Hour

	Sawtell Avenue Northbound				- Southbound				McDonough Boulevard Eastbound				McDonough Boulevard Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	37	0	329	366	0	0	0	0	0	196	40	236	229	156	0	385
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	42	0	375	417	0	0	0	0	0	276	56	332	323	220	0	543
No-Build 2024 Volumes:	45	0	406	451	0	0	0	0	0	299	61	360	350	238	0	588
Total New Trips:	0	0	18	18	0	0	0	0	0	54	0	54	12	35	0	47
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	45	0	424	469	0	0	0	0	0	353	61	414	362	273	0	635

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	11%	
PM Covid-19 Factor (North-South):	14%	
AM Covid-19 Factor (East-West):	130%	
PM Covid-19 Factor ((East-West):	41%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

13. Englewood Ave @ Drwy

A.M. Peak Hour

Condition	Site Driveway Northbound L	T	R	Tot	- Southbound L	T	R	Tot	Englewood Avenue Eastbound L	T	R	Tot	Englewood Avenue Westbound L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	80	0	80	0	143	0	143
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	35	0	35	0	44	0	44
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	83	0	83	0	148	0	148
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	95	0	95	0	170	0	170
Total New Trips:	62	0	17	79	0	0	0	0	0	0	38	38	8	21	0	29
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	62	0	17	79	0	0	0	0	0	95	38	133	8	191	0	199

P.M. Peak Hour

Condition	Site Driveway Northbound L	T	R	Tot	- Southbound L	T	R	Tot	Englewood Avenue Eastbound L	T	R	Tot	Englewood Avenue Westbound L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	121	0	121	0	79	0	79
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	69	0	69	0	72	0	72
Growth Factor (%):	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	3.5	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	125	0	125	0	82	0	82
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	143	0	143	0	94	0	94
Total New Trips:	35	0	9	44	0	0	0	0	0	0	71	71	14	12	0	26
Pass-by Trips:	10	0	16	26	0	0	0	0	0	-14	14	0	10	-10	0	0
Future 2024 Traffic Volumes:	45	0	25	70	0	0	0	0	0	129	85	214	24	96	0	120

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	0%	
PM Covid-19 Factor (North-South):	0%	
AM Covid-19 Factor (East-West):	54%	
PM Covid-19 Factor ((East-West):	21%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

14. Blvd SE @ Drwy N.

A.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Site Driveway (Northern) Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	543	0	543	0	235	0	235	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	554	0	554	0	240	0	240	0	0	0	0	0	0	0	0
No-Build 2024 Volumes:	0	600	0	600	0	260	0	260	0	0	0	0	0	0	0	0
Total New Trips:	10	81	0	91	0	18	41	59	68	0	33	101	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	10	681	0	691	0	278	41	319	68	0	33	101	0	0	0	0

P.M. Peak Hour

	Boulevard SE Northbound				Boulevard SE Southbound				Site Driveway (Northern) Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	287	0	287	0	456	0	456	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	293	0	293	0	465	0	465	0	0	0	0	0	0	0	0
No-Build 2024 Volumes:	0	317	0	317	0	503	0	503	0	0	0	0	0	0	0	0
Total New Trips:	18	45	0	63	0	34	77	111	38	0	18	56	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	18	362	0	380	0	537	77	614	38	0	18	56	0	0	0	0

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	130%	
PM Covid-19 Factor (North-South):	41%	
AM Covid-19 Factor (East-West):	0%	
PM Covid-19 Factor ((East-West):	0%	

20-037 Chosewood Development, Atlanta (Detailed DRI)
Traffic Volumes

A&R Engineering
November 2020

15. Cassanova St @ Drwy E.

A.M. Peak Hour

	-				Site Driveway (Eastern)				Cassanova Street				Cassanova Street			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	8	0	8	0	1	0	1
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	9	0	9	0	1	0	1
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	10	0	10	0	1	0	1
Total New Trips:	0	0	0	0	8	0	4	12	2	0	0	2	0	0	4	4
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	0	0	0	8	0	4	12	2	10	0	12	0	1	4	5

P.M. Peak Hour

	-				Site Driveway (Eastern)				Cassanova Street				Cassanova Street			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	14	0	14	0	14	0	14
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	16	0	16	0	16	0	16
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	17	0	17	0	17	0	17
Total New Trips:	0	0	0	0	5	0	2	7	4	0	0	4	0	0	7	7
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	0	0	0	5	0	2	7	4	17	0	21	0	17	7	24

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	0%	
PM Covid-19 Factor (North-South):	0%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	

16. Cassanova St @ Drwy W.

A.M. Peak Hour

	- Northbound				Site Driveway (Western) Southbound				Cassanova Street Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	8	0	8	0	1	0	1
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	9	0	9	0	1	0	1
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	10	0	10	0	1	0	1
Total New Trips:	0	0	0	0	17	0	21	38	10	0	0	10	0	0	8	8
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	0	0	0	17	0	21	38	10	10	0	20	0	1	8	9

P.M. Peak Hour

	- Northbound				Site Driveway (Western) Southbound				Cassanova Street Eastbound				Cassanova Street Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
2019 Traffic Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing 2020 Volumes during Covid-19:	0	0	0	0	0	0	0	0	0	12	0	12	0	14	0	14
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Adjusted Existing / Projected 2020 Volumes:	0	0	0	0	0	0	0	0	0	14	0	14	0	16	0	16
No-Build 2024 Volumes:	0	0	0	0	0	0	0	0	0	15	0	15	0	17	0	17
Total New Trips:	0	0	0	0	9	0	12	21	18	0	0	18	0	0	14	14
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2024 Traffic Volumes:	0	0	0	0	9	0	12	21	18	15	0	33	0	17	14	31

Number of Years =	1	(From 2019 to 2020)
Number of Years =	4	(From 2020 to 2024)
Growth Factor (%) =	3.5	(for study intersections on or north of Englewood Ave)
Growth Factor (%) =	2	(for study intersections south of Englewood Ave)
AM Covid-19 Factor (North-South):	0%	
PM Covid-19 Factor (North-South):	0%	
AM Covid-19 Factor (East-West):	11%	
PM Covid-19 Factor ((East-West):	14%	