DEVELOPMENT OF REGIONAL IMPACT
(DRI #4371)

TRANSPORTATION IMPACT STUDY
FOR
CASCADE PALMETTO HIGHWAY AND RIDGE ROAD
(DRI # 4371)

CITY OF SOUTH FULTON, GEORGIA

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A & R Project # 24-015

EXECUTIVE SUMMARY

Transportation impacts were evaluated for the proposed residential development that will be located to the northeast of the intersection of SR 154 and Cedar Grove Road / Ridge Road in the City of South Fulton, Georgia. The development will consist of:

- Single-Family Detached Housing: 491 units
- Townhomes: 152 units

The development proposes access at the following locations:

- Site Driveway 1: Full access driveway on SR 154
- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
- Site Driveway 3: Full access (eastern) driveway on Ridge Road, west of Bethlehem Road

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

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road
5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR 92/SR 154 @ SR 166
8. Ridge Road @ Clark Road / Site Driveway 2 (Western)
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road
13. SR 154 @ Site Driveway 1
14. Ridge Road @ Site Driveway 3 (Eastern)

Transportation Operations Summary

As per GRTA requirements, all approaches that do not meet the level-of-service (LOS) standard (considered failing) are required to be shown under Transportation Operations Summary along with the project's total added trip and the respective percentage of overall total "Build" condition approach traffic volume for all failing LOS approaches after all improvements are completed. Since all approaches at all study intersections will meet the level-of-service standard with the recommended 'system improvements', we do not have anything to report here.

The results of the "No-Build" transportation operations show that the signalized study intersection of SR 92 at SR 154 will operate at an overall level-of-service "D" with the westbound approach having LOS "E" in both the AM and PM peak hours.

Results of "Build" conditions transportation operations show that the intersection of SR 92 and SR 154 will continue to operate at level of service "D" as in "No-Build" conditions with some additional delays. The westbound approach will operate at level of service "E" in both the AM and PM peak hours. All other study intersections will operate satisfactorily.

After the recommended system improvements are implemented, the intersection of SR 92 at SR 154 will operate at LOS "D" or better in both the AM and PM peak hours for all approaches.

Recommendations for System Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below.

Intersection 6: SR 92 @ SR 154

The results of the "No-Build" transportation operations show that the signalized study intersection of SR 92 at SR 154 will operate at an overall level-of-service "E" in the PM peak hour with the westbound and northbound approaches operating with LOS "E" in PM peak hour.

- Addition of a right turn lane on the westbound approach (Cascade Palmetto Highway/SR 70)

After the recommended system improvements are implemented, the intersection of SR 92 at SR 154 will operate at LOS "D" or better in both the AM and PM peak hours.

Recommendation for Site Access Configuration

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

- Site Driveway 1: Full access driveway on SR 154
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with SR 154 remaining free flow.
  - Left Turn Lane and Right Turn Lane on SR 154 for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway and Clark Road approaches.
  - Left Turn Lane and Right Turn Lane on Ridge Road for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

- Site Driveway 3: Full access (eastern) driveway on Ridge Road
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with Ridge Road remaining free flow.
  - Left Turn Lane and Right Turn Lane on Ridge Road for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

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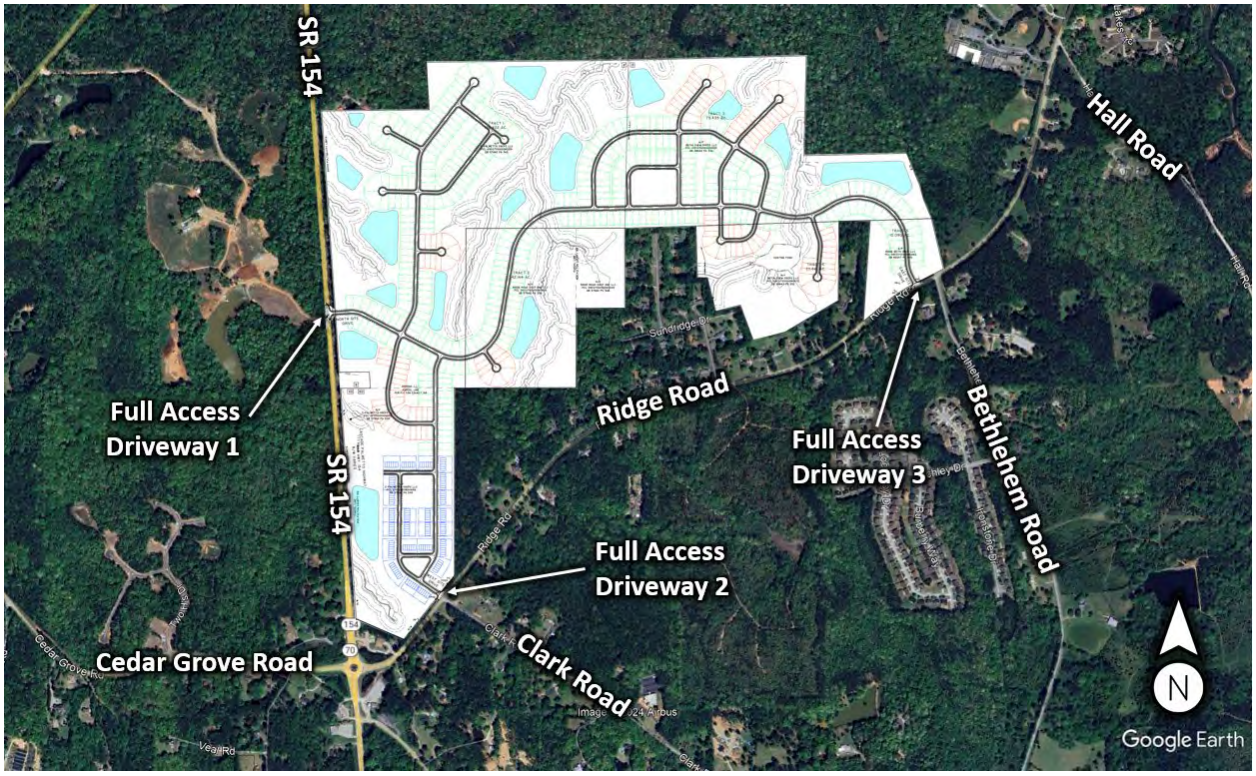
INTRODUCTION

The purpose of this study is to determine the transportation impact from the proposed residential development that will be located to the northeast of the intersection of SR 154 and Cedar Grove Road / Ridge Road in the City of South Fulton, Georgia. The transportation analysis evaluates the current operations and the future conditions with the traffic generated by the development. The development will consist of:

- Single-Family Detached Housing: 491 units
- Townhomes: 152 units



The development proposes access at the following locations:

- Site Driveway 1: Full access driveway on SR 154
- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
- Site Driveway 3: Full access (eastern) driveway on Ridge Road, west of Bethlehem Road

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

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road

5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR 92/SR 154 @ SR 166
8. Ridge Road @ Clark Road / Site Driveway 2 (Western)
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road
13. SR 154 @ Site Driveway 1
14. Ridge Road @ Site Driveway 3 (Eastern)

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

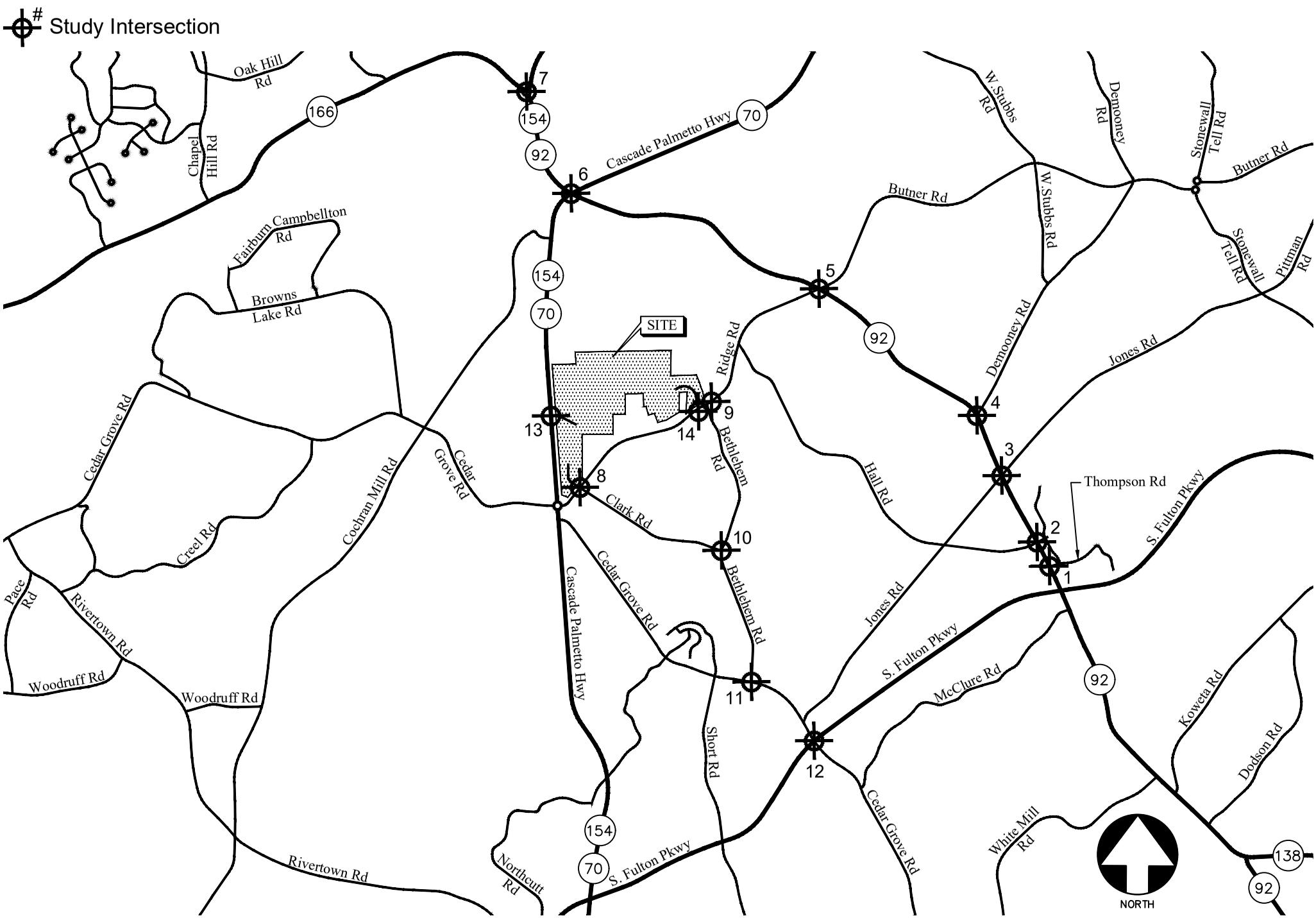
STUDY NETWORK DETERMINATION

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

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

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road
5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR 92/SR 154 @ SR 166
8. Ridge Road @ Clark Road / Site Driveway 2 (Western)
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road
13. SR 154 @ Site Driveway 1
14. Ridge Road @ Site Driveway 3 (Eastern)

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



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

A&R Engineering Inc.

EXISTING ROADWAY FACILITIES

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

State Route 154 (SR 154)

State Route 154 (SR 154) is a north-south, two-lane, undivided roadway with a posted speed limit of 55 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID 121-0370) indicate that the daily traffic volume on SR 154 in 2023 was 9,430 vehicles per day north of Cedar Grove Road / Ridge Road. GDOT classifies SR 154 as an Urban Minor Arterial roadway.

State Route 92 (SR 92)

State Route 92 (SR 92) is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. Towards the north of Ridge Road / Butner Road, the posted speed limit on SR 92 increases to 50 mph and then to 55 mph south of Chattahoochee River. GDOT traffic counts (Station ID 121-0294) indicate that the daily traffic volume on SR 92 in 2023 was 11,400 vehicles per day north of Ridge Road / Butner Road. GDOT classifies SR 92 as an Urban Principal Arterial roadway.

State Route 166 (SR 166)

State Route 166 (SR 166) is a north-south, two-lane, undivided roadway with a posted speed limit of 55 mph in the vicinity of the site. GDOT traffic counts (Station ID 097-0101) indicate that the daily traffic volume on SR 166 in 2023 was 11,100 vehicles per day northwest of SR 92/SR 154. GDOT classifies SR 166 as an Urban Minor Arterial roadway.

South Fulton Parkway

South Fulton Parkway is an east-west, four-lane, median-divided roadway with a posted speed limit of 55 mph in the vicinity of the site. GDOT traffic counts (Station ID's 121-0981 & 121-6056) indicate that the daily traffic volume on South Fulton Parkway in 2023 was 22,100 vehicles east of SR 92 and 7,350 vehicles east of SR 154. GDOT classifies South Fulton Parkway as an Urban Principal Arterial roadway.

Ridge Road

Ridge Road is an east-west, two-lane, undivided roadway with a posted speed limit of 45 mph. GDOT traffic counts (Station ID 121-0733) indicate that the daily traffic volume on Ridge Road in 2023 was 750 vehicles per day east of Farnsborough Drive. GDOT classifies Ridge Road as an Urban Minor Arterial roadway.

Cedar Grove Road

Cedar Grove Road is a two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID's 121-0773 & 121-0757) indicate that the daily traffic volume on Cedar Grove Road in 2023 was 3,680 vehicles per day west of Short Road and 740 vehicles per day east of West Teal Road. GDOT classifies Cedar Grove Road as an Urban Major Collector roadway west of Short Road and as a Rural Major Collector roadway east of West Teal Road.

Clark Road

Clark Road is a north-south, two-lane, undivided roadway without any posted speed limit.

Bethlehem Road

Bethlehem Road is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph.

Butner Road

Butner Road is an east-west, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 121-0734) indicate that the daily traffic volume on Butner Road in 2023 was 2,730 vehicles per day east of Deep Creek. GDOT classifies Butner Road as an Urban Minor Arterial roadway.

Demooney Road

Demooney Road is an east-west, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site.

Jones Road

Jones Road is an east-west, two-lane, undivided roadway with a posted speed limit of 45 mph to the east of SR 92 and 35 mph to the west of SR 92. GDOT traffic counts (Station ID 121-8077) indicate that the daily traffic volume on Jones Road in 2023 was 180 vehicles per day west of SR 92. GDOT classifies Jones Road as an Urban Local roadway.

Hall Road

Hall Road is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph to the east of Line Creek and 35 mph to the west of Line Creek.

Thompson Road

Thompson Road is an east-west, two-lane, undivided roadway without any posted speed limit.

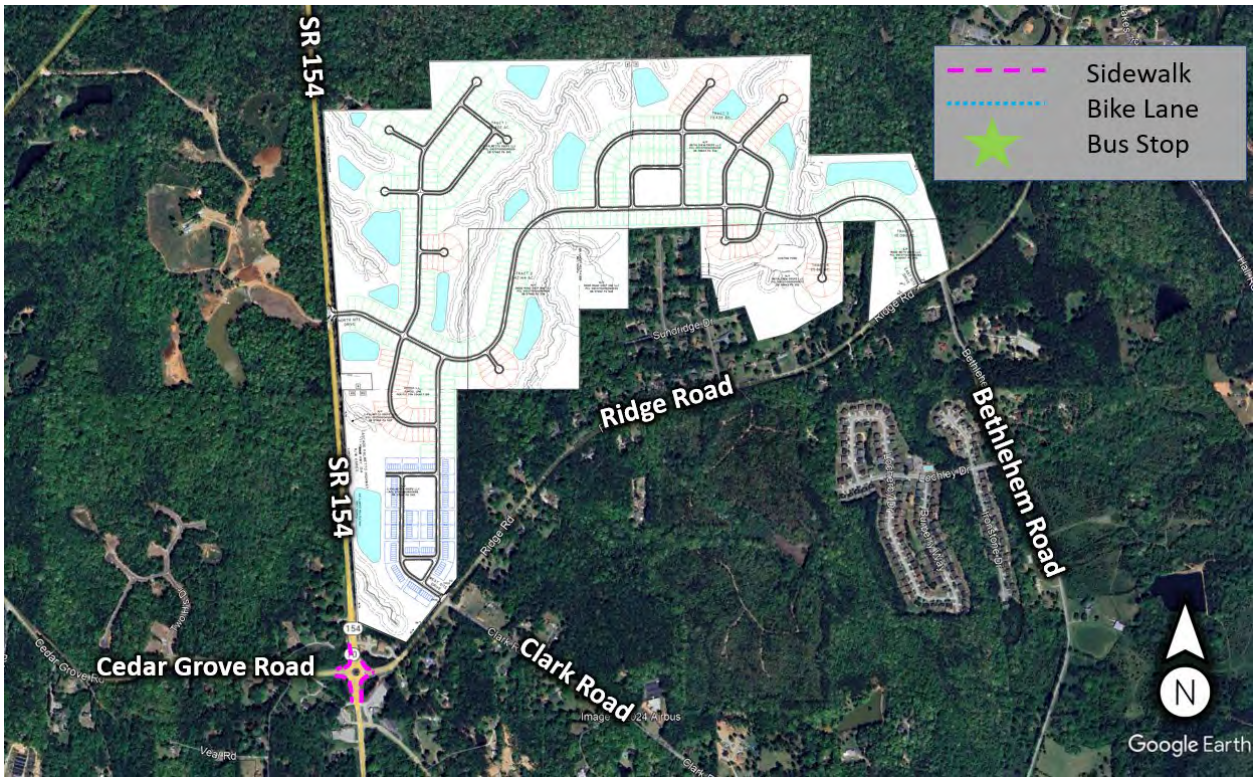
Existing Bicycle and Pedestrian Facilities

- Sidewalk is present on the north side of Ridge Road from approximately 700 feet west of Arlington Christian School's access point to Hall Road
- Sidewalk is present on the east side of SR 92 from South Fulton Parkway through Thompson Road to Hall Road, in the vicinity of Winstar Lane, and south of Ridge Road/Butner Road for approximately 0.4 miles to Giverney Boulevard
- Sidewalk is present on the west side of SR 92 for approximately 500 feet south of Hall Road and north of Jones Road to 550 feet north of Estonian Drive
- Sidewalk is present on the west side of Bethlehem Road from approximately 700 feet north to 200 feet south of Lochley Drive
- Sidewalks are present on Hall Road on:
    - east of SR 92 to Bentley Drive (south side)
    - west of Bentley Drive for appx. 100 feet (north side), but it does not connect to SR 92
    - west of SR 92 for approximately 1,250 feet (south side)
    - from approximately 1,250 feet west of SR 92 to Jones Road (north side)
    - from Jones Road to 200 feet west of Langston Hughes High School's western driveway (south side)
- Sidewalks are present at the intersections of:
    - SR 154 and Cedar Grove Road/Ridge Road on all approaches of the roundabout
    - SR 92 and Ridge Road/Butner Road on both sides of the eastbound approach, on the south side of the westbound approach and on the east side of the northbound approach
    - SR 92/SR 154 and SR 166 on all approaches of the roundabout
    - SR 92 and Thompson Road on the south side of the eastbound approach and both sides of the westbound approach
    - SR 92 and Hall Road on the south side of the eastbound and westbound approaches
    - SR 92 and Jones Road on the south side of the westbound approach
    - South Fulton Parkway and Cedar Grove Road on west side of the northbound approach
- Crosswalks are present at the intersections of:
    - SR 154 and Cedar Grove Road/Ridge Road on all approaches of the roundabout
    - SR 92 and Thompson Road along with pedestrian signal heads on all approaches
    - SR 92 and Hall Road on all approaches
    - SR 92 and Ridge Road/Butner Road on the eastbound approach
    - SR 92 and SR 154 along with pedestrian signal heads on all approaches
    - SR 92/SR 154 and SR 166 on all approaches of the roundabout
    - South Fulton Parkway and Cedar Grove Road on all approaches
- Streetlights are present at the intersections of:
    - SR 154 and Cedar Grove Road / Ridge Road on all approaches
    - SR 92/SR 154 and SR 166 on all approaches
    - SR 92 and Thompson Road on the south side of the eastbound approach

- A shared use path for pedestrians and bicyclists is present at the roundabout intersection of SR 92/SR 154 and SR 166
- From the shared use path at SR 92/SR 154 and SR 166 roundabout, there are bicycle lanes on:
    - SR 166 for approximately 600 feet west
    - SR 92/SR 154 for approximately 700 feet north
    - SR 92/SR 154 for approximately 300 feet south
- The South Fulton Scenic Byway bicycle route, also called the City of Chattahoochee Hills' Silk Sheets Bicycle Route, runs along Cedar Grove Road west of Cochran Mill Road approximately one mile west of SR 154 and along Cochran Mill Road north and south of Cedar Grove Road. It runs along SR 154 from Cochran Mill Road to Church Street, and along Church Street from SR 154 to SR 92. It crosses SR 92 at Church Street approximately 500 feet north of SR 154 and runs to City of Chattahoochee Hills' Campbellton Park, which is approximately two miles from the Project. On Cochran Mill Road south of Cedar Grove Road, it connects to Bear Creek Nature Center and Cochran Mill Park approximately five miles from the Project, and it intersects the City of Chattahoochee Hills' Dirty Sheets Bicycle Route at Cochran Mill Park.

The graphic below includes the location of existing sidewalks in the study network within 0.25-mile proximity of the site. Other than the sidewalks at the roundabout at the intersection of SR 154 and Cedar Grove Road/Ridge Road, there are no sidewalks, bike lanes or bus stop within 0.25 mile of the site.

Existing Alternative Transportation Map



Explore the Nature of Chattahoochee Hills

South Fulton Scenic Byway

www.chatthillsga.us

The Georgia Scenic Byways program adopted this 29-mile loop in Chattahoochee Hills as its first scenic byway in 1998. The route showcases the scenic rolling hills, forested ridges, and serene pastures along Cochran Mill Road, Hutcheson Ferry Road and State Highway 70.

Along the route, visitors can enjoy Campbellton Park, Cochran Mill Park, Bear Creek Nature Center, and Hutcheson Ferry Park, which provide many recreational opportunities. Two other attractions include Smith's Grocery Store, which has served the area for more than 100 years, and the Serenbe Hamlet with its many shops and restaurants.

Points of Interest

1. Campbellton Park
   - Beavers House
   - Boat Ramp

2. Bear Creek Nature Center
6300 Cochran Mill Rd

3. Cochran Mill Park
6875 Cochran Mill Road

4. Hutcheson Ferry Park
9774 Hutcheson Ferry Road

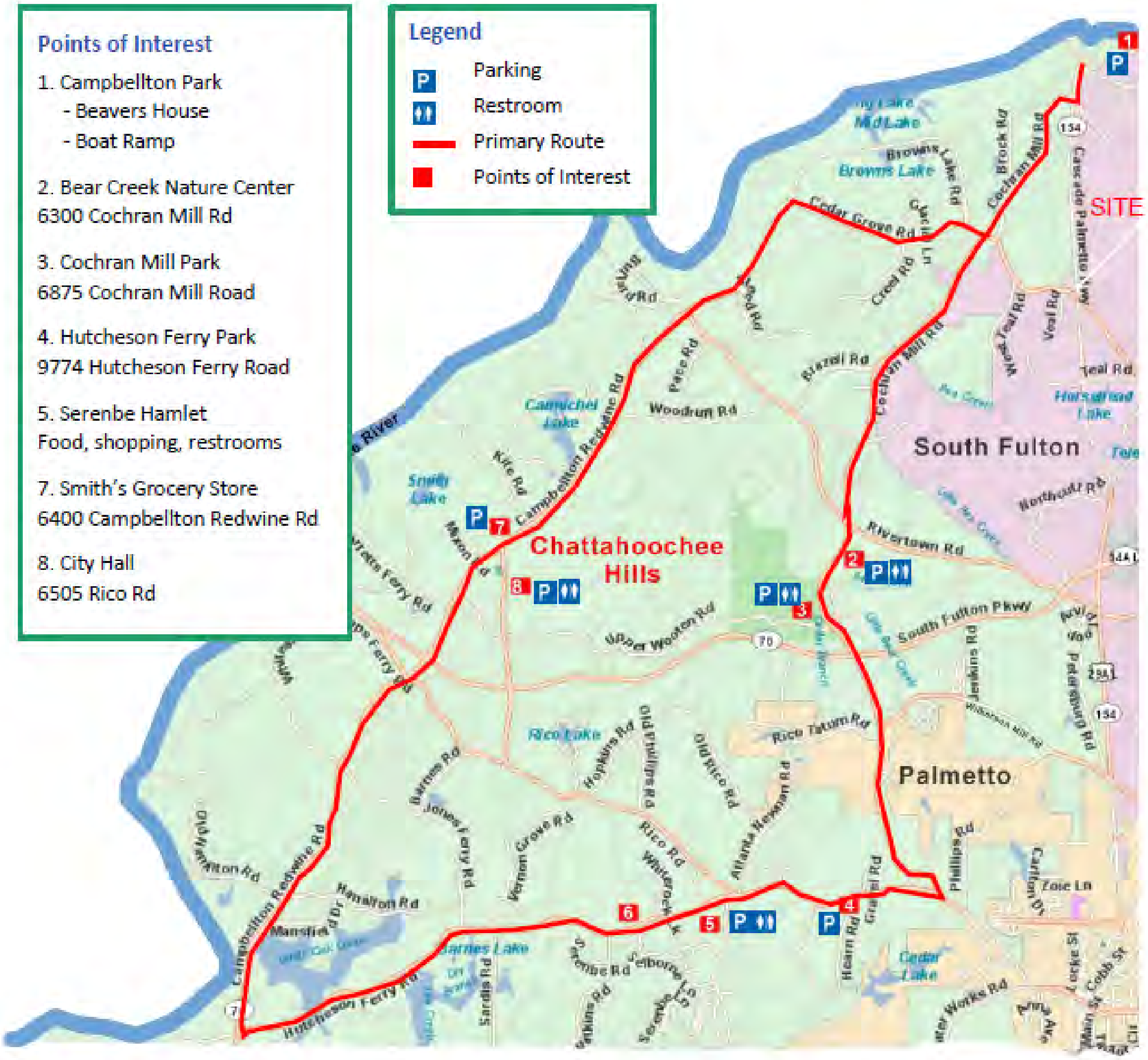
5. Serenbe Hamlet
Food, shopping, restrooms

7. Smith's Grocery Store
6400 Campbellton Redwine Rd

8. City Hall
6505 Rico Rd

Legend

- P Parking
- Restroom
- Primary Route
- Points of Interest



Explore the Nature of Chattahoochee Hills

Silk Sheets Bicycle Route

www.chatthillsga.us

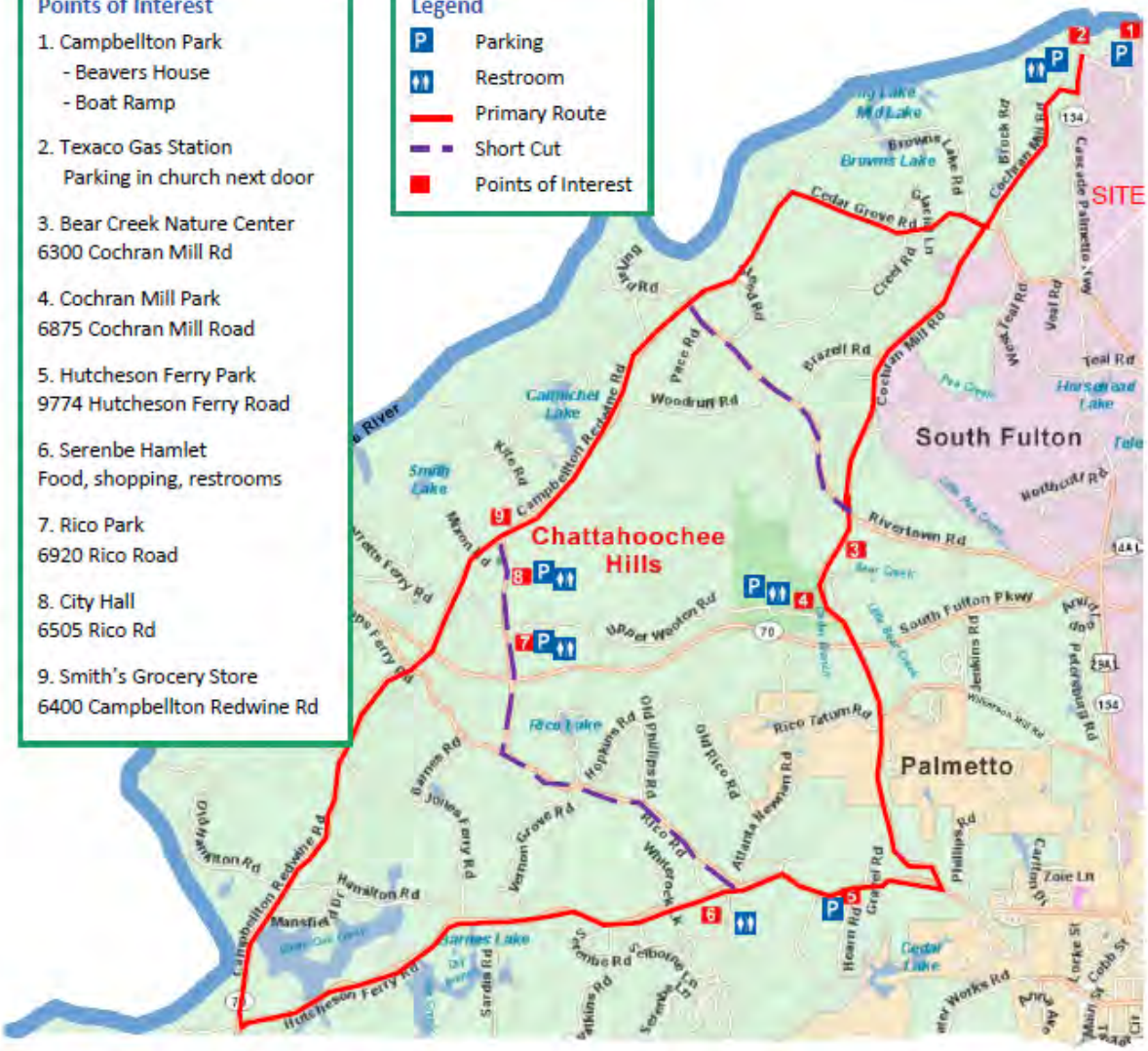
Chattahoochee Hills has long been known as a mecca for bicycle riders. In the early 80s, long before Chatt Hills became a city, bicyclists found their way to our paved roads through favorite rides shared in the Southern Bicycle League magazine. Nicknamed the Silk Sheets, the 29-mile route wound around the rural countryside in what would later become Georgia's first Scenic Byway. There are several different stories on how this route got its name. Some say silk sheets refer to the smooth paved roads, while others say the name came before the roads were paved. A more colorful version claims this was the route where a scantily-clad lady could be seen hanging her silk sheets out to dry.

Points of Interest

1. Campbellton Park
   - Beavers House
   - Boat Ramp
2. Texaco Gas Station
   Parking in church next door
3. Bear Creek Nature Center
   6300 Cochran Mill Rd
4. Cochran Mill Park
   6875 Cochran Mill Road
5. Hutcheson Ferry Park
   9774 Hutcheson Ferry Road
6. Serenbe Hamlet
   Food, shopping, restrooms
7. Rico Park
   6920 Rico Road
8. City Hall
   6505 Rico Rd
9. Smith's Grocery Store
   6400 Campbellton Redwine Rd

Legend

- Parking
- Restroom
- Primary Route
- Short Cut
- Points of Interest



Explore the Nature of Chattahoochee Hills

Dirty Sheets Bicycle Route

www.chatthillsga.us

The Dirty Sheets is a 20-mile bicycle route along the scenic gravel roads in Chattahoochee Hills. The route is available on the Strava and Ride with GPS apps. A popular place to begin is at Cochran Mill Park (6875 Cochran Mill Rd). However, since parking is limited at the Park, the City offers free overflow parking behind City Hall (6505 Rico Rd), at Rico Park (6920 Rico Rd), or Hutcheson Ferry Park (9774 Hutcheson Ferry Rd).

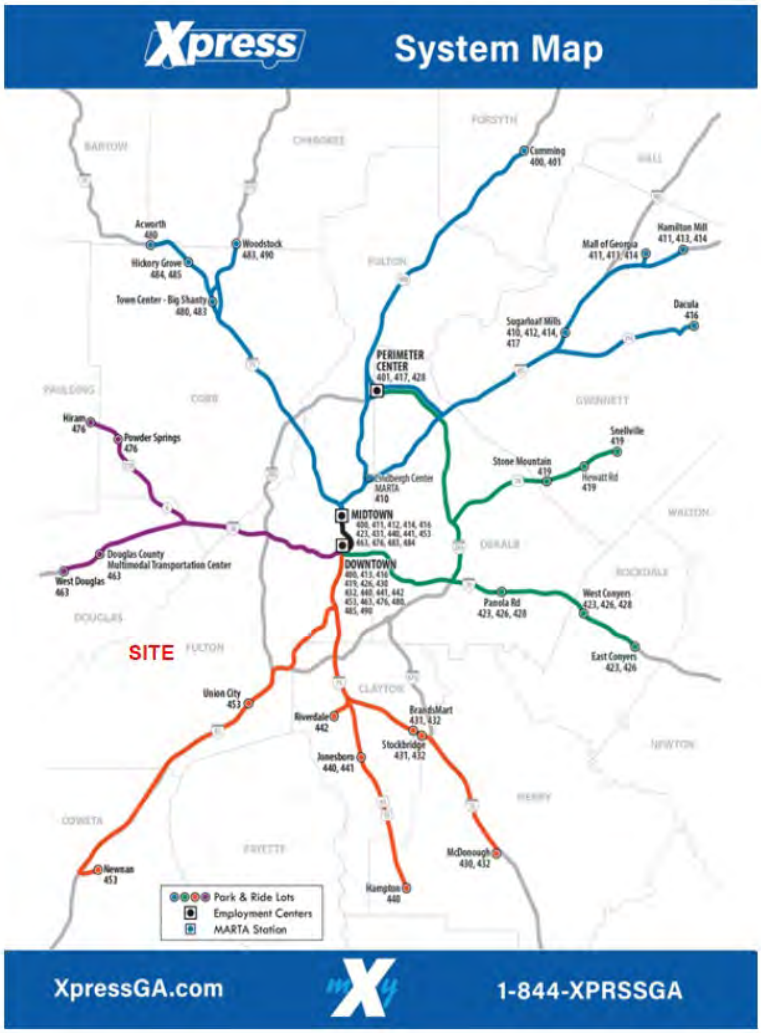
Cue Sheet - Beginning from Rico Park (6920 Rico Rd, Chattahoochee Hills, GA 30268)

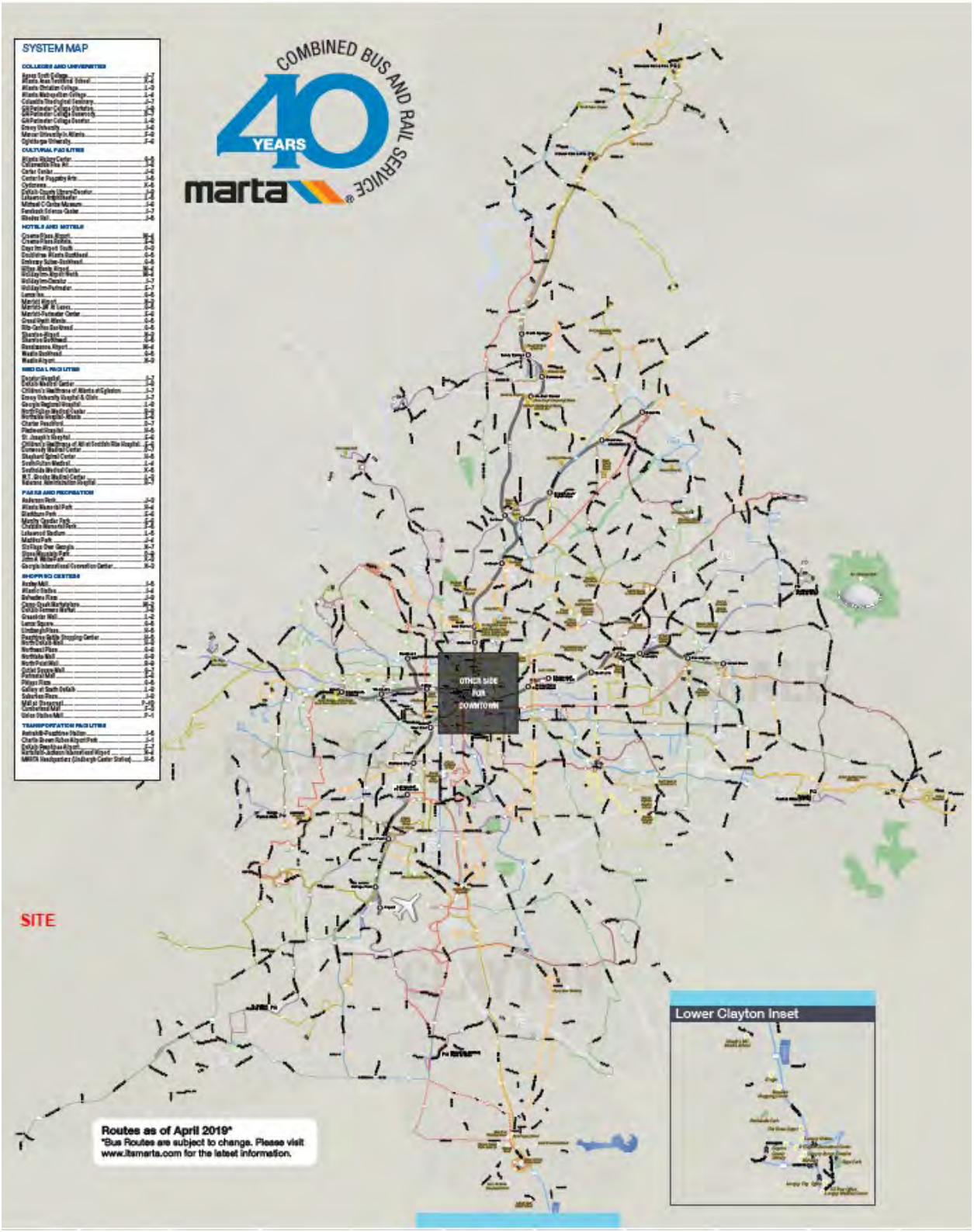
★ **Start of route** – Left on Upper Wooten Rd	Miles
Continue on Garretts Ferry Rd	0.06
Keep right onto Garretts Ferry Rd	1.06
Left onto South Fulton Parkway	2.69
Cross SF Parkway Gate and Capps Ferry Rd	2.7
Right onto Whiteside Rd	2.92
Left onto Jones Ferry Rd	4.27
Left onto Hutchensons Ferry Rd	7.75
Left onto Vernon Grove Rd	8.09
Right onto Rico Rd	9.92

Left onto Hopkins Rd	10.06
Right onto Old Rico Rd	11.31
Left onto Atlanta-Newnan Rd	13
Keep left onto Atlanta-Newnan Rd	13.67
Right onto Rico Tatum Rd	14.24
Left onto Cochran Mill Rd	15.17
Left into Cochran Mill Park	16.4
Go through the gate before the parking lot	16.43
Keep on Upper Wooten Gravel Rd	17.12
End of route	20.14

Alternative Modes of Access

- There are no transit routes in the study network.
- There are no high-capacity transit stations in the vicinity of the proposed development.
- The closest Metropolitan Atlanta Rapid Transit Authority (MARTA) bus routes are between six and seven miles away in the City of South Fulton, Union City, Palmetto, and Fairburn. The closest is Route 82, Camp Creek/South Fulton Parkway, which runs from Derrick Road on South Fulton Parkway to the College Park rail station. MARTA's Combined Bus and Rail Service System Map is attached.
- The Atlanta-Region Transit Link Authority (ATL) Xpress Route 453 runs from the Union City Park-and-Ride, which is approximately twelve miles away, to downtown Atlanta. Xpress Route 463 runs from the Douglas County Multi-Modal Transportation Center, which is approximately thirteen miles away, to downtown Atlanta.
- The closest MARTA rail station is sixteen miles away in College Park.




SYSTEM MAP
COMBINED BUS AND RAIL SERVICE
40 YEARS
marta
OTHER SIDE
RUN
DOWNTOWN
SITE
Lower Clayton Inset
Routes as of April 2019*
*Bus Routes are subject to change. Please visit
www.itsmarta.com for the latest information.

STUDY METHODOLOGY

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

Unsignalized Intersections

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

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

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

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

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

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

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

Signalized Intersections

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

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

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

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

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

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

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

EXISTING 2025 TRANSPORTATION ANALYSIS

Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road
5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR 92/SR 154 @ SR 166
8. Ridge Road @ Clark Road
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road

Turning movement counts were collected on Tuesday, April 29, 2025, at all the study intersections except the intersections of Ridge Road @ Bethlehem Road (#9), Bethlehem Road @ Clark Road (#10), Cedar Grove Road @ Bethlehem Road (#11) and South Fulton Parkway @ Cedar Grove Road (#12) where the counts were collected on Wednesday, April 30, 2025. All turning movement counts were recorded during the AM and PM peak hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. Truck data was included separately in the counts. The four consecutive 15-minute interval volumes that produced the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

Signalized Intersections

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

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

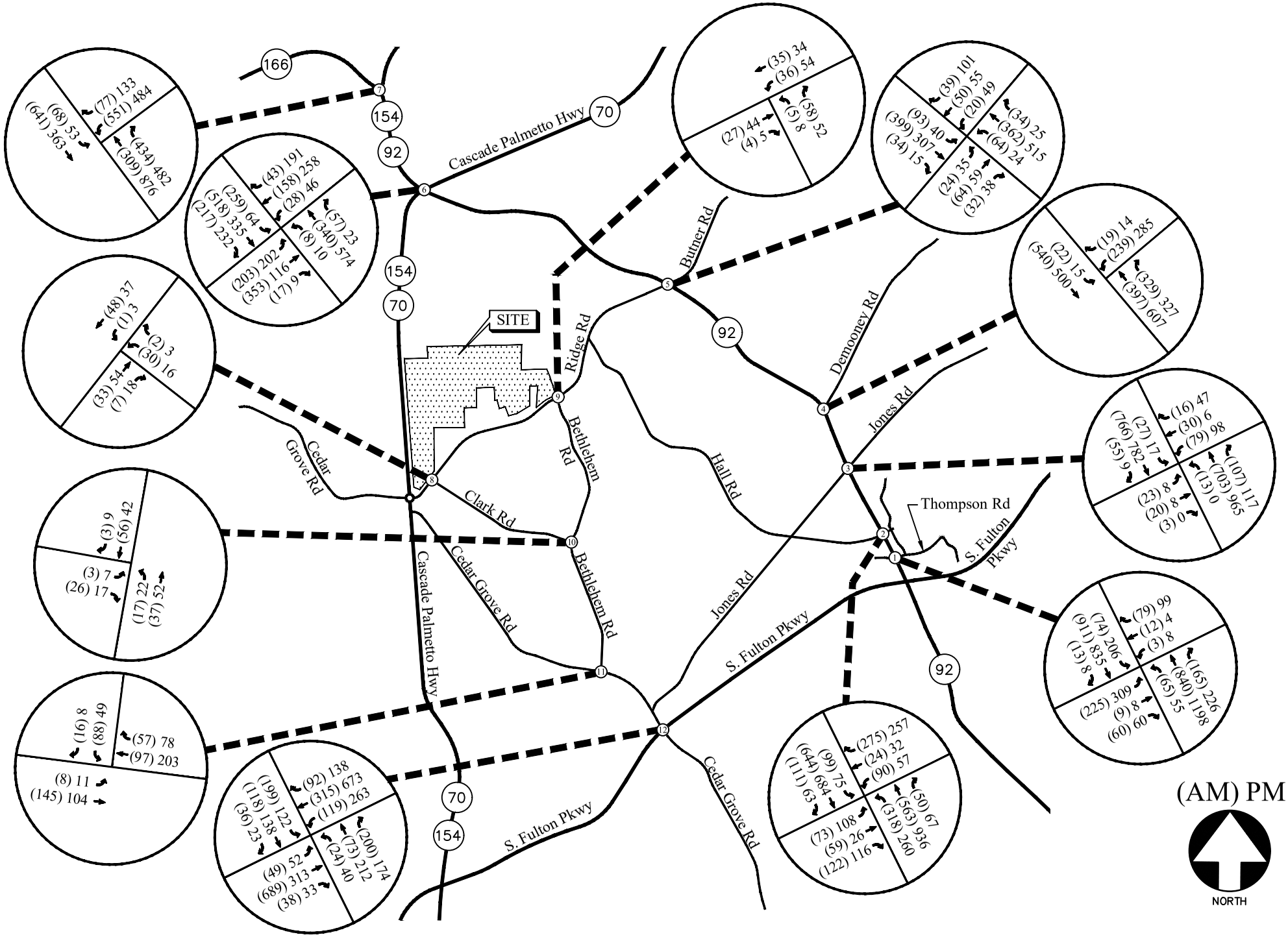
TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

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

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

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

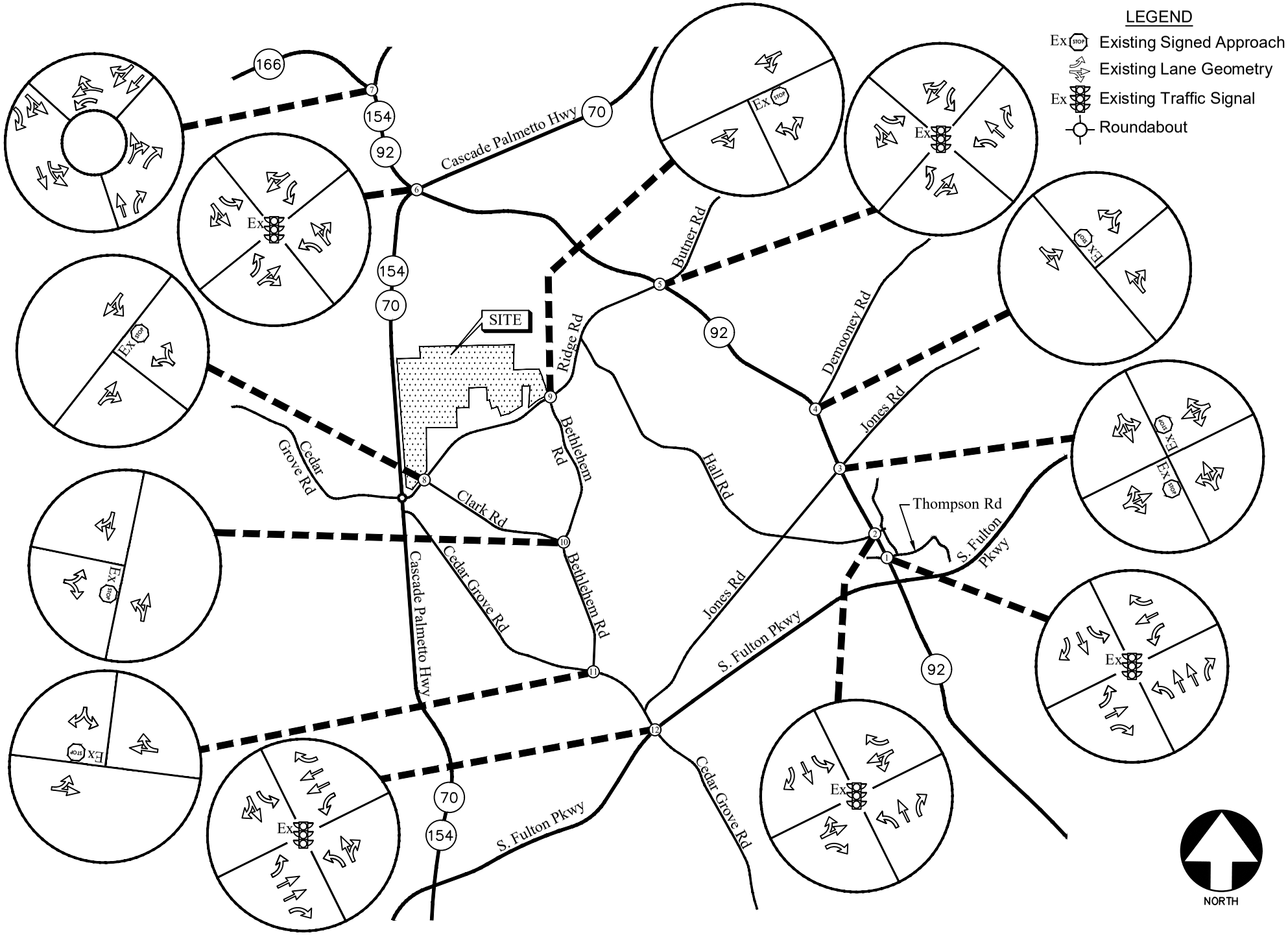
LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more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



EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 2

A&R Engineering Inc.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

A&R Engineering Inc.

Existing Transportation Operations

Existing 2025 transportation operations were analyzed at the study intersections in accordance with the HCM methodology. Per GDOT PI's #0015593 and #0017398, the three intersections of SR 92 at Ridge Road / Butner Road, SR 92 at Jones Road, and SR 92 at Demooney Road are scheduled to be converted into roundabouts in 2024. As per MMP, these intersections have also been analyzed separately with a roundabout traffic control in the existing 2025 analysis and results with both traffic controls are given below in Table 3.

TABLE 3 – EXISTING 2025 INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak	PM Peak	LOS Standard
1	**SR 92 @ Thompson Road**	Signalized	**B (14.1)**	**B (18.0)**	**D/D**
	-Eastbound Approach		D (54.2)	D (51.7)	D/D
	-Westbound Approach		D (35.6)	C (34.9)	D/D
	-Northbound Approach		B (14.1)	B (19.9)	D/D
	-Southbound Approach		A (4.1)	A (5.2)	D/D
2	**SR 92 @ Hall Road**	Signalized	**B (13.7)**	**B (10.8)**	**D/D**
	-Eastbound Approach		D (53.9)	D (55.0)	D/D
	-Westbound Approach		D (54.9)	D (51.2)	D/D
	-Northbound Approach		A (3.7)	A (2.8)	D/D
	-Southbound Approach		B (12.1)	B (10.9)	D/D
3	**SR 92 @ Jones Road**	Existing Stop Controlled on EB and WB Approaches			
	-Eastbound Approach		F (166.1)	F (114.6)	-
	-Westbound Approach		F (**)	F (**)	-
	-Northbound Left		A (9.6)	A (9.4)	-
	-Southbound Left		A (9.6)	B (10.8)	-
3*	**SR 92 @ Jones Road**	*Scheduled Roundabout**	**A (6.3)**	**A (6.7)**	**D/D**
	-Eastbound Approach		A (6.4)	A (5.9)	D/D
	-Westbound Approach		A (6.9)	A (9.3)	D/D
	-Northbound Approach		A (6.0)	A (6.8)	D/D
	-Southbound Approach		A (6.5)	A (6.1)	D/D
4	**SR 92 @ Demooney Road**	Existing Stop Controlled on WB Approach			
	-Westbound Approach		F (**)	F (**)	-
	-Southbound Left		A (9.6)	B (10.2)	-
4*	**SR 92 @ Demooney Road**	*Scheduled Roundabout**	**A (6.2)**	**A (6.7)**	**D/D**
	-Westbound Approach		A (7.1)	A (9.5)	D/D
	-Northbound Approach		A (5.6)	A (6.1)	D/D
	-Southbound Approach		A (6.5)	A (6.1)	D/D
5	**SR 92 @ Ridge Road / Butner Road**	Existing Signalized	**B (13.8)**	**B (18.0)**	-
	-Eastbound Approach		E (56.7)	D (50.2)	-
	-Westbound Approach		E (55.9)	D (52.4)	-
	-Northbound Approach		A (3.1)	A (5.6)	-
	-Southbound Approach		A (3.3)	A (4.8)	-
5*	**SR 92 @ Ridge Road / Butner Road**	*Scheduled Roundabout**	**A (7.3)**	**A (7.6)**	**D/D**
	-Eastbound Approach		A (6.5)	A (5.7)	D/D
	-Westbound Approach		A (5.7)	A (8.8)	D/D
	-Northbound Approach		A (7.4)	A (8.6)	D/D
	-Southbound Approach		A (7.7)	A (6.2)	D/D

6	**SR 92 @ SR 154** -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	**D (35.7)** D (54.2) E (65.4) C (23.8) B (18.6)	**D (44.5)** D (44.2) E (68.5) D (37.6) C (25.2)	**D/D** D/D D/D D/D D/D
7	**SR 92/SR 154 @ SR 166** -Westbound Approach -Northbound Approach -Southbound Approach	Roundabout	**A (7.0)** A (7.5) A (2.2) B (11.6)	**B (10.7)** C (17.3) A (8.8) A (7.1)	**D/D** D/D D/D D/D
8	**Ridge Road @ Clark Road** -Westbound Approach -Southbound Left	Stop Controlled on WB Approach	 A (9.1) A (7.3)	 A (9.3) A (7.4)	 D/D D/D
9	**Ridge Road @ Bethlehem Road** -Westbound Left -Northbound Approach	Stop Controlled on NB Approach	 A (7.3) A (8.8)	 A (7.4) A (9.0)	 D/D D/D
10	**Bethlehem Road @ Clark Road** -Eastbound Approach -Northbound Left	Stop Controlled on EB Approach	 A (8.8) A (7.4)	 A (9.0) A (7.4)	 D/D D/D
11	**Cedar Grove Road @ Bethlehem Road** -Eastbound Left -Southbound Approach	Stop Controlled on SB Approach	 A (7.6) B (11.2)	 A (7.9) B (11.5)	 D/D D/D
12	**South Fulton Parkway @ Cedar Grove Road** -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	**C (30.6)** C (22.2) B (17.7) D (53.9) D (44.4)	**C (32.4)** C (27.6) C (23.8) D (54.5) C (33.9)	**D/D** D/D D/D D/D D/D

* SR 92 at Ridge Rd/Butner Rd, SR 92 at Jones Rd and SR 92 at Demooney Rd evaluated with roundabouts instead of with existing stop-controlled intersections due to GDOT PI's #0015593 and #0017398 converting them into roundabouts

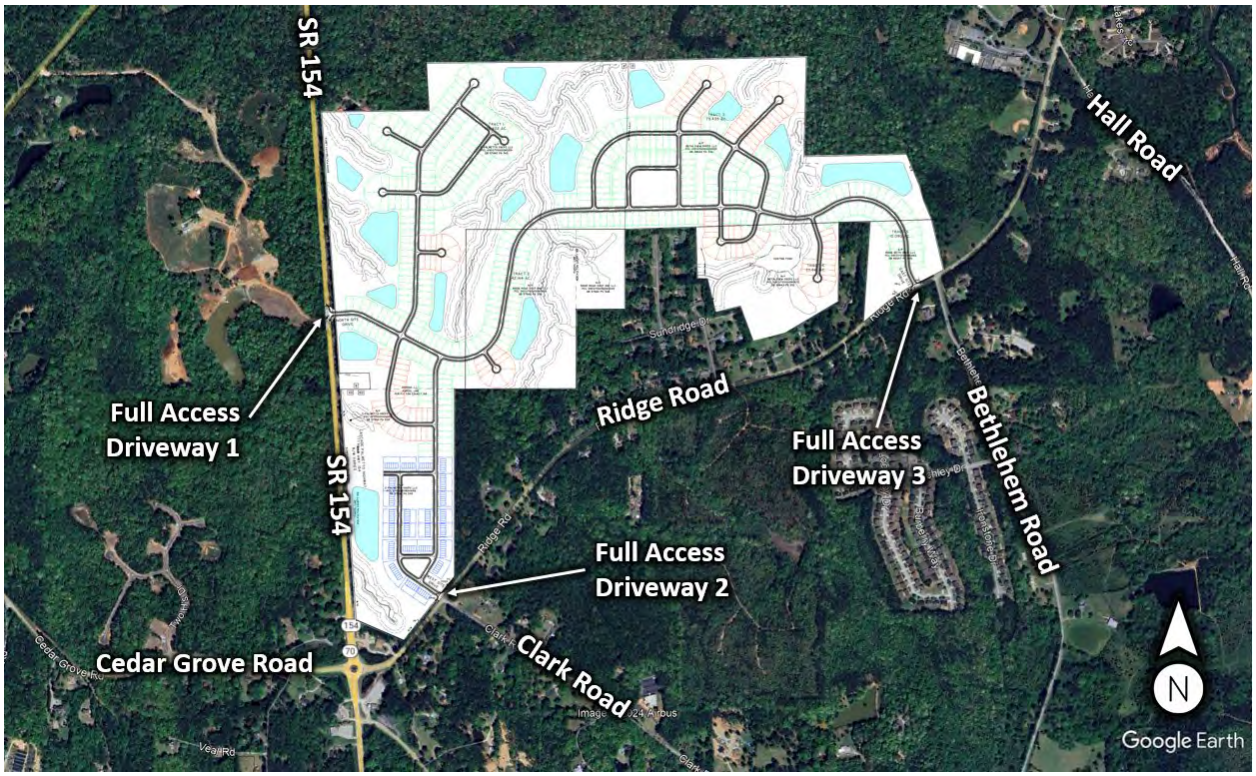
** Delay exceeds 300 seconds

The results of the existing transportation operations analysis indicate that the westbound approach of SR 154 (Cascade Palmetto Highway) at the signalized study intersection of SR 92 at SR 154 is operating at level-of-service "E" in both peak hours. The stop-controlled approaches at the unsignalized intersections of SR 92 at Jones Road and SR 92 at Demooney Road have LOS "F" in both the AM and PM peak hours, and side street stop-controlled Butner Road will operate at LOS "E" in the AM peak hour with the existing minor-stop traffic control. With a roundabout, these three intersections will operate at overall LOS "D" or better.

PROJECT DESCRIPTION

The proposed residential development will be located to the northeast of the intersection of SR 154 and Cedar Grove Road / Ridge Road in the City of South Fulton, Georgia. The development will consist of:

- Single-Family Detached Housing: 491 units
- Townhomes: 152 units

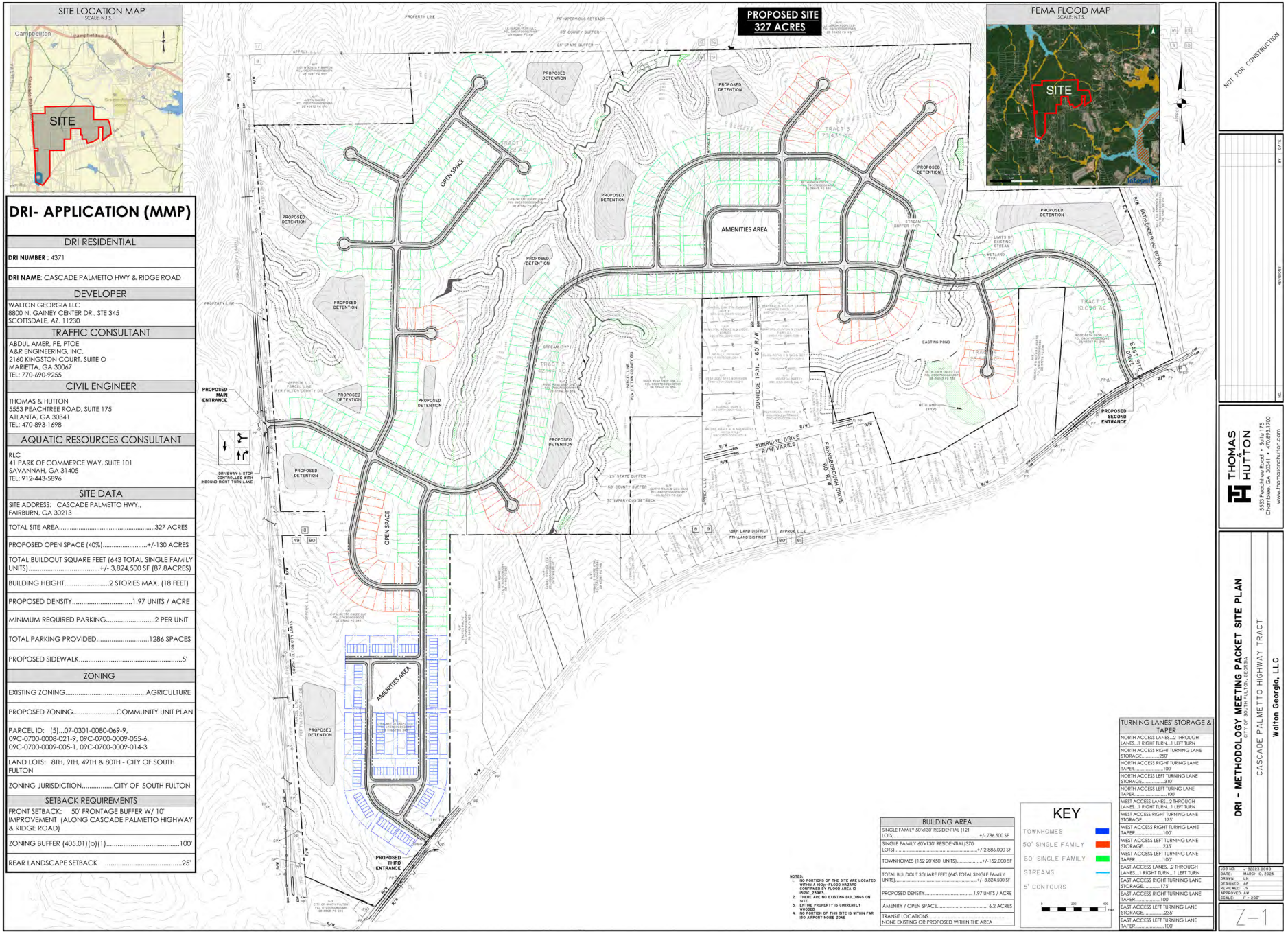


The development proposes access at the following locations:

- Site Driveway 1: Full access driveway on SR 154
- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
- Site Driveway 3: Full access (eastern) driveway on Ridge Road, west of Bethlehem Road

Site Plan

A site plan is shown in Figure 4. A digital copy of the site plan is also provided with this report.



DRI- APPLICATION (MMP)

DRI RESIDENTIAL

DRI NUMBER : 4371

DRI NAME: CASCADE PALMETTO HWY & RIDGE ROAD

DEVELOPER

WALTON GEORGIA LLC
8800 N. GAINEY CENTER DR., STE 345
SCOTTSDALE, AZ. 11230

TRAFFIC CONSULTANT

ABDUL AMER, PE, PTOE
A&R ENGINEERING, INC.
2160 KINGSTON COURT, SUITE O
MARIETTA, GA 30067
TEL: 770-690-9255

CIVIL ENGINEER

THOMAS & HUTTON
5553 PEACHTREE ROAD, SUITE 175
ATLANTA, GA 30341
TEL: 470-893-1698

AQUATIC RESOURCES CONSULTANT

RLC
41 PARK OF COMMERCE WAY, SUITE 101
SAVANNAH, GA 31405
TEL: 912-443-5896

SITE DATA

SITE ADDRESS: CASCADE PALMETTO HWY.,
FAIRBURN, GA 30213

TOTAL SITE AREA.....327 ACRES

PROPOSED OPEN SPACE (40%).....+/-130 ACRES

TOTAL BUILDOUT SQUARE FEET (643 TOTAL SINGLE FAMILY UNITS).....+/- 3,824,500 SF (87.8ACRES)

BUILDING HEIGHT.....2 STORIES MAX. (18 FEET)

PROPOSED DENSITY.....1.97 UNITS / ACRE

MINIMUM REQUIRED PARKING.....2 PER UNIT

TOTAL PARKING PROVIDED.....1286 SPACES

PROPOSED SIDEWALK.....5'

ZONING

EXISTING ZONING.....AGRICULTURE

PROPOSED ZONING.....COMMUNITY UNIT PLAN

PARCEL ID: (5)...07-0301-0080-069-9, 09C-0700-0008-021-9, 09C-0700-0009-055-6, 09C-0700-0009-005-1, 09C-0700-0009-014-3

LAND LOTS: 8TH, 9TH, 49TH & 80TH - CITY OF SOUTH FULTON

ZONING JURISDICTION.....CITY OF SOUTH FULTON

SETBACK REQUIREMENTS

FRONT SETBACK: 50' FRONTAGE BUFFER W/ 10' IMPROVEMENT (ALONG CASCADE PALMETTO HIGHWAY & RIDGE ROAD)

ZONING BUFFER (405.01)(b)(1).....100'

REAR LANDSCAPE SETBACK .....25'

BUILDING AREA	
SINGLE FAMILY 50'x130' RESIDENTIAL (121 LOTS)	+/-.786,500 SF
SINGLE FAMILY 60'x130' RESIDENTIAL(370 LOTS)	+/-2,886,000 SF
TOWNHOMES (152 20'X50' UNITS)	+/-152,000 SF
TOTAL BUILDOUT SQUARE FEET (643 TOTAL SINGLE FAMILY UNITS)	+/- 3,824,500 SF
PROPOSED DENSITY	1.97 UNITS / ACRE
AMENITY / OPEN SPACE	6.2 ACRES
TRANSIT LOCATIONS: NONE EXISTING OR PROPOSED WITHIN THE AREA	

NOTES:
1. NO PORTIONS OF THE SITE ARE LOCATED WITHIN A 100yr-FLOOD HAZARD CONFIRMED BY FLOOD AREA ID 13121C_0259G.
2. THERE ARE NO EXISTING BUILDINGS ON SITE.
3. ENTIRE PROPERTY IS CURRENTLY WOODED
4. NO PORTION OF THIS SITE IS WITHIN FAR ISO AIRPORT NOISE ZONE

KEY
TOWNHOMES
50' SINGLE FAMILY
60' SINGLE FAMILY
STREAMS
5' CONTOURS
0 200 400 Feet

TURNING LANES' STORAGE & TAPER	
NORTH ACCESS LANES...2 THROUGH LANES...1 RIGHT TURN...1 LEFT TURN	
NORTH ACCESS RIGHT TURNING LANE STORAGE	250'
NORTH ACCESS RIGHT TURING LANE TAPER	100'
NORTH ACCESS LEFT TURNING LANE STORAGE	310'
NORTH ACCESS LEFT TURING LANE TAPER	100'
WEST ACCESS LANES...2 THROUGH LANES...1 RIGHT TURN...1 LEFT TURN	
WEST ACCESS RIGHT TURNING LANE STORAGE	175'
WEST ACCESS RIGHT TURING LANE TAPER	100'
WEST ACCESS LEFT TURNING LANE STORAGE	225'
WEST ACCESS LEFT TURNING LANE TAPER	100'
EAST ACCESS LANES...2 THROUGH LANES...1 RIGHT TURN...1 LEFT TURN	
EAST ACCESS RIGHT TURNING LANE STORAGE	175'
EAST ACCESS RIGHT TURNING LANE TAPER	100'
EAST ACCESS LEFT TURNING LANE STORAGE	235'
EAST ACCESS LEFT TURNING LANE TAPER	100'

Planned Bicycle and Pedestrian Facilities

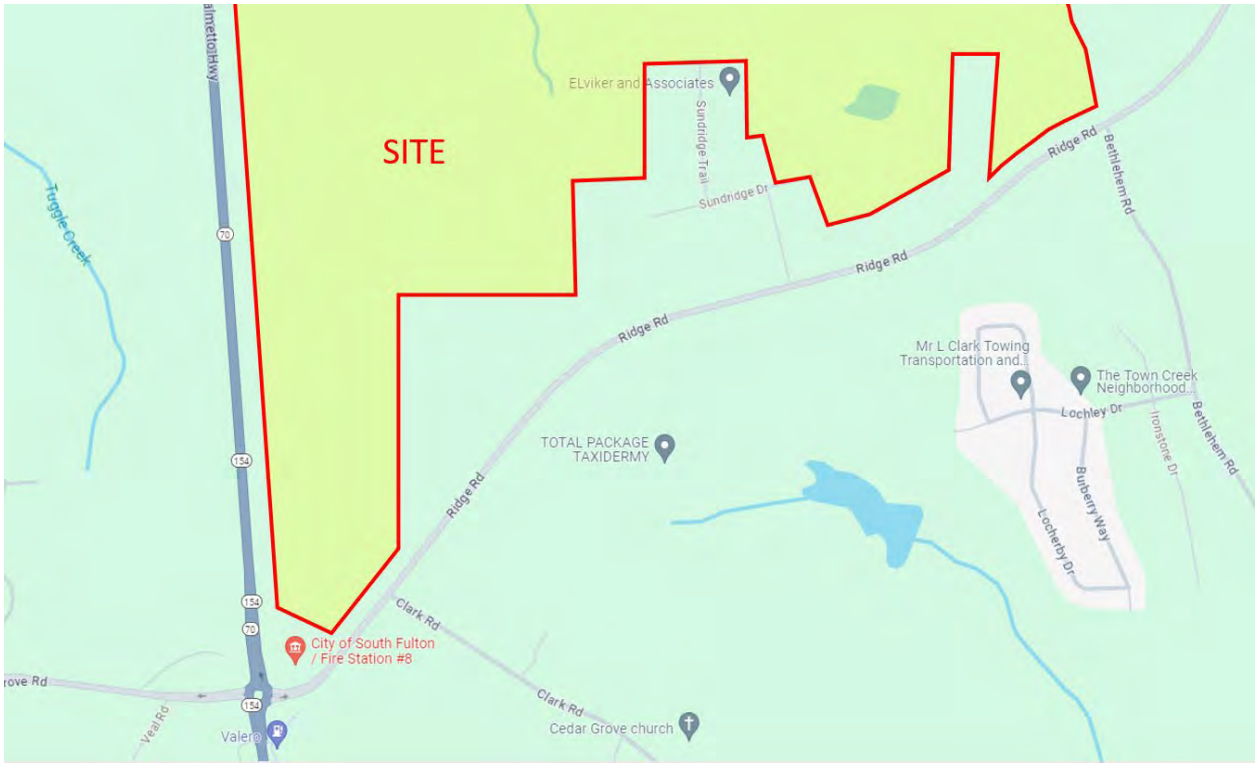
The project will have five-foot wide sidewalks on both sides of the internal streets. Sidewalk is proposed on the east side of SR 154 for 70 feet to the north and for 205 feet to the south of Site Driveway 1, on the north side of Ridge Road for 160 feet to the east and for 22 feet to the west of Site Driveway 2 (Western), and on the north side of Ridge Road for 160 feet to the east and for 16 feet to the west of Site Driveway 3 (Eastern).

Potential Pedestrian and Bicycle Destinations

Potential pedestrian and bicycle destinations within 0.25-mile of the vicinity of the proposed development include:

- Valero gas station at SR 154 and Cedar Grove Road (east)

These potential destinations are shown in the aerial below.



The City of South Fulton Future Land Use Map shows the area within 0.25 miles of the intersection of Ridge Road/Cedar Grove Road and SR 154, except for the area that is part of the Project, as Local Live Work. The 0.25-mile area extends east along the south side of Ridge Road to Clark Road; Site Driveway 2 (Western) will align with Clark Road. In the future, the City plans for there to be a balanced mix of commercial, office, and residential uses within 0.25 miles of the project. The sidewalk proposed on the north side of Ridge Road at Site Driveway 2 (Western) could provide a pedestrian connection between the project and the Village Live-Work area.

Sidewalk Ordinances

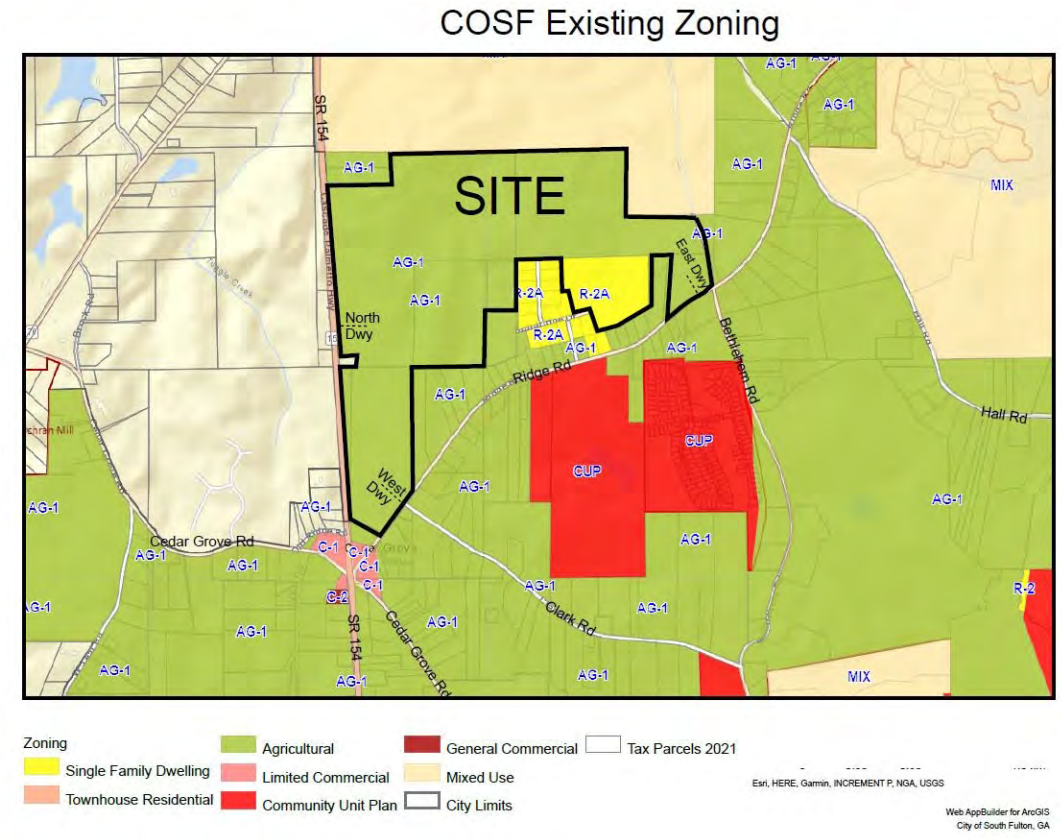
City of South Fulton's Subdivision Regulations require single family residential subdivisions to place a sidewalk along both sides of all internal publicly dedicated streets. Single family residential subdivisions shall be required to place a sidewalk along the development's frontage on external publicly dedicated streets. Sidewalks for residential development shall have a minimum width of five feet. Sidewalks along publicly dedicated streets shall be located within the public right-of-way and shall be set off the street curb by a minimum three-foot wide landscape strip. City's ordinance standards for sidewalk and streetscape will be followed.

Planned Transit Facilities

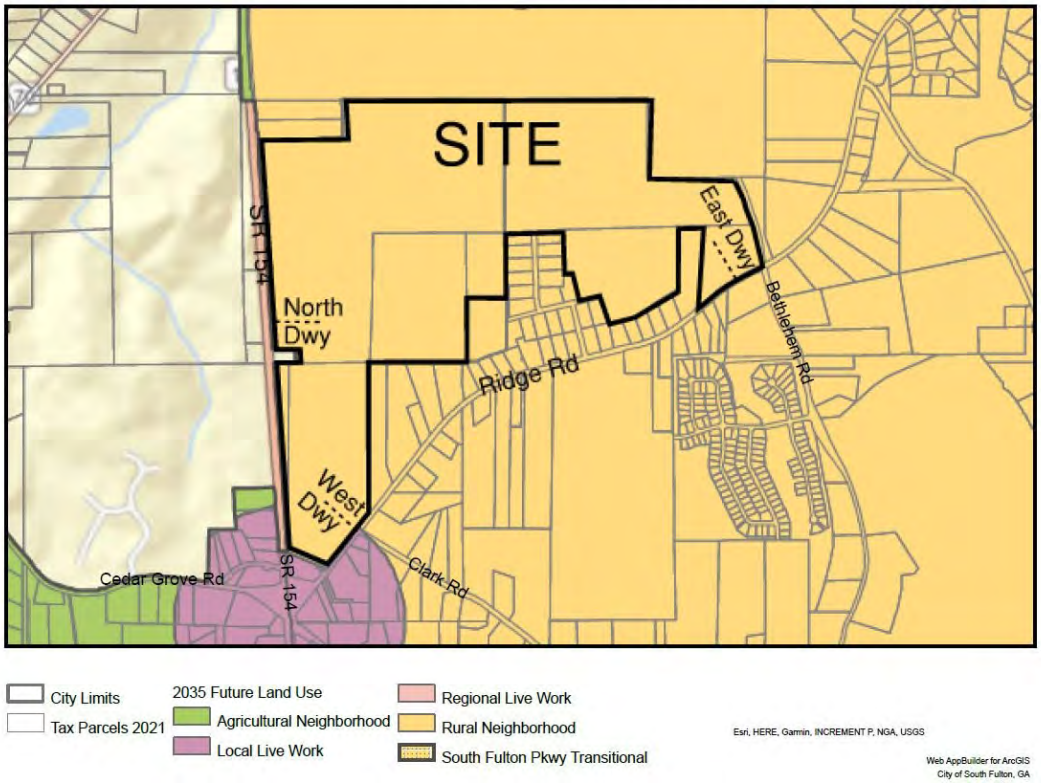
There is no existing or planned public transit service near the proposed development.

Consistency with Adopted Comprehensive Plan

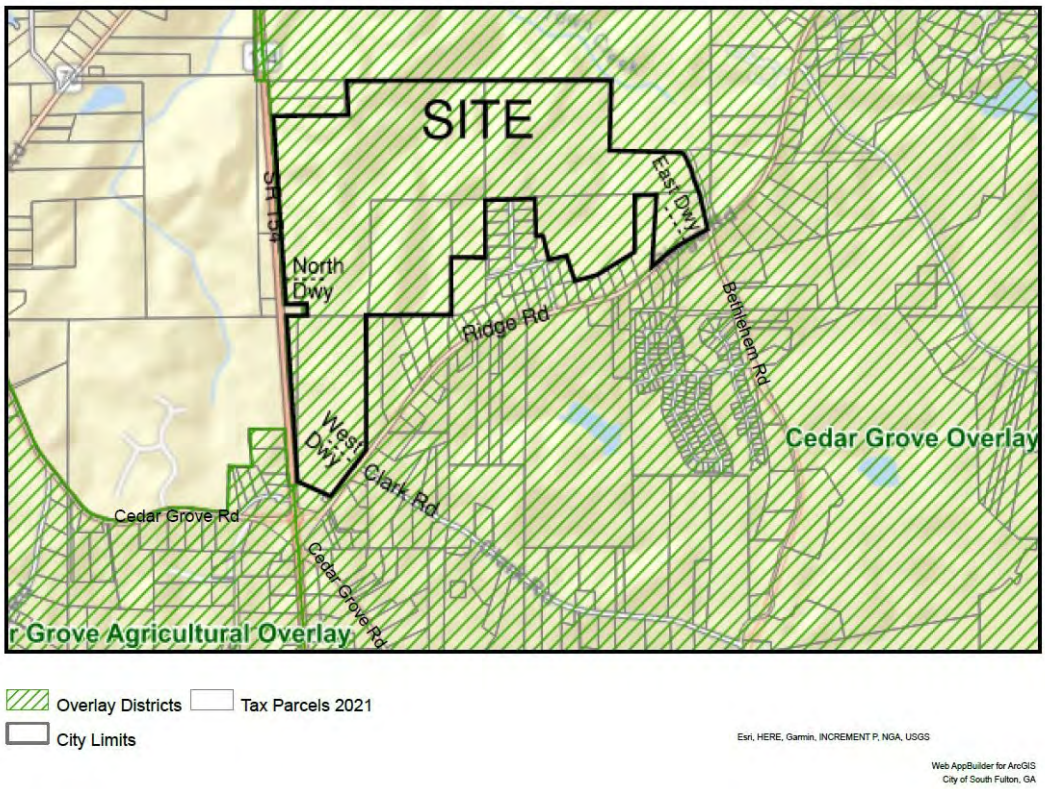
The proposed development will consist of 643 dwelling units, including 491 single-family units and 152 townhomes. The property consists of 327 acres of land, including 130 acres of open space. The site is currently zoned as Agricultural (AG-1) (301.337 acres) and Single-Family Dwelling (R-2A) (25.622 acres) and is requesting a rezoning to Community Unit Plan District (CUP) within the Cedar Grove Overlay District.



COSF Future Land Use



COSF Overlay Districts

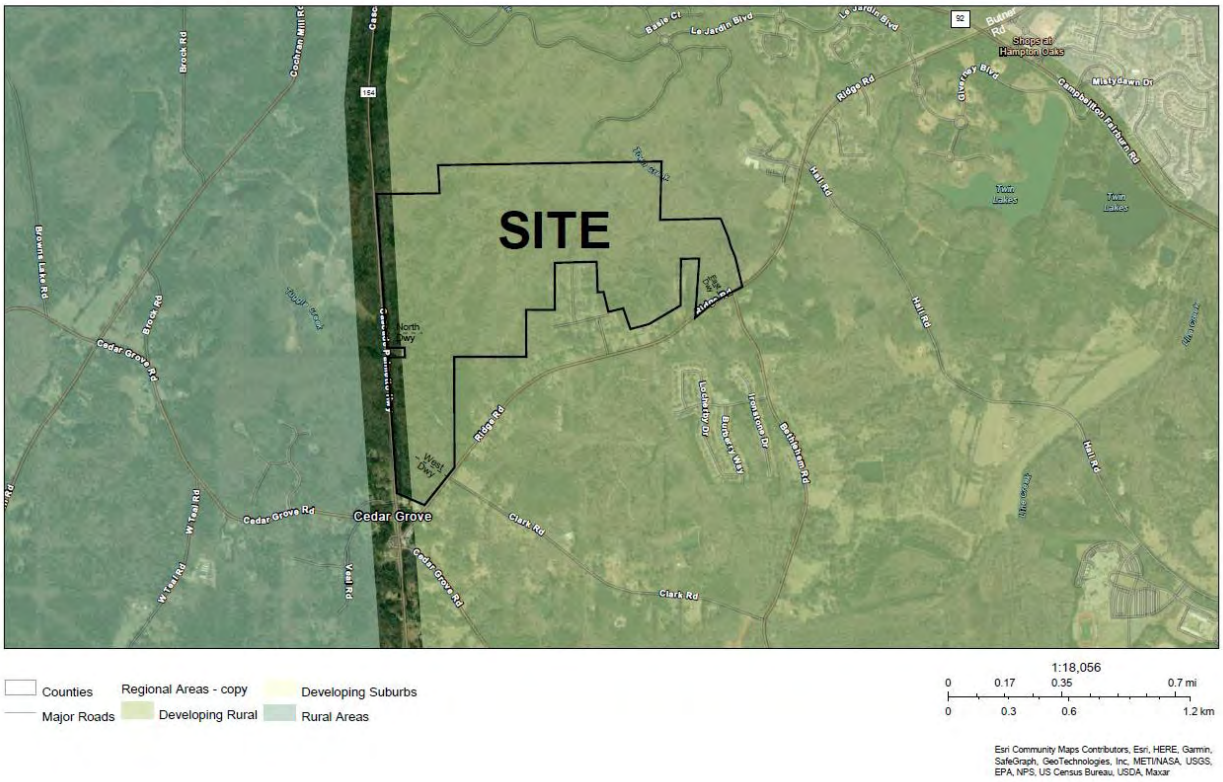


Future Land Use Map

City of South Fulton Future Land Use	Rural Neighborhood
Land Use Vision and Goals for the City of South Fulton	As per the 2021 Comprehensive Plan of the City of South Fulton, the South Fulton Community Vison is: • *City of South Fulton will be an innovative, diverse community that is safe, environmentally conscious, healthy, transparent and financially sustainable for all its citizens and visitors.* The goals to implement the above vision are: • *Ensure Stable Housing for All* • *Building Trust within the Community* • *Creating an Economic Engine for the South Side* • *Develop a Unique South Fulton* • *Develop a Strong Community for South Fulton* According to the City of South Fulton's Zoning Ordinance, the CUP District identifies land areas for a variety of housing types, including single-family and multi-family uses, within a planned community setting. The CUP District is intended to: • *Encourage the development of large tracts of land as planned communities* • *Encourage flexible and creative concepts in site planning.* • *Preserve the natural amenities of the land by encouraging scenic and functional open areas* • *Provide for an efficient use of land* • *Provide a stable residential environment compatible with surrounding residential areas* • *Protect neighboring properties by requiring larger peripheral lots adjacent to larger lot developments* The Cedar Grove Overlay District includes the area east of SR 154, west of SR 92, and approximately 0.5 miles north of South Fulton Parkway. The Cedar Grove Overlay District's purpose and intent is to establish a uniform procedure for providing for the protection, enhancement, preservation, unity of design, and use of places, sites, buildings, structures, streets, neighborhoods, and landscape features in the Cedar Grove Overlay District. The Cedar Grove Overlay District is part of a strategy designed to promote the health, safety, order, prosperity, and general welfare of the citizens of South Fulton through the regulation of design, aesthetics, location, bulk, size of buildings and structures, and the density and distribution of population. The Cedar Grove Overlay District seeks to: • *Reduce congestion on the streets* • *Provide safety from fire, flood, and other dangers* • *Provide adequate light and open space* • *Protect the natural environment* • *Address other public requirements, in order to provide sustainable development that involves the* • *simultaneous pursuit of economic prosperity, environmental protection, and social quality* • *Promote accepted design principles in areas of new development and redevelopment* • *Raise the level of community understanding and expectation for quality in*

	the built environment • *Protect and enhance local aesthetic and functional qualities* • *Stimulate business and promote economic development* In consideration of the rural character of the Cedar Grove Overlay District, the regulations are intended to: • *Define and monitor the suitability for certain uses, construction and design* • *Prevent functional and visual disunity* • *Promote desirable conditions for community and commerce* • *Protect property against blight and depreciation*
Relation to Existing Land Use Plans	The Project aligns with the Local Government's approved land use plan. *Single-Family Detached and Townhouses are allowed uses. A maximum of five single-family dwelling units (d.u.) per acre is allowed.* Common outdoor area consisting of not less than 550 square feet (s.f.) per unit shall be provided for recreation in all developments of 20 or more acres. Land area proposed for open space or recreation shall be allocated among the use areas in proportion to the ratio of a neighborhood population to the total CUP population so that acreage devoted to open space is reasonably accessible to all residents. The Project has 643 d.u. on a total of 327 acres, with 130 acres of open space. There will be 1.97 d.u. per acre, which satisfies the CUP District intention of a maximum of five single-family d.u. per acre. 130 acres is 5,662,800 s.f. There will be 8,807 s.f. of open space per d.u., which satisfies the CUP District intention of common outdoor area consisting of not less than 550 s.f. per unit. The acreage devoted to open space is reasonably accessible to all residents.

2021 ARC Unified Growth Policy Map



Project Phasing

This project has been evaluated for the complete build-out of the development in one phase in 2027.

Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 11th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE *Land Uses: 210 – Single-Family Detached Housing* and *215 – Single-Family Attached Housing*. The calculated total trip generation for the proposed development is shown in Table 4.

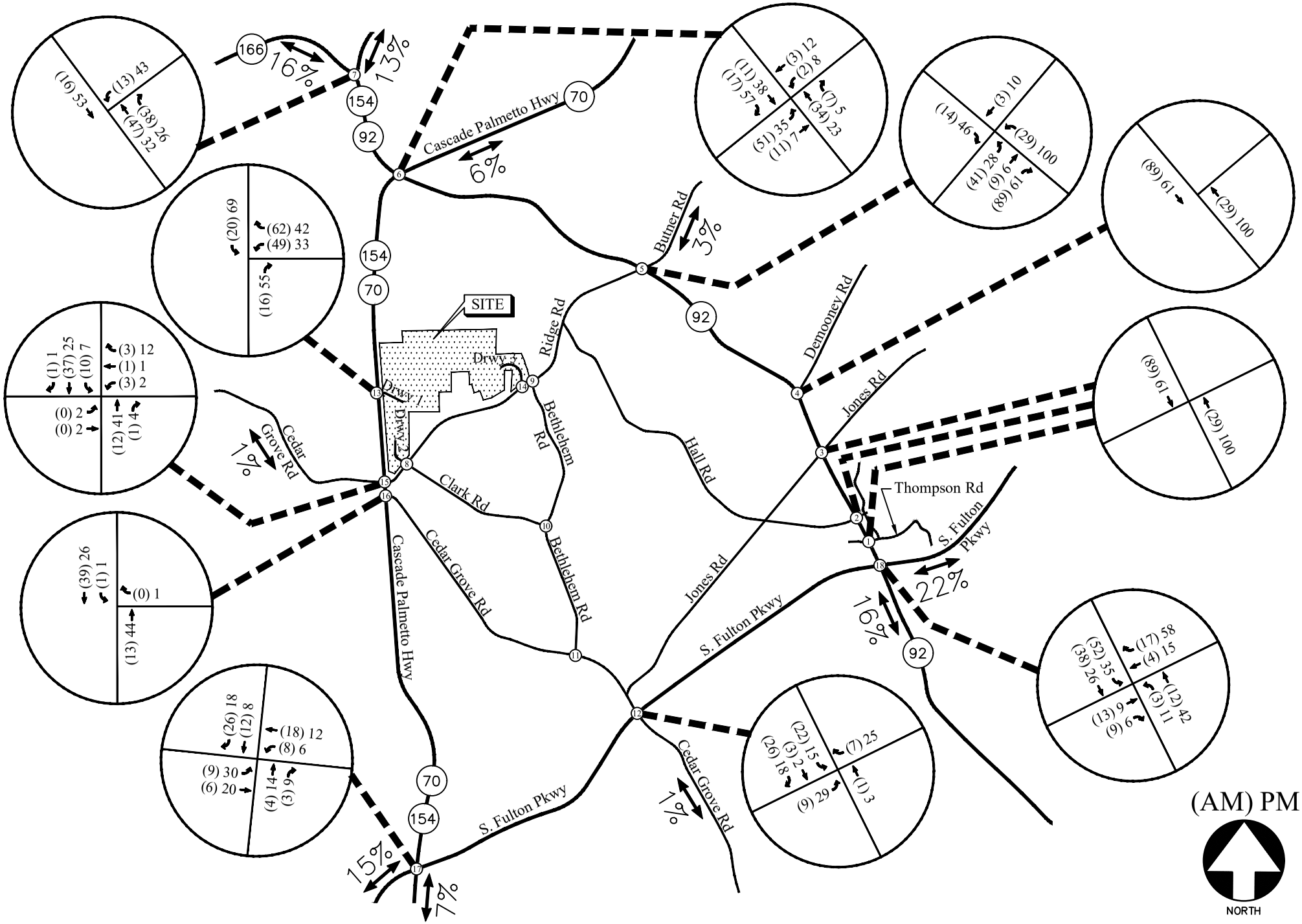
TABLE 4 – TRIP GENERATION (PROPOSED DEVELOPMENT)

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	2-way
ITE 210 – Single-Family Detached Housing	491 units	79	238	317	279	164	443	4,362
ITE 215 – Single-Family Attached Housing	152 units	18	55	73	51	36	87	1,108
Total Site Trips		97	293	390	330	200	530	5,470

Trip Distribution

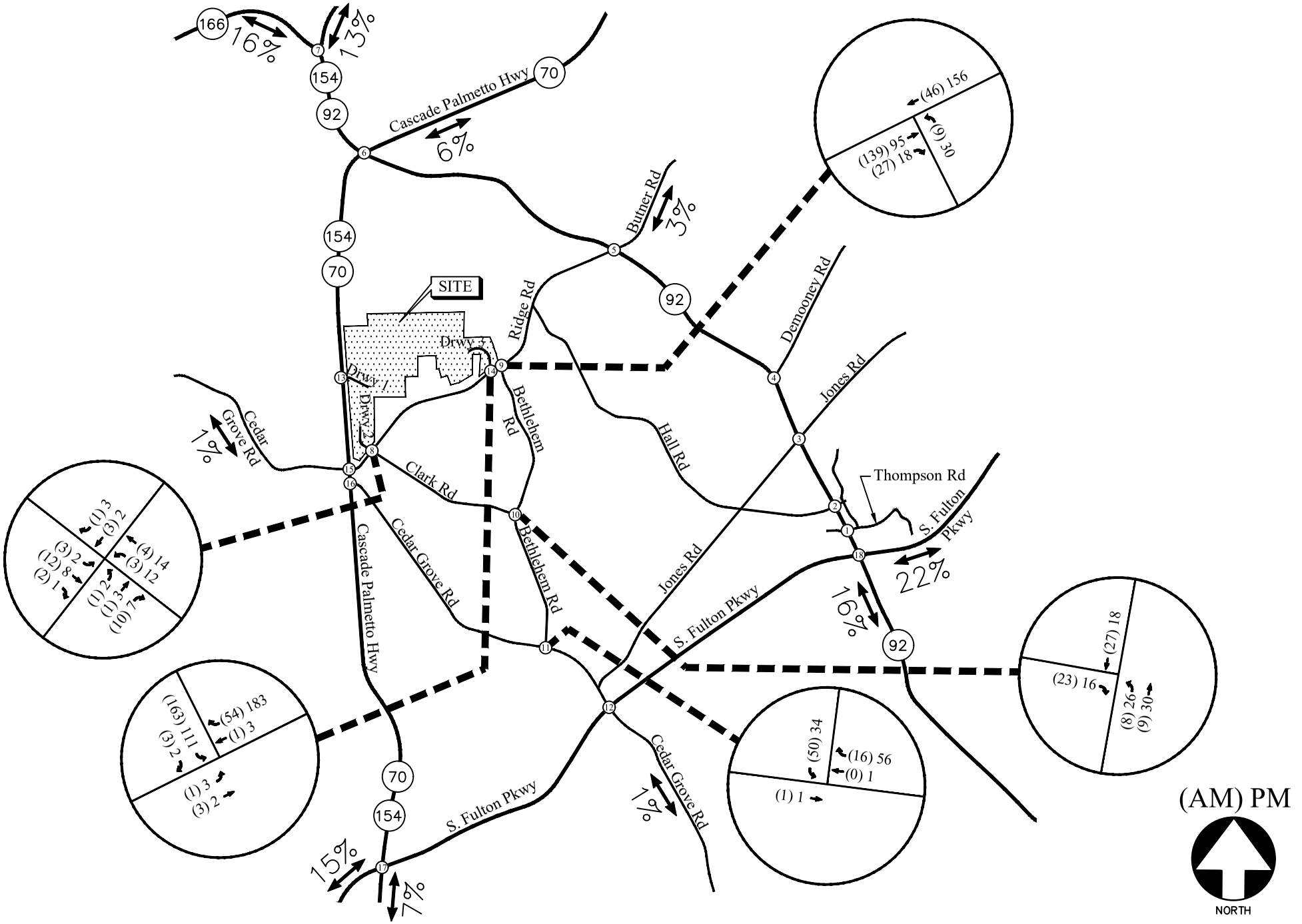
The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution as mentioned in the MMP and approved was used in the analysis and is shown below. The site-generated peak hour traffic volumes, shown in Table 4, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 5A and Figure 5B.

Roadway	ARC ABM Year 2030 Vehicular Volume	Trip Distribution
SR 154 south of South Fulton Pkwy	9453	7%
SR 154 east of SR 92	7545	6%
Cedar Grove Rd North west of SR 154	1379	1%
Butner Rd east of SR 92	3957	3%
Cedar Grove Rd South south of South Fulton Pkwy	1913	1%
SR 92 south of South Fulton Pkwy	21476	16%
SR 92 north of SR 166	17068	13%
South Fulton Pkwy west of SR 154	19207	15%
South Fulton Pkwy east of SR 92	29492	22%
SR 166 west of SR 92	20835	16%
Total Entering/Exiting Study Area	132325	100%



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (1 OF 2) FIGURE 5A

A&R Engineering Inc.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (2 OF 2) FIGURE 5B

A&R Engineering Inc.

FUTURE 2027 TRANSPORTATION ANALYSIS

The future 2027 transportation 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.

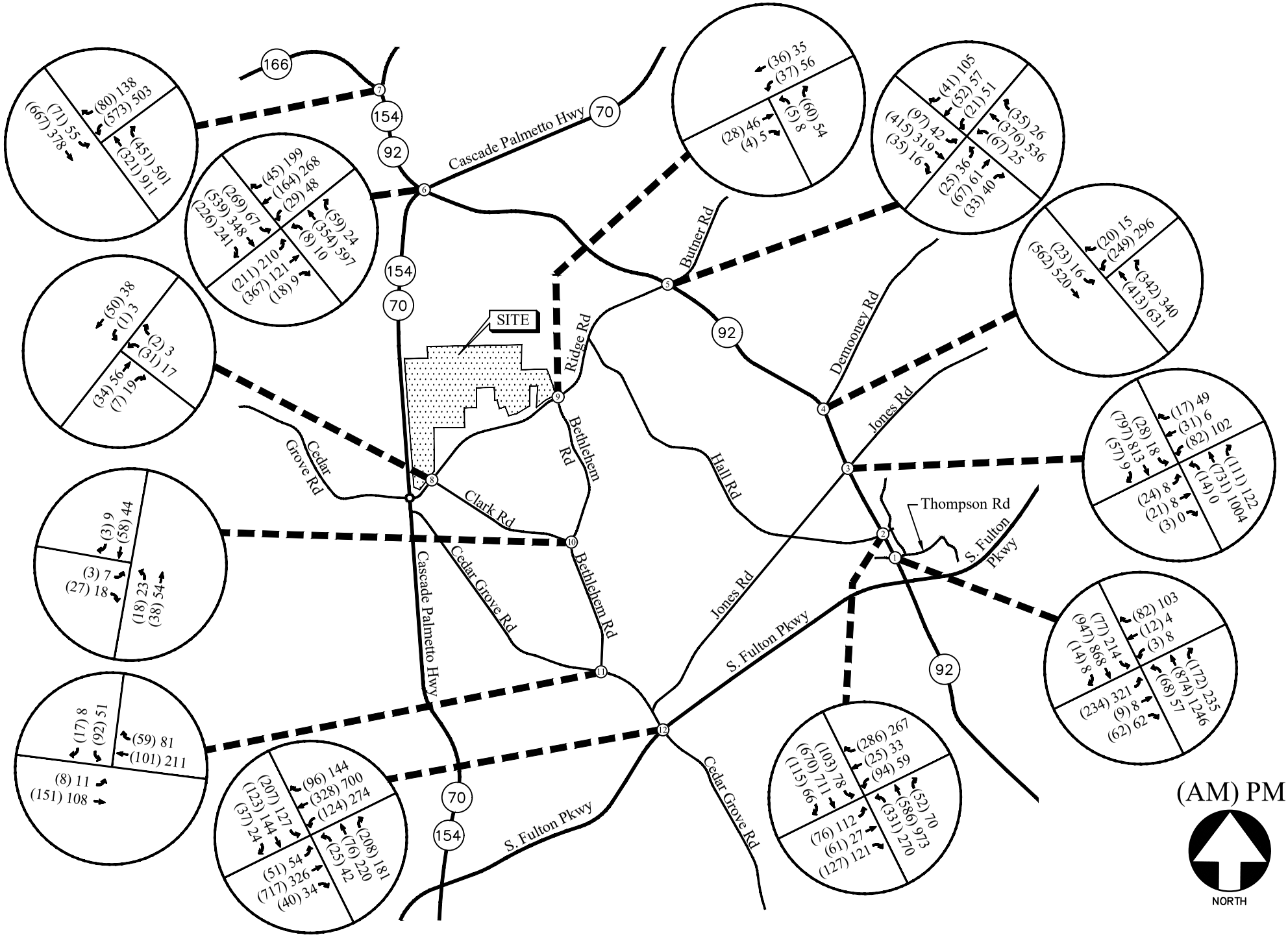
Improvements that are identified as "System Improvements" address deficiencies that are found within the existing road network prior to any impacts from the proposed development's added traffic. Improvements that are identified as "Site Mitigation Improvements" address further impacts that are a result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

Future "No-Build" Conditions

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

Annual Traffic Growth

In order to evaluate future transportation operations in this area, a projection of normal traffic growth was applied to the existing volumes. A growth rate of 2% as shown in the approved MMP dated MJarch 20, 2025 was used in the analysis. This growth factor was applied to the existing traffic volumes to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future "No-Build" volumes on the roadway are shown in Figure 6.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 6

A&R Engineering Inc.

Planned and Programmed Improvements in Study Area

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

Table 5 – Planned and Programmed Improvements

Item #	Project Name	From / To Points	Sponsor	GDOT PI #	ARC ID #	Design FY	ROW / UTL FY	CST FY
1	Greenway Trail from Boundary Waters Park to Sweetwater Creek Park	Boundary Waters Park to Sweetwater Creek Park	Douglas County	0012877	DO-298	2023	2025	2027
2	SR 14/SR 154 at Nine Locations and SR 154 at One Location in Fulton County	SR 154/Cascade Palmetto Highway at South Fulton Parkway is one of the intersections	GDOT	0013207	N/A	2014	2020	2023
3	SR 92 at SR 14 Alternate – CFI	Intersection of SR 92/Campbelton-Fairburn Rd and SR 14 Alternate/ South Fulton Parkway; Begin Project, tie into PI 0017398 approx. 1,580 ft north of Hall Rd; End Project, tie into existing approx. 1,760 ft south of SR 14 Alt	GDOT	0014081	FS-350	2023	2028	2030
4	SR 92 at CR 1374/Butner Road	Intersection of Ridge Road/Butner Road and SR 92	GDOT	0015593	N/A	2017	2022	2024
5	SR 92 at CR 515/Jones Road and at CR 485/Demooney Road	Intersections of SR 92 at CR 515/ Jones Road and at CR 485/ Demooney Road	GDOT	0017398	N/A	2021	2023	2024
6	Chattahoochee Hills Regional Greenway – Fulton	Cochran Mill Park to Phillips Road	Chattahoochee Hills	0009643	FS-209	Long Range – 2035		
7	Cascade-Palmetto Highway Widening	SR 92 (Campbelltown-Fairburn Road) to SR 154 (Campbellton Road)	GDOT	-	FS-011	Long Range – 2050		
8	South Fulton Parkway Corridor High-Capacity Premium Transit Service	MARTA College Park Rail Station to SR 92	MARTA	-	AR-491A	Long Range – 2050		

GDOT PI 0015593 SR 92 at CR 1374/Butner Road – This project plans the construction of a single lane roundabout with a 106-foot by 222-foot inscribed diameter at the intersection of Ridge Road/Butner Road and SR 92. The project was originally scheduled for construction in 2024, but it has not started yet. We will use the roundabout geometry in our analysis assuming it will be completed before the build year 2027 of the DRI development.

GDOT PI 0015593 (SR 92 @ Ridge Road/Butner Road):

GDOT PI 0017398 SR 92 at CR 515/Jones Road and at CR 485/Demooney Road – It proposes the construction of two roundabouts along SR 92/Campbellton Fairburn Road in Fulton County, Georgia: one at the intersection at Jones Road and the other at the intersection at Demooney Road. The total length of the project is 4,040 feet. The construction length at Jones Road is 1,842 feet, and the construction length at Demooney Road is 1,739 feet. Both roundabouts are proposed as multilane hybrid roundabouts. The number of roundabout lanes will be evaluated during design. The roundabouts are expected to reduce or eliminate the angle, head-on, and sideswipe-opposite direction crashes at the two subject intersections which account for 52% of total crashes. The project was originally scheduled for construction in 2024, but it has not started yet. We will use the roundabout geometry in our analysis assuming it will be completed before the build year 2027 of the DRI development.

GDOT PI 0017398 (SR 92 @ Jones Road):

GDOT PI 0017398 (SR 92 @ Demooney Road):

Since both the above GDOT projects were scheduled for construction in 2024, the intersection of SR 92 at Ridge Road/Butner Road has been modeled as a single-lane roundabout, and the intersections of SR 92 at Jones Road and SR 92 at Demooney Road have been modeled as multi-lane roundabouts in both the "No-Build" and "Build" conditions analyses. The existing "2025" conditions analysis also included these improvements.

Nearby Planned Developments

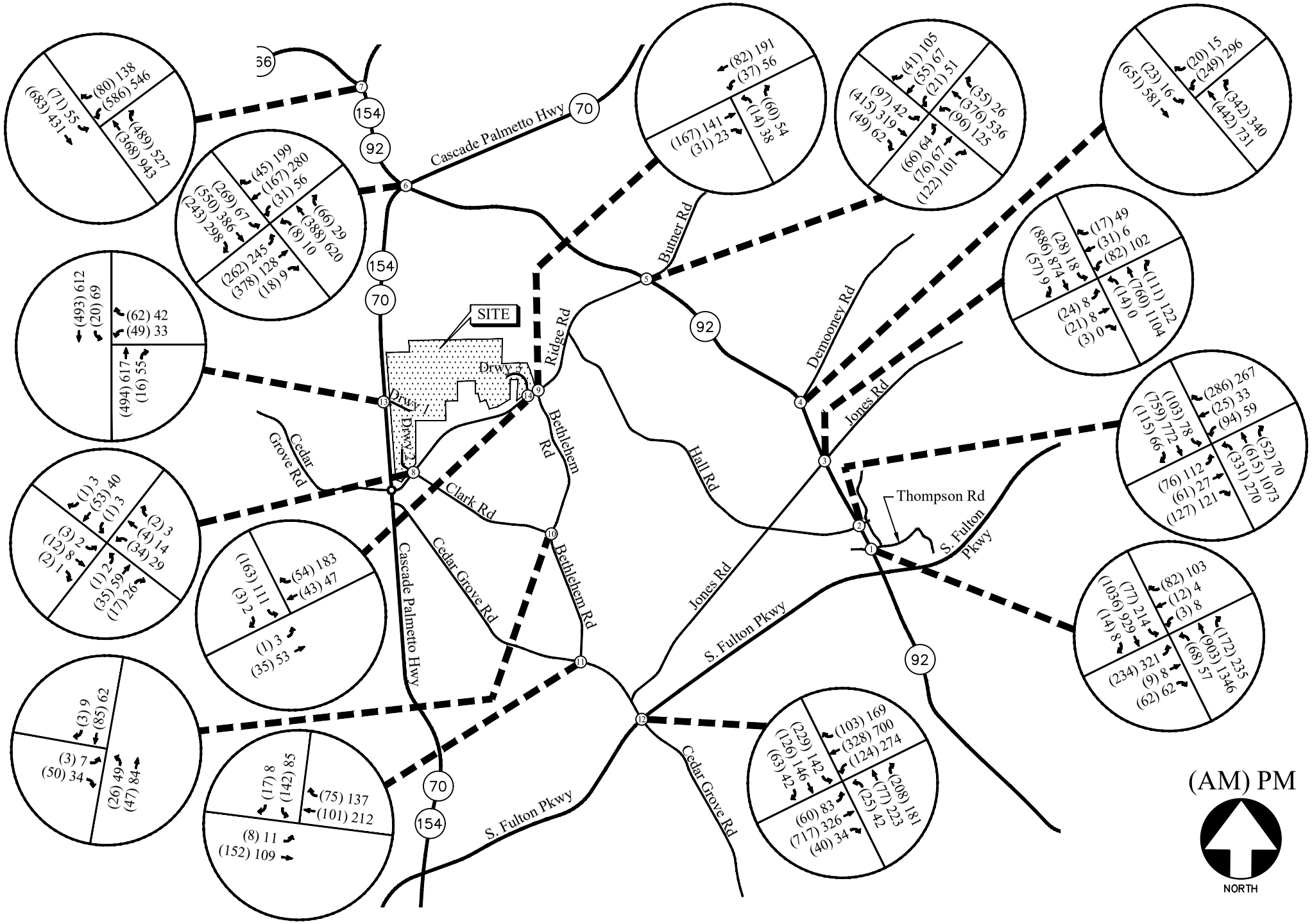
There are two planned developments in the vicinity of the proposed site:

DRI #3739 Cedar Grove Village Center – proposed mixed-use development with 16 single family detached units, 344 single family attached units, 436 multifamily units, 35,240 s.f. of office, 14,000 s.f. of strip retail plaza and 16,080 s.f. of fast casual restaurant, Cedar Grove Village Center will be located on the southeast corner of Cedar Grove Road and South Fulton Parkway. Since the build out year of this project is 2030 and the proposed development will be built by 2027, this site has not been considered in this traffic study.

DRI #4057 Westwood – proposed mixed-use development with 235 single family detached units, 226 single family attached units, 1,042 multifamily units, 154,100 s.f. of office, 221,720 s.f. of shopping center and 44,500 s.f. of supermarket, DRI #4057 will be located on the northwest corner of SR 154 and Cochran Road. Since the build out year of this project is 2032 and the proposed development will be built by 2027, this site has not been considered in this traffic study.

Future "Build" Conditions

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



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.

Future Transportation Operations

The future "No-Build" and "Build" transportation operations were analyzed using the volumes in Figure 6 and Figure 7, respectively. The results of the future transportation operations analysis are shown below in Table 8.

TABLE 8 – FUTURE 2027 INTERSECTION OPERATIONS

	Intersection	LOS (Delay)			
		NO-BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 92 @ Thompson Road**	**B (14.8)**	**B (19.3)**	**B (15.1)**	**C (20.4)**
	-Eastbound Approach	D (54.6)	D (52.3)	D (54.6)	D (52.9)
	-Westbound Approach	C (34.9)	C (34.2)	C (34.9)	C (34.3)
	-Northbound Approach	B (14.9)	C (21.4)	B (15.1)	C (22.9)
	-Southbound Approach	A (4.9)	A (6.6)	A (6.2)	A (7.9)
2	**SR 92 @ Hall Road**	**B (14.4)**	**B (11.2)**	**B (15.6)**	**B (11.5)**
	-Eastbound Approach	D (53.7)	D (54.9)	D (53.7)	D (54.9)
	-Westbound Approach	D (54.9)	D (50.9)	D (54.9)	D (50.9)
	-Northbound Approach	A (4.2)	A (3.1)	A (5.7)	A (3.7)
	-Southbound Approach	B (13.2)	B (11.6)	B (14.9)	B (12.6)
3	**SR 92 @ Jones Road**	**A (6.5)**	**A (6.9)**	**A (6.8)**	**A (7.4)**
	-Eastbound Approach	A (6.6)	A (6.1)	A (7.2)	A (6.5)
	-Westbound Approach	A (7.3)	A (9.9)	A (7.5)	B (11.2)
	-Northbound Approach	A (6.2)	A (7.0)	A (6.3)	A (7.5)
	-Southbound Approach	A (6.7)	A (6.3)	A (7.2)	A (6.6)
4	**SR 92 @ Demooney Road**	**A (6.4)**	**A (6.9)**	**A (6.8)**	**A (7.5)**
	-Westbound Approach	A (7.5)	B (10.1)	A (7.8)	B (11.7)
	-Northbound Approach	A (5.8)	A (6.3)	A (5.9)	A (6.8)
	-Southbound Approach	A (6.8)	A (6.3)	A (7.4)	A (6.6)
5	**SR 92 @ Ridge Road / Butner Road**	**A (7.6)**	**A (8.0)**	**A (6.3)**	**A (6.9)**
	-Eastbound Approach	A (6.7)	A (5.9)	A (6.6)	A (5.4)
	-Westbound Approach	A (5.9)	A (9.3)	A (5.4)	A (8.1)
	-Northbound Approach	A (7.8)	A (9.0)	A (6.4)	A (7.6)
	-Southbound Approach	A (8.1)	A (6.4)	A (6.2)	A (5.9)
6	**SR 92 @ SR 154**	**D (36.7)**	**D (49.3)**	**D (39.2)**	**D (52.3)**
	-Eastbound Approach	D (54.6)	D (54.3)	D (54.3)	D (50.0)
	-Westbound Approach	E (66.1)	E (76.5)	E (72.7)	E (73.2)
	-Northbound Approach	C (25.5)	D (39.7)	C (28.9)	D (51.8)
	-Southbound Approach	B (19.8)	C (25.7)	C (22.2)	C (30.1)
7	**SR 92/SR 154 @ SR 166**	**A (7.5)**	**B (11.8)**	**A (7.8)**	**B (13.4)**
	-Westbound Approach	A (7.8)	C (19.6)	A (8.5)	C (23.3)
	-Northbound Approach	A (2.3)	A (9.7)	A (2.6)	B (10.4)
	-Southbound Approach	B (12.5)	A (7.5)	B (13.2)	A (8.4)
8	**Ridge Road @ Clark Road / Site Driveway 2 (Western)**				
	-Eastbound Approach	-	-	A (9.6)	A (9.7)
	-Westbound Approach	A (9.1)	A (9.3)	A (9.5)	A (9.9)
	-Northbound Left	-	-	A (7.3)	A (7.3)
	-Southbound Left	A (7.3)	A (7.4)	A (7.3)	A (7.4)

9	**Ridge Road @ Bethlehem Road** -Westbound Left -Northbound Approach	 A (7.3) A (8.8)	 A (7.4) A (9.0)	 A (7.8) B (10.3)	 A (7.7) B (11.4)
10	**Bethlehem Road @ Clark Road** -Eastbound Approach -Northbound Left	 A (8.8) A (7.4)	 A (9.0) A (7.4)	 A (9.1) A (7.4)	 A (9.3) A (7.5)
11	**Cedar Grove Road @ Bethlehem Road** -Eastbound Left -Southbound Approach	 A (7.6) B (11.4)	 A (7.9) B (11.6)	 A (7.6) B (12.3)	 A (8.1) B (12.6)
12	**South Fulton Parkway @ Cedar Grove Road** -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	**C (32.1)** C (22.7) B (17.9) D (51.7) D (52.9)	**C (33.3)** C (28.9) C (25.2) D (54.8) C (33.7)	**C (32.6)** C (24.2) B (19.2) D (51.9) D (48.2)	**C (34.3)** C (29.3) C (26.9) D (54.9) C (34.5)
13	**SR 154 @ Site Driveway 1** -Westbound Approach -Southbound Left	 -	 -	 C (21.8) A (8.6)	 D (32.4) A (9.5)
14	**Ridge Road @ Site Driveway 3 (Eastern)** -Eastbound Left -Southbound Approach	 -	 -	 A (7.4) A (9.9)	 A (7.7) A (9.7)

The results of the "No-Build" transportation operations show that the signalized study intersection of SR 92 at SR 154 will operate at an overall level-of-service "D" with the westbound approach having LOS "E" in both the AM and PM peak hours.

Results of "Build" conditions transportation operations show that the intersection of SR 92 and SR 154 will continue to operate at level of service "D" as in "No-Build" conditions with some additional delays. The westbound approach will operate at level of service "E" in both the AM and PM peak hours. All other study intersections will operate satisfactorily.

Recommendations for System Improvements

The results of the "No-Build" transportation operations show that the signalized study intersection of SR 92 at SR 154 will operate at an overall level-of-service "D" with the westbound approach having LOS "E" in both the AM and PM peak hours.

- Addition of a right turn lane on the westbound approach (Cascade Palmetto Highway/SR 70)

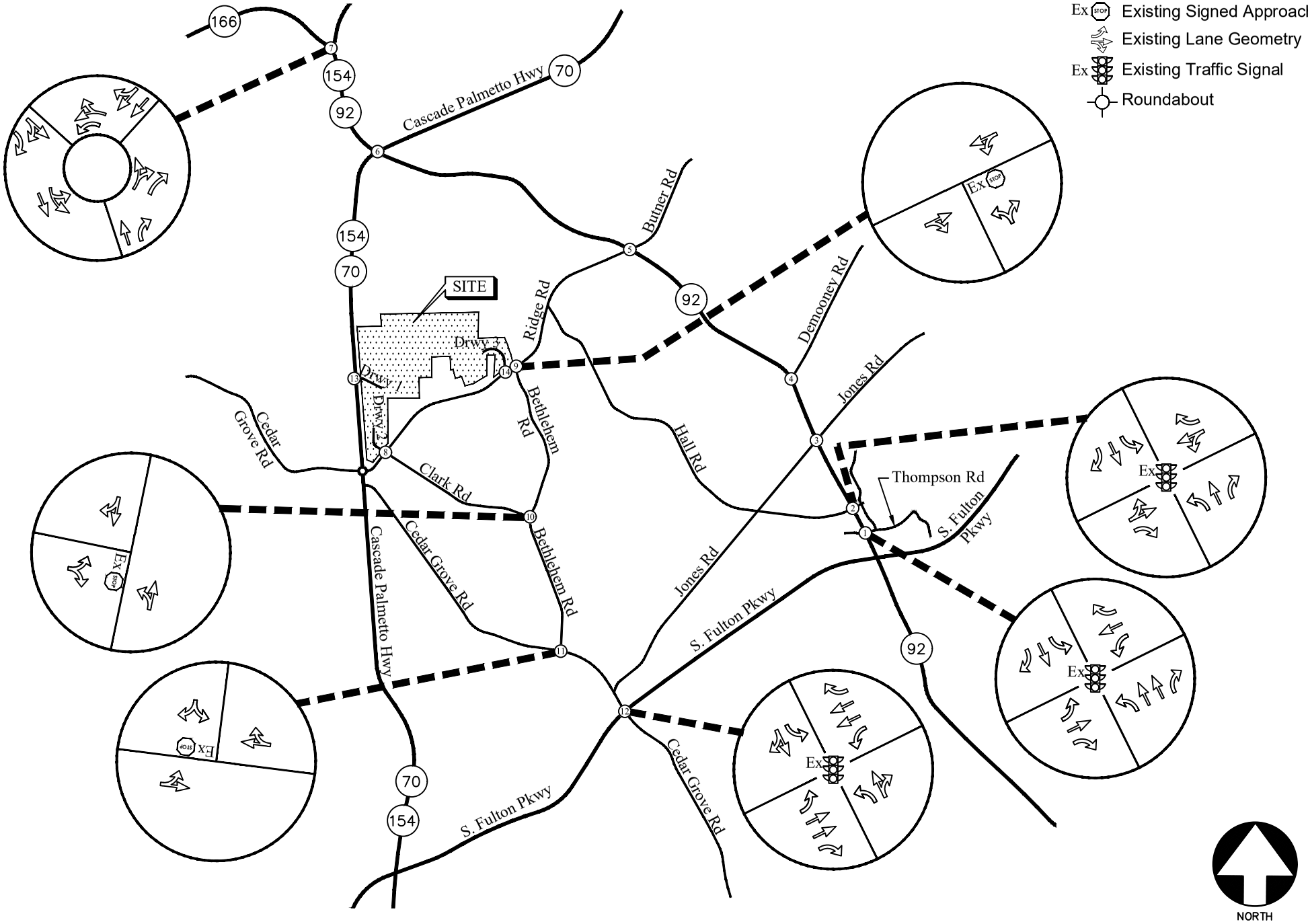
The results of the future transportation operations after the system improvements are implemented are shown below in Table 9.

TABLE 9 – FUTURE INTERSECTION OPERATIONS WITH SYSTEM IMPROVEMENTS

Intersection		LOS (Delay)			
		NO-BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
6	**SR 92 @ SR 154**	**C (34.3)**	**D (35.2)**	**D (35.8)**	**D (36.6)**
	-Eastbound Approach	D (53.5)	D (43.2)	D (53.3)	D (42.7)
	-Westbound Approach	D (48.1)	D (54.9)	D (51.0)	D (53.8)
	-Northbound Approach	C (25.5)	C (25.9)	C (27.6)	C (29.8)
	-Southbound Approach	B (19.9)	B (17.9)	C (21.1)	C (20.5)

After the recommended system improvements are implemented, the intersection of SR 92 at SR 154 will operate at LOS "D" or better in both the AM and PM peak hours for all approaches.

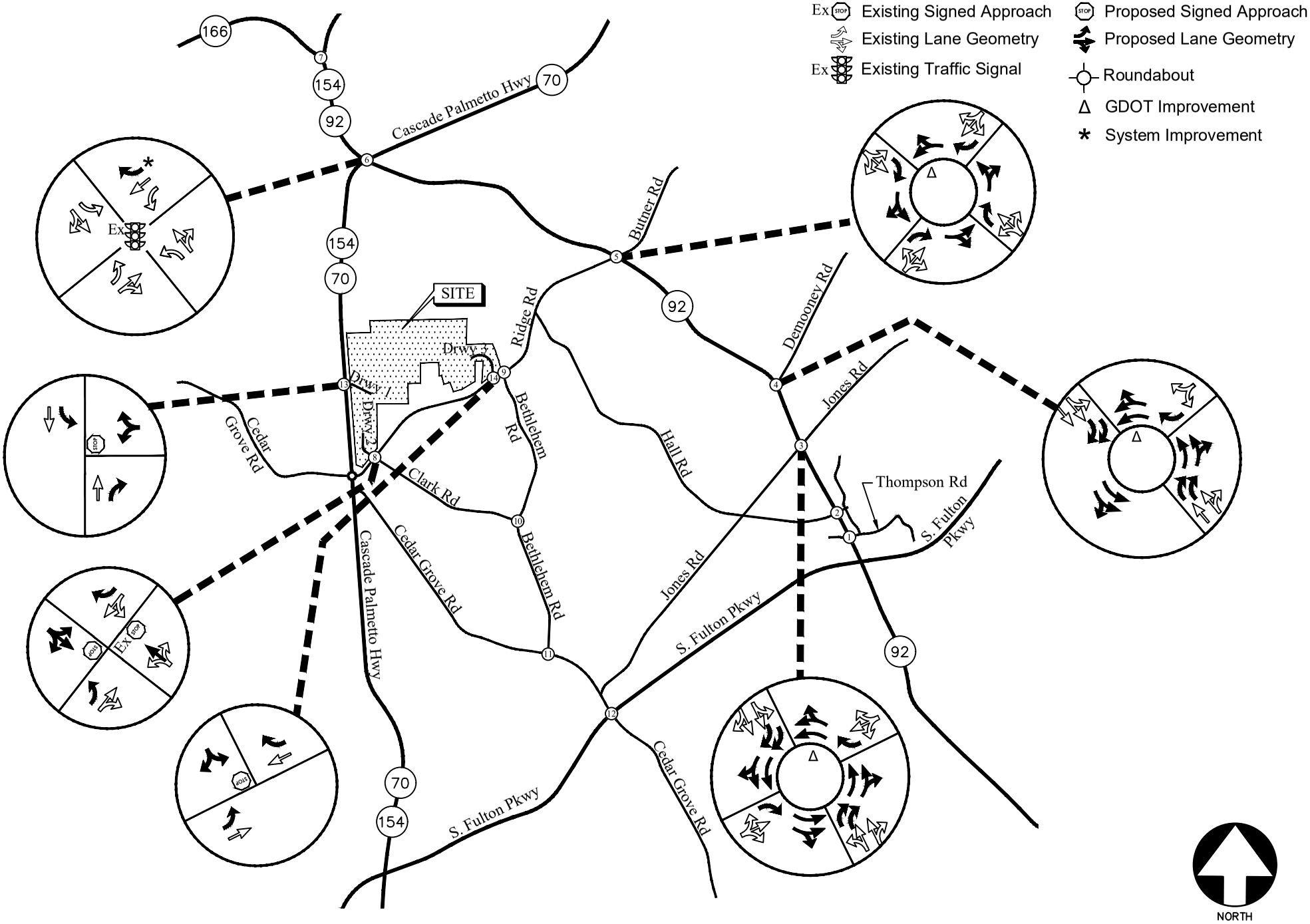
Recommendations for future traffic control and lane geometry are shown in Figure 8A and Figure 8B.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY 1 OF 2

FIGURE 8A

A&R Engineering Inc.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY 2 OF 2

FIGURE 8B

A&R Engineering Inc.

CONCLUSIONS AND RECOMMENDATIONS

Transportation impacts were evaluated for the proposed residential development that will be located to the northeast of the intersection of SR 154 and Cedar Grove Road / Ridge Road in the City of South Fulton, Georgia. The development will consist of:

- Single-Family Detached Housing: 491 units
- Townhomes: 152 units

The development proposes access at the following locations:

- Site Driveway 1: Full access driveway on SR 154
- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
- Site Driveway 3: Full access (eastern) driveway on Ridge Road, west of Bethlehem Road

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

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road
5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR 92/SR 154 @ SR 166
8. Ridge Road @ Clark Road / Site Driveway 2 (Western)
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road
13. SR 154 @ Site Driveway 1
14. Ridge Road @ Site Driveway 3 (Eastern)

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

The results of the “No-Build” transportation operations show that the signalized study intersection of SR 92 at SR 154 will operate at an overall level-of-service “D” with the westbound approach having LOS “E” in both the AM and PM peak hours.

Results of “Build” conditions transportation operations show that the intersection of SR 92 and SR 154 will continue to operate at an unsatisfactory level of service as in “No-Build” conditions with some additional delays. All other study intersections will operate satisfactorily.

Recommendations for System Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below.

Intersection 6: SR 92 @ SR 154

- Addition of a right turn lane on the westbound approach (Cascade Palmetto Highway/SR 70)

After the recommended system improvements are implemented, the intersection of SR 92 at SR 154 will operate at LOS "D" or better in both the AM and PM peak hours for all approaches.

Recommendation for Site Access Configuration

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

- Site Driveway 1: Full access driveway on SR 154
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with SR 154 remaining free flow.
  - Left Turn Lane and Right Turn Lane on SR 154 for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

- Site Driveway 2: Full access (western) driveway on Ridge Road, aligned with Clark Road
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway and Clark Road approaches.
  - Left Turn Lane and Right Turn Lane on Ridge Road for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

- Site Driveway 3: Full access (eastern) driveway on Ridge Road
  - One entering and one exiting lane.
  - Stop-sign controlled on the driveway approach with Ridge Road remaining free flow.
  - Left Turn Lane and Right Turn Lane on Ridge Road for entering traffic.
  - Provide adequate sight distance per AASHTO standards.

Appendix

Existing Intersection Traffic Counts

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Thompson Road
7-9 am | 4-6 pm

File Name : 20250115
Site Code : 20250115
Start Date : 04-29-2025

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 92 Southbound				Thompson Road Westbound				Thompson Road Eastbound				
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	16	183	25	224	11	185	0	196	40	1	14	55	0	0	5	5	480
07:15 AM	12	221	29	262	9	200	3	212	43	5	11	59	1	1	9	11	544
07:30 AM	18	213	27	258	13	221	1	235	38	2	16	56	0	3	11	14	563
07:45 AM	14	233	31	278	18	213	2	233	41	3	13	57	2	4	15	21	589
Total	60	850	112	1022	51	819	6	876	162	11	54	227	3	8	40	51	2176
08:00 AM	13	224	36	273	14	215	4	233	46	1	14	61	1	2	13	16	583
08:15 AM	15	198	38	251	17	224	1	242	52	2	12	66	0	1	19	20	579
08:30 AM	19	219	44	282	19	261	3	283	58	2	18	78	1	2	21	24	667
08:45 AM	18	199	47	264	24	211	5	240	69	4	16	89	1	7	26	34	627
Total	65	840	165	1070	74	911	13	998	225	9	60	294	3	12	79	94	2456
*** BREAK ***																	
04:00 PM	18	272	50	340	38	192	2	232	78	3	15	96	1	1	24	26	694
04:15 PM	16	316	43	375	41	211	1	253	73	5	11	89	2	1	21	24	741
04:30 PM	12	339	52	403	46	172	3	221	65	2	13	80	1	2	26	29	733
04:45 PM	17	303	57	377	55	224	1	280	79	1	16	96	3	1	23	27	780
Total	63	1230	202	1495	180	799	7	986	295	11	55	361	7	5	94	106	2948
05:00 PM	12	265	63	340	59	222	2	283	84	3	19	106	2	0	29	31	760
05:15 PM	14	291	54	359	46	217	2	265	81	2	12	95	2	1	21	24	743
05:30 PM	13	263	42	318	35	232	1	268	79	1	11	91	1	2	18	21	698
05:45 PM	12	254	39	305	30	227	0	257	75	3	15	93	0	3	17	20	675
Total	51	1073	198	1322	170	898	5	1073	319	9	57	385	5	6	85	96	2876
Grand Total	239	3993	677	4909	475	3427	31	3933	1001	40	226	1267	18	31	298	347	10456
Apprch %	4.9	81.3	13.8		12.1	87.1	0.8		79	3.2	17.8		5.2	8.9	85.9		
Total %	2.3	38.2	6.5	46.9	4.5	32.8	0.3	37.6	9.6	0.4	2.2	12.1	0.2	0.3	2.9	3.3	

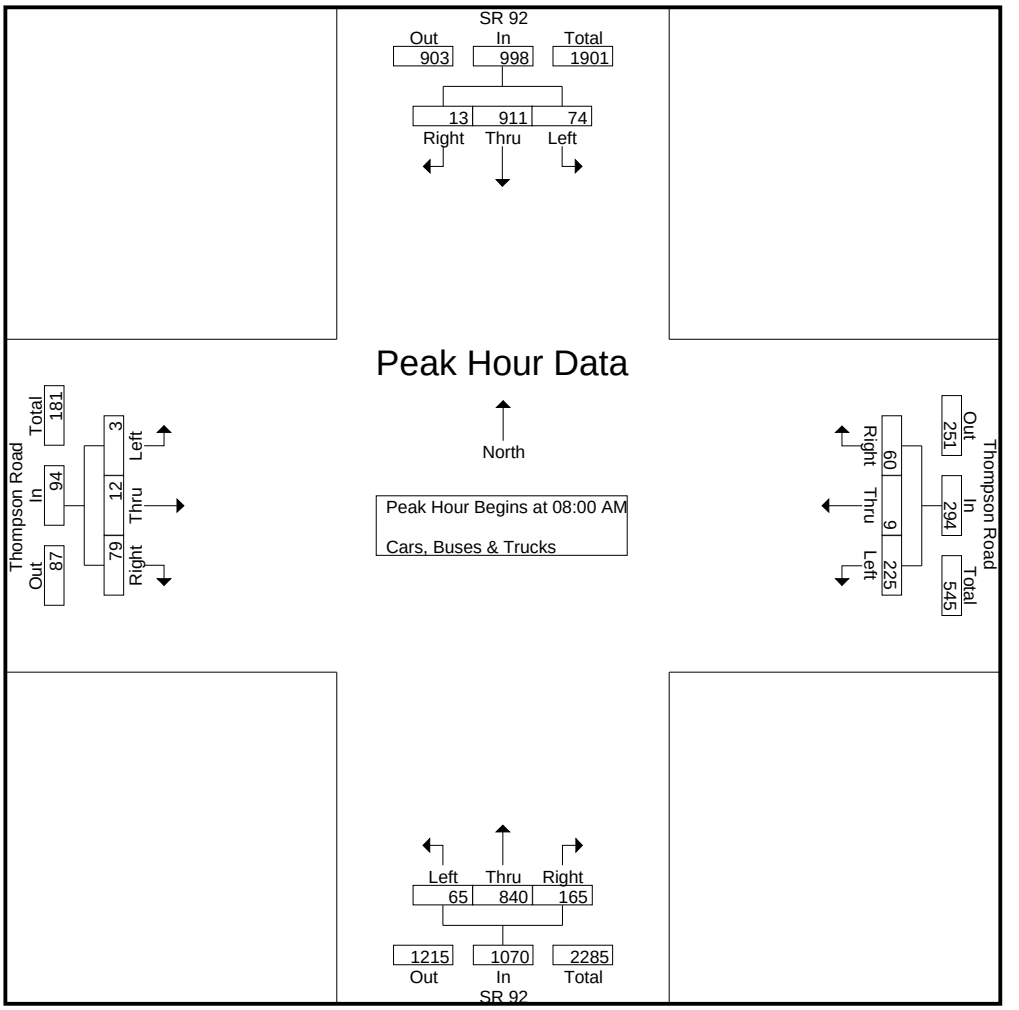
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Thompson Road
7-9 am | 4-6 pm

File Name : 20250115
Site Code : 20250115
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 92 Southbound				Thompson Road Westbound				Thompson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	13	**224**	36	273	14	215	4	233	46	1	14	61	**1**	2	13	16	583
08:15 AM	15	198	38	251	17	224	1	242	52	2	12	66	0	1	19	20	579
08:30 AM	**19**	219	44	**282**	19	**261**	3	**283**	58	2	**18**	78	1	2	21	24	**667**
08:45 AM	18	199	**47**	264	**24**	211	**5**	240	**69**	**4**	16	**89**	1	**7**	**26**	**34**	627
Total Volume	65	840	165	1070	74	911	13	998	225	9	60	294	3	12	79	94	2456
% App. Total	6.1	78.5	15.4		7.4	91.3	1.3		76.5	3.1	20.4		3.2	12.8	84		
PHF	.855	.938	.878	.949	.771	.873	.650	.882	.815	.563	.833	.826	.750	.429	.760	.691	.921



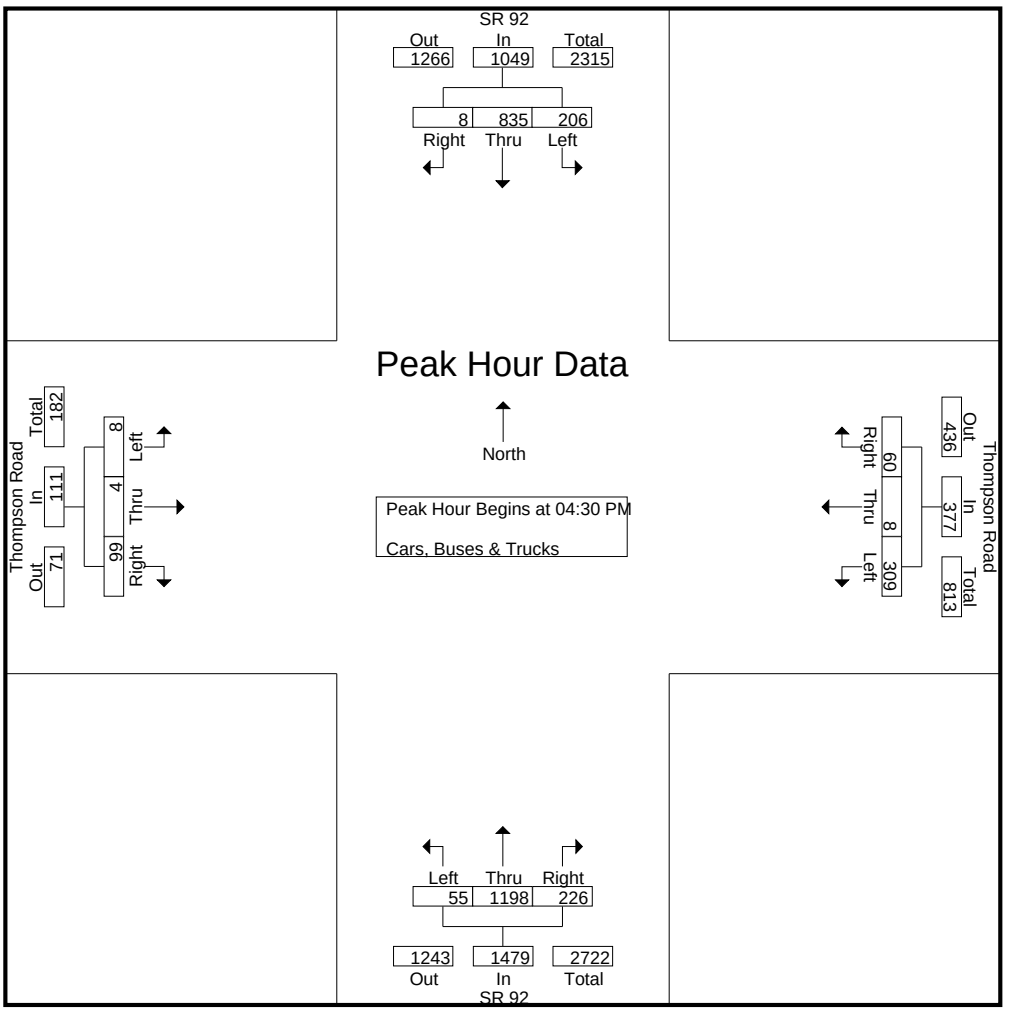
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Thompson Road
7-9 am | 4-6 pm

File Name : 20250115
Site Code : 20250115
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 92 Southbound				Thompson Road Westbound				Thompson Road Eastbound				
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	12	**339**	52	**403**	46	172	**3**	221	65	2	13	80	1	**2**	26	29	733
04:45 PM	**17**	303	57	377	55	**224**	1	280	79	1	16	96	**3**	1	23	27	**780**
05:00 PM	12	265	**63**	340	**59**	222	2	**283**	**84**	**3**	**19**	**106**	2	0	**29**	**31**	760
05:15 PM	14	291	54	359	46	217	2	265	81	2	12	95	2	1	21	24	743
Total Volume	55	1198	226	1479	206	835	8	1049	309	8	60	377	8	4	99	111	3016
% App. Total	3.7	81	15.3		19.6	79.6	0.8		82	2.1	15.9		7.2	3.6	89.2		
PHF	.809	.883	.897	.917	.873	.932	.667	.927	.920	.667	.789	.889	.667	.500	.853	.895	.967



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Hall Road
7-9 am | 4-6 pm

File Name : 20250116
Site Code : 20250116
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 92 Southbound				Hall Road Westbound				Hall Road Eastbound				
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	37	153	6	196	20	166	22	208	15	8	14	37	8	1	16	25	466
07:15 AM	47	175	10	232	28	154	26	208	15	10	19	44	14	4	42	60	544
07:30 AM	52	166	12	230	32	165	29	226	19	9	23	51	12	9	51	72	579
07:45 AM	65	173	9	247	38	157	31	226	12	13	21	46	16	6	63	85	604
Total	201	667	37	905	118	642	108	868	61	40	77	178	50	20	172	242	2193
08:00 AM	71	155	13	239	25	143	24	192	16	11	29	56	21	4	78	103	590
08:15 AM	89	109	11	209	21	166	26	213	21	18	35	74	29	7	55	91	587
08:30 AM	93	126	17	236	15	178	30	223	24	17	37	78	24	7	79	110	647
08:45 AM	100	102	14	216	18	129	34	181	27	20	30	77	33	9	83	125	599
Total	353	492	55	900	79	616	114	809	88	66	131	285	107	27	295	429	2423
*** BREAK ***																	
04:00 PM	63	216	8	287	15	163	18	196	22	6	25	53	16	10	46	72	608
04:15 PM	71	246	11	328	12	173	12	197	26	5	21	52	11	8	53	72	649
04:30 PM	86	251	15	352	16	130	19	165	21	9	26	56	13	11	68	92	665
04:45 PM	74	228	19	321	14	181	16	211	28	4	28	60	18	9	72	99	691
Total	294	941	53	1288	57	647	65	769	97	24	100	221	58	38	239	335	2613
05:00 PM	52	221	12	285	19	189	11	219	32	8	33	73	12	5	63	80	657
05:15 PM	48	236	21	305	26	184	17	227	27	5	29	61	14	7	54	75	668
05:30 PM	41	218	17	276	21	195	13	229	24	6	25	55	21	5	48	74	634
05:45 PM	33	222	14	269	20	195	9	224	19	6	29	54	17	6	45	68	615
Total	174	897	64	1135	86	763	50	899	102	25	116	243	64	23	210	297	2574
Grand Total	1022	2997	209	4228	340	2668	337	3345	348	155	424	927	279	108	916	1303	9803
Apprch %	24.2	70.9	4.9		10.2	79.8	10.1		37.5	16.7	45.7		21.4	8.3	70.3		
Total %	10.4	30.6	2.1	43.1	3.5	27.2	3.4	34.1	3.5	1.6	4.3	9.5	2.8	1.1	9.3	13.3	

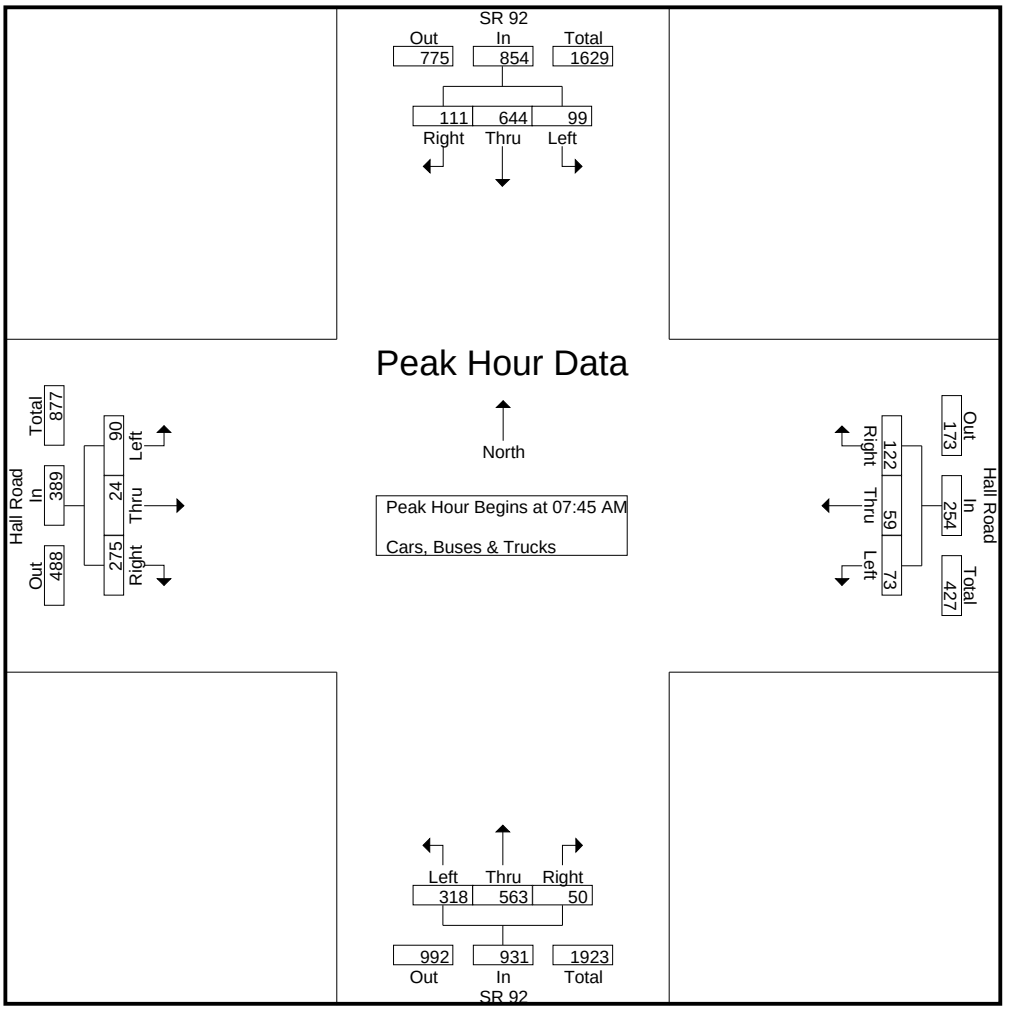
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Hall Road
7-9 am | 4-6 pm

File Name : 20250116
Site Code : 20250116
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 92 Southbound				Hall Road Westbound				Hall Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	65	**173**	9	**247**	**38**	157	**31**	**226**	12	13	21	46	16	6	63	85	604
08:00 AM	71	155	13	239	25	143	24	192	16	11	29	56	21	4	78	103	590
08:15 AM	89	109	11	209	21	166	26	213	21	**18**	35	74	**29**	**7**	55	91	587
08:30 AM	**93**	126	**17**	236	15	**178**	30	223	**24**	17	**37**	**78**	24	7	**79**	**110**	**647**
Total Volume	318	563	50	931	99	644	111	854	73	59	122	254	90	24	275	389	2428
% App. Total	34.2	60.5	5.4		11.6	75.4	13		28.7	23.2	48		23.1	6.2	70.7		
PHF	.855	.814	.735	.942	.651	.904	.895	.945	.760	.819	.824	.814	.776	.857	.870	.884	.938



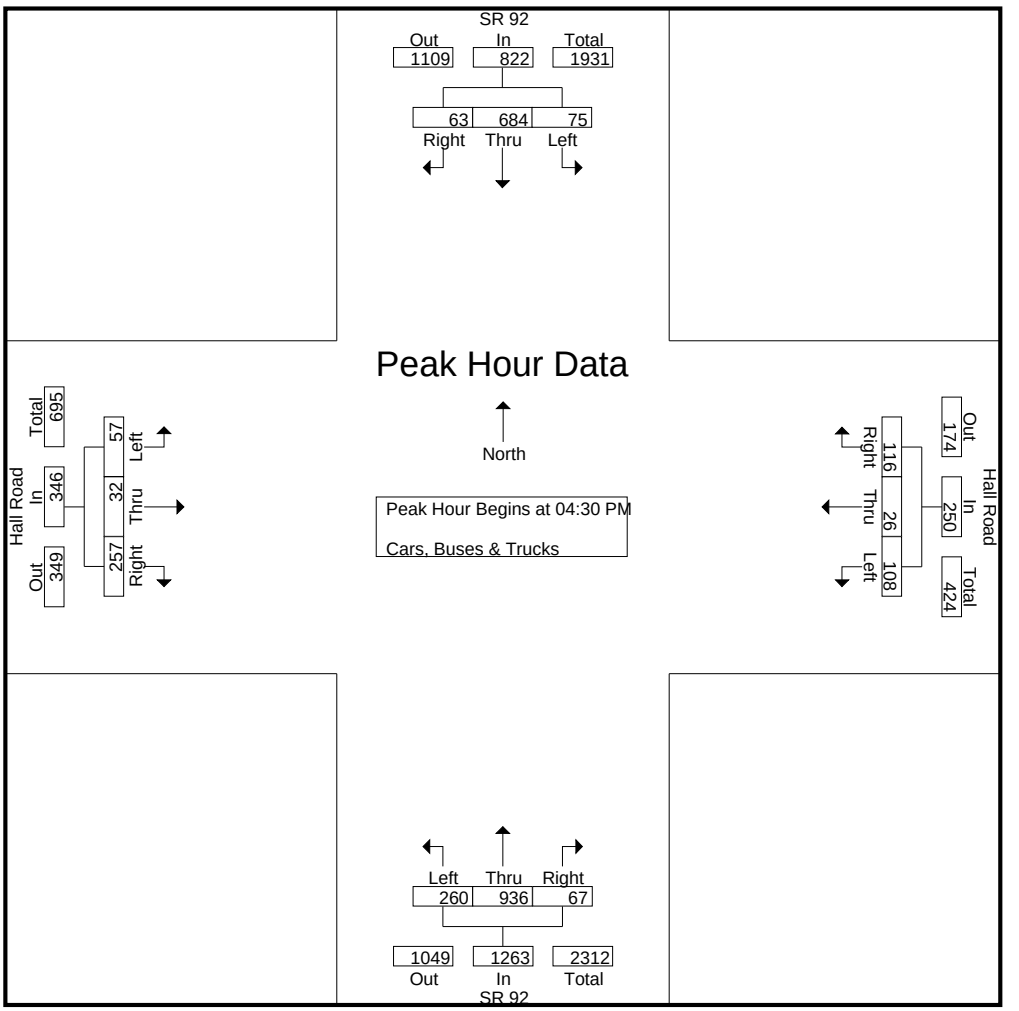
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Hall Road
7-9 am | 4-6 pm

File Name : 20250116
Site Code : 20250116
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 92 Southbound				Hall Road Westbound				Hall Road Eastbound				
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	**86**	**251**	15	**352**	16	130	**19**	165	21	**9**	26	56	13	**11**	68	92	665
04:45 PM	74	228	19	321	14	181	16	211	28	4	28	60	**18**	9	**72**	**99**	**691**
05:00 PM	52	221	12	285	19	**189**	11	219	**32**	8	**33**	**73**	12	5	63	80	657
05:15 PM	48	236	**21**	305	**26**	184	17	**227**	27	5	29	61	14	7	54	75	668
Total Volume	260	936	67	1263	75	684	63	822	108	26	116	250	57	32	257	346	2681
% App. Total	20.6	74.1	5.3		9.1	83.2	7.7		43.2	10.4	46.4		16.5	9.2	74.3		
PHF	.756	.932	.798	.897	.721	.905	.829	.905	.844	.722	.879	.856	.792	.727	.892	.874	.970



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Jones Road
7-9 am | 4-6 pm

File Name : 20250119
Site Code : 20250119
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 92 Southbound				Jones Road Eastbound				Jones Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	145	28	173	13	183	6	202	1	0	0	1	22	4	1	27	403
07:15 AM	0	181	27	208	8	189	13	210	4	4	1	9	20	8	5	33	460
07:30 AM	1	172	28	201	6	206	10	222	7	4	2	13	17	3	3	23	459
07:45 AM	5	174	28	207	5	203	15	223	0	8	0	8	21	9	6	36	474
Total	6	672	111	789	32	781	44	857	12	16	3	31	80	24	15	119	1796
08:00 AM	7	176	24	207	8	168	17	193	12	4	0	16	21	10	2	33	449
08:15 AM	3	148	21	172	11	197	5	213	10	5	0	15	16	7	3	26	426
08:30 AM	0	165	22	187	6	200	14	220	3	7	0	10	23	3	8	34	451
08:45 AM	0	128	34	162	4	156	4	164	2	2	1	5	23	0	14	37	368
Total	10	617	101	728	29	721	40	790	27	18	1	46	83	20	27	130	1694
*** BREAK ***																	
04:00 PM	0	234	21	255	5	171	7	183	6	6	0	12	24	4	5	33	483
04:15 PM	0	250	30	280	4	177	3	184	15	6	0	21	19	3	5	27	512
04:30 PM	1	251	37	289	1	149	3	153	3	3	0	6	18	3	8	29	477
04:45 PM	0	244	31	275	5	181	1	187	4	2	0	6	28	0	11	39	507
Total	1	979	119	1099	15	678	14	707	28	17	0	45	89	10	29	128	1979
05:00 PM	0	230	36	266	2	189	2	193	0	4	0	4	29	3	13	45	508
05:15 PM	0	248	29	277	5	208	3	216	1	1	0	2	19	1	12	32	527
05:30 PM	0	243	21	264	5	204	3	212	3	1	0	4	22	2	11	35	515
05:45 PM	1	239	27	267	4	208	2	214	1	1	0	2	16	1	4	21	504
Total	1	960	113	1074	16	809	10	835	5	7	0	12	86	7	40	133	2054
Grand Total	18	3228	444	3690	92	2989	108	3189	72	58	4	134	338	61	111	510	7523
Apprch %	0.5	87.5	12		2.9	93.7	3.4		53.7	43.3	3		66.3	12	21.8		
Total %	0.2	42.9	5.9	49	1.2	39.7	1.4	42.4	1	0.8	0.1	1.8	4.5	0.8	1.5	6.8	

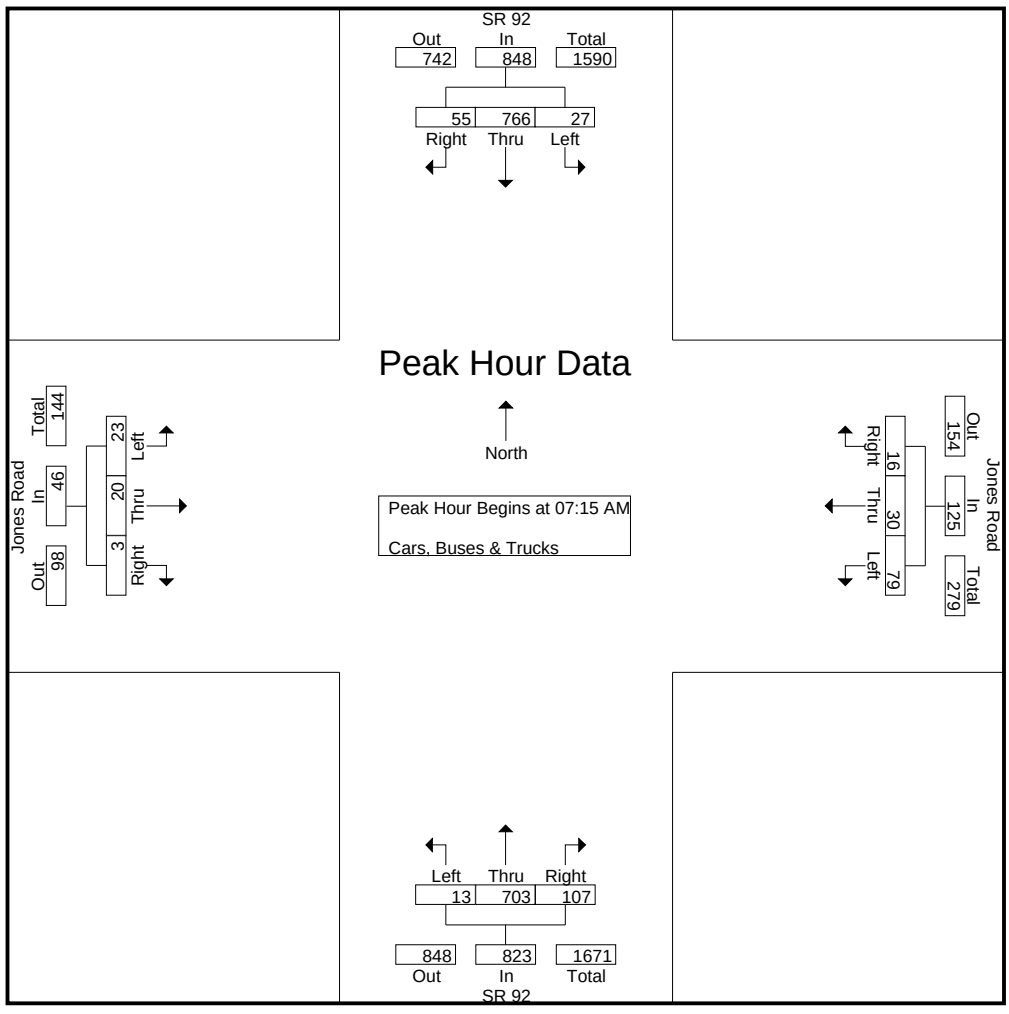
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Jones Road
7-9 am | 4-6 pm

File Name : 20250119
Site Code : 20250119
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 92 Southbound				Jones Road Eastbound				Jones Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**181**	27	**208**	**8**	189	13	210	4	4	1	9	20	8	5	33	460
07:30 AM	1	172	**28**	201	6	**206**	10	222	7	4	**2**	13	17	3	3	23	459
07:45 AM	5	174	28	207	5	203	15	**223**	0	**8**	0	8	**21**	9	**6**	**36**	**474**
08:00 AM	**7**	176	24	207	8	168	**17**	193	**12**	4	0	**16**	21	**10**	2	33	449
Total Volume	13	703	107	823	27	766	55	848	23	20	3	46	79	30	16	125	1842
% App. Total	1.6	85.4	13		3.2	90.3	6.5		50	43.5	6.5		63.2	24	12.8		
PHF	.464	.971	.955	.989	.844	.930	.809	.951	.479	.625	.375	.719	.940	.750	.667	.868	.972



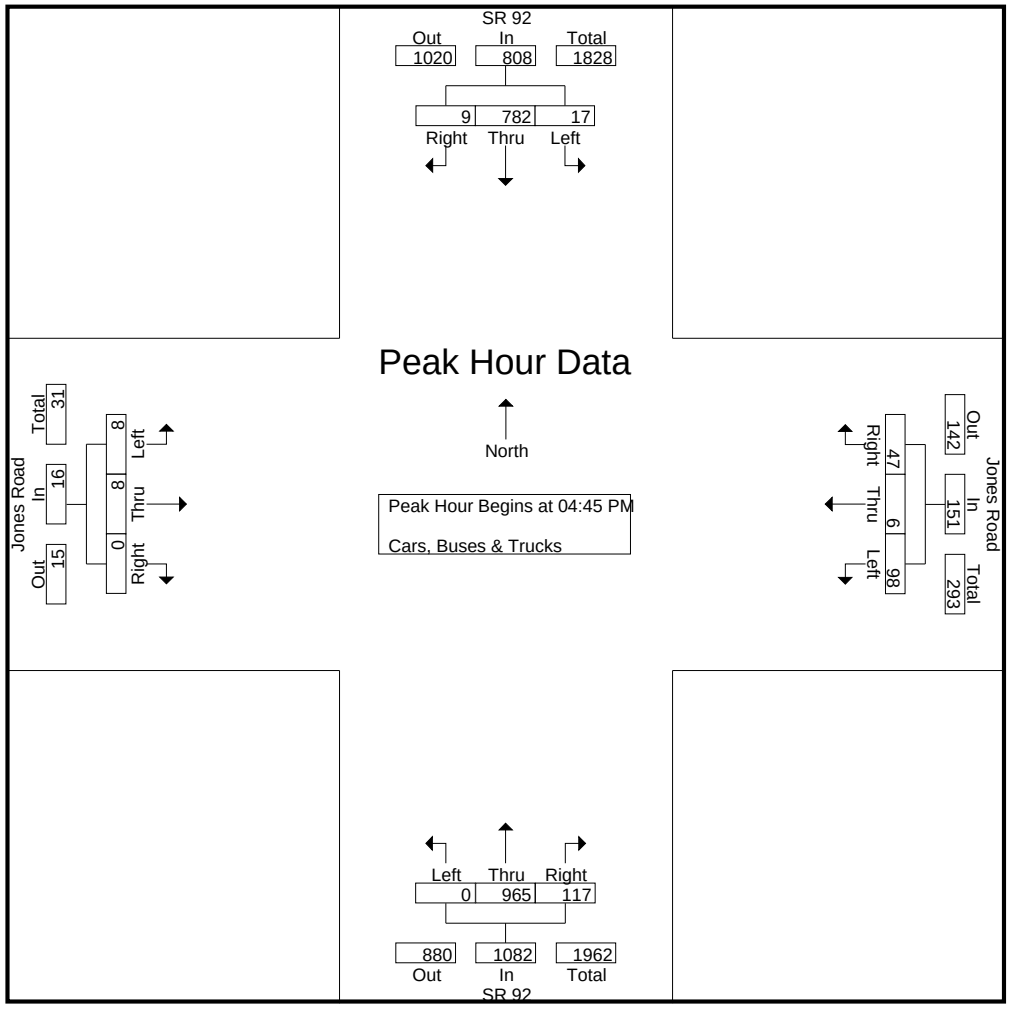
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Jones Road
7-9 am | 4-6 pm

File Name : 20250119
Site Code : 20250119
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 92 Southbound				Jones Road Eastbound				Jones Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	244	31	275	**5**	181	1	187	**4**	2	0	**6**	28	0	11	39	507
05:00 PM	0	230	**36**	266	2	189	2	193	0	**4**	0	4	**29**	**3**	**13**	**45**	508
05:15 PM	0	**248**	29	**277**	5	**208**	**3**	**216**	1	1	0	2	19	1	12	32	**527**
05:30 PM	0	243	21	264	5	204	3	212	3	1	0	4	22	2	11	35	515
Total Volume	0	965	117	1082	17	782	9	808	8	8	0	16	98	6	47	151	2057
% App. Total	0	89.2	10.8		2.1	96.8	1.1		50	50	0		64.9	4	31.1		
PHF	.000	.973	.813	.977	.850	.940	.750	.935	.500	.500	.000	.667	.845	.500	.904	.839	.976



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Demooney Road
7-9 am | 4-6 pm

File Name : 20250118
Site Code : 20250118
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 92 Southbound				Eastbound				Demooney Rd 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	61	50	111	4	139	0	143	0	0	0	0	47	0	4	51	305
07:15 AM	0	105	87	192	5	143	0	148	0	0	0	0	52	0	3	55	395
07:30 AM	0	90	82	172	8	128	0	136	0	0	0	0	63	0	6	69	377
07:45 AM	0	119	87	206	6	151	0	157	0	0	0	0	76	0	6	82	445
Total	0	375	306	681	23	561	0	584	0	0	0	0	238	0	19	257	1522
08:00 AM	0	83	73	156	3	118	0	121	0	0	0	0	48	0	4	52	329
08:15 AM	0	89	76	165	3	102	0	105	0	0	0	0	70	0	5	75	345
08:30 AM	0	96	69	165	3	129	0	132	0	0	0	0	72	0	3	75	372
08:45 AM	0	89	76	165	0	118	0	118	0	0	0	0	46	0	1	47	330
Total	0	357	294	651	9	467	0	476	0	0	0	0	236	0	13	249	1376
*** BREAK ***																	
04:00 PM	0	138	76	214	6	107	0	113	0	0	0	0	78	0	3	81	408
04:15 PM	0	128	94	222	9	104	0	113	0	0	0	0	68	0	1	69	404
04:30 PM	0	187	79	266	5	109	0	114	0	0	0	0	41	0	3	44	424
04:45 PM	0	163	79	242	1	82	0	83	0	0	0	0	68	0	3	71	396
Total	0	616	328	944	21	402	0	423	0	0	0	0	255	0	10	265	1632
05:00 PM	0	153	76	229	6	116	0	122	0	0	0	0	68	0	2	70	421
05:15 PM	0	153	75	228	3	110	0	113	0	0	0	0	77	0	4	81	422
05:30 PM	0	137	82	219	5	138	0	143	0	0	0	0	77	0	5	82	444
05:45 PM	0	164	94	258	1	136	0	137	0	0	0	0	63	0	3	66	461
Total	0	607	327	934	15	500	0	515	0	0	0	0	285	0	14	299	1748
Grand Total	0	1955	1255	3210	68	1930	0	1998	0	0	0	0	1014	0	56	1070	6278
Apprch %	0	60.9	39.1		3.4	96.6	0		0	0	0		94.8	0	5.2		
Total %	0	31.1	20	51.1	1.1	30.7	0	31.8	0	0	0	0	16.2	0	0.9	17	

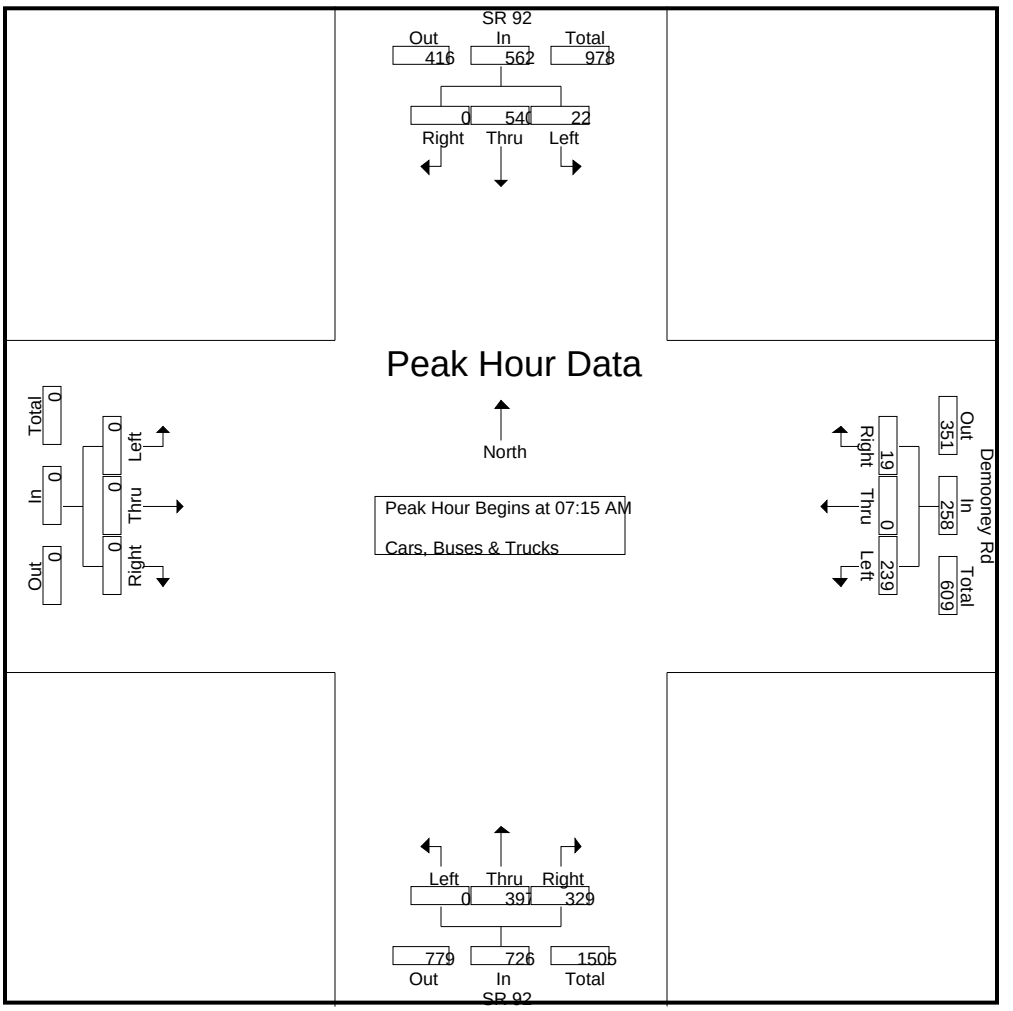
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Demooney Road
7-9 am | 4-6 pm

File Name : 20250118
Site Code : 20250118
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 92 Southbound				Eastbound				Demooney Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	105	**87**	192	5	143	0	148	0	0	0	0	52	0	3	55	395
07:30 AM	0	90	82	172	**8**	128	0	136	0	0	0	0	63	0	**6**	69	377
07:45 AM	0	**119**	87	**206**	6	**151**	0	**157**	0	0	0	0	**76**	0	6	**82**	**445**
08:00 AM	0	83	73	156	3	118	0	121	0	0	0	0	48	0	4	52	329
Total Volume	0	397	329	726	22	540	0	562	0	0	0	0	239	0	19	258	1546
% App. Total	0	54.7	45.3		3.9	96.1	0		0	0	0		92.6	0	7.4		
PHF	.000	.834	.945	.881	.688	.894	.000	.895	.000	.000	.000	.000	.786	.000	.792	.787	.869



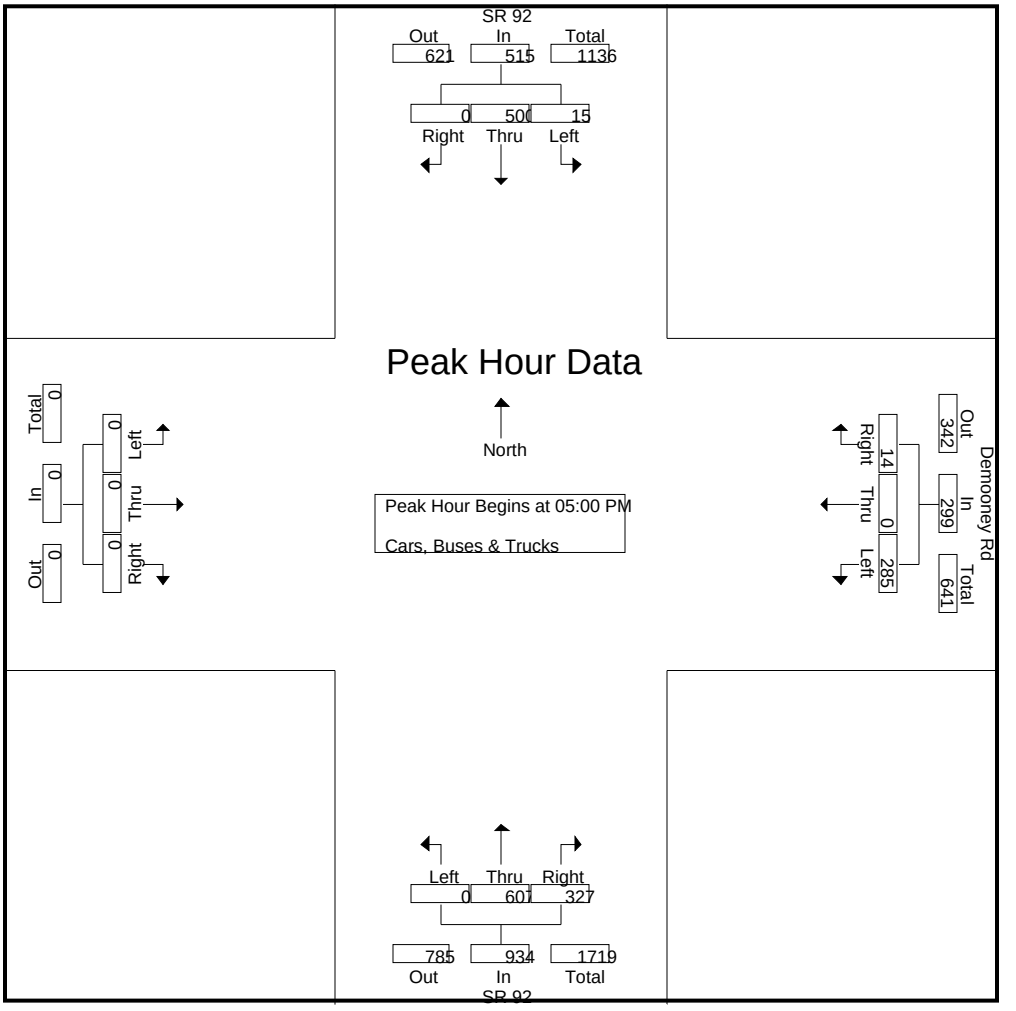
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Demooney Road
7-9 am | 4-6 pm

File Name : 20250118
Site Code : 20250118
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 92 Southbound				Eastbound				Demooney Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	153	76	229	**6**	116	0	122	0	0	0	0	68	0	2	70	421
05:15 PM	0	153	75	228	3	110	0	113	0	0	0	0	**77**	0	4	81	422
05:30 PM	0	137	82	219	5	**138**	0	**143**	0	0	0	0	77	0	**5**	**82**	444
05:45 PM	0	**164**	**94**	**258**	1	136	0	137	0	0	0	0	63	0	3	66	**461**
Total Volume	0	607	327	934	15	500	0	515	0	0	0	0	285	0	14	299	1748
% App. Total	0	65	35		2.9	97.1	0		0	0	0		95.3	0	4.7		
PHF	.000	.925	.870	.905	.625	.906	.000	.900	.000	.000	.000	.000	.925	.000	.700	.912	.948



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Ridge Road-Butner Road
7-9 am | 4-6 pm

File Name : 20250121
Site Code : 20250121
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 92 Southbound				Ridge Road Eastbound				Butner Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	61	5	67	19	131	0	150	3	6	8	17	6	2	4	12	246
07:15 AM	6	84	7	97	16	111	5	132	8	16	2	26	4	6	6	16	271
07:30 AM	15	100	6	121	27	120	3	150	3	16	5	24	4	16	3	23	318
07:45 AM	15	76	5	96	23	103	14	140	5	16	2	23	4	8	12	24	283
Total	37	321	23	381	85	465	22	572	19	54	17	90	18	32	25	75	1118
08:00 AM	24	87	10	121	25	93	10	128	7	16	14	37	4	16	17	37	323
08:15 AM	10	99	13	122	18	83	7	108	9	16	11	36	8	10	7	25	291
08:30 AM	8	117	7	132	21	94	4	119	6	16	10	32	5	6	5	16	299
08:45 AM	8	119	4	131	12	67	3	82	7	10	6	23	8	4	5	17	253
Total	50	422	34	506	76	337	24	437	29	58	41	128	25	36	34	95	1166
*** BREAK ***																	
04:00 PM	15	116	10	141	4	83	5	92	4	21	13	38	16	14	8	38	309
04:15 PM	11	120	6	137	4	81	7	92	4	9	8	21	11	11	18	40	290
04:30 PM	7	119	8	134	8	92	3	103	5	17	7	29	10	15	21	46	312
04:45 PM	4	137	9	150	7	49	4	60	18	21	6	45	7	15	27	49	304
Total	37	492	33	562	23	305	19	347	31	68	34	133	44	55	74	173	1215
05:00 PM	6	131	5	142	14	84	5	103	5	13	13	31	12	16	31	59	335
05:15 PM	7	128	3	138	11	82	3	96	7	8	12	27	20	9	22	51	312
05:30 PM	10	105	5	120	5	107	3	115	1	16	10	27	4	15	25	44	306
05:45 PM	12	94	3	109	11	97	3	111	0	9	2	11	4	9	22	35	266
Total	35	458	16	509	41	370	14	425	13	46	37	96	40	49	100	189	1219
Grand Total	159	1693	106	1958	225	1477	79	1781	92	226	129	447	127	172	233	532	4718
Apprch %	8.1	86.5	5.4		12.6	82.9	4.4		20.6	50.6	28.9		23.9	32.3	43.8		
Total %	3.4	35.9	2.2	41.5	4.8	31.3	1.7	37.7	1.9	4.8	2.7	9.5	2.7	3.6	4.9	11.3	

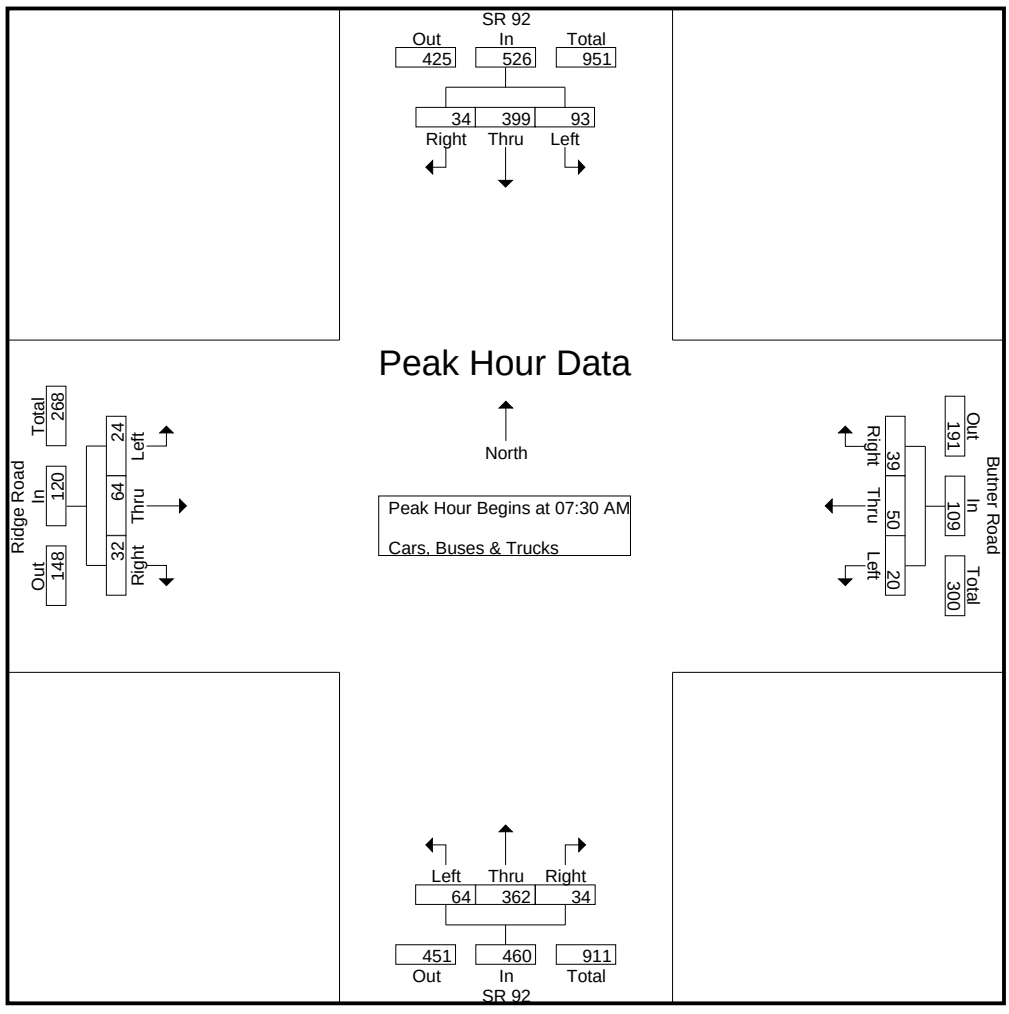
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Ridge Road-Butner Road
7-9 am | 4-6 pm

File Name : 20250121
Site Code : 20250121
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 92 Southbound				Ridge Road Eastbound				Butner Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	15	**100**	6	121	**27**	**120**	3	**150**	3	**16**	5	24	4	**16**	3	23	318
07:45 AM	15	76	5	96	23	103	**14**	140	5	16	2	23	4	8	12	24	283
08:00 AM	**24**	87	10	121	25	93	10	128	7	16	**14**	**37**	4	16	**17**	**37**	**323**
08:15 AM	10	99	**13**	**122**	18	83	7	108	**9**	16	11	36	**8**	10	7	25	291
Total Volume	64	362	34	460	93	399	34	526	24	64	32	120	20	50	39	109	1215
% App. Total	13.9	78.7	7.4		17.7	75.9	6.5		20	53.3	26.7		18.3	45.9	35.8		
PHF	.667	.905	.654	.943	.861	.831	.607	.877	.667	1.00	.571	.811	.625	.781	.574	.736	.940



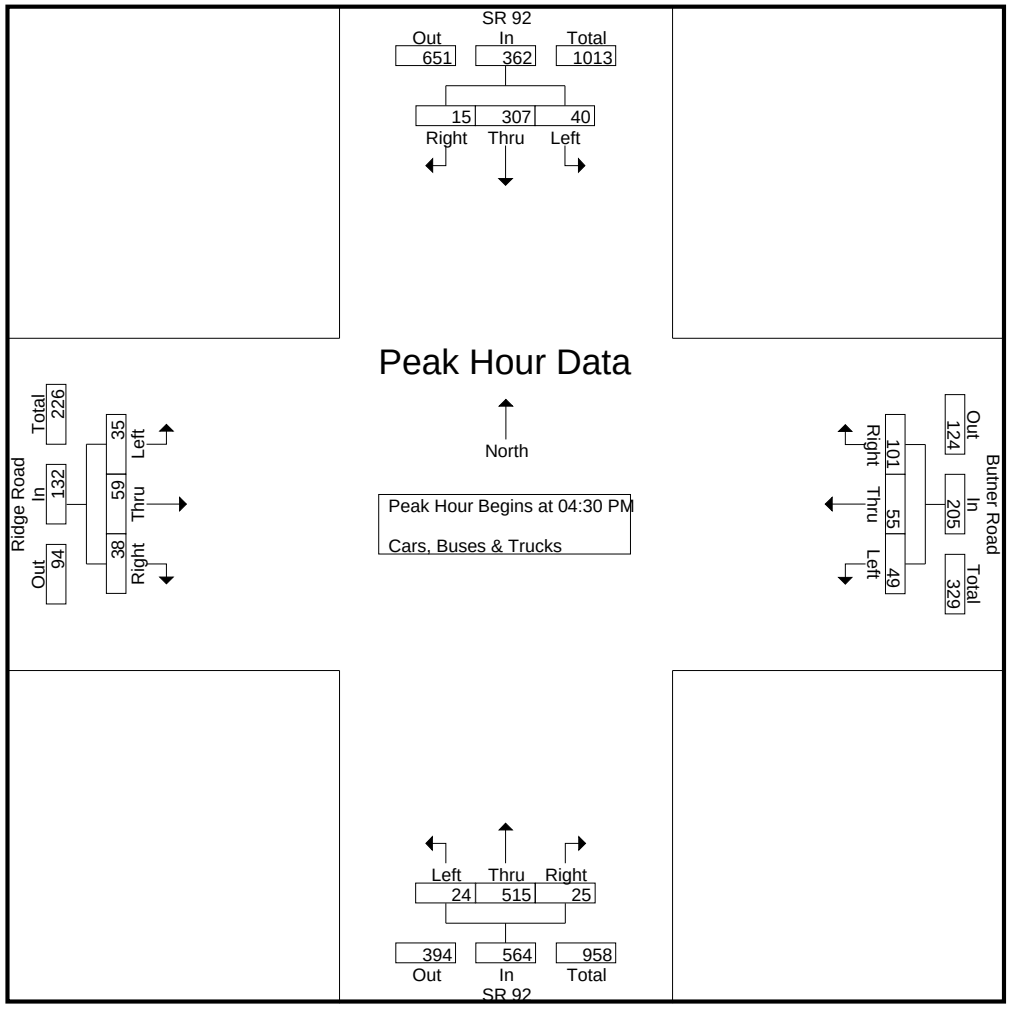
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ Ridge Road-Butner Road
7-9 am | 4-6 pm

File Name : 20250121
Site Code : 20250121
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 92 Southbound				Ridge Road Eastbound				Butner Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**7**	119	8	134	8	**92**	3	**103**	5	17	7	29	10	15	21	46	312
04:45 PM	4	**137**	**9**	**150**	7	49	4	60	**18**	**21**	6	**45**	7	15	27	49	304
05:00 PM	6	131	5	142	**14**	84	**5**	103	5	13	**13**	31	12	**16**	**31**	**59**	**335**
05:15 PM	7	128	3	138	11	82	3	96	7	8	12	27	**20**	9	22	51	312
Total Volume	24	515	25	564	40	307	15	362	35	59	38	132	49	55	101	205	1263
% App. Total	4.3	91.3	4.4		11	84.8	4.1		26.5	44.7	28.8		23.9	26.8	49.3		
PHF	.857	.940	.694	.940	.714	.834	.750	.879	.486	.702	.731	.733	.613	.859	.815	.869	.943



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ SR 154 - Cascade Palmetto Hwy
7-9am | 4-6pm

File Name : 20250122
Site Code : 20250122
Start Date : 04-29-2025

Groups Printed- Cars, Buses & Trucks

	SR 92 Northbound				SR 154 Southbound				SR 154 Eastbound				Cascade Palmetto Hwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	70	12	82	94	144	55	293	32	55	3	90	3	18	8	29	494
07:15 AM	1	89	11	101	67	138	48	253	50	94	3	147	7	23	6	36	537
07:30 AM	1	81	14	96	74	136	49	259	52	77	4	133	7	46	12	65	553
07:45 AM	2	76	15	93	58	111	57	226	55	99	4	158	10	43	13	66	543
Total	4	316	52	372	293	529	209	1031	189	325	14	528	27	130	39	196	2127
08:00 AM	4	94	17	115	60	133	63	256	46	83	6	135	4	46	12	62	568
08:15 AM	3	84	16	103	33	89	52	174	70	67	5	142	5	38	13	56	475
08:30 AM	4	113	14	131	32	101	44	177	57	65	5	127	3	22	12	37	472
08:45 AM	0	105	10	115	17	81	44	142	52	41	3	96	12	19	14	45	398
Total	11	396	57	464	142	404	203	749	225	256	19	500	24	125	51	200	1913
*** BREAK ***																	
04:00 PM	2	114	5	121	17	81	57	155	39	37	1	77	12	56	24	92	445
04:15 PM	4	140	6	150	9	86	49	144	45	35	5	85	14	66	29	109	488
04:30 PM	3	138	4	145	20	72	75	167	50	28	1	79	9	66	43	118	509
04:45 PM	3	141	8	152	11	63	63	137	58	39	3	100	10	65	51	126	515
Total	12	533	23	568	57	302	244	603	192	139	10	341	45	253	147	445	1957
05:00 PM	1	158	5	164	17	80	66	163	58	25	2	85	15	58	33	106	518
05:15 PM	5	126	8	139	21	84	56	161	43	35	2	80	10	64	59	133	513
05:30 PM	1	149	2	152	15	108	47	170	43	17	2	62	11	71	48	130	514
05:45 PM	1	136	1	138	16	86	47	149	65	33	2	100	15	61	50	126	513
Total	8	569	16	593	69	358	216	643	209	110	8	327	51	254	190	495	2058
Grand Total	35	1814	148	1997	561	1593	872	3026	815	830	51	1696	147	762	427	1336	8055
Apprch %	1.8	90.8	7.4		18.5	52.6	28.8		48.1	48.9	3		11	57	32		
Total %	0.4	22.5	1.8	24.8	7	19.8	10.8	37.6	10.1	10.3	0.6	21.1	1.8	9.5	5.3	16.6	

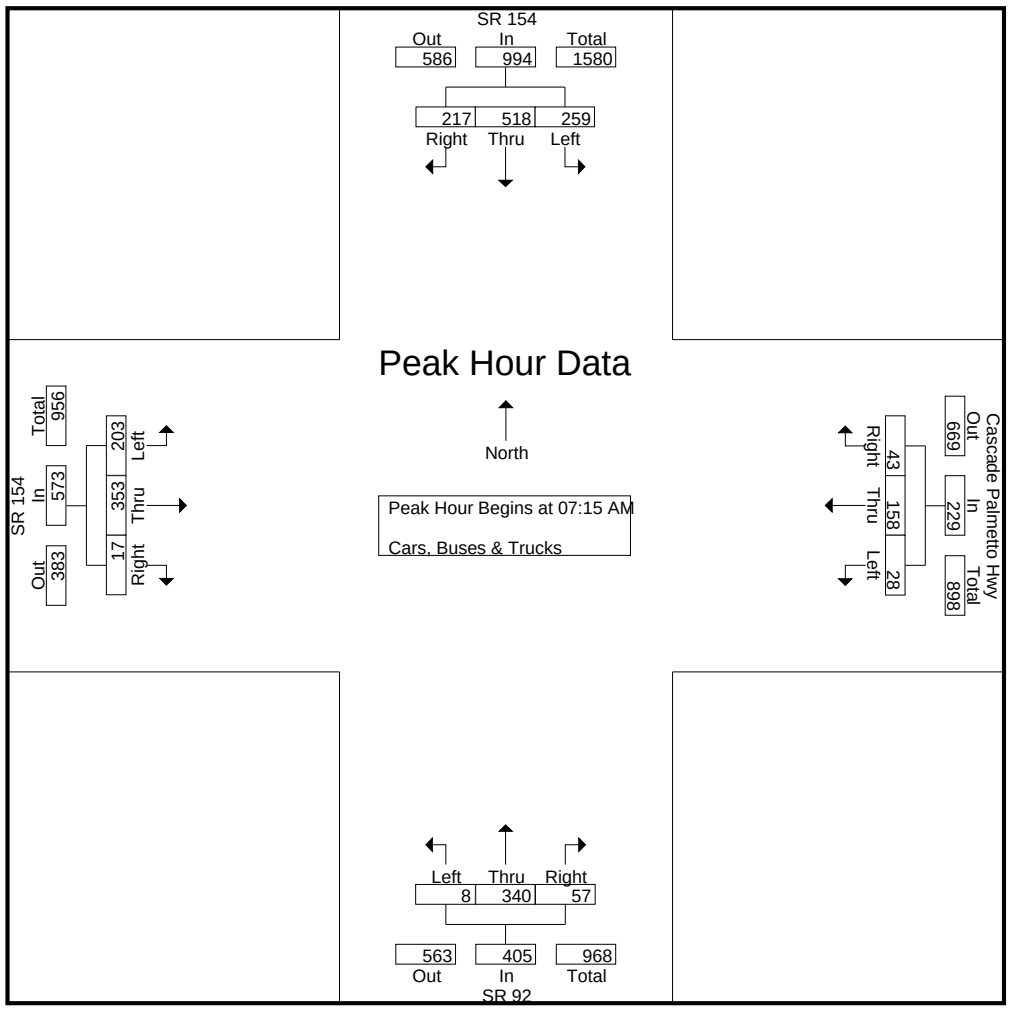
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ SR 154 - Cascade Palmetto Hwy
7-9am | 4-6pm

File Name : 20250122
Site Code : 20250122
Start Date : 04-29-2025
Page No : 2

	SR 92 Northbound				SR 154 Southbound				SR 154 Eastbound				Cascade Palmetto Hwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	89	11	101	67	**138**	48	253	50	94	3	147	7	23	6	36	537
07:30 AM	1	81	14	96	**74**	136	49	**259**	52	77	4	133	7	**46**	12	65	553
07:45 AM	2	76	15	93	58	111	57	226	**55**	**99**	4	**158**	**10**	43	**13**	**66**	543
08:00 AM	**4**	**94**	**17**	**115**	60	133	**63**	256	46	83	**6**	135	4	46	12	62	**568**
Total Volume	8	340	57	405	259	518	217	994	203	353	17	573	28	158	43	229	2201
% App. Total	2	84	14.1		26.1	52.1	21.8		35.4	61.6	3		12.2	69	18.8		
PHF	.500	.904	.838	.880	.875	.938	.861	.959	.923	.891	.708	.907	.700	.859	.827	.867	.969



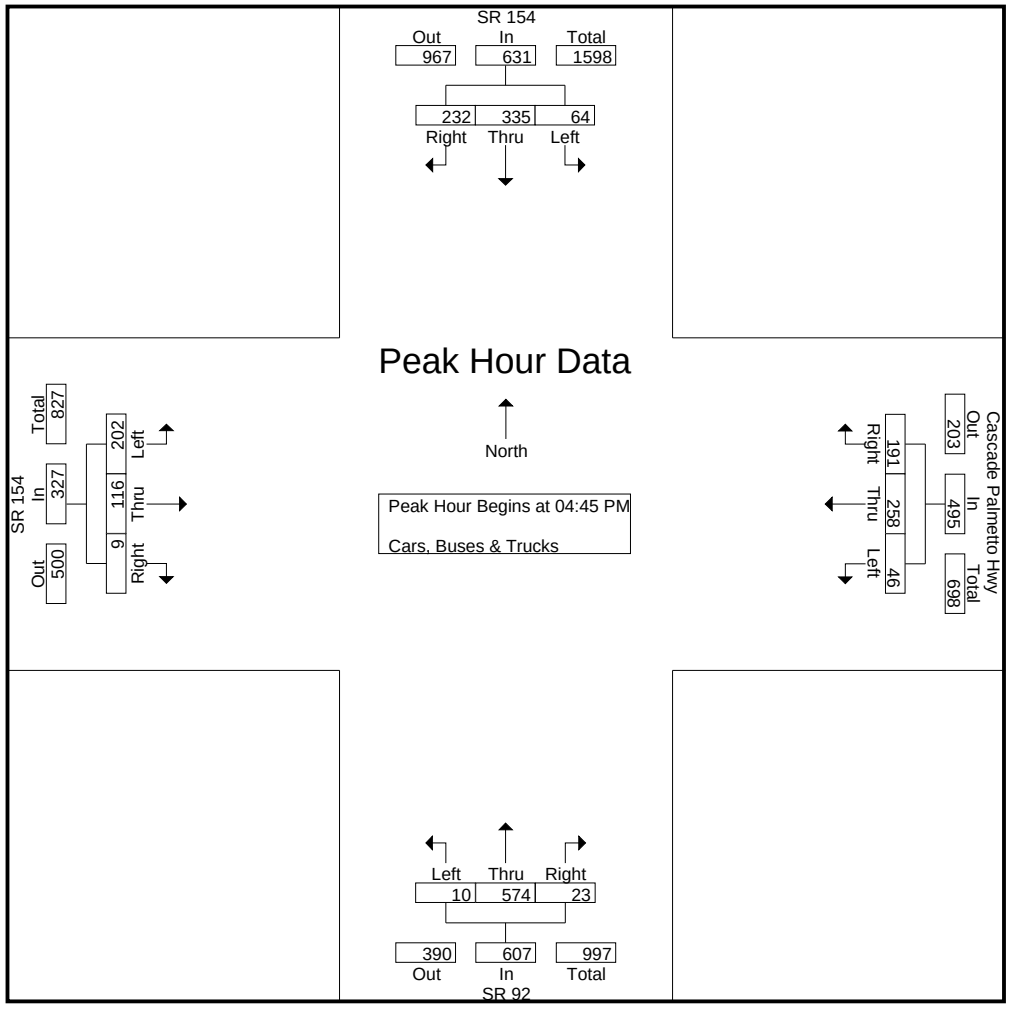
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 92 @ SR 154 - Cascade Palmetto Hwy
7-9am | 4-6pm

File Name : 20250122
Site Code : 20250122
Start Date : 04-29-2025
Page No : 3

	SR 92 Northbound				SR 154 Southbound				SR 154 Eastbound				Cascade Palmetto Hwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	141	**8**	152	11	63	63	137	**58**	**39**	**3**	**100**	10	65	51	126	515
05:00 PM	1	**158**	5	**164**	17	80	**66**	163	58	25	2	85	**15**	58	33	106	**518**
05:15 PM	**5**	126	8	139	**21**	84	56	161	43	35	2	80	10	64	**59**	**133**	513
05:30 PM	1	149	2	152	15	**108**	47	**170**	43	17	2	62	11	**71**	48	130	514
Total Volume	10	574	23	607	64	335	232	631	202	116	9	327	46	258	191	495	2060
% App. Total	1.6	94.6	3.8		10.1	53.1	36.8		61.8	35.5	2.8		9.3	52.1	38.6		
PHF	.500	.908	.719	.925	.762	.775	.879	.928	.871	.744	.750	.818	.767	.908	.809	.930	.994



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 154 @ SR 166
7-9 am | 4-6 pm

File Name : 20250123
Site Code : 20250123
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 154 Northbound				SR 154 Southbound				SR 166 Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	172	0	189	0	52	55	107	133	0	16	149	0	0	0	0	445
07:15 AM	14	200	0	214	0	83	79	162	122	0	19	141	0	0	0	0	517
07:30 AM	16	188	0	204	0	84	94	178	141	0	6	147	0	0	0	0	529
07:45 AM	18	211	0	229	0	70	86	156	157	0	21	178	0	0	0	0	563
Total	65	771	0	836	0	289	314	603	553	0	62	615	0	0	0	0	2054
08:00 AM	12	99	0	111	0	91	99	190	132	0	28	160	0	0	0	0	461
08:15 AM	22	143	0	165	0	64	155	219	121	0	22	143	0	0	0	0	527
08:30 AM	6	76	0	82	0	82	129	211	86	0	11	97	0	0	0	0	390
08:45 AM	14	88	0	102	0	102	115	217	93	0	10	103	0	0	0	0	422
Total	54	406	0	460	0	339	498	837	432	0	71	503	0	0	0	0	1800
*** BREAK ***																	
04:00 PM	10	71	0	81	0	120	94	214	112	0	23	135	0	0	0	0	430
04:15 PM	8	79	0	87	0	186	110	296	116	0	23	139	0	0	0	0	522
04:30 PM	11	61	0	72	0	203	99	302	103	0	31	134	0	0	0	0	508
04:45 PM	15	75	0	90	0	212	124	336	108	0	29	137	0	0	0	0	563
Total	44	286	0	330	0	721	427	1148	439	0	106	545	0	0	0	0	2023
05:00 PM	15	96	0	111	0	217	116	333	147	0	23	170	0	0	0	0	614
05:15 PM	9	100	0	109	0	212	104	316	104	0	39	143	0	0	0	0	568
05:30 PM	14	92	0	106	0	235	138	373	125	0	42	167	0	0	0	0	646
05:45 PM	11	93	0	104	0	177	156	333	96	0	29	125	0	0	0	0	562
Total	49	381	0	430	0	841	514	1355	472	0	133	605	0	0	0	0	2390
Grand Total	212	1844	0	2056	0	2190	1753	3943	1896	0	372	2268	0	0	0	0	8267
Apprch %	10.3	89.7	0		0	55.5	44.5		83.6	0	16.4		0	0	0		
Total %	2.6	22.3	0	24.9	0	26.5	21.2	47.7	22.9	0	4.5	27.4	0	0	0	0	

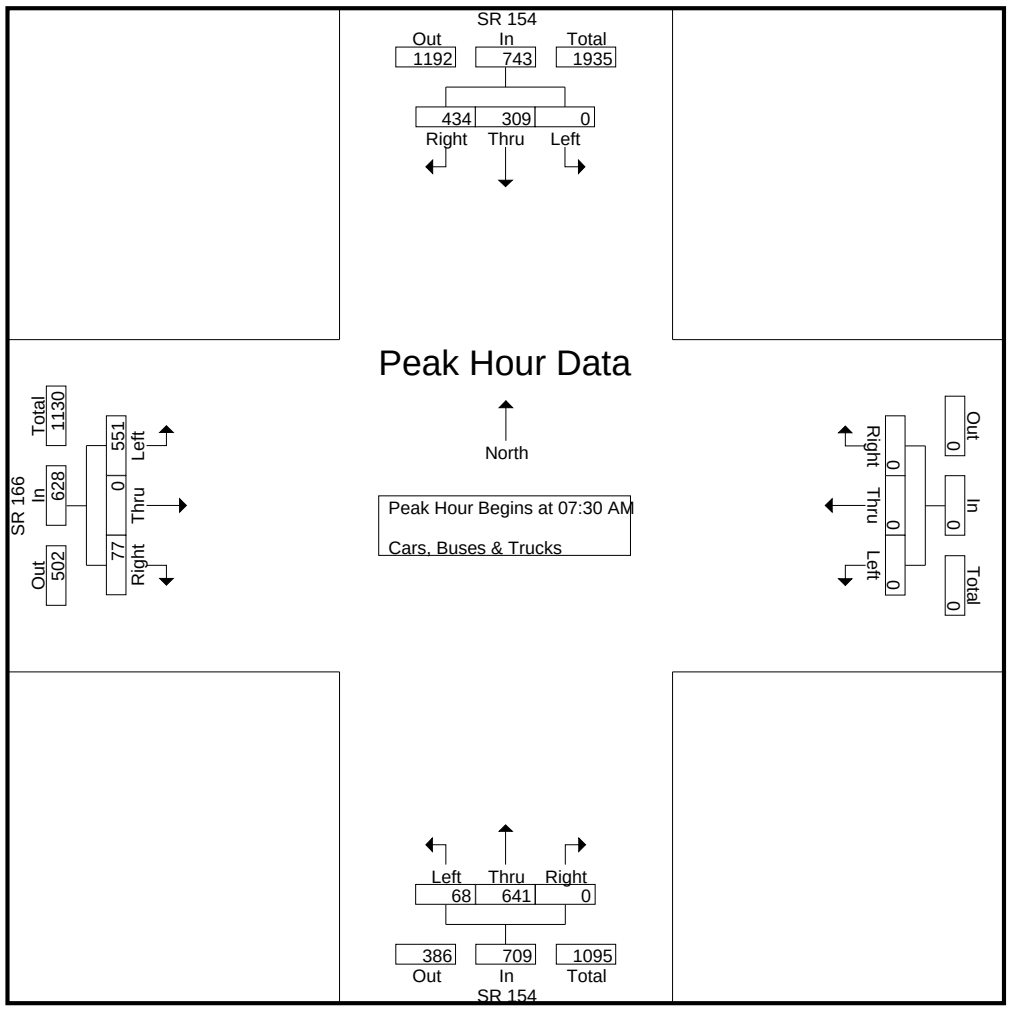
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 154 @ SR 166
7-9 am | 4-6 pm

File Name : 20250123
Site Code : 20250123
Start Date : 04-29-2025
Page No : 2

	SR 154 Northbound				SR 154 Southbound				SR 166 Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	16	188	0	204	0	84	94	178	141	0	6	147	0	0	0	0	529
07:45 AM	18	**211**	0	**229**	0	70	86	156	**157**	0	21	**178**	0	0	0	0	**563**
08:00 AM	12	99	0	111	0	**91**	99	190	132	0	**28**	160	0	0	0	0	461
08:15 AM	**22**	143	0	165	0	64	**155**	**219**	121	0	22	143	0	0	0	0	527
Total Volume	68	641	0	709	0	309	434	743	551	0	77	628	0	0	0	0	2080
% App. Total	9.6	90.4	0		0	41.6	58.4		87.7	0	12.3		0	0	0		
PHF	.773	.759	.000	.774	.000	.849	.700	.848	.877	.000	.688	.882	.000	.000	.000	.000	.924



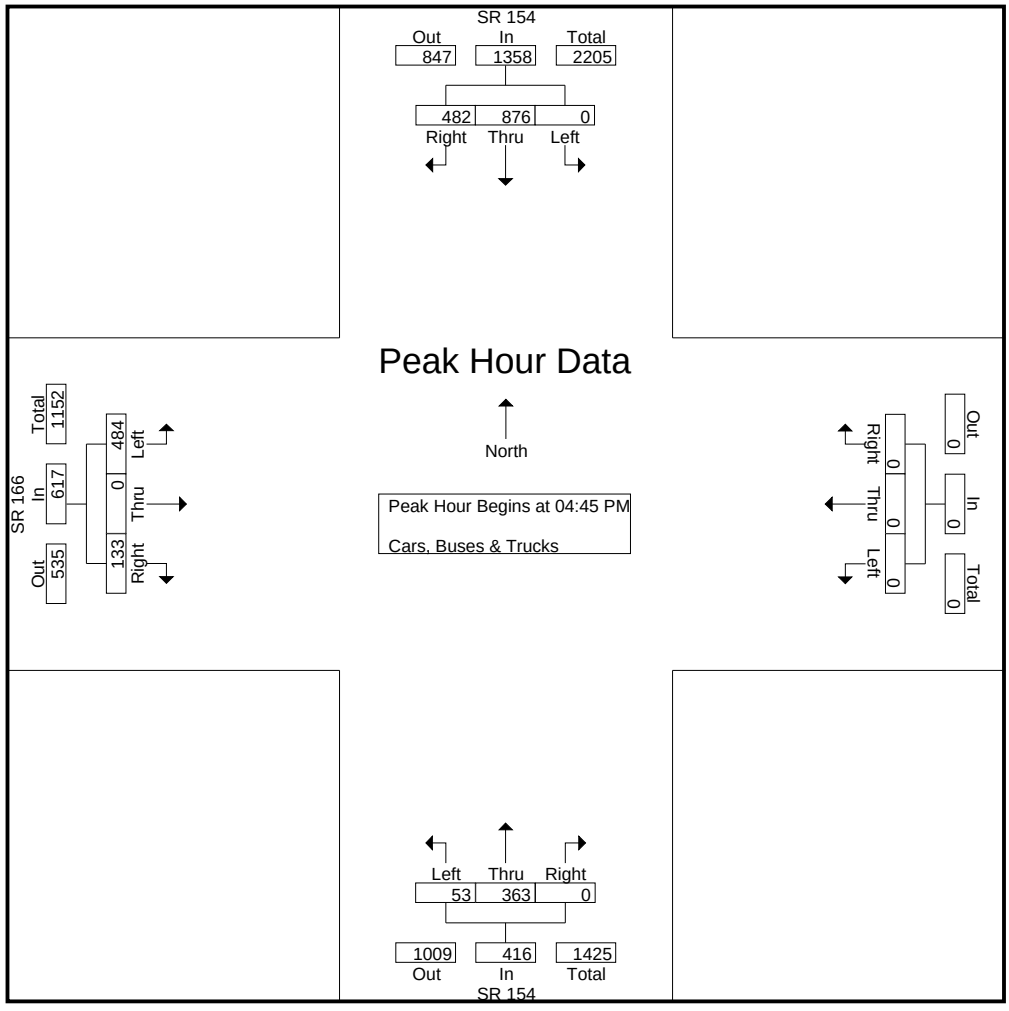
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 154 @ SR 166
7-9 am | 4-6 pm

File Name : 20250123
Site Code : 20250123
Start Date : 04-29-2025
Page No : 3

	SR 154 Northbound				SR 154 Southbound				SR 166 Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**15**	75	0	90	0	212	124	336	108	0	29	137	0	0	0	0	563
05:00 PM	15	96	0	**111**	0	217	116	333	**147**	0	23	**170**	0	0	0	0	614
05:15 PM	9	**100**	0	109	0	212	104	316	104	0	39	143	0	0	0	0	568
05:30 PM	14	92	0	106	0	**235**	**138**	**373**	125	0	**42**	167	0	0	0	0	**646**
Total Volume	53	363	0	416	0	876	482	1358	484	0	133	617	0	0	0	0	2391
% App. Total	12.7	87.3	0		0	64.5	35.5		78.4	0	21.6		0	0	0		
PHF	.883	.908	.000	.937	.000	.932	.873	.910	.823	.000	.792	.907	.000	.000	.000	.000	.925



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Ridge Road @ Clark Road
7-9 am | 4-6 pm

File Name : 20250124
Site Code : 20250124
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Clark Road Northbound				Southbound				Ridge Road Eastbound				Ridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	8	0	0	8	0	0	0	0	0	4	0	4	0	2	0	2	14
07:15 AM	10	0	1	11	0	0	0	0	0	4	1	5	0	13	0	13	29
07:30 AM	7	0	0	7	0	0	0	0	0	6	2	8	1	17	0	18	33
07:45 AM	5	0	1	6	0	0	0	0	0	11	2	13	0	11	0	11	30
Total	30	0	2	32	0	0	0	0	0	25	5	30	1	43	0	44	106
08:00 AM	8	0	0	8	0	0	0	0	0	12	2	14	0	7	0	7	29
08:15 AM	4	0	0	4	0	0	0	0	0	9	2	11	1	6	0	7	22
08:30 AM	1	0	0	1	0	0	0	0	0	5	1	6	0	5	0	5	12
08:45 AM	2	0	0	2	0	0	0	0	0	4	1	5	1	5	0	6	13
Total	15	0	0	15	0	0	0	0	0	30	6	36	2	23	0	25	76
*** BREAK ***																	
04:00 PM	6	0	0	6	0	0	0	0	0	15	4	19	0	11	0	11	36
04:15 PM	4	0	0	4	0	0	0	0	0	13	5	18	1	8	0	9	31
04:30 PM	0	0	0	0	0	0	0	0	0	17	4	21	0	11	0	11	32
04:45 PM	6	0	3	9	0	0	0	0	0	9	5	14	2	7	0	9	32
Total	16	0	3	19	0	0	0	0	0	54	18	72	3	37	0	40	131
05:00 PM	4	0	0	4	0	0	0	0	0	4	5	9	0	12	0	12	25
05:15 PM	2	0	0	2	0	0	0	0	0	11	3	14	0	11	0	11	27
05:30 PM	3	0	0	3	0	0	0	0	0	9	5	14	0	8	0	8	25
05:45 PM	6	0	1	7	0	0	0	0	0	15	2	17	0	8	0	8	32
Total	15	0	1	16	0	0	0	0	0	39	15	54	0	39	0	39	109
Grand Total	76	0	6	82	0	0	0	0	0	148	44	192	6	142	0	148	422
Apprch %	92.7	0	7.3		0	0	0		0	77.1	22.9		4.1	95.9	0		
Total %	18	0	1.4	19.4	0	0	0	0	0	35.1	10.4	45.5	1.4	33.6	0	35.1	

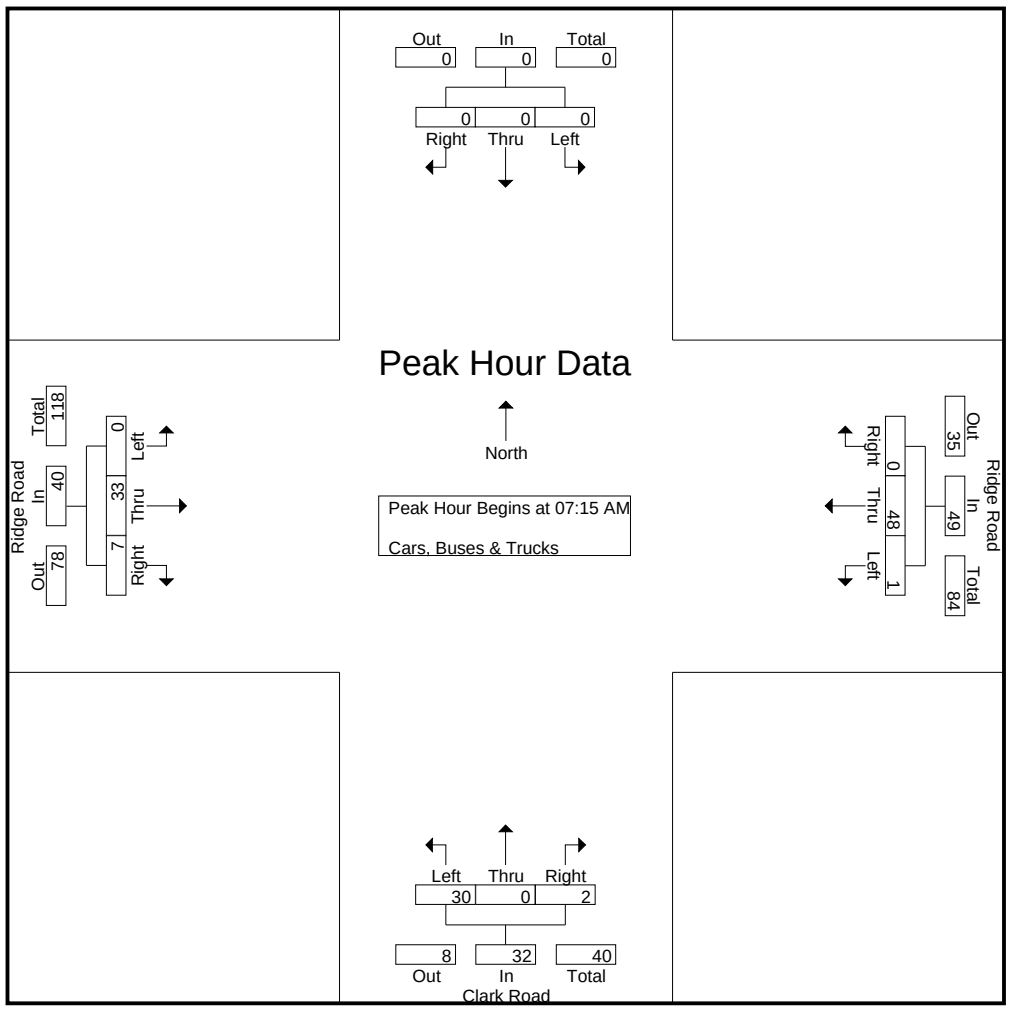
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Ridge Road @ Clark Road
7-9 am | 4-6 pm

File Name : 20250124
Site Code : 20250124
Start Date : 04-29-2025
Page No : 2

	Clark Road Northbound				Southbound				Ridge Road Eastbound				Ridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**10**	0	**1**	**11**	0	0	0	0	0	4	1	5	0	13	0	13	29
07:30 AM	7	0	0	7	0	0	0	0	0	6	**2**	8	**1**	**17**	0	**18**	**33**
07:45 AM	5	0	1	6	0	0	0	0	0	11	2	13	0	11	0	11	30
08:00 AM	8	0	0	8	0	0	0	0	0	**12**	2	**14**	0	7	0	7	29
Total Volume	30	0	2	32	0	0	0	0	0	33	7	40	1	48	0	49	121
% App. Total	93.8	0	6.2		0	0	0		0	82.5	17.5		2	98	0		
PHF	.750	.000	.500	.727	.000	.000	.000	.000	.000	.688	.875	.714	.250	.706	.000	.681	.917



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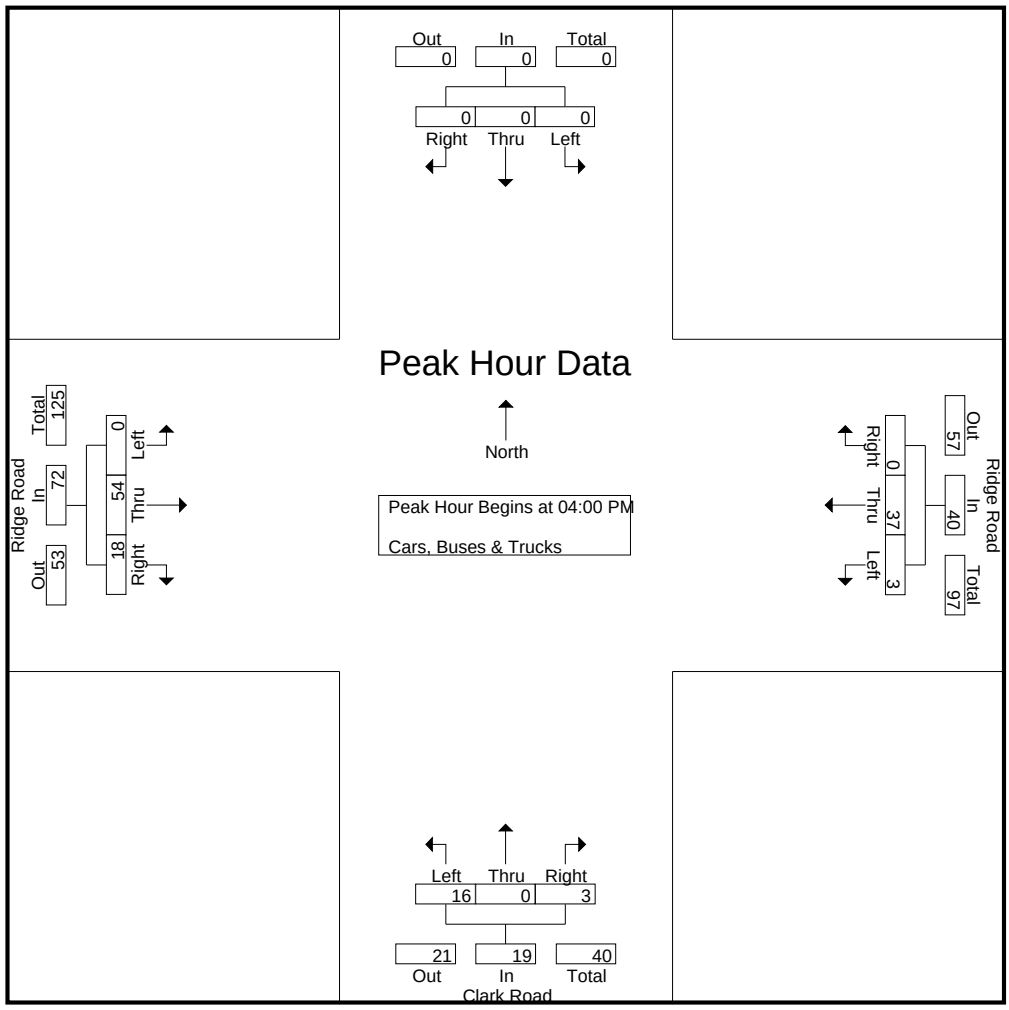
2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Ridge Road @ Clark Road
7-9 am | 4-6 pm

File Name : 20250124
Site Code : 20250124
Start Date : 04-29-2025
Page No : 3

	Clark Road Northbound				Southbound				Ridge Road Eastbound				Ridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**6**	0	0	6	0	0	0	0	0	15	4	19	0	**11**	0	**11**	**36**
04:15 PM	4	0	0	4	0	0	0	0	0	13	**5**	18	1	8	0	9	31
04:30 PM	0	0	0	0	0	0	0	0	0	**17**	4	**21**	0	11	0	11	32
04:45 PM	6	0	**3**	**9**	0	0	0	0	0	9	5	14	**2**	7	0	9	32
Total Volume	16	0	3	19	0	0	0	0	0	54	18	72	3	37	0	40	131
% App. Total	84.2	0	15.8		0	0	0		0	75	25		7.5	92.5	0		
PHF	.667	.000	.250	.528	.000	.000	.000	.000	.000	.794	.900	.857	.375	.841	.000	.909	.910



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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 154 (Cascade Palmetto Hwy) @ Ridge Rd
-Cedar Grove Rd roundabout
7-9 am | 4-6 pm

File Name : 20250125
Site Code : 20250125
Start Date : 04-29-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 154 (Cascade Palmetto Hwy) Northbound				SR 154 (Cascade Palmetto Hwy) Southbound				Cedar Grove Rd Eastbound				Ridge Rd 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	4	79	2	85	0	82	1	83	5	0	11	16	2	0	5	7	191
07:15 AM	1	115	4	120	1	101	0	102	2	1	8	11	2	1	11	14	247
07:30 AM	5	122	1	128	1	112	1	114	9	1	12	22	12	2	7	21	285
07:45 AM	4	94	4	102	1	116	2	119	1	6	10	17	9	6	9	24	262
Total	14	410	11	435	3	411	4	418	17	8	41	66	25	9	32	66	985
08:00 AM	5	113	1	119	1	123	2	126	5	9	5	19	5	6	4	15	279
08:15 AM	7	103	5	115	3	109	3	115	0	6	4	10	5	3	8	16	256
08:30 AM	4	118	7	129	0	76	1	77	1	1	6	8	6	0	3	9	223
08:45 AM	4	82	4	90	2	80	1	83	4	3	4	11	4	0	2	6	190
Total	20	416	17	453	6	388	7	401	10	19	19	48	20	9	17	46	948
*** BREAK ***																	
04:00 PM	7	104	9	120	3	125	2	130	0	6	9	15	5	7	1	13	278
04:15 PM	9	155	10	174	4	144	2	150	0	1	4	5	6	3	7	16	345
04:30 PM	7	143	7	157	5	152	2	159	0	4	7	11	2	6	2	10	337
04:45 PM	12	149	12	173	4	142	4	150	6	5	6	17	6	3	1	10	350
Total	35	551	38	624	16	563	10	589	6	16	26	48	19	19	11	49	1310
05:00 PM	17	127	7	151	2	126	1	129	1	1	4	6	7	7	2	16	302
05:15 PM	13	127	7	147	1	128	0	129	0	3	9	12	4	6	3	13	301
05:30 PM	8	110	6	124	2	118	2	122	2	1	5	8	5	4	4	13	267
05:45 PM	10	105	7	122	2	127	0	129	2	1	6	9	5	1	7	13	273
Total	48	469	27	544	7	499	3	509	5	6	24	35	21	18	16	55	1143
Grand Total	117	1846	93	2056	32	1861	24	1917	38	49	110	197	85	55	76	216	4386
Apprch %	5.7	89.8	4.5		1.7	97.1	1.3		19.3	24.9	55.8		39.4	25.5	35.2		
Total %	2.7	42.1	2.1	46.9	0.7	42.4	0.5	43.7	0.9	1.1	2.5	4.5	1.9	1.3	1.7	4.9	

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
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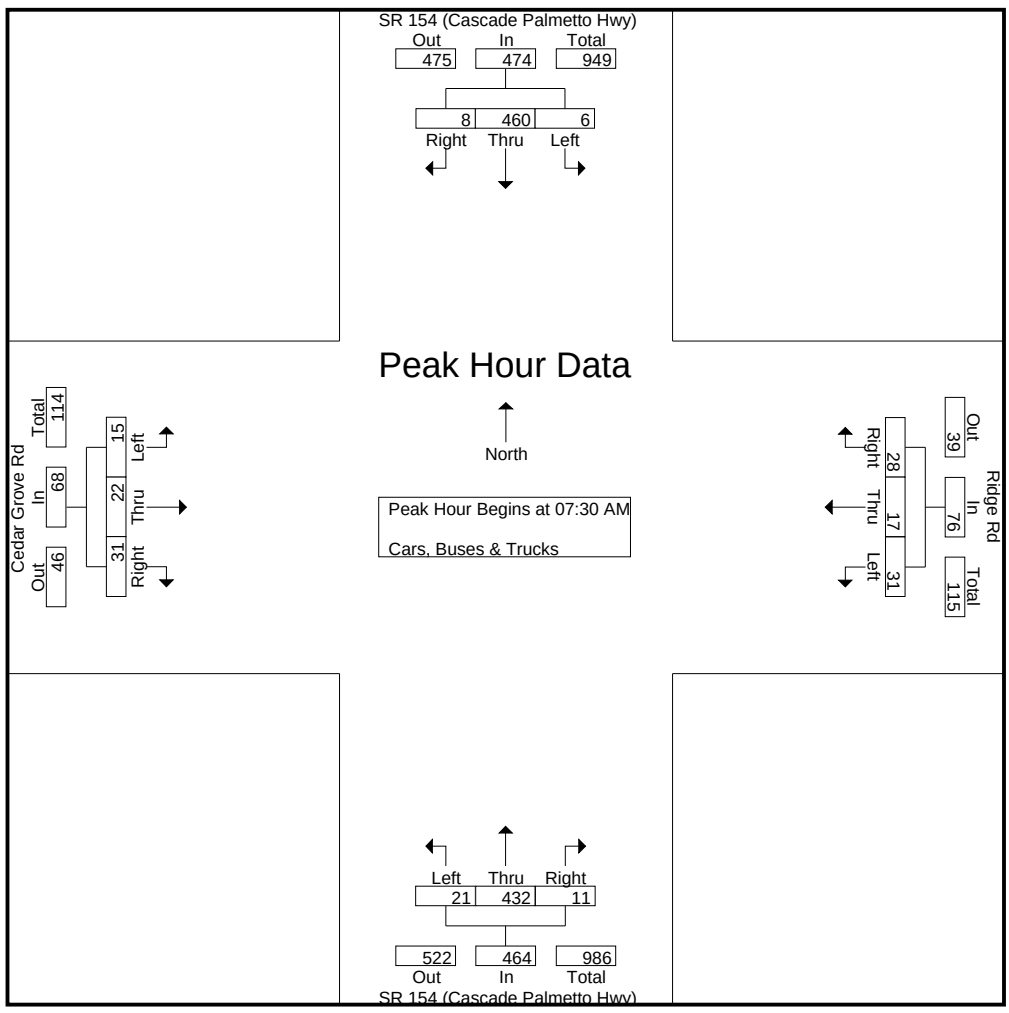
TMC Data
SR 154 (Cascade Palmetto Hwy) @ Ridge Rd
-Cedar Grove Rd roundabout
7-9 am | 4-6 pm

File Name : 20250125
Site Code : 20250125
Start Date : 04-29-2025
Page No : 2

	SR 154 (Cascade Palmetto Hwy) Northbound				SR 154 (Cascade Palmetto Hwy) Southbound				Cedar Grove Rd Eastbound				Ridge Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	5	**122**	1	**128**	1	112	1	114	**9**	1	**12**	**22**	**12**	2	7	21	**285**
07:45 AM	4	94	4	102	1	116	2	119	1	6	10	17	9	**6**	**9**	**24**	262
08:00 AM	5	113	1	119	1	**123**	2	**126**	5	**9**	5	19	5	6	4	15	279
08:15 AM	**7**	103	**5**	115	**3**	109	**3**	115	0	6	4	10	5	3	8	16	256
Total Volume	21	432	11	464	6	460	8	474	15	22	31	68	31	17	28	76	1082
% App. Total	4.5	93.1	2.4		1.3	97	1.7		22.1	32.4	45.6		40.8	22.4	36.8		
PHF	.750	.885	.550	.906	.500	.935	.667	.940	.417	.611	.646	.773	.646	.708	.778	.792	.949



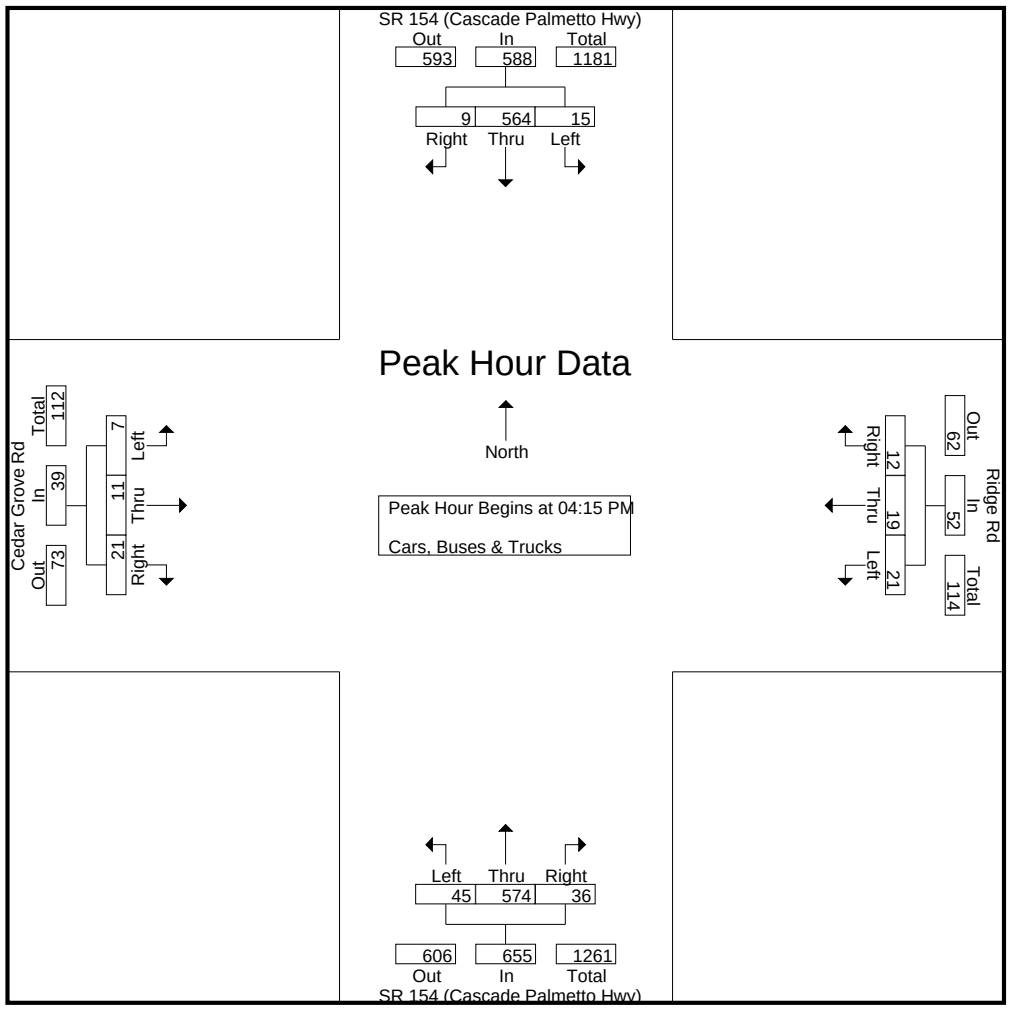
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
SR 154 (Cascade Palmetto Hwy) @ Ridge Rd
-Cedar Grove Rd roundabout
7-9 am | 4-6 pm

File Name : 20250125
Site Code : 20250125
Start Date : 04-29-2025
Page No : 3

	SR 154 (Cascade Palmetto Hwy) Northbound				SR 154 (Cascade Palmetto Hwy) Southbound				Cedar Grove Rd Eastbound				Ridge Rd 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 04:15 PM																	
04:15 PM	9	**155**	10	**174**	4	144	2	150	0	1	4	5	6	3	**7**	**16**	345
04:30 PM	7	143	7	157	**5**	**152**	2	**159**	0	4	**7**	11	2	6	2	10	337
04:45 PM	12	149	**12**	173	4	142	**4**	150	**6**	**5**	6	**17**	6	3	1	10	**350**
05:00 PM	**17**	127	7	151	2	126	1	129	1	1	4	6	**7**	**7**	2	16	302
Total Volume	45	574	36	655	15	564	9	588	7	11	21	39	21	19	12	52	1334
% App. Total	6.9	87.6	5.5		2.6	95.9	1.5		17.9	28.2	53.8		40.4	36.5	23.1		
PHF	.662	.926	.750	.941	.750	.928	.563	.925	.292	.550	.750	.574	.750	.679	.429	.813	.953



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Clark Road
7-9am | 4-6pm

File Name : 20250126
Site Code : 20250126
Start Date : 04-30-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Bethlehem Road Northbound				Bethlehem Road Southbound				Clark Road Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	3	0	4	0	9	0	9	0	0	11	11	0	0	0	0	24
07:15 AM	5	10	0	15	0	4	0	4	3	0	3	6	0	0	0	0	25
07:30 AM	4	8	0	12	0	20	1	21	1	0	5	6	0	0	0	0	39
07:45 AM	1	14	0	15	0	14	0	14	1	0	8	9	0	0	0	0	38
Total	11	35	0	46	0	47	1	48	5	0	27	32	0	0	0	0	126
08:00 AM	7	9	0	16	0	12	1	13	1	0	8	9	0	0	0	0	38
08:15 AM	5	6	0	11	0	10	1	11	0	0	5	5	0	0	0	0	27
08:30 AM	6	3	0	9	0	10	0	10	2	0	4	6	0	0	0	0	25
08:45 AM	1	3	0	4	0	9	0	9	1	0	7	8	0	0	0	0	21
Total	19	21	0	40	0	41	2	43	4	0	24	28	0	0	0	0	111
*** BREAK ***																	
04:00 PM	10	15	0	25	0	6	0	6	0	0	9	9	0	0	0	0	40
04:15 PM	5	9	0	14	0	14	0	14	2	0	5	7	0	0	0	0	35
04:30 PM	6	11	0	17	0	8	1	9	2	0	3	5	0	0	0	0	31
04:45 PM	7	14	0	21	0	10	4	14	1	0	3	4	0	0	0	0	39
Total	28	49	0	77	0	38	5	43	5	0	20	25	0	0	0	0	145
05:00 PM	0	10	0	10	0	8	0	8	1	0	4	5	0	0	0	0	23
05:15 PM	7	14	0	21	0	10	2	12	4	0	6	10	0	0	0	0	43
05:30 PM	8	14	0	22	0	14	3	17	1	0	4	5	0	0	0	0	44
05:45 PM	6	7	0	13	0	10	1	11	3	0	11	14	0	0	0	0	38
Total	21	45	0	66	0	42	6	48	9	0	25	34	0	0	0	0	148
Grand Total	79	150	0	229	0	168	14	182	23	0	96	119	0	0	0	0	530
Apprch %	34.5	65.5	0		0	92.3	7.7		19.3	0	80.7		0	0	0		
Total %	14.9	28.3	0	43.2	0	31.7	2.6	34.3	4.3	0	18.1	22.5	0	0	0	0	

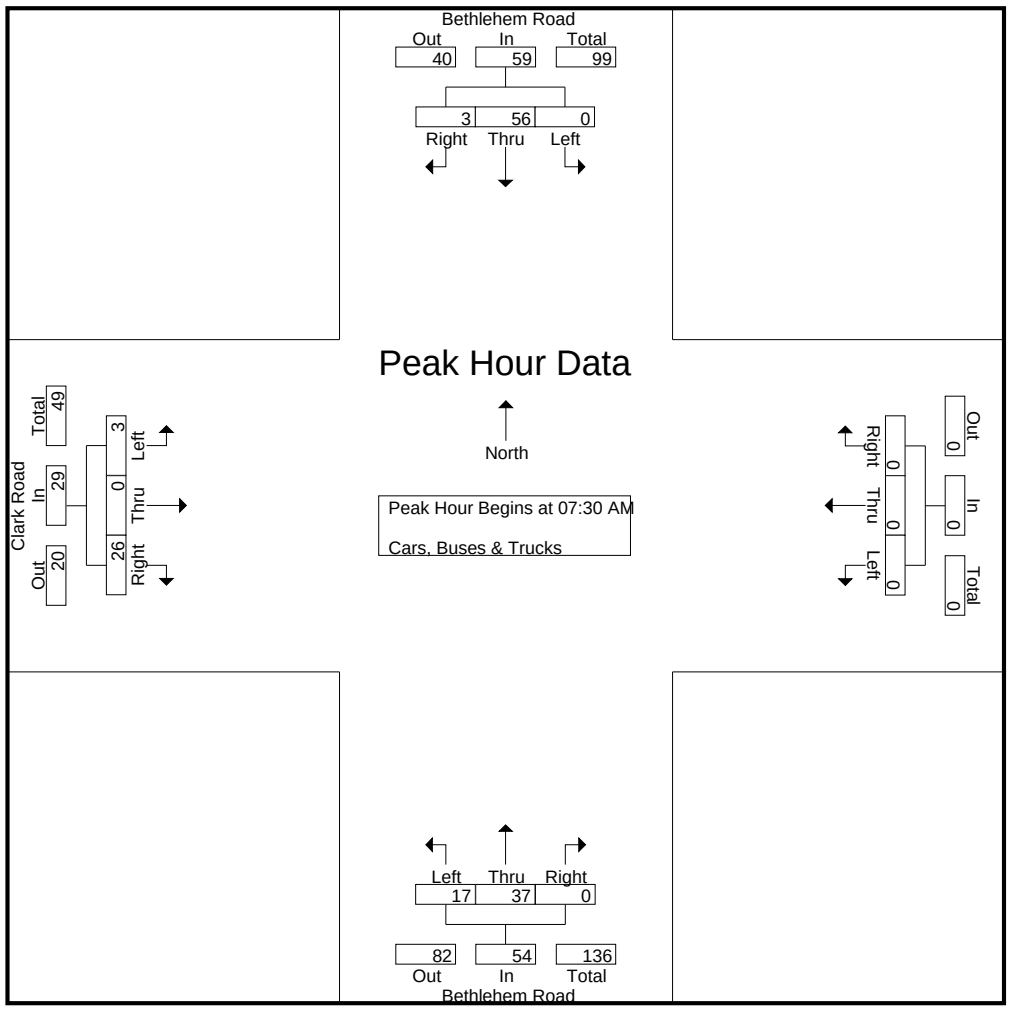
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Clark Road
7-9am | 4-6pm

File Name : 20250126
Site Code : 20250126
Start Date : 04-30-2025
Page No : 2

	Bethlehem Road Northbound				Bethlehem Road Southbound				Clark Road Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	8	0	12	0	**20**	**1**	**21**	**1**	0	5	6	0	0	0	0	**39**
07:45 AM	1	**14**	0	15	0	14	0	14	1	0	**8**	**9**	0	0	0	0	38
08:00 AM	**7**	9	0	**16**	0	12	1	13	1	0	8	9	0	0	0	0	38
08:15 AM	5	6	0	11	0	10	1	11	0	0	5	5	0	0	0	0	27
Total Volume	17	37	0	54	0	56	3	59	3	0	26	29	0	0	0	0	142
% App. Total	31.5	68.5	0		0	94.9	5.1		10.3	0	89.7		0	0	0		
PHF	.607	.661	.000	.844	.000	.700	.750	.702	.750	.000	.813	.806	.000	.000	.000	.000	.910



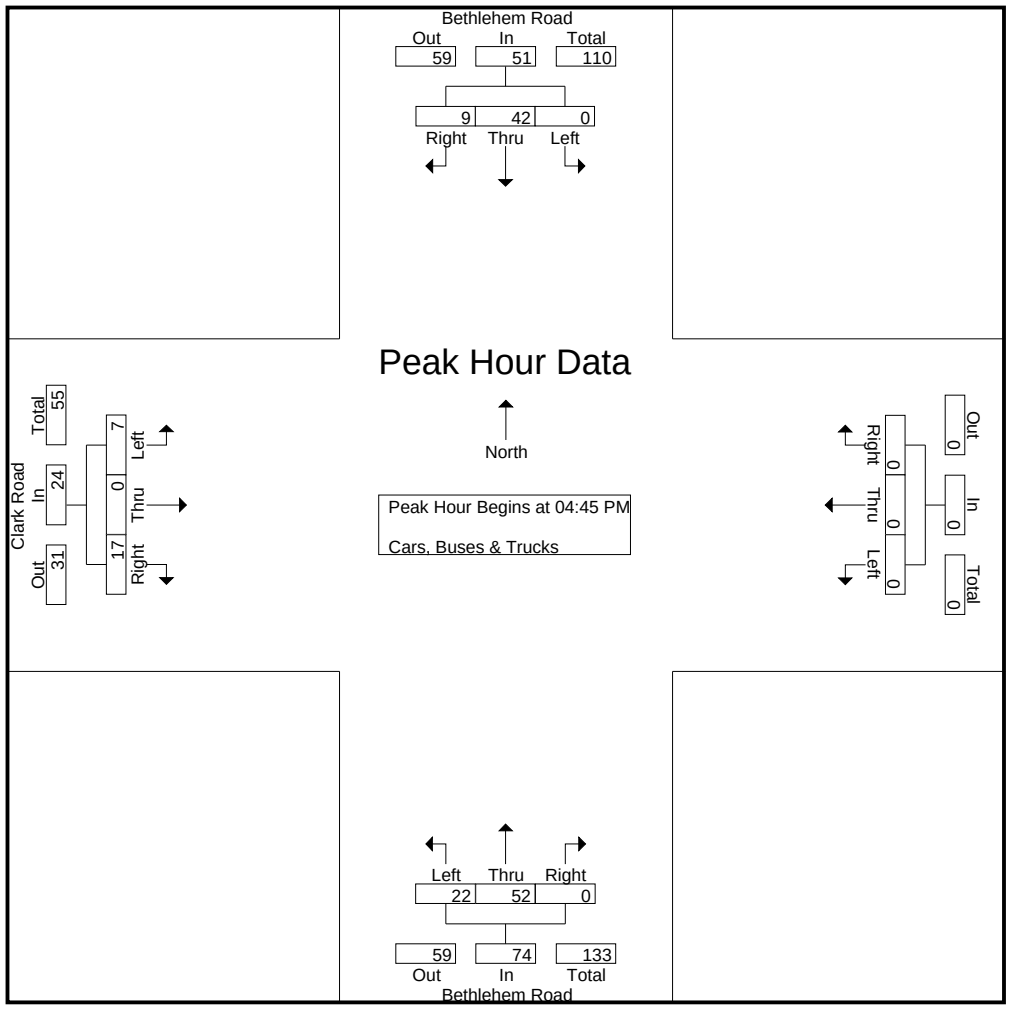
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Clark Road
7-9am | 4-6pm

File Name : 20250126
Site Code : 20250126
Start Date : 04-30-2025
Page No : 3

	Bethlehem Road Northbound				Bethlehem Road Southbound				Clark Road Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	7	**14**	0	21	0	10	**4**	14	1	0	3	4	0	0	0	0	39
05:00 PM	0	10	0	10	0	8	0	8	1	0	4	5	0	0	0	0	23
05:15 PM	7	14	0	21	0	10	2	12	**4**	0	**6**	**10**	0	0	0	0	43
05:30 PM	**8**	14	0	**22**	0	**14**	3	**17**	1	0	4	5	0	0	0	0	**44**
Total Volume	22	52	0	74	0	42	9	51	7	0	17	24	0	0	0	0	149
% App. Total	29.7	70.3	0		0	82.4	17.6		29.2	0	70.8		0	0	0		
PHF	.688	.929	.000	.841	.000	.750	.563	.750	.438	.000	.708	.600	.000	.000	.000	.000	.847



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Cedar Grove Road
7-9am | 4-6pm

File Name : 20250128
Site Code : 20250128
Start Date : 04-30-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Northbound				Bethlehem Road Southbound				Cedar Grove Road Eastbound				Cedar Grove Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	21	0	2	23	1	30	0	31	0	21	6	27	81
07:15 AM	0	0	0	0	21	0	2	23	1	35	0	36	0	19	4	23	82
07:30 AM	0	0	0	0	24	0	5	29	3	31	0	34	0	20	12	32	95
07:45 AM	0	0	0	0	24	0	3	27	1	46	0	47	0	25	17	42	116
Total	0	0	0	0	90	0	12	102	6	142	0	148	0	85	39	124	374
08:00 AM	0	0	0	0	25	0	6	31	1	33	0	34	0	27	13	40	105
08:15 AM	0	0	0	0	15	0	2	17	3	35	0	38	0	25	15	40	95
08:30 AM	0	0	0	0	17	0	0	17	1	32	0	33	0	25	7	32	82
08:45 AM	0	0	0	0	13	0	1	14	0	28	0	28	0	16	8	24	66
Total	0	0	0	0	70	0	9	79	5	128	0	133	0	93	43	136	348
*** BREAK ***																	
04:00 PM	0	0	0	0	16	0	3	19	3	26	0	29	0	46	29	75	123
04:15 PM	0	0	0	0	12	0	2	14	1	27	0	28	0	47	18	65	107
04:30 PM	0	0	0	0	13	0	1	14	3	21	0	24	0	62	19	81	119
04:45 PM	0	0	0	0	8	0	2	10	4	30	0	34	0	48	12	60	104
Total	0	0	0	0	49	0	8	57	11	104	0	115	0	203	78	281	453
05:00 PM	0	0	0	0	15	0	1	16	3	24	0	27	0	38	21	59	102
05:15 PM	0	0	0	0	15	0	0	15	3	25	0	28	0	28	26	54	97
05:30 PM	0	0	0	0	19	0	3	22	3	25	0	28	0	27	20	47	97
05:45 PM	0	0	0	0	12	0	1	13	2	26	0	28	0	23	20	43	84
Total	0	0	0	0	61	0	5	66	11	100	0	111	0	116	87	203	380
Grand Total	0	0	0	0	270	0	34	304	33	474	0	507	0	497	247	744	1555
Apprch %	0	0	0		88.8	0	11.2		6.5	93.5	0		0	66.8	33.2		
Total %	0	0	0	0	17.4	0	2.2	19.5	2.1	30.5	0	32.6	0	32	15.9	47.8	

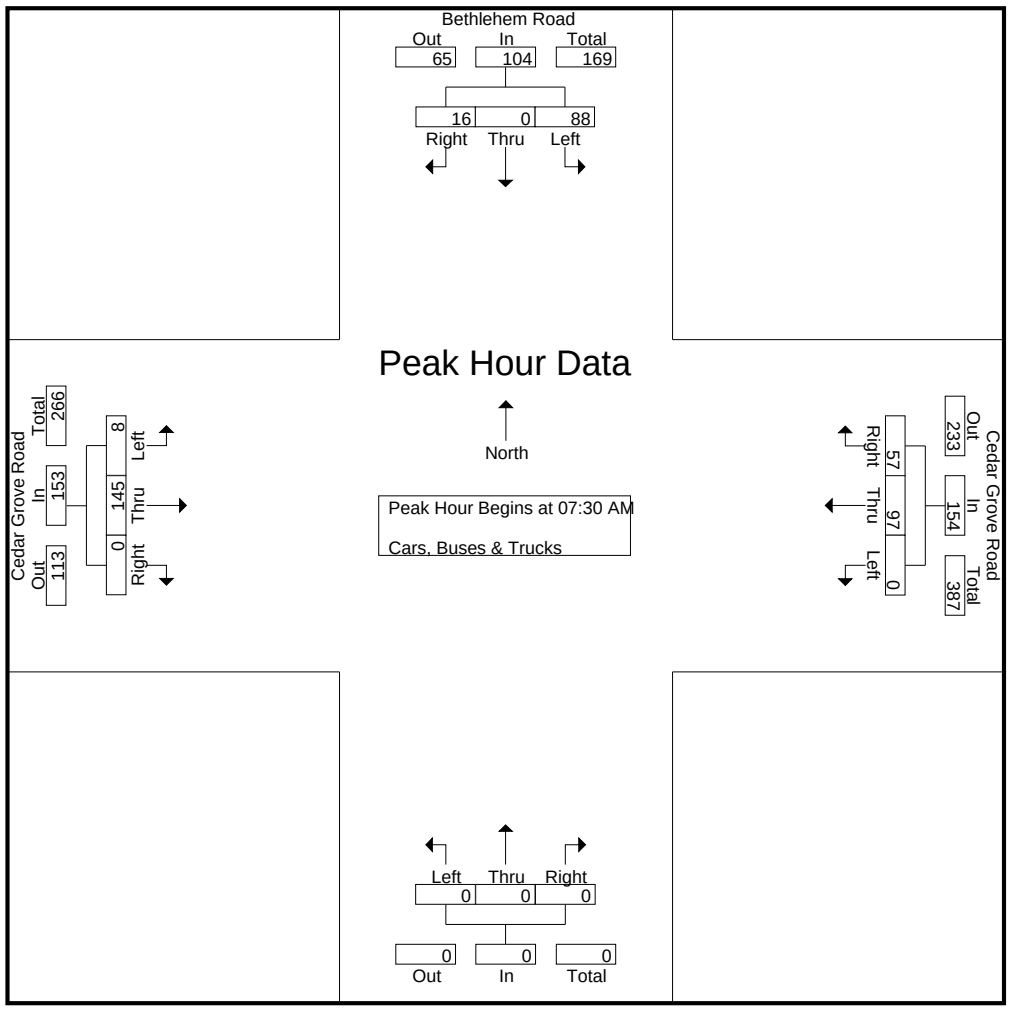
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Cedar Grove Road
7-9am | 4-6pm

File Name : 20250128
Site Code : 20250128
Start Date : 04-30-2025
Page No : 2

	Northbound				Bethlehem Road Southbound				Cedar Grove Road Eastbound				Cedar Grove Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	24	0	5	29	**3**	31	0	34	0	20	12	32	95
07:45 AM	0	0	0	0	24	0	3	27	1	**46**	0	**47**	0	25	**17**	**42**	**116**
08:00 AM	0	0	0	0	**25**	0	**6**	**31**	1	33	0	34	0	**27**	13	40	105
08:15 AM	0	0	0	0	15	0	2	17	3	35	0	38	0	25	15	40	95
Total Volume	0	0	0	0	88	0	16	104	8	145	0	153	0	97	57	154	411
% App. Total	0	0	0		84.6	0	15.4		5.2	94.8	0		0	63	37		
PHF	.000	.000	.000	.000	.880	.000	.667	.839	.667	.788	.000	.814	.000	.898	.838	.917	.886



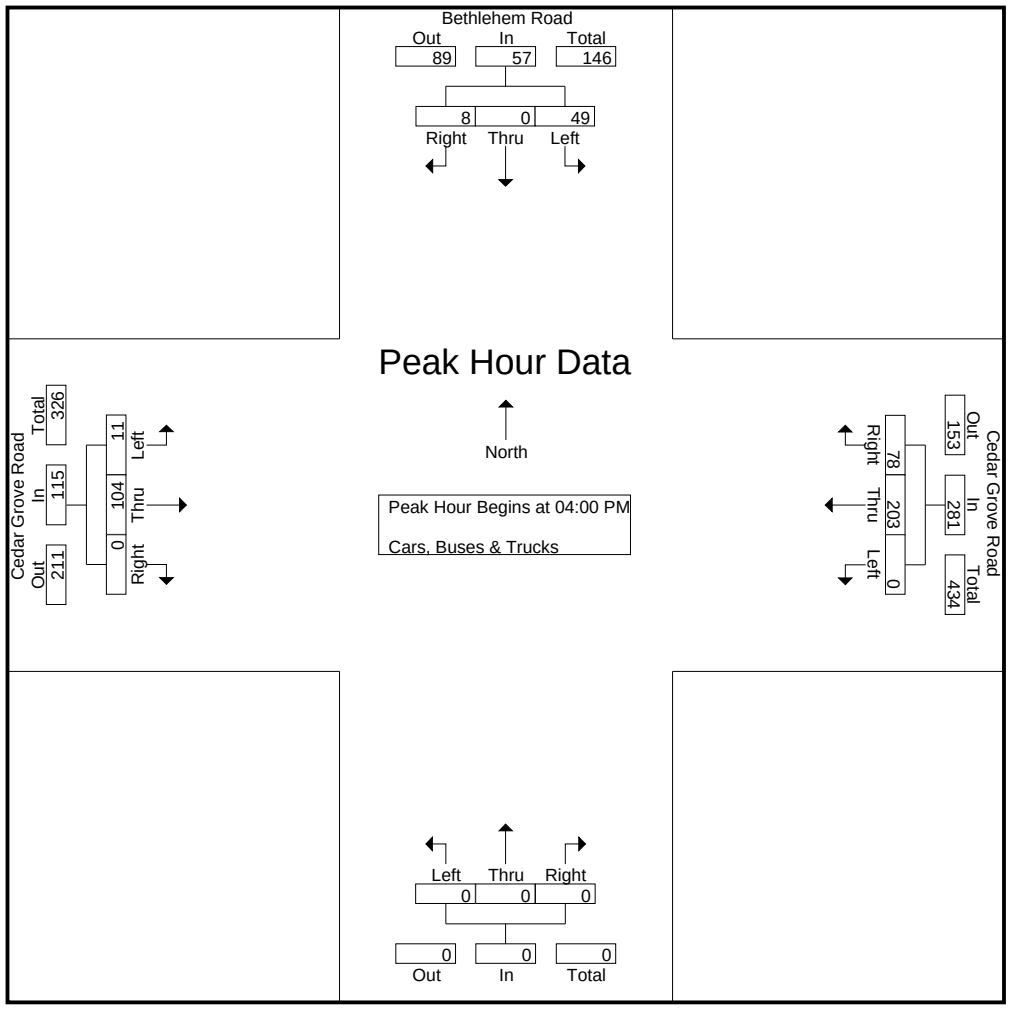
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Bethlehem Road @ Cedar Grove Road
7-9am | 4-6pm

File Name : 20250128
Site Code : 20250128
Start Date : 04-30-2025
Page No : 3

	Northbound				Bethlehem Road Southbound				Cedar Grove Road Eastbound				Cedar Grove Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	**16**	0	**3**	**19**	3	26	0	29	0	46	**29**	75	**123**
04:15 PM	0	0	0	0	12	0	2	14	1	27	0	28	0	47	18	65	107
04:30 PM	0	0	0	0	13	0	1	14	3	21	0	24	0	**62**	19	**81**	119
04:45 PM	0	0	0	0	8	0	2	10	**4**	**30**	0	**34**	0	48	12	60	104
Total Volume	0	0	0	0	49	0	8	57	11	104	0	115	0	203	78	281	453
% App. Total	0	0	0		86	0	14		9.6	90.4	0		0	72.2	27.8		
PHF	.000	.000	.000	.000	.766	.000	.667	.750	.688	.867	.000	.846	.000	.819	.672	.867	.921



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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
S. Fulton Pkwy @ Cedar Grove Road
7-9am | 4-6pm

File Name : 20250129
Site Code : 20250129
Start Date : 04-30-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Cedar Grove Road Northbound				Cedar Grove Road Southbound				S. Fulton Pkwy Eastbound				S. Fulton Pkwy 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	6	15	78	99	65	14	10	89	6	184	8	198	12	34	7	53	439
07:15 AM	8	23	81	112	61	36	8	105	4	168	7	179	16	51	5	72	468
07:30 AM	8	16	51	75	46	25	8	79	13	149	10	172	24	74	12	110	436
07:45 AM	4	17	60	81	60	36	16	112	14	142	7	163	31	105	26	162	518
Total	26	71	270	367	232	111	42	385	37	643	32	712	83	264	50	397	1861
08:00 AM	9	24	41	74	43	32	7	82	10	208	13	231	33	87	17	137	524
08:15 AM	3	16	48	67	50	25	5	80	12	190	8	210	31	49	37	117	474
08:30 AM	4	22	44	70	61	18	6	85	8	113	6	127	24	51	24	99	381
08:45 AM	8	13	38	59	46	20	6	72	5	82	7	94	27	51	13	91	316
Total	24	75	171	270	200	95	24	319	35	593	34	662	115	238	91	444	1695
*** BREAK ***																	
04:00 PM	8	36	43	87	27	41	5	73	19	94	9	122	58	193	39	290	572
04:15 PM	11	63	47	121	43	45	9	97	11	90	10	111	78	172	37	287	616
04:30 PM	9	56	40	105	26	21	6	53	17	62	9	88	64	189	35	288	534
04:45 PM	12	57	44	113	26	31	3	60	5	67	5	77	63	119	27	209	459
Total	40	212	174	426	122	138	23	283	52	313	33	398	263	673	138	1074	2181
05:00 PM	9	48	32	89	30	36	8	74	12	54	5	71	51	179	43	273	507
05:15 PM	12	50	47	109	33	35	7	75	13	56	11	80	50	145	35	230	494
05:30 PM	9	53	41	103	31	32	4	67	6	65	10	81	69	133	27	229	480
05:45 PM	14	31	36	81	37	17	4	58	12	81	12	105	65	166	44	275	519
Total	44	182	156	382	131	120	23	274	43	256	38	337	235	623	149	1007	2000
Grand Total	134	540	771	1445	685	464	112	1261	167	1805	137	2109	696	1798	428	2922	7737
Apprch %	9.3	37.4	53.4		54.3	36.8	8.9		7.9	85.6	6.5		23.8	61.5	14.6		
Total %	1.7	7	10	18.7	8.9	6	1.4	16.3	2.2	23.3	1.8	27.3	9	23.2	5.5	37.8	

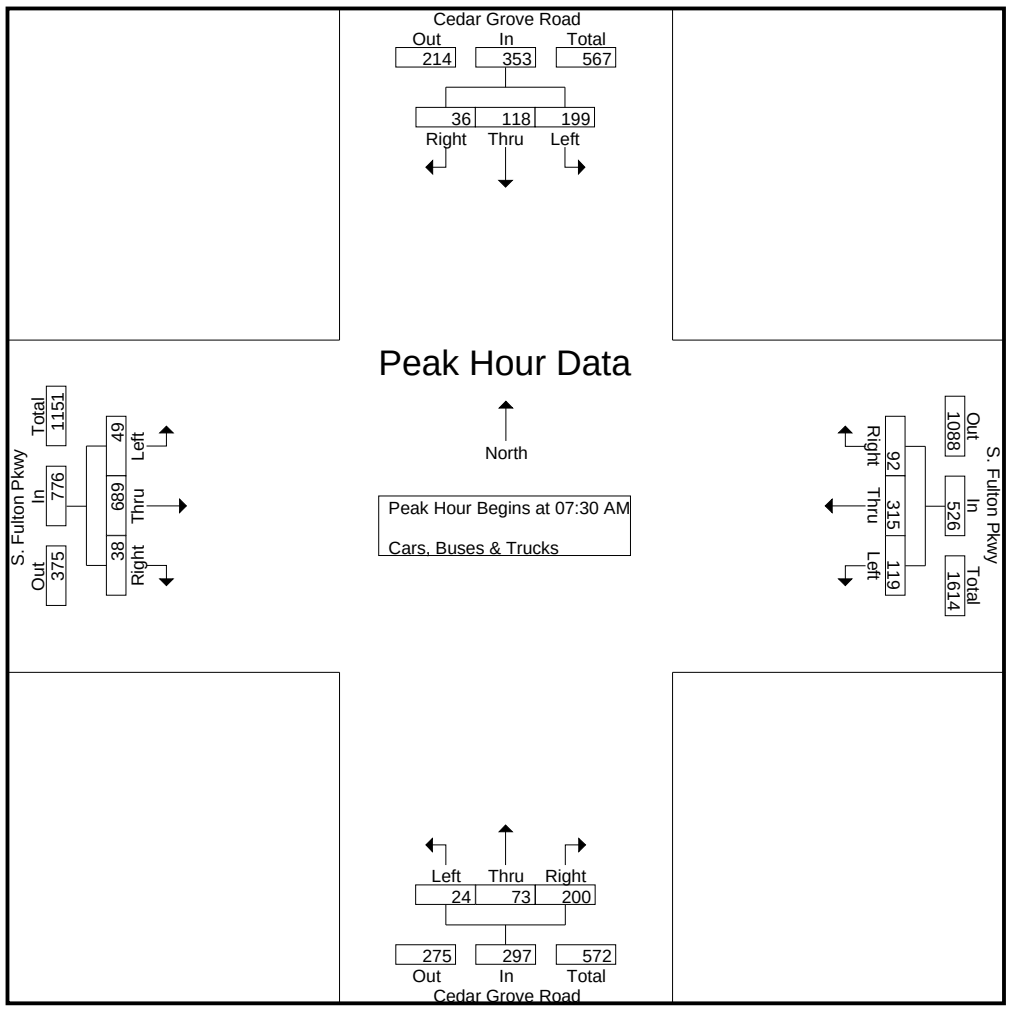
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
S. Fulton Pkwy @ Cedar Grove Road
7-9am | 4-6pm

File Name : 20250129
Site Code : 20250129
Start Date : 04-30-2025
Page No : 2

	Cedar Grove Road Northbound				Cedar Grove Road Southbound				S. Fulton Pkwy Eastbound				S. Fulton Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	8	16	51	75	46	25	8	79	13	149	10	172	24	74	12	110	436
07:45 AM	4	17	**60**	**81**	**60**	**36**	**16**	**112**	**14**	142	7	163	31	**105**	26	**162**	518
08:00 AM	**9**	**24**	41	74	43	32	7	82	10	**208**	**13**	**231**	**33**	87	17	137	**524**
08:15 AM	3	16	48	67	50	25	5	80	12	190	8	210	31	49	**37**	117	474
Total Volume	24	73	200	297	199	118	36	353	49	689	38	776	119	315	92	526	1952
% App. Total	8.1	24.6	67.3		56.4	33.4	10.2		6.3	88.8	4.9		22.6	59.9	17.5		
PHF	.667	.760	.833	.917	.829	.819	.563	.788	.875	.828	.731	.840	.902	.750	.622	.812	.931



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7-9am | 4-6pm

File Name : 20250129
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Start Date : 04-30-2025
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	Cedar Grove Road Northbound				Cedar Grove Road Southbound				S. Fulton Pkwy Eastbound				S. Fulton Pkwy 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
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Peak Hour for Entire Intersection Begins at 04:00 PM																	
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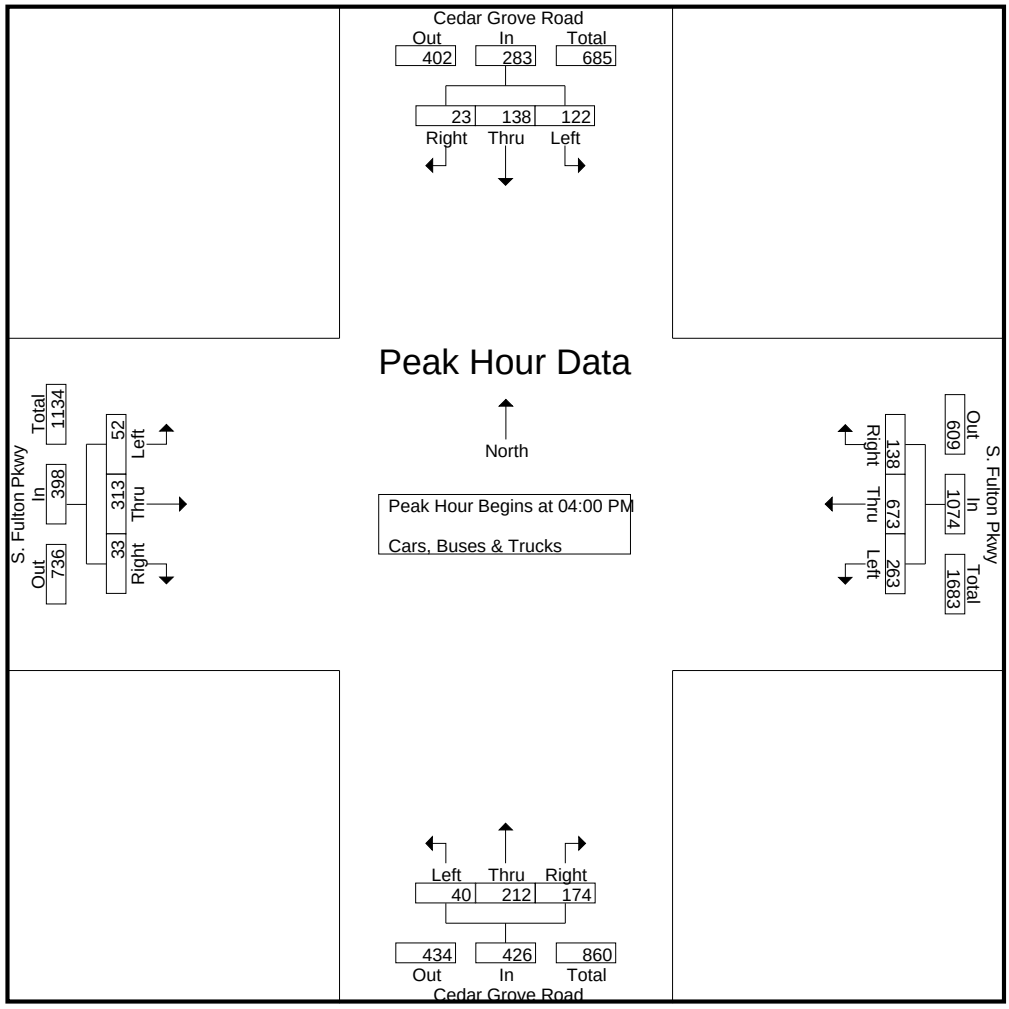
04:15 PM	11	**63**	**47**	**121**	**43**	**45**	**9**	**97**	11	90	**10**	111	**78**	172	37	287	**616**
04:30 PM	9	56	40	105	26	21	6	53	17	62	9	88	64	189	35	288	534
04:45 PM	**12**	57	44	113	26	31	3	60	5	67	5	77	63	119	27	209	459
Total Volume	40	212	174	426	122	138	23	283	52	313	33	398	263	673	138	1074	2181
% App. Total	9.4	49.8	40.8		43.1	48.8	8.1		13.1	78.6	8.3		24.5	62.7	12.8		
PHF	.833	.841	.926	.880	.709	.767	.639	.729	.684	.832	.825	.816	.843	.872	.885	.926	.885



GRTA Letter of Understanding

LETTER OF UNDERSTANDING

April 15th, 2025

Barry Dluzen
Walton Global
8800 N. Gainey Center Drive, Suite 345
Scottsdale, Arizona 85258

RE: **Cascade Palmetto Highway and Ridge Road** (**DRI#: 4371)**

Dear Mr. Dluzen:

The purpose of this Letter of Understanding is to document the discussions during the Methodology Meeting held virtually on March 24th 2025 regarding **Cascade Palmetto Highway and Ridge Road** Development of Regional Impact (DRI). The *GRTA DRI Review Procedures*, as well as the inputs and parameters documented in this Letter of Understanding and the revised Methodology Meeting Packet, shall be adhered to in preparing the GRTA required Transportation Study.

PROJECT OVERVIEW

- The proposed site is located at 33°37'19"N,84°40'10"W
- The proposed development includes 643 dwelling units, including 491 single-family units and 152 townhomes.
- The projected build-out is one phase to be completed by 2027.
- The proposed development includes (3) site accesses along SR 154 and Ridge Road
- The DRI trigger for this development is a Rezoning
- The vehicular trip generation is estimated to be 5,470 net daily trips based on the *ITE Trip Generation Manual 11th edition.*
- The applicant is applying for approval under GRTA's non-expedited Traffic Impact Study review process.

STUDY NETWORK

1. SR 92 @ Thompson Road
2. SR 92 @ Hall Road
3. SR 92 @ Jones Road
4. SR 92 @ Demooney Road
5. SR 92 @ Ridge Road / Butner Road
6. SR 92 @ SR 154
7. SR92/SR 154 @ SR 166
8. Ridge Road @ Clark Road
9. Ridge Road @ Bethlehem Road
10. Bethlehem Road @ Clark Road
11. Cedar Grove Road @ Bethlehem Road
12. South Fulton Parkway @ Cedar Grove Road
13. Driveway A at SR 154
14. Driveway B at Ridge Road
15. Driveway C at Ridge Road

METHODOLOGY MEETING PACKET INPUTS & PARAMETERS

- The Site Plan shall meet all the applicable requirements in Section 7.1 of the *GRTA DRI Review Procedures*.

- All Study Network intersections shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions, and (3) future "build" conditions as specified in the *GRTA DRI Review Procedures*.

- This DRI shall be modeled and reviewed in one phase to be completed by 2027.

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

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

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

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

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

- A 2.0% annual traffic Background Growth Rate shall be used for all roadways.

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

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

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

ADDITIONAL REQUIREMENTS

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

The Transportation Study shall also include as attachments the native LOS modeling file (i.e., Synchro modeling files) as well as the modeling reports (PDFs) for all Study Network intersections for the Existing, No-Build and Build conditions for all phases. The PDF reports shall be numbered (in page headers) and organized in order according

to the Study Network numbering sequence in this Letter of Understanding. The reports shall also be organized in the following sequence: *Existing condition AM, Existing condition PM, No-build condition AM, No-Build condition PM, Build condition AM, Build condition PM*. If improvements are modeled, those PDFs shall be labeled as such and follow the appropriate condition's applicable peak period.

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

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

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

DRI REVIEW PACKAGE SUBMITTAL

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

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

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

Sincerely,

Derrick A. Peevy Jr. AICP
DRI Planner
SRTA/GRTA

Cc:

Zane Grennell, DCA
Brittany Williams SRTA/GRTA/ATL
Donald Shockey, ATL Regional Commission
Reginald McClendon, City of South Fulton
Megan Wilson, GDOT
Landon Perry, GDOT
Abdul Amer, A&R Engineering Inc.
Barry Dluzen, Walton Global

Fact Sheets for Planned and Programmed Improvements

SR 92 @ CR 515/JONES ROAD & @ CR 485/DEMOONEY ROAD

Project ID:	**0017398**	Notice to Proceed Date:	
Project Manager:	Chris Penuel	Construction Percent Complete:	%
Office:	Program Delivery	Current Completion Date:	
County:	Fulton	Work Completion Date:	
Congressional District:	013	Construction Contract Amount:	
State Senate District.:	035	Construction Contractor:	
State House District:	062, 065	**Preconstruction Status Report**	
Project Type:	Safety	**Construction Status Report**	
Project Status:	Construction Work Program		
Right of Way Authorization:	11/14/2023	Contact Us	

Project Description:

The proposed project is the construction of two roundabouts along SR 92 / Campbellton Fairburn Road in Fulton County, GA: one at the intersection of Jones Road and the other at the intersection of at Demooney Road. The total length of project is 4040 feet. The construction length at Jones Road is 1842 feet and the construction length at Demooney Road is 1739 feet. Both roundabouts are proposed as multilane hybrid roundabouts. The number of roundabout lanes should be evaluated during design. The roundabout would be expected to reduce or eliminate the angle, head-on, and sideswipe-opposite direction crashes at the two subject intersections which account for 52% of total crashes.

Activity	Program Year	Cost Estimate	Date of Last Estimate
UTL (Utilities)		$84,683.02	10/14/2021
ROW (Right of Way)		$318,000.00	10/14/2021
CST (Construction)		$5,466,879.38	10/14/2021
PE (Preliminary Engineering)	2021	$810,000.00	

Project Documents
Approved Concept Reports
0017398_CR_AUG2021.pdf

Georgia Department of Transportation
One Georgia Center
600 West Peachtree NW
Atlanta, GA 30308
(404) 631-1990 Main Office

Street lighting is not provided on this stretch of SR 92 nor at the intersections. Parking is not allowed along this section of SR 92 and no other modes of transport are observed along this section of SR 92.

At the intersection of SR 92 and Demooney Road, the existing intersection was analyzed to operate at a level of service of F with a delay over 200 seconds during the PM peak hour in the existing year 2017. The no build condition is expected to operate at a level of service of F with a delay over 500 seconds during the PM peak hour in the design year 2044.

At the intersection of SR 92 and Jones Road, the existing intersection was analyzed to operate at a level of service of F with a delay over 300 seconds during the PM peak hour in the existing year 2017. The no build condition is expected to operate at a level of service of F with a delay over 500 seconds during the PM peak hour in the design year 2044.

Other projects in the area:

- A traffic signal was installed at the intersection of SR 92 and Butner Road/Ridge Road located about 1.42 miles north of the intersection SR 92 and Demooney Road. However, there is a planned GDOT project (PI # 0015593 "SR 92 @ CR 1374/Butner Road") to convert this intersection to a single-lane roundabout, and the ROW authorization is scheduled in 2021.
- A bridge replacement project (PI # 770271 "CR 485/Demooney Road NW of Fairburn @ Deep Creek") on Demooney Road at Deep Creek located about 4,000 feet east of SR 92. This project is included in the GDOT long range program (year 2052).
- A private developer has plans to move forward with a regional developmental project pursuant the approval of the Development Regional Impact (DRI) notice 398 Hampton Oaks (fka PEC Butner Road) by the Georgia Regional Transportation Authority (GRTA). This plan will include the installation of dedicated left-turn lanes on Demooney Road approach towards SR 92 and on SR 92 southbound approach towards Demooney Road. GDOT District 7 has received plans for this development and these plans have been reviewed in coordination with this concept report. The estimate schedule of the project is unknown.
- Fulton County has a project programmed with T-SPLOST (Transportation-related Special-Purpose Local-Option Sales Tax) funds at the intersection of SR 92 and Jones Road. It is has been discussed with the City of South Fulton that this T-SPLOST project will assist in funding this roundabout project.
- Fulton County has plans to pave Jones Road to the west of SR 92. The completion of this project is unknown.

MPO: Atlanta Regional Commission **TIP #:** N/A
Congressional District(s): 13
Federal Oversight: ☐ PoDI ☒ Exempt ☐ State Funded ☐ Other
Projected Traffic: AADT 24-HR Truck: 7.5 %

Roadway	Current Year (2021)	Open Year (2025)	Design Year (2045)
SR 92	21,350	23,125	34,350
Jones Road	2,900	3,125	4,700
Demooney Road	4,450	4,850	7,200

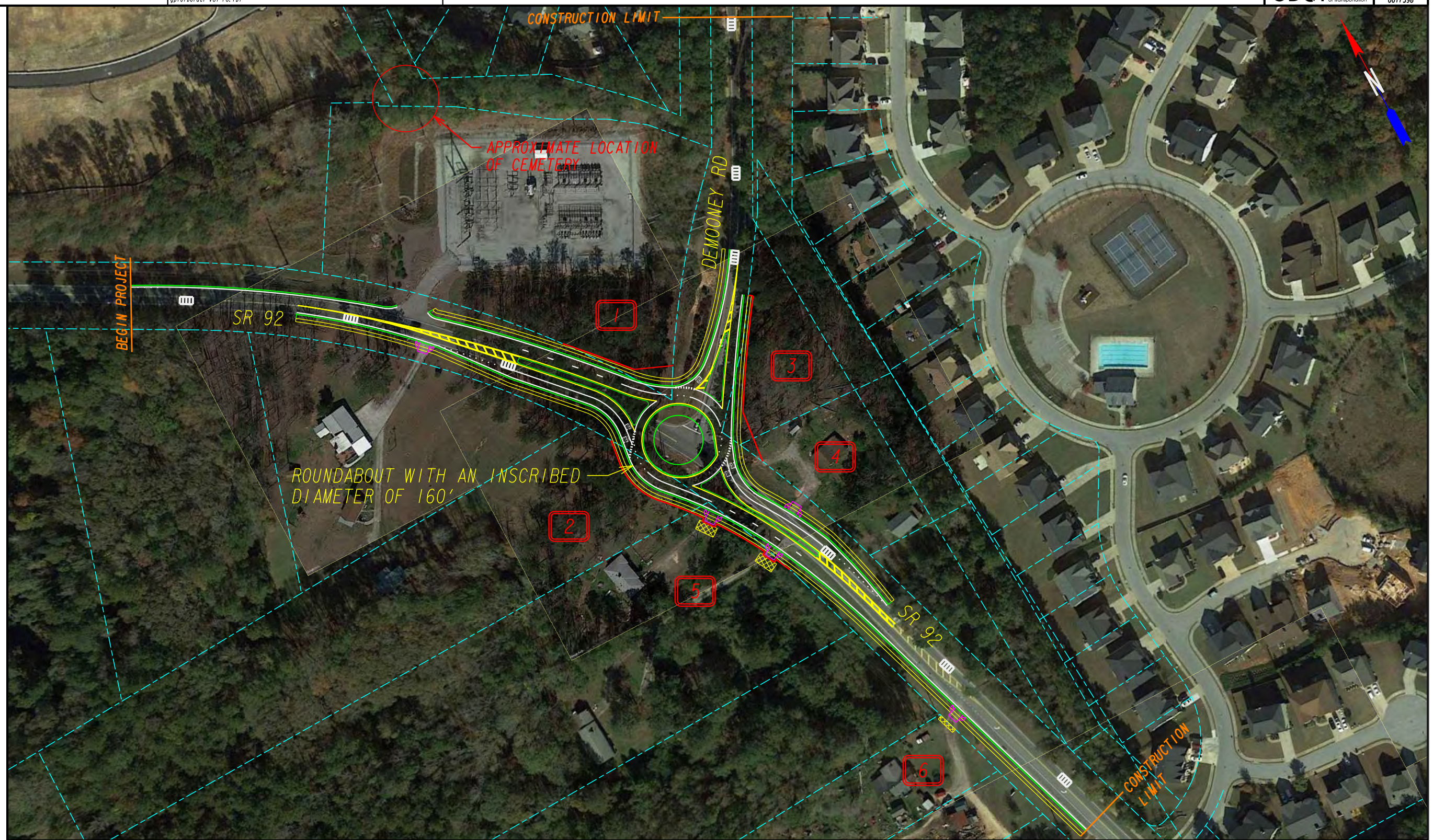
Traffic Projections Performed by: AECOM
Date approved by the GDOT Office of Traffic Operations: 9/3/19

AASHTO Functional Classification (Mainline): *Principal Arterial*
AASHTO Context Classification (Mainline): *Suburban*
AASHTO Project Type (Mainline): *Reconstruction*
Is the project located on a NHS roadway? ☐ No ☒ Yes
Complete Streets - Bicycle, Pedestrian, and/or Transit Standard Warrants:
Warrants met: ☐ None ☐ Bicycle ☒ Pedestrian ☐ Transit

- The study intersections meet the standard pedestrian warrant and conditions 1 and 2. Also, the Renaissance Middle School and the Langston Hughes High School are located less than one mile away from these intersections. The corridor is not serviced by transit nor does it meet the bicycle warrants in the study limits.

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

7/16/2021 1:55:49 PM qldl.sun	GPLOT-V8 gplotborder-V8i-PO.tbl	SR92@JonesDemooney - 001 071221.dgn	GDOT Georgia Department of Transportation	P. I. No. 0017398



AECOM
ONE MIDTOWN PLAZA
1360 PEACHTREE ST.N.E., SUITE 500
ATLANTA, GEORGIA 30309
TEL: (404) 965-9600 FAX: (404) 965-9605

GDOT Georgia Department of Transportation

SCALE IN FEET
0 70 140 280

REVISION DATES		

CONCEPT PLANS

SR 92 @ DEMOOONEY RD

MULTILANE HYBRID ROUNDABOUT

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		1 OF 2
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/205 GPLN

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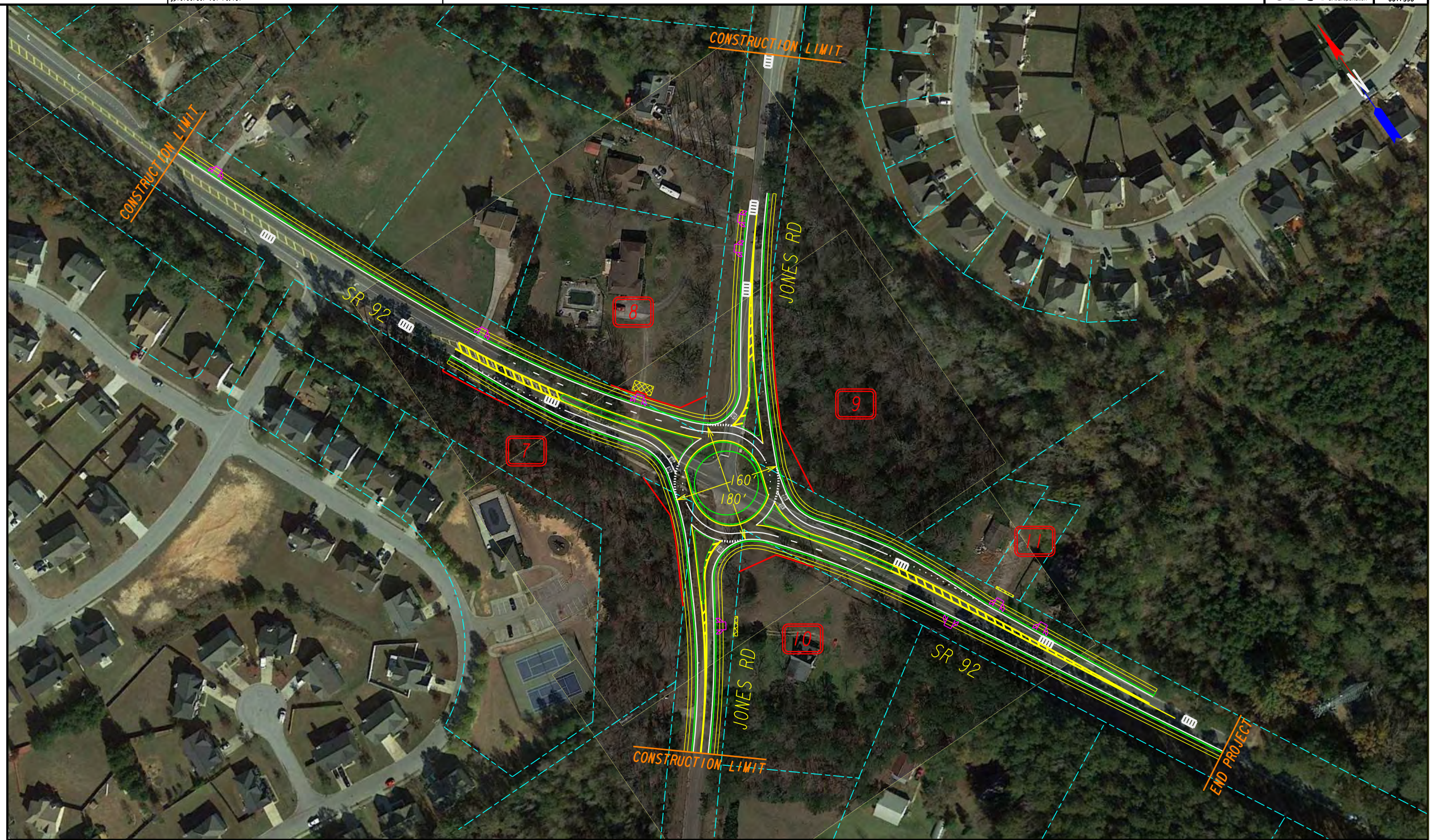

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GDOT
Georgia Department of Transportation

SCALE IN FEET
0 70 140 280

REVISION DATES

CONCEPT PLANS

SR 92 @ JONES RD

MULTILANE HYBRID ROUNDABOUT

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		2 OF 2
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/205 GPLN

FS-209

Atlanta Region's Plan RTP (2020) PROJECT FACT SHEET

Short Title	SOUTH FULTON SCENIC BYWAY MULTI-USE TRAIL - PHASE I FROM COCHRAN MILL PARK TO PHILLIPS ROAD
GDOT Project No.	0009643
Federal ID No.	STP00-0002-00(308)
Status	Programmed
Service Type	Last Mile Connectivity / Sidepaths and Trails
Sponsor	Chattahoochee Hills
Jurisdiction	Fulton County (South)
Analysis Level	Exempt from Air Quality Analysis (40 CFR 93)

Existing Thru Lane	N/A	**LCI**		**Network Year**	TBD
Planned Thru Lane	N/A	**Flex**		**Corridor Length**	3.1 miles

Detailed Description and Justification

This project consists of the design of a bicycle/pedestrian trail from Cochran Mill Park following the Little Bear Creek corridor approximately 2.2 miles, then shifting southward towards Phillips Road approximately 0.5 miles, ending at an existing gravel path just north of Phillips Road. The typical section is 10' wide concrete with 4' wide graded shoulders. A bridge will be required to cross a tributary to Little Bear Creek approximately 0.25 miles south of the creek. Funding shown for this line item is supplemental to an existing Transportation Enhancement project.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
ROW	Local Jurisdiction/Municipality Funds	AUTH	2017	**$25,000**	~~$0,000~~	~~$0,000~~	~~$0,000~~	~~$25,000~~
CST	Federal Earmark Funding		2020	**$562,437**	$449,950	$0,000	$0,000	$112,487
				$587,437	**$449,950**	**$0,000**	**$0,000**	**$137,487**

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquistion
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

? For additional information about this project, please call (404) 463-3100 or email transportation@atlantaregional.com.

Report Generated: 1/9/2023

FS-011

Atlanta Region's Plan RTP (2020) PROJECT FACT SHEET

Short Title	CASCADE-PALMETTO HIGHWAY WIDENING FROM SR 92 (CAMPBELLTON-FAIRBURN ROAD) TO SR 154 (CAMPBELLTON ROAD)
GDOT Project No.	N/A
Federal ID No.	N/A
Status	Long Range
Service Type	Roadway / General Purpose Capacity
Sponsor	GDOT
Jurisdiction	Fulton County (South)
Analysis Level	In the Region's Air Quality Conformity Analysis

Existing Thru Lane	2	**LCI**		**Network Year**	2050
Planned Thru Lane	4	**Flex**		**Corridor Length**	4.4 miles

Detailed Description and Justification

This project will widen Cascade-Palmetto Highway to 4 lanes from SR 92 to SR 154.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
ALL	Local Jurisdiction/Municipality Funds		LR 2041-2050	**$35,000,000**	$0,000	$0,000	$0,000	$35,000,000
				$35,000,000	**$0,000**	**$0,000**	**$0,000**	**$35,000,000**

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquistion
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

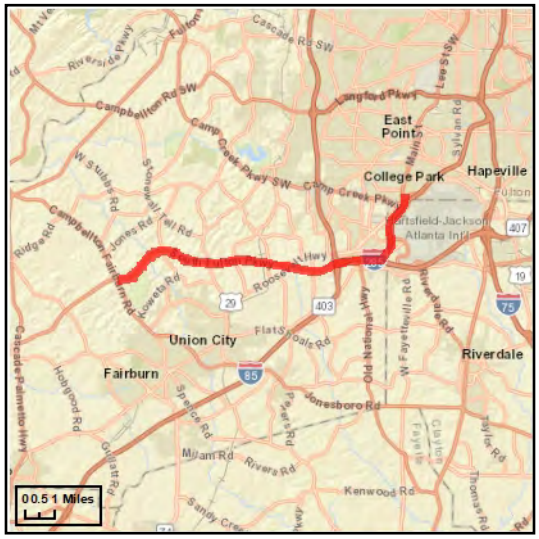
? For additional information about this project, please call (404) 463-3100 or email transportation@atlantaregional.com.

Report Generated: 1/9/2023

AR-491A

Atlanta Region's Plan RTP (2020) PROJECT FACT SHEET

Short Title	SOUTH FULTON PARKWAY CORRIDOR HIGH CAPACITY PREMIUM TRANSIT SERVICE FROM MARTA COLLEGE PARK RAIL STATION TO SR 92
GDOT Project No.	N/A
Federal ID No.	N/A
Status	Long Range
Service Type	Transit / Bus Capital
Sponsor	MARTA
Jurisdiction	Fulton County (South)
Analysis Level	In the Region's Air Quality Conformity Analysis



Existing Thru Lane	N/A	**LCI**		**Network Year**	2050
Planned Thru Lane	N/A	**Flex**		**Corridor Length**	TBD miles

Detailed Description and Justification

This project will provide high capacity premium transit service along the South Fulton Parkway corridor between MARTA's College Park heavy rail station and SR 92.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
ALL	New Starts		LR 2041-2050	**$165,000,000**	$57,750,000	$0,000	$0,000	$107,250,000
				$165,000,000	**$57,750,000**	**$0,000**	**$0,000**	**$107,250,000**

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquistion
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

? For additional information about this project, please call (404) 463-3100 or email transportation@atlantaregional.com.

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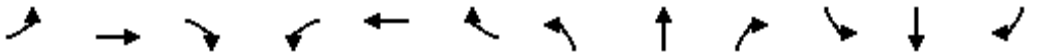
Existing Intersection Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	9	60	3	12	79	65	840	165	74	911	13
Future Volume (vph)	225	9	60	3	12	79	65	840	165	74	911	13
Lane Group Flow (vph)	245	10	65	3	13	86	71	913	179	80	990	14
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	70.0	70.0	70.0	15.0	85.0	85.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	58.3%	58.3%	58.3%	12.5%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.92	0.02	0.16	0.01	0.03	0.20	0.38	0.44	0.18	0.21	0.79	0.02
Control Delay	84.1	34.7	7.7	34.3	34.8	8.6	23.1	15.8	2.3	3.8	13.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	84.1	34.7	7.7	34.3	34.8	8.6	23.1	15.8	2.3	3.8	13.2	0.1
Queue Length 50th (ft)	183	6	0	2	8	0	30	214	0	6	612	0
Queue Length 95th (ft)	#334	20	31	10	25	41	77	274	33	m11	117	m0
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	279	467	436	343	467	454	187	2055	993	401	1257	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	10	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.02	0.15	0.01	0.03	0.19	0.38	0.44	0.18	0.20	0.79	0.02

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 6 (5%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	9	60	3	12	79	65	840	165	74	911	13
Future Volume (veh/h)	225	9	60	3	12	79	65	840	165	74	911	13
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	1530	1900	1841	1870	1900	1870	1885	1856	1856	1870	1870	1307
Adj Flow Rate, veh/h	245	10	0	3	13	0	71	913	0	80	990	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	0	4	2	0	2	1	3	3	2	2	40
Cap, veh/h	321	443		382	443		398	2081		402	1262	
Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.00	0.59	0.59	0.00	0.08	1.00	0.00
Sat Flow, veh/h	1146	1900	1560	1405	1900	1585	573	3526	1572	1781	1870	1108
Grp Volume(v), veh/h	245	10	0	3	13	0	71	913	0	80	990	0
Grp Sat Flow(s),veh/h/ln	1146	1900	1560	1405	1900	1585	573	1763	1572	1781	1870	1108
Q Serve(g_s), s	25.2	0.5	0.0	0.2	0.6	0.0	6.9	17.2	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	25.8	0.5	0.0	0.7	0.6	0.0	6.9	17.2	0.0	2.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	443		382	443		398	2081		402	1262	
V/C Ratio(X)	0.76	0.02		0.01	0.03		0.18	0.44		0.20	0.78	
Avail Cap(c_a), veh/h	336	467		400	467		398	2081		474	1262	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.73	0.73	0.00
Uniform Delay (d), s/veh	45.5	35.5	0.0	35.7	35.5	0.0	11.5	13.6	0.0	9.2	0.0	0.0
Incr Delay (d2), s/veh	9.5	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	0.2	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.2	0.0	0.1	0.3	0.0	0.9	6.4	0.0	0.7	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	35.5	0.0	35.7	35.5	0.0	12.5	14.3	0.0	9.4	3.6	0.0
LnGrp LOS	E	D		D	D		B	B		A	A	
Approach Vol, veh/h		255			16			984			1070	
Approach Delay, s/veh		54.2			35.6			14.1			4.1	
Approach LOS		D			D			B			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		86.5		33.5	10.2	76.3		33.5				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		79.5		29.5	9.5	64.5		29.5				
Max Q Clear Time (g_c+I1), s		2.0		27.8	4.0	19.2		2.7				
Green Ext Time (p_c), s		24.4		0.2	0.1	16.6		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	14.1	
HCM 6th LOS	B	

Notes

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	59	122	90	24	275	318	563	50	99	644	111
Future Volume (vph)	73	59	122	90	24	275	318	563	50	99	644	111
Lane Group Flow (vph)	0	141	130	0	122	293	338	599	53	105	685	118
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	24.0	83.0	83.0	59.0	59.0	59.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	20.0%	69.2%	69.2%	49.2%	49.2%	49.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.74	0.37		0.78	0.60	0.63	0.44	0.04	0.23	0.69	0.13
Control Delay		69.8	9.9		78.7	10.1	21.2	8.4	3.5	12.7	20.4	0.8
Queue Delay		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		69.8	9.9		78.8	10.1	21.2	8.4	3.5	12.7	20.4	0.8
Queue Length 50th (ft)		106	0		92	0	142	133	0	28	368	0
Queue Length 95th (ft)		165	52		151	73	m236	m287	m17	67	#664	7
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		338	519		278	640	543	1374	1239	450	998	928
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	13		8	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.42	0.26		0.45	0.46	0.62	0.44	0.04	0.23	0.69	0.13

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 102 (85%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	59	122	90	24	275	318	563	50	99	644	111
Future Volume (veh/h)	73	59	122	90	24	275	318	563	50	99	644	111
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	1900	1900	1900	1900	1885	1900	1870	1826	1900	1900	1856	1900
Adj Flow Rate, veh/h	78	63	0	96	26	0	338	599	0	105	685	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	1	0	2	5	0	0	3	0
Cap, veh/h	147	87		172	32		566	1451		611	1228	
Arrive On Green	0.11	0.11	0.00	0.11	0.11	0.00	0.17	1.00	0.00	0.66	0.66	0.00
Sat Flow, veh/h	888	768	1610	1040	282	1610	1781	1826	1610	833	1856	1610
Grp Volume(v), veh/h	141	0	0	122	0	0	338	599	0	105	685	0
Grp Sat Flow(s),veh/h/ln	1656	0	1610	1321	0	1610	1781	1826	1610	833	1856	1610
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	7.8	0.0	0.0	5.9	23.7	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0	11.1	0.0	0.0	7.8	0.0	0.0	5.9	23.7	0.0
Prop In Lane	0.55		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	0		204	0		566	1451		611	1228	
V/C Ratio(X)	0.60	0.00		0.60	0.00		0.60	0.41		0.17	0.56	
Avail Cap(c_a), veh/h	472	0		418	0		686	1451		611	1228	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	0.0	0.0	52.1	0.0	0.0	8.0	0.0	0.0	7.8	10.9	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	2.8	0.0	0.0	0.9	0.7	0.0	0.6	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	3.8	0.0	0.0	2.0	0.3	0.0	1.0	9.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	0.0	54.9	0.0	0.0	8.8	0.7	0.0	8.5	12.7	0.0
LnGrp LOS	D	A		D	A		A	A		A	B	
Approach Vol, veh/h		141			122			937			790	
Approach Delay, s/veh		53.9			54.9			3.7			12.1	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	15.9	84.9		19.1		100.9		19.1				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	18.5	53.5		31.5		77.5		31.5				
Max Q Clear Time (g_c+I1), s	9.8	25.7		11.8		2.0		13.1				
Green Ext Time (p_c), s	0.7	10.6		0.6		9.3		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		13.7	
HCM 6th LOS		B	

Notes

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

Intersection	
Int Delay, s/veh	41.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	23	20	3	79	30	16	13	703	107	27	766	55
Future Vol, veh/h	23	20	3	79	30	16	13	703	107	27	766	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	3	0
Mvmt Flow	24	21	3	81	31	16	13	725	110	28	790	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1705	1736	819	1693	1709	780	847	0	0	835	0	0
Stage 1	875	875	-	806	806	-	-	-	-	-	-	-
Stage 2	830	861	-	887	903	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	73	88	379	~ 74	92	399	799	-	-	807	-	-
Stage 1	347	370	-	379	398	-	-	-	-	-	-	-
Stage 2	367	375	-	341	359	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	80	379	~ 55	83	399	799	-	-	807	-	-
Mov Cap-2 Maneuver	46	80	-	~ 55	83	-	-	-	-	-	-	-
Stage 1	336	346	-	367	386	-	-	-	-	-	-	-
Stage 2	314	363	-	297	335	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	166.1	$ 552.1	0.2	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	799	-	-	61	68	807	-	-
HCM Lane V/C Ratio	0.017	-	-	0.777	1.895	0.034	-	-
HCM Control Delay (s)	9.6	0	-	166.1	$ 552.1	9.6	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.5	11.7	0.1	-	-

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

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	48	128	848	875
Demand Flow Rate, veh/h	48	128	877	899
Vehicles Circulating, veh/h	923	791	73	125
Vehicles Exiting, veh/h	101	159	898	794
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	6.9	6.0	6.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.471	0.529
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	48	128	412	465	423	476
Cap Entry Lane, veh/h	648	725	1262	1335	1203	1277
Entry HV Adj Factor	1.000	1.000	0.967	0.967	0.973	0.975
Flow Entry, veh/h	48	128	399	449	411	464
Cap Entry, veh/h	648	725	1221	1290	1170	1244
V/C Ratio	0.074	0.177	0.326	0.348	0.352	0.373
Control Delay, s/veh	6.4	6.9	6.0	6.0	6.5	6.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	1	2	2	2

Intersection	
Int Delay, s/veh	63.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	239	19	397	329	22	540
Future Vol, veh/h	239	19	397	329	22	540
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	5	2	0	4
Mvmt Flow	275	22	456	378	25	621

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1316	645	0	0	834	0
Stage 1	645	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 176	476	-	-	808	-
Stage 1	526	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 168	476	-	-	808	-
Mov Cap-2 Maneuver	~ 168	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	488	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 377.7	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	176	808	-
HCM Lane V/C Ratio	-	-	1.685	0.031	-
HCM Control Delay (s)	-	-	$ 377.7	9.6	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	20.5	0.1	-

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

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	297	834	646
Demand Flow Rate, veh/h	297	865	671
Vehicles Circulating, veh/h	479	25	275
Vehicles Exiting, veh/h	411	921	501
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.1	5.6	6.5
Approach LOS	A	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.471	0.529	0.469	0.531
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	297	407	458	315	356
Cap Entry Lane, veh/h	945	1319	1390	1048	1124
Entry HV Adj Factor	1.000	0.963	0.965	0.964	0.962
Flow Entry, veh/h	297	392	442	304	342
Cap Entry, veh/h	945	1271	1342	1011	1081
V/C Ratio	0.314	0.309	0.329	0.301	0.317
Control Delay, s/veh	7.1	5.6	5.6	6.6	6.4
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	24	64	20	50	64	362	34	93	399
Future Volume (vph)	24	64	20	50	64	362	34	93	399
Lane Group Flow (vph)	26	102	21	94	68	385	36	99	460
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		6			2
Permitted Phases	4		8		6		6	2	
Detector Phase	4	4	8	8	6	6	6	2	2
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	30.5	30.5	28.5	28.5	28.5	36.5	36.5
Total Split (s)	39.0	39.0	39.0	39.0	81.0	81.0	81.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	67.5%	67.5%	67.5%	67.5%	67.5%
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 Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.23	0.57	0.20	0.49	0.09	0.26	0.03	0.12	0.31
Control Delay	53.6	52.7	52.9	42.7	2.5	2.9	0.7	1.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	52.7	52.9	42.7	2.5	2.9	0.7	1.5	2.8
Queue Length 50th (ft)	19	61	15	46	6	45	0	9	74
Queue Length 95th (ft)	47	115	40	97	15	71	m4	m2	m9
Internal Link Dist (ft)		1123		799		3705			2383
Turn Bay Length (ft)	195				310		200	305	
Base Capacity (vph)	351	512	331	518	743	1479	1326	824	1467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.20	0.06	0.18	0.09	0.26	0.03	0.12	0.31

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 44 (37%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: SR 92 & Ridge Rd/Butner Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	64	32	20	50	39	64	362	34	93	399	34
Future Volume (veh/h)	24	64	32	20	50	39	64	362	34	93	399	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	1900	1870	1900	1900	1900	1900	1870	1826	1900	1900	1826	1900
Adj Flow Rate, veh/h	26	68	34	21	53	41	68	385	0	99	424	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	0	0	0	0	2	5	0	0	5	0
Cap, veh/h	114	108	54	107	91	71	793	1491		838	1491	
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.82	0.82	0.00	0.82	0.82	0.00
Sat Flow, veh/h	1323	1176	588	1313	993	768	963	1826	1610	1014	1826	0
Grp Volume(v), veh/h	26	0	102	21	0	94	68	385	0	99	424	0
Grp Sat Flow(s),veh/h/ln	1323	0	1764	1313	0	1762	963	1826	1610	1014	1826	0
Q Serve(g_s), s	2.3	0.0	6.7	1.9	0.0	6.1	2.2	5.9	0.0	3.0	6.7	0.0
Cycle Q Clear(g_c), s	8.5	0.0	6.7	8.6	0.0	6.1	8.8	5.9	0.0	8.9	6.7	0.0
Prop In Lane	1.00		0.33	1.00		0.44	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	114	0	162	107	0	162	793	1491		838	1491	
V/C Ratio(X)	0.23	0.00	0.63	0.20	0.00	0.58	0.09	0.26		0.12	0.28	
Avail Cap(c_a), veh/h	362	0	493	353	0	492	793	1491		838	1491	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.3	0.0	52.5	56.7	0.0	52.3	3.7	2.6	0.0	3.6	2.6	0.0
Incr Delay (d2), s/veh	1.0	0.0	4.0	0.9	0.0	3.3	0.2	0.4	0.0	0.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.1	0.6	0.0	2.8	0.4	1.4	0.0	0.5	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	0.0	56.5	57.5	0.0	55.6	3.9	3.0	0.0	3.9	3.1	0.0
LnGrp LOS	E	A	E	E	A	E	A	A		A	A	
Approach Vol, veh/h		128			115			453			523	
Approach Delay, s/veh		56.7			55.9			3.1			3.3	
Approach LOS		E			E			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		103.5		16.5		103.5		16.5				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		75.5		33.5		75.5		33.5				
Max Q Clear Time (g_c+I1), s		10.9		10.5		10.8		10.6				
Green Ext Time (p_c), s		6.9		0.5		5.9		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		13.8
HCM 6th LOS		B

Notes

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

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

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	128	115	489	559
Demand Flow Rate, veh/h	129	115	509	580
Vehicles Circulating, veh/h	565	499	194	143
Vehicles Exiting, veh/h	122	168	500	471
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	5.7	7.4	7.7
Approach LOS	A	A	A	A

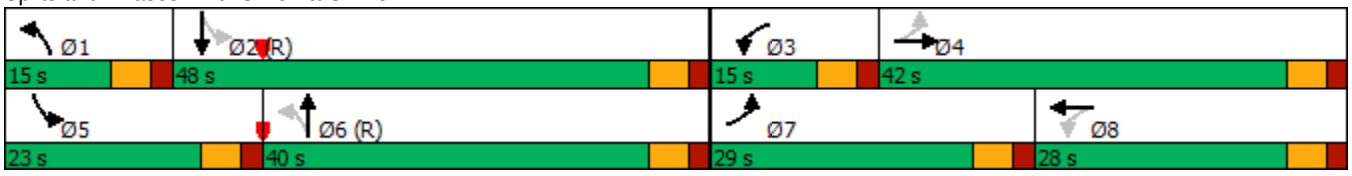
Lane	Left	Left	Left	Bypass	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized				Yield		Yield
Lane Util	1.000	1.000	1.000		1.000	
Follow-Up Headway, s	2.609	2.609	2.609		2.609	
Critical Headway, s	4.976	4.976	4.976	36	4.976	36
Entry Flow, veh/h	129	115	473	1163	544	1218
Cap Entry Lane, veh/h	775	829	1132	1.000	1193	1.000
Entry HV Adj Factor	0.990	1.000	0.957	36	0.961	36
Flow Entry, veh/h	128	115	453	1163	523	1218
Cap Entry, veh/h	767	829	1084	0.031	1146	0.030
V/C Ratio	0.166	0.139	0.418	3.4	0.456	3.2
Control Delay, s/veh	6.5	5.7	7.8	A	8.0	A
LOS	A	A	A	0	A	0
95th %tile Queue, veh	1	0	2		2	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	203	353	28	158	8	340	259	518
Future Volume (vph)	203	353	28	158	8	340	259	518
Lane Group Flow (vph)	209	382	29	207	8	410	267	758
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	29.0	42.0	15.0	28.0	15.0	40.0	23.0	48.0
Total Split (%)	24.2%	35.0%	12.5%	23.3%	12.5%	33.3%	19.2%	40.0%
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	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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.57	0.77	0.14	0.74	0.04	0.60	0.60	0.81
Control Delay	33.5	50.4	25.0	60.1	17.8	31.3	21.8	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	50.4	25.0	60.1	17.8	31.3	21.8	32.8
Queue Length 50th (ft)	116	279	14	143	2	199	108	446
Queue Length 95th (ft)	162	377	32	223	11	#377	185	#910
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	428	528	232	321	251	685	476	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.72	0.13	0.64	0.03	0.60	0.56	0.81

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	353	17	28	158	43	8	340	57	259	518	217
Future Volume (veh/h)	203	353	17	28	158	43	8	340	57	259	518	217
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	1796	1737	1900	1633	1663	1707	1900	1826	1811	1870	1856	1811
Adj Flow Rate, veh/h	209	364	18	29	163	44	8	351	0	267	534	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	11	0	18	16	13	0	5	6	2	3	6
Cap, veh/h	290	399	20	124	189	51	388	824		563	999	
Arrive On Green	0.12	0.24	0.24	0.03	0.15	0.15	0.01	0.45	0.00	0.10	0.54	0.00
Sat Flow, veh/h	1711	1641	81	1555	1261	340	1810	1826	0	1781	1856	0
Grp Volume(v), veh/h	209	0	382	29	0	207	8	351	0	267	534	0
Grp Sat Flow(s),veh/h/ln	1711	0	1722	1555	0	1602	1810	1826	0	1781	1856	0
Q Serve(g_s), s	11.9	0.0	25.9	1.9	0.0	15.1	0.3	15.7	0.0	9.2	22.4	0.0
Cycle Q Clear(g_c), s	11.9	0.0	25.9	1.9	0.0	15.1	0.3	15.7	0.0	9.2	22.4	0.0
Prop In Lane	1.00		0.05	1.00		0.21	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	290	0	418	124	0	240	388	824		563	999	
V/C Ratio(X)	0.72	0.00	0.91	0.23	0.00	0.86	0.02	0.43		0.47	0.53	
Avail Cap(c_a), veh/h	422	0	524	207	0	300	514	824		650	999	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	0.0	44.2	42.5	0.0	49.8	18.1	22.4	0.0	15.1	18.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	17.8	1.0	0.0	18.7	0.0	1.6	0.0	0.6	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	12.5	0.7	0.0	7.0	0.1	6.7	0.0	3.4	9.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	0.0	62.0	43.4	0.0	68.5	18.1	24.0	0.0	15.8	20.0	0.0
LnGrp LOS	D	A	E	D	A	E	B	C		B	C	
Approach Vol, veh/h		591			236			359			801	
Approach Delay, s/veh		54.2			65.4			23.8			18.6	
Approach LOS		D			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	70.1	8.6	34.6	17.1	59.7	19.8	23.5
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	42.5	9.5	36.5	17.5	34.5	23.5	22.5
Max Q Clear Time (g_c+I1), s	2.3	24.4	3.9	27.9	11.2	17.7	13.9	17.1
Green Ext Time (p_c), s	0.0	5.3	0.0	1.3	0.4	3.1	0.4	0.4

Intersection Summary	
HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D

Notes

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

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

Intersection	
Intersection Delay, s/veh	7.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	683	808	771
Demand Flow Rate, veh/h	728	859	780
Vehicles Circulating, veh/h	349	76	641
Vehicles Exiting, veh/h	76	1345	436
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	2.2	11.6
Approach LOS	A	A	B

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.530	0.470	1.000		0.471	0.529
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	510	4.645	4.328
Entry Flow, veh/h	386	342	349	2052	367	413
Cap Entry Lane, veh/h	1034	1034	1277	0.926	749	823
Entry HV Adj Factor	0.938	0.939	0.962	472	0.987	0.989
Flow Entry, veh/h	362	321	336	1900	362	409
Cap Entry, veh/h	969	970	1228	0.248	739	815
V/C Ratio	0.373	0.331	0.273	0.0	0.490	0.502
Control Delay, s/veh	7.8	7.2	5.4	A	11.9	11.3
LOS	A	A	A	1	B	B
95th %tile Queue, veh	2	1	1		3	3

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	2	33	7	1	48
Future Vol, veh/h	30	2	33	7	1	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	10	0	0
Mvmt Flow	33	2	36	8	1	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	94	40	0	0	44	0
Stage 1	40	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	911	1037	-	-	1577	-
Stage 1	988	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	910	1037	-	-	1577	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	917	1577	-
HCM Lane V/C Ratio	-	-	0.038	0.001	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	4	36	35	5	58
Future Vol, veh/h	27	4	36	35	5	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	23	0	0	0	2
Mvmt Flow	31	5	42	41	6	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	36	0	159	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1588	-	837	1039
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1588	-	814	1039
Mov Cap-2 Maneuver	-	-	-	-	814	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	882	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1017	-	-	1588	-
HCM Lane V/C Ratio	0.072	-	-	0.026	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	26	17	37	56	3
Future Vol, veh/h	3	26	17	37	56	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	33	0	0	3	2	0
Mvmt Flow	3	29	19	41	62	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	143	64	65	0	-	0
Stage 1	64	-	-	-	-	-
Stage 2	79	-	-	-	-	-
Critical Hdwy	6.73	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	782	1006	1550	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	1006	1550	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1550	-	975	-	-
HCM Lane V/C Ratio	0.012	-	0.033	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	145	97	57	88	16
Future Vol, veh/h	8	145	97	57	88	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	4	2	0	0
Mvmt Flow	9	163	109	64	99	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	173	0	-	0	322	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1416	-	-	-	676	912
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1416	-	-	-	671	912
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	855	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.2
HCM LOS			B

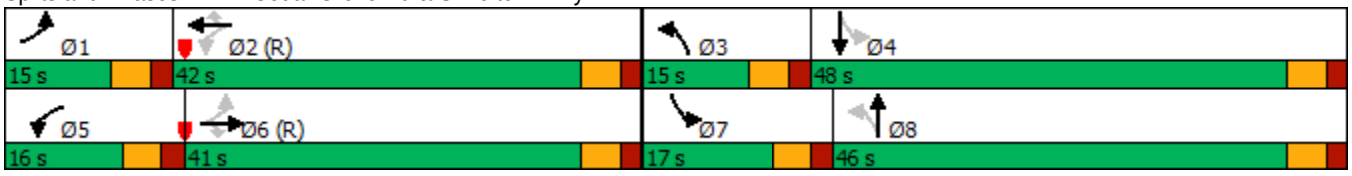
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	699
HCM Lane V/C Ratio	0.006	-	-	-	0.167
HCM Control Delay (s)	7.6	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	49	689	38	119	315	92	24	73	199	118
Future Volume (vph)	49	689	38	119	315	92	24	73	199	118
Lane Group Flow (vph)	53	741	41	128	339	99	26	293	214	166
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	41.0	41.0	16.0	42.0	42.0	15.0	46.0	17.0	48.0
Total Split (%)	12.5%	34.2%	34.2%	13.3%	35.0%	35.0%	12.5%	38.3%	14.2%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.09	0.43	0.05	0.32	0.18	0.11	0.09	0.81	0.94	0.38
Control Delay	12.0	22.5	0.1	13.4	17.5	2.4	28.0	44.1	81.5	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	22.5	0.1	13.4	17.5	2.4	28.0	44.1	81.5	38.3
Queue Length 50th (ft)	15	188	0	39	73	0	14	129	132	105
Queue Length 95th (ft)	40	295	0	81	123	22	32	211	#240	159
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	609	1729	852	425	1837	896	334	644	227	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.43	0.05	0.30	0.18	0.11	0.08	0.45	0.94	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	689	38	119	315	92	24	73	200	199	118	36
Future Volume (veh/h)	49	689	38	119	315	92	24	73	200	199	118	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1870	1900	1885	1856	1885	1900	1856	1885	1885	1885	1900
Adj Flow Rate, veh/h	53	741	0	128	339	0	26	78	215	214	127	39
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, %	7	2	0	1	3	1	0	3	1	1	1	0
Cap, veh/h	548	1650		390	1705		353	88	244	264	380	117
Arrive On Green	0.03	0.46	0.00	0.05	0.48	0.00	0.02	0.20	0.20	0.10	0.27	0.27
Sat Flow, veh/h	1711	3554	1610	1795	3526	1598	1810	436	1203	1795	1384	425
Grp Volume(v), veh/h	53	741	0	128	339	0	26	0	293	214	0	166
Grp Sat Flow(s),veh/h/ln	1711	1777	1610	1795	1763	1598	1810	0	1639	1795	0	1809
Q Serve(g_s), s	1.9	16.9	0.0	4.4	6.6	0.0	1.4	0.0	20.8	11.1	0.0	8.8
Cycle Q Clear(g_c), s	1.9	16.9	0.0	4.4	6.6	0.0	1.4	0.0	20.8	11.1	0.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		0.23
Lane Grp Cap(c), veh/h	548	1650		390	1705		353	0	332	264	0	496
V/C Ratio(X)	0.10	0.45		0.33	0.20		0.07	0.00	0.88	0.81	0.00	0.33
Avail Cap(c_a), veh/h	624	1650		451	1705		452	0	553	264	0	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	21.7	0.0	16.5	17.7	0.0	36.4	0.0	46.4	34.6	0.0	34.8
Incr Delay (d2), s/veh	0.1	0.9	0.0	0.5	0.3	0.0	0.1	0.0	9.1	17.1	0.0	0.4
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	0.7	6.7	0.0	1.7	2.5	0.0	0.6	0.0	9.0	5.9	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	22.6	0.0	16.9	18.0	0.0	36.5	0.0	55.5	51.6	0.0	35.2
LnGrp LOS	B	C		B	B		D	A	E	D	A	D
Approach Vol, veh/h		794			467			319			380	
Approach Delay, s/veh		22.2			17.7			53.9			44.4	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	63.5	8.4	38.4	11.9	61.2	17.0	29.8
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	36.5	9.5	42.5	10.5	35.5	11.5	40.5
Max Q Clear Time (g_c+I1), s	3.9	8.6	3.4	10.8	6.4	18.9	13.1	22.8
Green Ext Time (p_c), s	0.0	3.7	0.0	0.9	0.1	7.0	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Notes

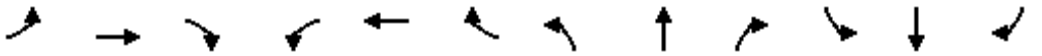
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	8	60	8	4	99	55	1198	226	206	835	8
Future Volume (vph)	309	8	60	8	4	99	55	1198	226	206	835	8
Lane Group Flow (vph)	319	8	62	8	4	102	57	1235	233	212	861	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	59.0	59.0	59.0	20.0	79.0	79.0
Total Split (%)	34.2%	34.2%	34.2%	34.2%	34.2%	34.2%	49.2%	49.2%	49.2%	16.7%	65.8%	65.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.87	0.02	0.14	0.02	0.01	0.21	0.25	0.70	0.26	0.71	0.72	0.01
Control Delay	66.2	30.5	6.2	30.6	30.2	7.0	23.9	26.9	6.1	40.4	14.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	30.5	6.2	30.6	30.2	7.0	23.9	26.9	6.1	40.4	14.6	3.0
Queue Length 50th (ft)	233	5	0	5	2	0	26	394	22	97	209	0
Queue Length 95th (ft)	#354	17	27	17	11	41	64	513	73	193	431	m1
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	424	562	497	422	449	549	225	1769	895	330	1204	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.01	0.12	0.02	0.01	0.19	0.25	0.70	0.26	0.64	0.72	0.01

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 1 (1%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	8	60	8	4	99	55	1198	226	206	835	8
Future Volume (veh/h)	309	8	60	8	4	99	55	1198	226	206	835	8
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	1900	1900	1796	1900	1530	1900	1752	1856	1885	1900	1856	1900
Adj Flow Rate, veh/h	319	8	0	8	4	0	57	1235	0	212	861	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	7	0	25	0	10	3	1	0	3	0
Cap, veh/h	403	458		400	369		391	1943		329	1238	
Arrive On Green	0.24	0.24	0.00	0.24	0.24	0.00	0.55	0.55	0.00	0.14	1.00	0.00
Sat Flow, veh/h	1435	1900	1522	1430	1530	1610	601	3526	1598	1810	1856	1610
Grp Volume(v), veh/h	319	8	0	8	4	0	57	1235	0	212	861	0
Grp Sat Flow(s),veh/h/ln	1435	1900	1522	1430	1530	1610	601	1763	1598	1810	1856	1610
Q Serve(g_s), s	26.1	0.4	0.0	0.5	0.2	0.0	5.6	29.0	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	26.3	0.4	0.0	0.9	0.2	0.0	5.6	29.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	403	458		400	369		391	1943		329	1238	
V/C Ratio(X)	0.79	0.02		0.02	0.01		0.15	0.64		0.64	0.70	
Avail Cap(c_a), veh/h	482	562		478	452		391	1943		420	1238	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	44.7	34.7	0.0	35.1	34.7	0.0	13.3	18.6	0.0	14.8	0.0	0.0
Incr Delay (d2), s/veh	7.4	0.0	0.0	0.0	0.0	0.0	0.8	1.6	0.0	1.6	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.2	0.0	0.2	0.1	0.0	0.8	11.3	0.0	2.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	34.7	0.0	35.1	34.7	0.0	14.1	20.2	0.0	16.4	2.4	0.0
LnGrp LOS	D	C		D	C		B	C		B	A	
Approach Vol, veh/h		327			12			1292			1073	
Approach Delay, s/veh		51.7			34.9			19.9			5.2	
Approach LOS		D			C			B			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		85.6		34.4	13.9	71.7		34.4				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		73.5		35.5	14.5	53.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0		28.3	8.1	31.0		2.9				
Green Ext Time (p_c), s		17.7		0.6	0.3	15.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Notes

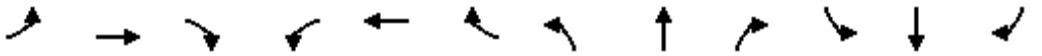
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	26	116	57	32	257	260	936	67	75	684	63
Future Volume (vph)	108	26	116	57	32	257	260	936	67	75	684	63
Lane Group Flow (vph)	0	138	120	0	92	265	268	965	69	77	705	65
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	19.0	78.0	78.0	59.0	59.0	59.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	15.8%	65.0%	65.0%	49.2%	49.2%	49.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.69	0.35		0.54	0.75	0.52	0.69	0.06	0.25	0.68	0.07
Control Delay		65.0	9.9		57.3	36.6	17.7	10.7	1.1	18.0	24.6	3.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		65.0	9.9		57.3	36.6	17.7	10.7	1.1	18.0	24.6	3.0
Queue Length 50th (ft)		103	0		67	99	62	199	0	31	379	4
Queue Length 95th (ft)		161	49		114	181	m174	365	m5	82	#711	20
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		407	574		349	583	513	1399	1239	311	1042	944
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.34	0.21		0.26	0.45	0.52	0.69	0.06	0.25	0.68	0.07

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	26	116	57	32	257	260	936	67	75	684	63
Future Volume (veh/h)	108	26	116	57	32	257	260	936	67	75	684	63
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	1900	1900	1900	1900	1900	1900	1885	1856	1900	1900	1856	1900
Adj Flow Rate, veh/h	111	27	0	59	33	0	268	965	0	77	705	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	3	0	0	3	0
Cap, veh/h	189	33		156	77		547	1480		466	1273	
Arrive On Green	0.11	0.11	0.00	0.11	0.11	0.00	0.13	1.00	0.00	0.69	0.69	0.00
Sat Flow, veh/h	1212	295	1610	961	697	1610	1795	1856	1610	591	1856	1610
Grp Volume(v), veh/h	138	0	0	92	0	0	268	965	0	77	705	0
Grp Sat Flow(s),veh/h/ln	1507	0	1610	1658	0	1610	1795	1856	1610	591	1856	1610
Q Serve(g_s), s	4.6	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	5.6	23.1	0.0
Cycle Q Clear(g_c), s	10.7	0.0	0.0	6.1	0.0	0.0	5.5	0.0	0.0	5.6	23.1	0.0
Prop In Lane	0.80		1.00	0.64		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	0		233	0		547	1480		466	1273	
V/C Ratio(X)	0.62	0.00		0.39	0.00		0.49	0.65		0.17	0.55	
Avail Cap(c_a), veh/h	506	0		533	0		631	1480		466	1273	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.65	0.65	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.1	0.0	0.0	50.1	0.0	0.0	7.2	0.0	0.0	6.8	9.5	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	1.1	0.0	0.0	0.4	1.5	0.0	0.8	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	2.7	0.0	0.0	1.3	0.6	0.0	0.7	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.0	0.0	0.0	51.2	0.0	0.0	7.7	1.5	0.0	7.6	11.3	0.0
LnGrp LOS	D	A		D	A		A	A		A	B	
Approach Vol, veh/h		138			92			1233			782	
Approach Delay, s/veh		55.0			51.2			2.8			10.9	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.4	87.8		18.8		101.2		18.8				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	13.5	53.5		36.5		72.5		36.5				
Max Q Clear Time (g_c+I1), s	7.5	25.1		12.7		2.0		8.1				
Green Ext Time (p_c), s	0.4	11.1		0.6		22.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		10.8	
HCM 6th LOS		B	

Notes

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

Intersection	
Int Delay, s/veh	58.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	8	0	98	6	47	1	965	117	17	782	9
Future Vol, veh/h	8	8	0	98	6	47	1	965	117	17	782	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	8	8	0	100	6	48	1	985	119	17	798	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1911	1943	803	1888	1888	1045	807	0	0	1104	0	0
Stage 1	837	837	-	1047	1047	-	-	-	-	-	-	-
Stage 2	1074	1106	-	841	841	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	52	66	387	~ 54	71	280	827	-	-	640	-	-
Stage 1	364	385	-	278	308	-	-	-	-	-	-	-
Stage 2	269	289	-	362	383	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	63	387	~ 47	67	280	827	-	-	640	-	-
Mov Cap-2 Maneuver	39	63	-	~ 47	67	-	-	-	-	-	-	-
Stage 1	363	367	-	277	307	-	-	-	-	-	-	-
Stage 2	218	288	-	337	365	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	114.6	$ 779.5	0	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	827	-	-	48	64	640	-	-
HCM Lane V/C Ratio	0.001	-	-	0.34	2.408	0.027	-	-
HCM Control Delay (s)	9.4	0	-	114.6	$ 779.5	10.8	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	15.1	0.1	-	-

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

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	16	154	1105	824
Demand Flow Rate, veh/h	16	154	1125	848
Vehicles Circulating, veh/h	939	1014	33	107
Vehicles Exiting, veh/h	16	144	922	1061
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	9.3	6.8	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.471	0.529
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	16	154	529	596	399	449
Cap Entry Lane, veh/h	639	600	1309	1381	1223	1297
Entry HV Adj Factor	1.000	1.000	0.982	0.983	0.971	0.973
Flow Entry, veh/h	16	154	519	586	387	437
Cap Entry, veh/h	639	600	1286	1357	1187	1261
V/C Ratio	0.025	0.257	0.404	0.432	0.326	0.346
Control Delay, s/veh	5.9	9.3	6.7	6.8	6.1	6.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	2	2	1	2

Intersection	
Int Delay, s/veh	85.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	285	14	607	327	15	500
Future Vol, veh/h	285	14	607	327	15	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	11	4	0	0	3
Mvmt Flow	300	15	639	344	16	526

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1369	811	0	0	983	0
Stage 1	811	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.41	6.31	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	~ 162	366	-	-	711	-
Stage 1	439	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 157	366	-	-	711	-
Mov Cap-2 Maneuver	~ 157	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 498.8	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	161	711	-
HCM Lane V/C Ratio	-	-	1.955	0.022	-
HCM Control Delay (s)	-	-	$ 498.8	10.2	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	24.1	0.1	-

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

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	315	983	542
Demand Flow Rate, veh/h	320	1009	558
Vehicles Circulating, veh/h	665	16	303
Vehicles Exiting, veh/h	360	845	682
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.5	6.1	6.1
Approach LOS	A	A	A

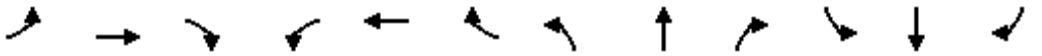
Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	320	474	535	262	296
Cap Entry Lane, veh/h	807	1330	1401	1021	1098
Entry HV Adj Factor	0.984	0.975	0.974	0.973	0.971
Flow Entry, veh/h	315	462	521	255	287
Cap Entry, veh/h	794	1297	1365	994	1066
V/C Ratio	0.397	0.356	0.382	0.256	0.270
Control Delay, s/veh	9.5	6.1	6.2	6.2	6.0
LOS	A	A	A	A	A
95th %tile Queue, veh	2	2	2	1	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	35	59	49	55	24	515	25	40	307
Future Volume (vph)	35	59	49	55	24	515	25	40	307
Lane Group Flow (vph)	37	103	52	166	26	548	27	43	343
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		6			2
Permitted Phases	4		8		6		6	2	
Detector Phase	4	4	8	8	6	6	6	2	2
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	30.5	30.5	28.5	28.5	28.5	36.5	36.5
Total Split (s)	35.0	35.0	35.0	35.0	85.0	85.0	85.0	85.0	85.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	70.8%	70.8%	70.8%	70.8%	70.8%
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 Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.52	0.50	0.43	0.69	0.03	0.38	0.02	0.06	0.24
Control Delay	74.3	45.4	59.2	43.6	2.8	4.7	1.1	0.8	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	45.4	59.2	43.6	2.8	4.7	1.1	0.8	0.9
Queue Length 50th (ft)	28	58	38	70	3	117	1	1	11
Queue Length 95th (ft)	62	109	76	138	m7	188	m3	m3	19
Internal Link Dist (ft)		1123		799		3705			2383
Turn Bay Length (ft)	195				310		200	305	
Base Capacity (vph)	170	458	292	471	848	1457	1255	668	1438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.18	0.35	0.03	0.38	0.02	0.06	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: SR 92 & Ridge Rd/Butner Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	59	38	49	55	101	24	515	25	40	307	15
Future Volume (veh/h)	35	59	38	49	55	101	24	515	25	40	307	15
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	1900	1900	1900	1885	1856	1900	1900	1826	1841	1900	1811	1900
Adj Flow Rate, veh/h	37	63	40	52	59	107	26	548	0	43	327	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	3	0	0	5	4	0	6	0
Cap, veh/h	121	157	100	179	85	155	822	1395		638	1384	
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.76	0.76	0.00	0.76	0.76	0.00
Sat Flow, veh/h	1239	1086	690	1302	591	1072	1070	1826	1560	873	1811	0
Grp Volume(v), veh/h	37	0	103	52	0	166	26	548	0	43	327	0
Grp Sat Flow(s),veh/h/ln	1239	0	1776	1302	0	1663	1070	1826	1560	873	1811	0
Q Serve(g_s), s	3.5	0.0	6.3	4.5	0.0	11.4	0.9	12.1	0.0	2.1	6.2	0.0
Cycle Q Clear(g_c), s	14.9	0.0	6.3	10.9	0.0	11.4	7.1	12.1	0.0	14.2	6.2	0.0
Prop In Lane	1.00		0.39	1.00		0.64	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	121	0	256	179	0	240	822	1395		638	1384	
V/C Ratio(X)	0.31	0.00	0.40	0.29	0.00	0.69	0.03	0.39		0.07	0.24	
Avail Cap(c_a), veh/h	247	0	437	311	0	409	822	1395		638	1384	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	0.0	46.6	51.6	0.0	48.8	5.1	4.8	0.0	7.2	4.1	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.0	0.9	0.0	3.5	0.1	0.8	0.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	2.8	1.5	0.0	4.8	0.2	3.7	0.0	0.4	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	0.0	47.7	52.5	0.0	52.4	5.2	5.6	0.0	7.4	4.5	0.0
LnGrp LOS	E	A	D	D	A	D	A	A		A	A	
Approach Vol, veh/h		140			218			574			370	
Approach Delay, s/veh		50.2			52.4			5.6			4.8	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		97.2		22.8		97.2		22.8				
Change Period (Y+Rc), s		5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s		79.5		29.5		79.5		29.5				
Max Q Clear Time (g_c+I1), s		16.2		16.9		14.1		13.4				
Green Ext Time (p_c), s		4.7		0.4		8.4		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B

Notes

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

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	140	218	601	386
Demand Flow Rate, veh/h	140	221	629	406
Vehicles Circulating, veh/h	443	638	143	140
Vehicles Exiting, veh/h	87	106	440	719
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	8.8	8.6	6.2
Approach LOS	A	A	A	A

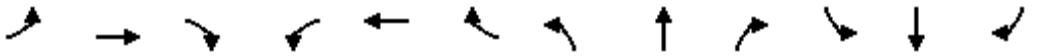
Lane	Left	Left	Left	Bypass	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized				Yield		Yield
Lane Util	1.000	1.000	1.000		1.000	
Follow-Up Headway, s	2.609	2.609	2.609		2.609	
Critical Headway, s	4.976	4.976	4.976	28	4.976	16
Entry Flow, veh/h	140	221	601	1238	390	1263
Cap Entry Lane, veh/h	878	720	1193	0.962	1196	1.000
Entry HV Adj Factor	1.000	0.987	0.954	27	0.950	16
Flow Entry, veh/h	140	218	574	1191	370	1263
Cap Entry, veh/h	878	711	1138	0.023	1136	0.013
V/C Ratio	0.159	0.307	0.504	3.2	0.326	3.0
Control Delay, s/veh	5.7	8.8	8.9	A	6.3	A
LOS	A	A	A	0	A	0
95th %tile Queue, veh	1	1	3		1	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	202	116	46	258	10	574	64	335
Future Volume (vph)	202	116	46	258	10	574	64	335
Lane Group Flow (vph)	204	126	46	454	10	603	65	572
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	17.0	39.0	17.0	39.0	15.0	49.0	15.0	49.0
Total Split (%)	14.2%	32.5%	14.2%	32.5%	12.5%	40.8%	12.5%	40.8%
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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.89	0.26	0.11	0.93	0.04	0.81	0.31	0.67
Control Delay	65.9	32.3	21.9	67.5	13.0	36.5	20.2	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	32.3	21.9	67.5	13.0	36.5	20.2	28.9
Queue Length 50th (ft)	102	71	21	318	2	434	26	308
Queue Length 95th (ft)	#248	126	45	#511	m8	#663	52	#568
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	228	494	464	507	328	746	233	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.26	0.10	0.90	0.03	0.81	0.28	0.67

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 4 (3%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: SR 92 & SR 154



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	116	9	46	258	191	10	574	23	64	335	232
Future Volume (veh/h)	202	116	9	46	258	191	10	574	23	64	335	232
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	1811	1559	1900	1737	1841	1900	1900	1870	1352	1826	1870	1841
Adj Flow Rate, veh/h	204	117	9	46	261	193	10	580	0	65	338	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	23	0	11	4	0	0	2	37	5	2	4
Cap, veh/h	241	488	38	441	273	202	405	759		237	806	
Arrive On Green	0.10	0.34	0.34	0.03	0.28	0.28	0.01	0.41	0.00	0.04	0.43	0.00
Sat Flow, veh/h	1725	1429	110	1654	983	727	1810	1870	0	1739	1870	0
Grp Volume(v), veh/h	204	0	126	46	0	454	10	580	0	65	338	0
Grp Sat Flow(s),veh/h/ln	1725	0	1539	1654	0	1710	1810	1870	0	1739	1870	0
Q Serve(g_s), s	9.8	0.0	7.0	2.4	0.0	31.3	0.4	32.0	0.0	2.6	15.1	0.0
Cycle Q Clear(g_c), s	9.8	0.0	7.0	2.4	0.0	31.3	0.4	32.0	0.0	2.6	15.1	0.0
Prop In Lane	1.00		0.07	1.00		0.43	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	241	0	525	441	0	475	405	759		237	806	
V/C Ratio(X)	0.85	0.00	0.24	0.10	0.00	0.95	0.02	0.76		0.27	0.42	
Avail Cap(c_a), veh/h	241	0	525	545	0	477	527	759		311	806	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.4	0.0	28.4	29.3	0.0	42.6	21.1	30.7	0.0	24.0	23.7	0.0
Incr Delay (d2), s/veh	23.5	0.0	0.2	0.1	0.0	29.9	0.0	7.2	0.0	0.6	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.5	0.9	0.0	16.4	0.2	15.0	0.0	1.0	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	28.6	29.4	0.0	72.5	21.1	37.9	0.0	24.6	25.3	0.0
LnGrp LOS	D	A	C	C	A	E	C	D		C	C	
Approach Vol, veh/h		330			500			590			403	
Approach Delay, s/veh		44.2			68.5			37.6			25.2	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	57.2	9.4	46.4	9.9	54.2	17.0	38.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	11.5	33.5	9.5	43.5	11.5	33.5
Max Q Clear Time (g_c+I1), s	2.4	17.1	4.4	9.0	4.6	34.0	11.8	33.3
Green Ext Time (p_c), s	0.0	3.6	0.0	0.5	0.0	3.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Notes

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

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	663	1460	447
Demand Flow Rate, veh/h	685	1495	456
Vehicles Circulating, veh/h	951	58	541
Vehicles Exiting, veh/h	58	939	1095
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	17.3	8.8	7.1
Approach LOS	C	A	A

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.530	0.470	1.000		0.469	0.531
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	544	4.645	4.328
Entry Flow, veh/h	363	322	951	1995	214	242
Cap Entry Lane, veh/h	598	598	1301	0.952	821	897
Entry HV Adj Factor	0.968	0.968	0.990	518	0.982	0.979
Flow Entry, veh/h	351	312	942	1900	210	237
Cap Entry, veh/h	579	578	1288	0.273	806	878
V/C Ratio	0.607	0.539	0.731	0.0	0.261	0.270
Control Delay, s/veh	18.4	16.0	13.6	A	7.3	7.0
LOS	C	C	B	1	A	A
95th %tile Queue, veh	4	3	7		1	1

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	3	54	18	3	37
Future Vol, veh/h	16	3	54	18	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	17	0	0	0	0	7
Mvmt Flow	18	3	59	20	3	41

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	116	69	0	0	79	0
Stage 1	69	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.57	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	845	1000	-	-	1532	-
Stage 1	917	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	843	1000	-	-	1532	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	864	1532	-
HCM Lane V/C Ratio	-	-	0.024	0.002	-
HCM Control Delay (s)	-	-	9.3	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	5	54	34	8	52
Future Vol, veh/h	44	5	54	34	8	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	50	6	61	39	9	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	56	0	214	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	161	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1549	-	779	1020
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	873	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1549	-	748	1020
Mov Cap-2 Maneuver	-	-	-	-	748	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1549	-
HCM Lane V/C Ratio	0.07	-	-	0.04	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	17	22	52	42	9
Future Vol, veh/h	7	17	22	52	42	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	14	0	0	0	50
Mvmt Flow	8	20	26	61	49	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	168	55	60	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	827	979	1556	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	979	1556	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1556	-	924	-	-
HCM Lane V/C Ratio	0.017	-	0.031	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	104	203	78	49	8
Future Vol, veh/h	11	104	203	78	49	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	12	113	221	85	53	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	306	0	-	0	401	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	4.1	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1266	-	-	-	605	780
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1266	-	-	-	599	780
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	890	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.5
HCM LOS			B

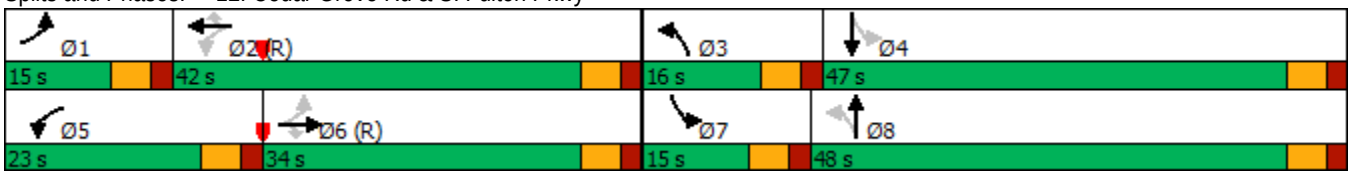
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1266	-	-	-	619
HCM Lane V/C Ratio	0.009	-	-	-	0.1
HCM Control Delay (s)	7.9	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

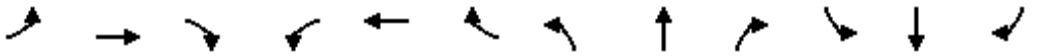
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	52	313	33	263	673	138	40	212	122	138
Future Volume (vph)	52	313	33	263	673	138	40	212	122	138
Lane Group Flow (vph)	58	352	37	296	756	155	45	434	137	181
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	34.0	34.0	23.0	42.0	42.0	16.0	48.0	15.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	19.2%	35.0%	35.0%	13.3%	40.0%	12.5%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.19	0.30	0.06	0.54	0.52	0.21	0.11	0.85	0.58	0.32
Control Delay	20.0	33.2	0.2	23.2	30.0	8.6	20.5	52.5	32.3	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	33.2	0.2	23.2	30.0	8.6	20.5	52.5	32.3	31.4
Queue Length 50th (ft)	22	108	0	131	234	15	21	292	68	105
Queue Length 95th (ft)	52	166	0	224	340	66	39	372	96	151
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	339	1169	633	561	1467	734	455	648	237	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.30	0.06	0.53	0.52	0.21	0.10	0.67	0.58	0.28

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	313	33	263	673	138	40	212	174	122	138	23
Future Volume (veh/h)	52	313	33	263	673	138	40	212	174	122	138	23
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	1900	1870	1856	1900	1856	1870	1796	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	58	352	0	296	756	0	45	238	196	137	155	26
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, %	0	2	3	0	3	2	7	1	0	0	2	0
Cap, veh/h	329	1261		572	1544		387	262	215	217	485	81
Arrive On Green	0.04	0.35	0.00	0.12	0.44	0.00	0.03	0.27	0.27	0.07	0.31	0.31
Sat Flow, veh/h	1810	3554	1572	1810	3526	1585	1711	956	787	1810	1561	262
Grp Volume(v), veh/h	58	352	0	296	756	0	45	0	434	137	0	181
Grp Sat Flow(s),veh/h/ln	1810	1777	1572	1810	1763	1585	1711	0	1743	1810	0	1823
Q Serve(g_s), s	2.4	8.5	0.0	12.0	18.4	0.0	2.2	0.0	28.9	6.4	0.0	9.1
Cycle Q Clear(g_c), s	2.4	8.5	0.0	12.0	18.4	0.0	2.2	0.0	28.9	6.4	0.0	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.14
Lane Grp Cap(c), veh/h	329	1261		572	1544		387	0	477	217	0	566
V/C Ratio(X)	0.18	0.28		0.52	0.49		0.12	0.00	0.91	0.63	0.00	0.32
Avail Cap(c_a), veh/h	408	1261		621	1544		481	0	617	235	0	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	27.7	0.0	19.3	24.1	0.0	29.8	0.0	42.1	31.6	0.0	31.7
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.7	1.1	0.0	0.1	0.0	14.9	4.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.5	0.0	4.7	7.3	0.0	0.9	0.0	13.9	3.0	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	28.3	0.0	20.0	25.2	0.0	29.9	0.0	57.0	36.4	0.0	32.0
LnGrp LOS	C	C		C	C		C	A	E	D	A	C
Approach Vol, veh/h		410			1052			479			318	
Approach Delay, s/veh		27.6			23.8			54.5			33.9	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	58.1	9.4	42.8	19.7	48.1	13.8	38.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	36.5	10.5	41.5	17.5	28.5	9.5	42.5
Max Q Clear Time (g_c+I1), s	4.4	20.4	4.2	11.1	14.0	10.5	8.4	30.9
Green Ext Time (p_c), s	0.0	7.0	0.0	0.9	0.3	3.2	0.0	1.9

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

Notes

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

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

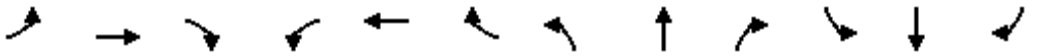
Future “No-Build” Intersection Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	9	62	3	12	82	68	874	172	77	947	14
Future Volume (vph)	234	9	62	3	12	82	68	874	172	77	947	14
Lane Group Flow (vph)	254	10	67	3	13	89	74	950	187	84	1029	15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	70.0	70.0	70.0	15.0	85.0	85.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	58.3%	58.3%	58.3%	12.5%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.94	0.02	0.16	0.01	0.03	0.20	0.48	0.47	0.19	0.23	0.82	0.02
Control Delay	87.2	34.7	8.0	34.3	34.8	8.4	30.0	16.3	2.3	4.7	13.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	87.2	34.7	8.0	34.3	34.8	8.4	30.0	16.3	2.3	4.7	13.8	0.2
Queue Length 50th (ft)	192	6	0	2	8	0	34	226	0	8	643	0
Queue Length 95th (ft)	#352	20	33	10	25	42	96	290	33	m14	150	m0
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	279	467	436	343	467	456	155	2038	990	383	1249	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	10	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.02	0.15	0.01	0.03	0.20	0.48	0.47	0.19	0.22	0.83	0.02

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	9	62	3	12	82	68	874	172	77	947	14
Future Volume (veh/h)	234	9	62	3	12	82	68	874	172	77	947	14
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	1530	1900	1841	1870	1900	1870	1885	1856	1856	1870	1870	1307
Adj Flow Rate, veh/h	254	10	0	3	13	0	74	950	0	84	1029	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	0	4	2	0	2	1	3	3	2	2	40
Cap, veh/h	329	457		392	457		382	2055		383	1249	
Arrive On Green	0.24	0.24	0.00	0.24	0.24	0.00	0.58	0.58	0.00	0.08	1.00	0.00
Sat Flow, veh/h	1146	1900	1560	1405	1900	1585	552	3526	1572	1781	1870	1108
Grp Volume(v), veh/h	254	10	0	3	13	0	74	950	0	84	1029	0
Grp Sat Flow(s),veh/h/ln	1146	1900	1560	1405	1900	1585	552	1763	1572	1781	1870	1108
Q Serve(g_s), s	26.1	0.5	0.0	0.2	0.6	0.0	7.7	18.5	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	26.8	0.5	0.0	0.7	0.6	0.0	7.7	18.5	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	457		392	457		382	2055		383	1249	
V/C Ratio(X)	0.77	0.02		0.01	0.03		0.19	0.46		0.22	0.82	
Avail Cap(c_a), veh/h	336	467		400	467		382	2055		454	1249	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.70	0.70	0.00
Uniform Delay (d), s/veh	45.1	34.8	0.0	35.1	34.9	0.0	12.1	14.3	0.0	9.8	0.0	0.0
Incr Delay (d2), s/veh	10.3	0.0	0.0	0.0	0.0	0.0	1.1	0.8	0.0	0.2	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.2	0.0	0.1	0.3	0.0	1.0	6.9	0.0	0.7	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	34.8	0.0	35.1	34.9	0.0	13.2	15.0	0.0	10.0	4.5	0.0
LnGrp LOS	E	C		D	C		B	B		B	A	
Approach Vol, veh/h		264			16			1024			1113	
Approach Delay, s/veh		54.6			34.9			14.9			4.9	
Approach LOS		D			C			B			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		85.6		34.4	10.2	75.5		34.4				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		79.5		29.5	9.5	64.5		29.5				
Max Q Clear Time (g_c+I1), s		2.0		28.8	4.2	20.5		2.7				
Green Ext Time (p_c), s		26.7		0.1	0.1	17.4		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									

Notes

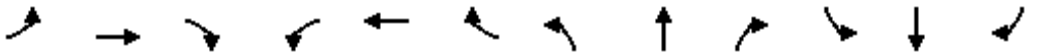
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	61	127	94	25	286	331	586	52	103	670	115
Future Volume (vph)	76	61	127	94	25	286	331	586	52	103	670	115
Lane Group Flow (vph)	0	146	135	0	127	304	352	623	55	110	713	122
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	31.8	31.8	31.8	31.8	31.8	31.8	27.0	88.2	88.2	61.2	61.2	61.2
Total Split (%)	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	22.5%	73.5%	73.5%	51.0%	51.0%	51.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.74	0.37		0.78	0.60	0.70	0.46	0.04	0.25	0.72	0.13
Control Delay		69.0	9.5		77.9	9.7	26.3	7.1	2.3	19.2	28.0	3.5
Queue Delay		0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		69.0	9.6		78.0	9.7	26.3	7.1	2.3	19.2	28.1	3.5
Queue Length 50th (ft)		109	0		96	0	136	113	0	44	403	0
Queue Length 95th (ft)		171	52		156	74	m237	m242	m13	96	#655	33
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		278	459		229	591	528	1362	1229	440	996	928
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	6		2	0	0	0	0	0	6	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.53	0.30		0.56	0.51	0.67	0.46	0.04	0.25	0.72	0.13

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	61	127	94	25	286	331	586	52	103	670	115
Future Volume (veh/h)	76	61	127	94	25	286	331	586	52	103	670	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1885	1900	1870	1826	1900	1900	1856	1900
Adj Flow Rate, veh/h	81	65	0	100	27	0	352	623	0	110	713	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	1	0	2	5	0	0	3	0
Cap, veh/h	151	89		175	33		547	1445		591	1210	
Arrive On Green	0.12	0.12	0.00	0.12	0.12	0.00	0.19	1.00	0.00	0.65	0.65	0.00
Sat Flow, veh/h	893	761	1610	1034	279	1610	1781	1826	1610	814	1856	1610
Grp Volume(v), veh/h	146	0	0	127	0	0	352	623	0	110	713	0
Grp Sat Flow(s),veh/h/ln	1654	0	1610	1314	0	1610	1781	1826	1610	814	1856	1610
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	0.0	8.4	0.0	0.0	6.5	26.0	0.0
Cycle Q Clear(g_c), s	10.2	0.0	0.0	11.6	0.0	0.0	8.4	0.0	0.0	6.5	26.0	0.0
Prop In Lane	0.55		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	0		207	0		547	1445		591	1210	
V/C Ratio(X)	0.61	0.00		0.61	0.00		0.64	0.43		0.19	0.59	
Avail Cap(c_a), veh/h	403	0		354	0		700	1445		591	1210	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.82	0.82	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.2	0.0	0.0	52.0	0.0	0.0	9.1	0.0	0.0	8.4	11.8	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	2.9	0.0	0.0	1.1	0.8	0.0	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	3.9	0.0	0.0	2.5	0.3	0.0	1.1	10.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	0.0	0.0	54.9	0.0	0.0	10.2	0.8	0.0	9.1	13.9	0.0
LnGrp LOS	D	A		D	A		B	A		A	B	
Approach Vol, veh/h		146			127			975			823	
Approach Delay, s/veh		53.7			54.9			4.2			13.2	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	16.7	83.8		19.6		100.4		19.6				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	21.5	55.7		26.3		82.7		26.3				
Max Q Clear Time (g_c+I1), s	10.4	28.0		12.2		2.0		13.6				
Green Ext Time (p_c), s	0.8	11.2		0.5		10.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		14.4	
HCM 6th LOS		B	

Notes

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

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	50	135	882	910
Demand Flow Rate, veh/h	50	135	912	935
Vehicles Circulating, veh/h	961	823	76	131
Vehicles Exiting, veh/h	105	165	935	827
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.6	7.3	6.2	6.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	50	135	429	483	439	496
Cap Entry Lane, veh/h	627	705	1259	1331	1197	1270
Entry HV Adj Factor	1.000	1.000	0.966	0.968	0.975	0.973
Flow Entry, veh/h	50	135	414	467	428	482
Cap Entry, veh/h	627	705	1216	1288	1166	1236
V/C Ratio	0.080	0.191	0.341	0.363	0.367	0.390
Control Delay, s/veh	6.6	7.3	6.2	6.2	6.7	6.7
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	2	2	2	2

Intersection	
Intersection Delay, s/veh	6.4
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	309	868	672
Demand Flow Rate, veh/h	309	900	698
Vehicles Circulating, veh/h	499	26	286
Vehicles Exiting, veh/h	427	958	522
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	5.8	6.8
Approach LOS	A	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	309	423	477	328	370
Cap Entry Lane, veh/h	929	1318	1389	1038	1114
Entry HV Adj Factor	1.000	0.965	0.965	0.963	0.963
Flow Entry, veh/h	309	408	460	316	356
Cap Entry, veh/h	929	1271	1340	999	1072
V/C Ratio	0.333	0.321	0.343	0.316	0.332
Control Delay, s/veh	7.5	5.8	5.8	6.8	6.7
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	2	1	1

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	133	121	508	581
Demand Flow Rate, veh/h	134	121	529	603
Vehicles Circulating, veh/h	588	519	202	149
Vehicles Exiting, veh/h	127	175	520	491
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	5.9	7.8	8.1
Approach LOS	A	A	A	A

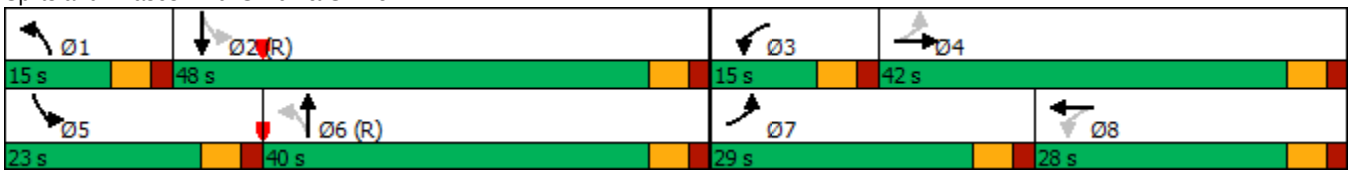
Lane	Left	Left	Left	Bypass	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized				Yield		Yield
Lane Util	1.000	1.000	1.000		1.000	
Follow-Up Headway, s	2.609	2.609	2.609		2.609	
Critical Headway, s	4.976	4.976	4.976	37	4.976	37
Entry Flow, veh/h	134	121	492	1154	566	1212
Cap Entry Lane, veh/h	758	813	1123	1.000	1185	1.000
Entry HV Adj Factor	0.989	1.000	0.957	37	0.961	37
Flow Entry, veh/h	133	121	471	1154	544	1212
Cap Entry, veh/h	750	813	1075	0.032	1139	0.031
V/C Ratio	0.177	0.149	0.438	3.4	0.478	3.2
Control Delay, s/veh	6.7	5.9	8.1	A	8.4	A
LOS	A	A	A	0	A	0
95th %tile Queue, veh	1	1	2		3	

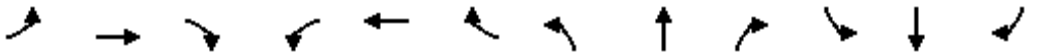
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	211	367	29	164	8	354	269	539
Future Volume (vph)	211	367	29	164	8	354	269	539
Lane Group Flow (vph)	218	397	30	215	8	426	277	789
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	29.0	42.0	15.0	28.0	15.0	40.0	23.0	48.0
Total Split (%)	24.2%	35.0%	12.5%	23.3%	12.5%	33.3%	19.2%	40.0%
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	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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.59	0.78	0.15	0.75	0.05	0.65	0.65	0.85
Control Delay	33.4	50.3	24.7	60.5	17.6	39.0	24.0	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	50.3	24.7	60.5	17.6	39.0	24.0	36.6
Queue Length 50th (ft)	119	289	15	148	3	279	116	493
Queue Length 95th (ft)	169	395	32	233	12	#471	193	#964
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	430	532	231	324	218	660	452	927
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.75	0.13	0.66	0.04	0.65	0.61	0.85

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 115 (96%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	367	18	29	164	45	8	354	59	269	539	226
Future Volume (veh/h)	211	367	18	29	164	45	8	354	59	269	539	226
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	1796	1737	1900	1633	1663	1707	1900	1826	1811	1870	1856	1811
Adj Flow Rate, veh/h	218	378	19	30	169	46	8	365	0	277	556	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	11	0	18	16	13	0	5	6	2	3	6
Cap, veh/h	296	412	21	124	195	53	362	799		543	982	
Arrive On Green	0.12	0.25	0.25	0.03	0.15	0.15	0.01	0.44	0.00	0.10	0.53	0.00
Sat Flow, veh/h	1711	1640	82	1555	1259	343	1810	1826	0	1781	1856	0
Grp Volume(v), veh/h	218	0	397	30	0	215	8	365	0	277	556	0
Grp Sat Flow(s),veh/h/ln	1711	0	1722	1555	0	1601	1810	1826	0	1781	1856	0
Q Serve(g_s), s	12.4	0.0	26.9	1.9	0.0	15.7	0.3	16.9	0.0	9.8	24.2	0.0
Cycle Q Clear(g_c), s	12.4	0.0	26.9	1.9	0.0	15.7	0.3	16.9	0.0	9.8	24.2	0.0
Prop In Lane	1.00		0.05	1.00		0.21	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	296	0	433	124	0	248	362	799		543	982	
V/C Ratio(X)	0.74	0.00	0.92	0.24	0.00	0.87	0.02	0.46		0.51	0.57	
Avail Cap(c_a), veh/h	421	0	524	206	0	300	487	799		622	982	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	43.7	42.0	0.0	49.5	19.1	23.7	0.0	16.1	19.0	0.0
Incr Delay (d2), s/veh	4.0	0.0	19.0	1.0	0.0	19.8	0.0	1.9	0.0	0.7	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	13.1	0.7	0.0	7.4	0.1	7.2	0.0	3.7	10.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	62.8	43.0	0.0	69.4	19.2	25.6	0.0	16.8	21.3	0.0
LnGrp LOS	D	A	E	D	A	E	B	C		B	C	
Approach Vol, veh/h		615			245			373			833	
Approach Delay, s/veh		54.6			66.1			25.5			19.8	
Approach LOS		D			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	69.0	8.7	35.6	17.7	58.0	20.2	24.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	42.5	9.5	36.5	17.5	34.5	23.5	22.5
Max Q Clear Time (g_c+I1), s	2.3	26.2	3.9	28.9	11.8	18.9	14.4	17.7
Green Ext Time (p_c), s	0.0	5.3	0.0	1.2	0.4	3.1	0.4	0.4

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

Notes

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

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	710	839	802
Demand Flow Rate, veh/h	757	892	811
Vehicles Circulating, veh/h	363	79	667
Vehicles Exiting, veh/h	79	1399	453
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.8	2.3	12.5
Approach LOS	A	A	B

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.530	0.470	1.000		0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	529	4.645	4.328
Entry Flow, veh/h	401	356	363	2052	381	430
Cap Entry Lane, veh/h	1021	1021	1273	0.926	731	805
Entry HV Adj Factor	0.938	0.937	0.962	490	0.989	0.988
Flow Entry, veh/h	376	334	349	1900	377	425
Cap Entry, veh/h	958	957	1224	0.258	723	796
V/C Ratio	0.393	0.349	0.285	0.0	0.521	0.534
Control Delay, s/veh	8.1	7.5	5.5	A	12.9	12.2
LOS	A	A	A	1	B	B
95th %tile Queue, veh	2	2	1		3	3

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	2	34	7	1	50
Future Vol, veh/h	31	2	34	7	1	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	10	0	0
Mvmt Flow	34	2	37	8	1	54

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	97	41	0	0	45	0
Stage 1	41	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	907	1036	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	1036	-	-	1576	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	971	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	913	1576	-
HCM Lane V/C Ratio	-	-	0.039	0.001	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	4	37	36	5	60
Future Vol, veh/h	28	4	37	36	5	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	23	0	0	0	2
Mvmt Flow	33	5	43	42	6	70

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	164	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	128	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1585	-	831	1037
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	808	1037
Mov Cap-2 Maneuver	-	-	-	-	808	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1015	-	-	1585	-
HCM Lane V/C Ratio	0.074	-	-	0.027	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	27	18	38	58	3
Future Vol, veh/h	3	27	18	38	58	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	33	0	0	3	2	0
Mvmt Flow	3	30	20	42	64	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	148	66	67	0	-	0
Stage 1	66	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.73	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	777	1003	1547	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	767	1003	1547	-	-	-
Mov Cap-2 Maneuver	767	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1547	-	973	-	-
HCM Lane V/C Ratio	0.013	-	0.034	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	151	101	59	92	17
Future Vol, veh/h	8	151	101	59	92	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	4	2	0	0
Mvmt Flow	9	170	113	66	103	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	334	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	188	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1409	-	-	-	665	906
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	849	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1409	-	-	-	660	906
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	849	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.4
HCM LOS			B

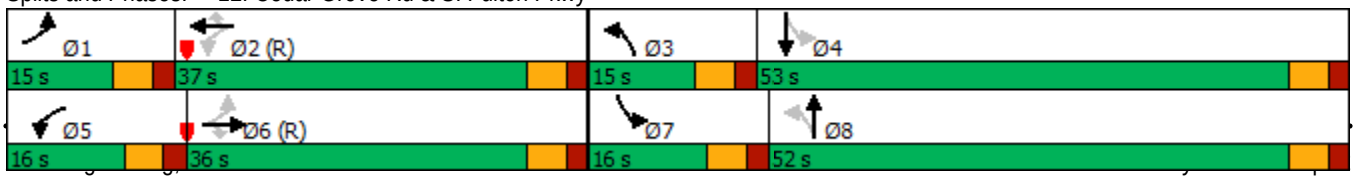
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1409	-	-	-	689
HCM Lane V/C Ratio	0.006	-	-	-	0.178
HCM Control Delay (s)	7.6	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

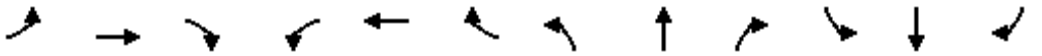
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	51	717	40	124	328	96	25	76	207	123
Future Volume (vph)	51	717	40	124	328	96	25	76	207	123
Lane Group Flow (vph)	55	771	43	133	353	103	27	306	223	172
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	36.0	36.0	16.0	37.0	37.0	15.0	52.0	16.0	53.0
Total Split (%)	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%	12.5%	43.3%	13.3%	44.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.10	0.44	0.05	0.34	0.19	0.11	0.09	0.81	1.06	0.41
Control Delay	11.9	22.6	0.1	13.5	17.4	2.7	28.1	43.0	114.9	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	22.6	0.1	13.5	17.4	2.7	28.1	43.0	114.9	38.9
Queue Length 50th (ft)	16	196	0	40	75	0	15	132	~146	109
Queue Length 95th (ft)	41	312	0	84	128	24	33	216	#275	164
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	604	1739	856	417	1852	903	339	727	210	729
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.44	0.05	0.32	0.19	0.11	0.08	0.42	1.06	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	717	40	124	328	96	25	76	208	207	123	37
Future Volume (veh/h)	51	717	40	124	328	96	25	76	208	207	123	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1870	1900	1885	1856	1885	1900	1856	1885	1885	1885	1900
Adj Flow Rate, veh/h	55	771	0	133	353	0	27	82	224	223	132	40
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, %	7	2	0	1	3	1	0	3	1	1	1	0
Cap, veh/h	539	1641		380	1700		349	93	254	251	381	116
Arrive On Green	0.04	0.46	0.00	0.06	0.48	0.00	0.02	0.21	0.21	0.09	0.27	0.27
Sat Flow, veh/h	1711	3554	1610	1795	3526	1598	1810	439	1200	1795	1389	421
Grp Volume(v), veh/h	55	771	0	133	353	0	27	0	306	223	0	172
Grp Sat Flow(s),veh/h/ln	1711	1777	1610	1795	1763	1598	1810	0	1640	1795	0	1809
Q Serve(g_s), s	2.0	17.9	0.0	4.6	6.9	0.0	1.4	0.0	21.7	10.5	0.0	9.1
Cycle Q Clear(g_c), s	2.0	17.9	0.0	4.6	6.9	0.0	1.4	0.0	21.7	10.5	0.0	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		0.23
Lane Grp Cap(c), veh/h	539	1641		380	1700		349	0	348	251	0	497
V/C Ratio(X)	0.10	0.47		0.35	0.21		0.08	0.00	0.88	0.89	0.00	0.35
Avail Cap(c_a), veh/h	615	1641		437	1700		448	0	635	251	0	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	22.2	0.0	16.7	17.9	0.0	35.5	0.0	45.8	36.7	0.0	34.9
Incr Delay (d2), s/veh	0.1	1.0	0.0	0.6	0.3	0.0	0.1	0.0	7.3	29.8	0.0	0.4
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	0.7	7.1	0.0	1.8	2.7	0.0	0.6	0.0	9.2	7.0	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	23.2	0.0	17.3	18.2	0.0	35.6	0.0	53.1	66.5	0.0	35.3
LnGrp LOS	B	C		B	B		D	A	D	E	A	D
Approach Vol, veh/h		826			486			333			395	
Approach Delay, s/veh		22.7			17.9			51.7			52.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	63.4	8.5	38.5	12.2	60.9	16.0	30.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	31.5	9.5	47.5	10.5	30.5	10.5	46.5
Max Q Clear Time (g_c+I1), s	4.0	8.9	3.4	11.1	6.6	19.9	12.5	23.7
Green Ext Time (p_c), s	0.0	3.6	0.0	0.9	0.1	5.4	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

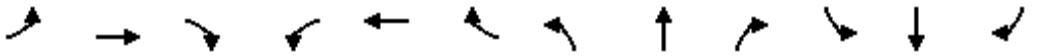
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	8	62	8	4	103	57	1246	235	214	868	8
Future Volume (vph)	321	8	62	8	4	103	57	1246	235	214	868	8
Lane Group Flow (vph)	331	8	64	8	4	106	59	1285	242	221	895	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	65.0	65.0	65.0	15.0	80.0	80.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	54.2%	54.2%	54.2%	12.5%	66.7%	66.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.89	0.02	0.14	0.02	0.01	0.21	0.30	0.71	0.26	0.82	0.75	0.01
Control Delay	68.8	31.0	6.6	31.1	30.8	7.1	23.1	25.7	4.7	51.4	16.1	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.8	31.0	6.6	31.1	30.8	7.1	23.1	25.7	4.7	51.4	16.2	2.4
Queue Length 50th (ft)	240	5	0	5	2	0	26	404	18	113	260	0
Queue Length 95th (ft)	#387	17	28	17	11	42	62	491	62	#234	437	m0
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	412	546	485	410	437	539	199	1801	917	271	1198	1056
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	3	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.01	0.13	0.02	0.01	0.20	0.30	0.71	0.26	0.82	0.75	0.01

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 1 (1%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	8	62	8	4	103	57	1246	235	214	868	8
Future Volume (veh/h)	321	8	62	8	4	103	57	1246	235	214	868	8
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	1900	1900	1796	1900	1530	1900	1752	1856	1885	1900	1856	1900
Adj Flow Rate, veh/h	331	8	0	8	4	0	59	1285	0	221	895	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	7	0	25	0	10	3	1	0	3	0
Cap, veh/h	414	472		411	380		376	1910		312	1224	
Arrive On Green	0.25	0.25	0.00	0.25	0.25	0.00	0.54	0.54	0.00	0.14	1.00	0.00
Sat Flow, veh/h	1435	1900	1522	1430	1530	1610	582	3526	1598	1810	1856	1610
Grp Volume(v), veh/h	331	8	0	8	4	0	59	1285	0	221	895	0
Grp Sat Flow(s),veh/h/ln	1435	1900	1522	1430	1530	1610	582	1763	1598	1810	1856	1610
Q Serve(g_s), s	27.1	0.4	0.0	0.5	0.2	0.0	6.2	31.5	0.0	6.6	0.0	0.0
Cycle Q Clear(g_c), s	27.3	0.4	0.0	0.9	0.2	0.0	6.2	31.5	0.0	6.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	472		411	380		376	1910		312	1224	
V/C Ratio(X)	0.80	0.02		0.02	0.01		0.16	0.67		0.71	0.73	
Avail Cap(c_a), veh/h	470	546		466	440		376	1910		325	1224	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	44.3	34.0	0.0	34.4	34.0	0.0	14.0	19.8	0.0	16.8	0.0	0.0
Incr Delay (d2), s/veh	8.5	0.0	0.0	0.0	0.0	0.0	0.9	1.9	0.0	5.0	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.2	0.0	0.2	0.1	0.0	0.9	12.3	0.0	2.6	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	34.0	0.0	34.4	34.0	0.0	14.9	21.7	0.0	21.7	2.9	0.0
LnGrp LOS	D	C		C	C		B	C		C	A	
Approach Vol, veh/h		339			12			1344			1116	
Approach Delay, s/veh		52.3			34.2			21.4			6.6	
Approach LOS		D			C			C			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		84.7		35.3	14.2	70.5		35.3				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		74.5		34.5	9.5	59.5		34.5				
Max Q Clear Time (g_c+I1), s		2.0		29.3	8.6	33.5		2.9				
Green Ext Time (p_c), s		19.2		0.5	0.1	17.6		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	27	121	59	33	267	270	973	70	78	711	66
Future Volume (vph)	112	27	121	59	33	267	270	973	70	78	711	66
Lane Group Flow (vph)	0	143	125	0	95	275	278	1003	72	80	733	68
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	15.0	85.0	85.0	70.0	70.0	70.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	12.5%	70.8%	70.8%	58.3%	58.3%	58.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.71	0.36		0.56	0.74	0.59	0.72	0.06	0.28	0.67	0.07
Control Delay		66.8	9.9		58.6	33.7	18.6	8.8	0.6	17.2	21.9	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		66.8	9.9		58.6	33.7	18.6	8.8	0.6	17.2	21.9	2.9
Queue Length 50th (ft)		107	0		69	94	55	189	0	30	375	0
Queue Length 95th (ft)		167	50		119	179	m156	245	m2	71	578	20
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		325	491		276	509	472	1396	1239	283	1089	983
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.44	0.25		0.34	0.54	0.59	0.72	0.06	0.28	0.67	0.07

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	27	121	59	33	267	270	973	70	78	711	66
Future Volume (veh/h)	112	27	121	59	33	267	270	973	70	78	711	66
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	1900	1900	1900	1900	1900	1900	1885	1856	1900	1900	1856	1900
Adj Flow Rate, veh/h	115	28	0	61	34	0	278	1003	0	80	733	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	3	0	0	3	0
Cap, veh/h	192	34		159	79		525	1474		449	1265	
Arrive On Green	0.11	0.11	0.00	0.11	0.11	0.00	0.13	1.00	0.00	0.68	0.68	0.00
Sat Flow, veh/h	1206	294	1610	964	692	1610	1795	1856	1610	571	1856	1610
Grp Volume(v), veh/h	143	0	0	95	0	0	278	1003	0	80	733	0
Grp Sat Flow(s),veh/h/ln	1500	0	1610	1655	0	1610	1795	1856	1610	571	1856	1610
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	6.2	24.9	0.0
Cycle Q Clear(g_c), s	11.2	0.0	0.0	6.3	0.0	0.0	5.9	0.0	0.0	6.2	24.9	0.0
Prop In Lane	0.80		1.00	0.64		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	0		238	0		525	1474		449	1265	
V/C Ratio(X)	0.63	0.00		0.40	0.00		0.53	0.68		0.18	0.58	
Avail Cap(c_a), veh/h	419	0		442	0		548	1474		449	1265	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.63	0.63	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	49.8	0.0	0.0	8.1	0.0	0.0	7.1	10.1	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	1.1	0.0	0.0	0.6	1.6	0.0	0.9	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	2.8	0.0	0.0	1.6	0.7	0.0	0.8	9.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	0.0	50.9	0.0	0.0	8.6	1.6	0.0	7.9	12.0	0.0
LnGrp LOS	D	A		D	A		A	A		A	B	
Approach Vol, veh/h		143			95			1281			813	
Approach Delay, s/veh		54.9			50.9			3.1			11.6	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.5	87.3		19.2		100.8		19.2				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	9.5	64.5		29.5		79.5		29.5				
Max Q Clear Time (g_c+I1), s	7.9	26.9		13.2		2.0		8.3				
Green Ext Time (p_c), s	0.1	13.3		0.5		25.1		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		11.2	
HCM 6th LOS		B	

Notes

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

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	16	160	1148	857
Demand Flow Rate, veh/h	16	160	1168	882
Vehicles Circulating, veh/h	977	1052	34	110
Vehicles Exiting, veh/h	15	150	959	1102
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	9.9	7.0	6.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.471	0.529
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	16	160	549	619	415	467
Cap Entry Lane, veh/h	619	581	1308	1380	1220	1293
Entry HV Adj Factor	1.000	1.000	0.982	0.983	0.971	0.973
Flow Entry, veh/h	16	160	539	608	403	454
Cap Entry, veh/h	619	581	1285	1356	1184	1258
V/C Ratio	0.026	0.276	0.420	0.449	0.340	0.361
Control Delay, s/veh	6.1	9.9	6.9	7.0	6.3	6.3
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	2	2	2	2

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	328	1022	564
Demand Flow Rate, veh/h	333	1049	580
Vehicles Circulating, veh/h	691	17	315
Vehicles Exiting, veh/h	375	878	709
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.1	6.3	6.3
Approach LOS	B	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.471	0.529
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	333	493	556	273	307
Cap Entry Lane, veh/h	789	1329	1400	1010	1086
Entry HV Adj Factor	0.985	0.975	0.975	0.970	0.973
Flow Entry, veh/h	328	481	542	265	299
Cap Entry, veh/h	777	1295	1364	980	1057
V/C Ratio	0.422	0.371	0.397	0.270	0.283
Control Delay, s/veh	10.1	6.3	6.4	6.4	6.2
LOS	B	A	A	A	A
95th %tile Queue, veh	2	2	2	1	1

Intersection	
Intersection Delay, s/veh	8.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	146	227	625	401
Demand Flow Rate, veh/h	146	230	654	421
Vehicles Circulating, veh/h	459	663	148	145
Vehicles Exiting, veh/h	90	110	457	748
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	9.3	9.0	6.4
Approach LOS	A	A	A	A

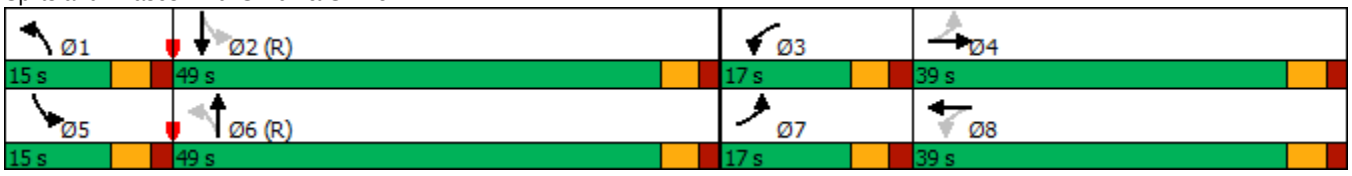
Lane	Left	Left	Left	Bypass	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized				Yield		Yield
Lane Util	1.000	1.000	1.000		1.000	
Follow-Up Headway, s	2.609	2.609	2.609		2.609	
Critical Headway, s	4.976	4.976	4.976	29	4.976	17
Entry Flow, veh/h	146	230	625	1233	404	1259
Cap Entry Lane, veh/h	864	702	1187	0.962	1190	1.000
Entry HV Adj Factor	1.000	0.988	0.954	28	0.950	17
Flow Entry, veh/h	146	227	597	1186	384	1259
Cap Entry, veh/h	864	693	1132	0.024	1130	0.014
V/C Ratio	0.169	0.328	0.527	3.2	0.339	3.0
Control Delay, s/veh	5.9	9.3	9.3	A	6.5	A
LOS	A	A	A	0	A	0
95th %tile Queue, veh	1	1	3		2	

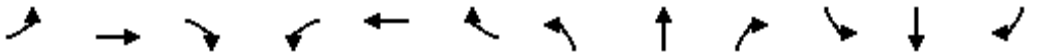
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	210	121	48	268	10	597	67	348
Future Volume (vph)	210	121	48	268	10	597	67	348
Lane Group Flow (vph)	212	131	48	472	10	627	68	595
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	17.0	39.0	17.0	39.0	15.0	49.0	15.0	49.0
Total Split (%)	14.2%	32.5%	14.2%	32.5%	12.5%	40.8%	12.5%	40.8%
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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.95	0.26	0.12	0.95	0.04	0.85	0.36	0.71
Control Delay	81.0	32.3	21.9	70.9	16.5	46.8	21.9	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	32.3	21.9	70.9	16.5	46.8	21.9	30.5
Queue Length 50th (ft)	115	74	22	337	4	456	27	328
Queue Length 95th (ft)	#275	132	47	#544	13	#705	53	#611
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	222	501	469	507	305	736	210	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.26	0.10	0.93	0.03	0.85	0.32	0.71

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	121	9	48	268	199	10	597	24	67	348	241
Future Volume (veh/h)	210	121	9	48	268	199	10	597	24	67	348	241
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	1811	1559	1900	1737	1841	1900	1900	1870	1352	1826	1870	1841
Adj Flow Rate, veh/h	212	122	9	48	271	201	10	603	0	68	352	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	23	0	11	4	0	0	2	37	5	2	4
Cap, veh/h	229	490	36	441	274	203	393	756		221	804	
Arrive On Green	0.10	0.34	0.34	0.03	0.28	0.28	0.01	0.40	0.00	0.04	0.43	0.00
Sat Flow, veh/h	1725	1434	106	1654	982	728	1810	1870	0	1739	1870	0
Grp Volume(v), veh/h	212	0	131	48	0	472	10	603	0	68	352	0
Grp Sat Flow(s),veh/h/ln	1725	0	1540	1654	0	1710	1810	1870	0	1739	1870	0
Q Serve(g_s), s	10.2	0.0	7.3	2.5	0.0	33.0	0.4	34.0	0.0	2.7	15.9	0.0
Cycle Q Clear(g_c), s	10.2	0.0	7.3	2.5	0.0	33.0	0.4	34.0	0.0	2.7	15.9	0.0
Prop In Lane	1.00		0.07	1.00		0.43	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	229	0	526	441	0	477	393	756		221	804	
V/C Ratio(X)	0.93	0.00	0.25	0.11	0.00	0.99	0.03	0.80		0.31	0.44	
Avail Cap(c_a), veh/h	229	0	526	545	0	477	514	756		294	804	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.6	0.0	28.4	29.2	0.0	43.1	21.3	31.4	0.0	24.7	24.0	0.0
Incr Delay (d2), s/veh	39.5	0.0	0.2	0.1	0.0	38.2	0.0	8.6	0.0	0.8	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	2.6	0.9	0.0	18.1	0.2	16.1	0.0	1.1	7.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	0.0	28.7	29.3	0.0	81.3	21.3	40.0	0.0	25.5	25.8	0.0
LnGrp LOS	E	A	C	C	A	F	C	D		C	C	
Approach Vol, veh/h		343			520			613			420	
Approach Delay, s/veh		54.3			76.5			39.7			25.7	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	57.1	9.5	46.5	10.0	54.0	17.0	39.0
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	43.5	11.5	33.5	9.5	43.5	11.5	33.5
Max Q Clear Time (g_c+I1), s	2.4	17.9	4.5	9.3	4.7	36.0	12.2	35.0
Green Ext Time (p_c), s	0.0	3.7	0.0	0.5	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	49.3
HCM 6th LOS	D

Notes

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

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	689	1519	465
Demand Flow Rate, veh/h	712	1556	474
Vehicles Circulating, veh/h	990	60	563
Vehicles Exiting, veh/h	60	977	1139
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	19.6	9.7	7.5
Approach LOS	C	A	A

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.529	0.471	1.000		0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	566	4.645	4.328
Entry Flow, veh/h	377	335	990	1995	223	251
Cap Entry Lane, veh/h	577	577	1298	0.952	804	880
Entry HV Adj Factor	0.969	0.967	0.990	539	0.980	0.982
Flow Entry, veh/h	365	324	980	1900	218	246
Cap Entry, veh/h	559	558	1285	0.284	788	864
V/C Ratio	0.654	0.581	0.763	0.0	0.277	0.285
Control Delay, s/veh	21.0	17.9	15.0	A	7.7	7.2
LOS	C	C	B	1	A	A
95th %tile Queue, veh	5	4	8		1	1

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	3	56	19	3	38
Future Vol, veh/h	17	3	56	19	3	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	17	0	0	0	0	7
Mvmt Flow	19	3	62	21	3	42

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	121	73	0	0	83	0
Stage 1	73	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.57	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	840	995	-	-	1527	-
Stage 1	913	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	838	995	-	-	1527	-
Mov Cap-2 Maneuver	838	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	858	1527	-
HCM Lane V/C Ratio	-	-	0.026	0.002	-
HCM Control Delay (s)	-	-	9.3	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	5	56	35	8	54
Future Vol, veh/h	46	5	56	35	8	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	52	6	64	40	9	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	58	0	223	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1546	-	770	1018
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1546	-	738	1018
Mov Cap-2 Maneuver	-	-	-	-	738	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	831	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	970	-	-	1546	-
HCM Lane V/C Ratio	0.073	-	-	0.041	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	18	23	54	44	9
Future Vol, veh/h	7	18	23	54	44	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	14	0	0	0	50
Mvmt Flow	8	21	27	64	52	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	176	58	63	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	118	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	818	975	1553	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	803	975	1553	-	-	-
Mov Cap-2 Maneuver	803	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1553	-	920	-	-
HCM Lane V/C Ratio	0.017	-	0.032	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	108	211	81	51	8
Future Vol, veh/h	11	108	211	81	51	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	12	117	229	88	55	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	317	0	-	0	414	273
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	141	-
Critical Hdwy	4.1	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1255	-	-	-	595	771
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	886	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1255	-	-	-	589	771
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	765	-
Stage 2	-	-	-	-	886	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.6
HCM LOS			B

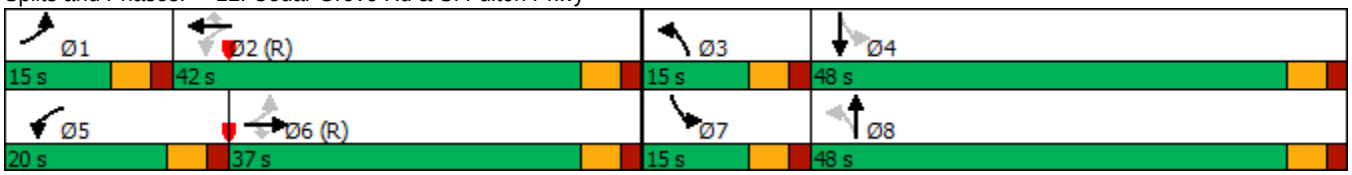
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1255	-	-	-	608
HCM Lane V/C Ratio	0.01	-	-	-	0.105
HCM Control Delay (s)	7.9	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

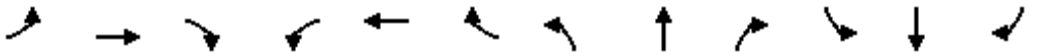
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	54	326	34	274	700	144	42	220	127	144
Future Volume (vph)	54	326	34	274	700	144	42	220	127	144
Lane Group Flow (vph)	61	366	38	308	787	162	47	450	143	189
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	37.0	37.0	20.0	42.0	42.0	15.0	48.0	15.0	48.0
Total Split (%)	12.5%	30.8%	30.8%	16.7%	35.0%	35.0%	12.5%	40.0%	12.5%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.21	0.32	0.06	0.59	0.55	0.22	0.11	0.86	0.61	0.32
Control Delay	20.4	33.1	0.2	25.1	31.1	9.2	20.1	53.2	33.2	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	33.1	0.2	25.1	31.1	9.2	20.1	53.2	33.2	31.2
Queue Length 50th (ft)	24	115	0	140	250	18	22	304	70	109
Queue Length 95th (ft)	54	167	0	234	356	72	40	389	100	158
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	320	1159	596	530	1440	724	443	648	235	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.32	0.06	0.58	0.55	0.22	0.11	0.69	0.61	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	326	34	274	700	144	42	220	181	127	144	24
Future Volume (veh/h)	54	326	34	274	700	144	42	220	181	127	144	24
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	1900	1870	1856	1900	1856	1870	1796	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	61	366	0	308	787	0	47	247	203	143	162	27
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, %	0	2	3	0	3	2	7	1	0	0	2	0
Cap, veh/h	309	1217		554	1505		394	270	222	220	501	83
Arrive On Green	0.04	0.34	0.00	0.12	0.43	0.00	0.03	0.28	0.28	0.07	0.32	0.32
Sat Flow, veh/h	1810	3554	1572	1810	3526	1585	1711	957	787	1810	1563	260
Grp Volume(v), veh/h	61	366	0	308	787	0	47	0	450	143	0	189
Grp Sat Flow(s),veh/h/ln	1810	1777	1572	1810	1763	1585	1711	0	1744	1810	0	1823
Q Serve(g_s), s	2.6	9.1	0.0	12.8	19.8	0.0	2.3	0.0	30.0	6.6	0.0	9.4
Cycle Q Clear(g_c), s	2.6	9.1	0.0	12.8	19.8	0.0	2.3	0.0	30.0	6.6	0.0	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.14
Lane Grp Cap(c), veh/h	309	1217		554	1505		394	0	492	220	0	584
V/C Ratio(X)	0.20	0.30		0.56	0.52		0.12	0.00	0.91	0.65	0.00	0.32
Avail Cap(c_a), veh/h	387	1217		554	1505		473	0	618	235	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	28.9	0.0	20.3	25.4	0.0	29.0	0.0	41.6	31.2	0.0	30.9
Incr Delay (d2), s/veh	0.3	0.6	0.0	1.2	1.3	0.0	0.1	0.0	15.8	5.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.8	0.0	5.1	7.9	0.0	0.9	0.0	14.5	3.1	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	29.6	0.0	21.5	26.7	0.0	29.2	0.0	57.5	36.9	0.0	31.2
LnGrp LOS	C	C		C	C		C	A	E	D	A	C
Approach Vol, veh/h		427			1095			497			332	
Approach Delay, s/veh		28.9			25.2			54.8			33.7	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	56.7	9.5	44.0	20.0	46.6	14.0	39.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	36.5	9.5	42.5	14.5	31.5	9.5	42.5
Max Q Clear Time (g_c+I1), s	4.6	21.8	4.3	11.4	14.8	11.1	8.6	32.0
Green Ext Time (p_c), s	0.0	6.9	0.0	1.0	0.0	3.6	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

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

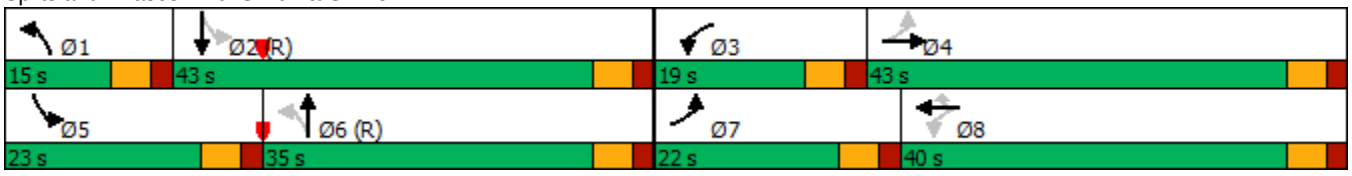
Future “No-Build” Intersection Analysis with Improvements

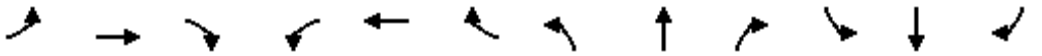
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	211	367	29	164	45	8	354	269	539
Future Volume (vph)	211	367	29	164	45	8	354	269	539
Lane Group Flow (vph)	218	397	30	169	46	8	426	277	789
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	30.5	15.0	28.5	15.0	28.5
Total Split (s)	22.0	43.0	19.0	40.0	40.0	15.0	35.0	23.0	43.0
Total Split (%)	18.3%	35.8%	15.8%	33.3%	33.3%	12.5%	29.2%	19.2%	35.8%
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	Lead	Lag	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
v/c Ratio	0.55	0.78	0.15	0.56	0.11	0.05	0.68	0.64	0.85
Control Delay	31.7	50.0	23.4	49.6	0.6	19.4	42.4	24.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	50.0	23.4	49.6	0.6	19.4	42.4	24.1	36.7
Queue Length 50th (ft)	119	290	15	118	0	3	291	115	492
Queue Length 95th (ft)	157	371	30	170	0	13	#532	208	#1019
Internal Link Dist (ft)		3937		1310			3134		1962
Turn Bay Length (ft)	245		205		250	195		190	
Base Capacity (vph)	405	548	282	470	534	219	629	454	929
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.72	0.11	0.36	0.09	0.04	0.68	0.61	0.85

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	367	18	29	164	45	8	354	59	269	539	226
Future Volume (veh/h)	211	367	18	29	164	45	8	354	59	269	539	226
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	1796	1737	1900	1633	1663	1707	1900	1826	1811	1870	1856	1811
Adj Flow Rate, veh/h	218	378	19	30	169	46	8	365	0	277	556	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	11	0	18	16	13	0	5	6	2	3	6
Cap, veh/h	336	413	21	125	262	228	361	797		542	981	
Arrive On Green	0.12	0.25	0.25	0.03	0.16	0.16	0.01	0.44	0.00	0.10	0.53	0.00
Sat Flow, veh/h	1711	1640	82	1555	1663	1447	1810	1826	0	1781	1856	0
Grp Volume(v), veh/h	218	0	397	30	169	46	8	365	0	277	556	0
Grp Sat Flow(s),veh/h/ln	1711	0	1722	1555	1663	1447	1810	1826	0	1781	1856	0
Q Serve(g_s), s	12.4	0.0	26.9	1.9	11.4	3.3	0.3	16.9	0.0	9.8	24.2	0.0
Cycle Q Clear(g_c), s	12.4	0.0	26.9	1.9	11.4	3.3	0.3	16.9	0.0	9.8	24.2	0.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	336	0	434	125	262	228	361	797		542	981	
V/C Ratio(X)	0.65	0.00	0.92	0.24	0.64	0.20	0.02	0.46		0.51	0.57	
Avail Cap(c_a), veh/h	365	0	538	259	478	416	487	797		621	981	
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.1	0.0	43.6	41.8	47.4	44.0	19.2	23.8	0.0	16.1	19.0	0.0
Incr Delay (d2), s/veh	3.6	0.0	18.0	1.0	2.7	0.4	0.0	1.9	0.0	0.7	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	12.9	0.7	4.7	1.2	0.1	7.2	0.0	3.7	10.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	61.6	42.8	50.1	44.4	19.2	25.7	0.0	16.8	21.4	0.0
LnGrp LOS	D	A	E	D	D	D	B	C		B	C	
Approach Vol, veh/h		615			245			373			833	
Approach Delay, s/veh		53.5			48.1			25.5			19.9	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	69.0	8.7	35.7	17.7	57.9	20.0	24.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	37.5	13.5	37.5	17.5	29.5	16.5	34.5
Max Q Clear Time (g_c+I1), s	2.3	26.2	3.9	28.9	11.8	18.9	14.4	13.4
Green Ext Time (p_c), s	0.0	4.2	0.0	1.3	0.4	2.5	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

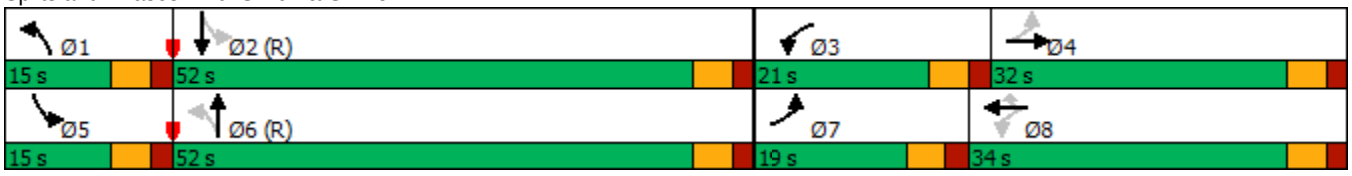
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	210	121	48	268	199	10	597	67	348
Future Volume (vph)	210	121	48	268	199	10	597	67	348
Lane Group Flow (vph)	212	131	48	271	201	10	627	68	595
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	30.5	15.0	28.5	15.0	28.5
Total Split (s)	19.0	32.0	21.0	34.0	34.0	15.0	52.0	15.0	52.0
Total Split (%)	15.8%	26.7%	17.5%	28.3%	28.3%	12.5%	43.3%	12.5%	43.3%
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	Lead	Lag	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
v/c Ratio	0.73	0.33	0.15	0.79	0.43	0.03	0.73	0.25	0.62
Control Delay	44.0	38.6	26.1	62.6	8.2	14.0	34.0	15.8	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	38.6	26.1	62.6	8.2	14.0	34.0	15.8	23.5
Queue Length 50th (ft)	121	83	25	201	0	3	397	23	277
Queue Length 95th (ft)	175	137	49	282	60	13	#667	50	541
Internal Link Dist (ft)		3937		1310			3134		1962
Turn Bay Length (ft)	245		205		250	195		190	
Base Capacity (vph)	292	394	426	433	536	389	863	290	956
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.33	0.11	0.63	0.38	0.03	0.73	0.23	0.62

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	121	9	48	268	199	10	597	24	67	348	241
Future Volume (veh/h)	210	121	9	48	268	199	10	597	24	67	348	241
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	1811	1559	1900	1737	1841	1900	1900	1870	1352	1826	1870	1841
Adj Flow Rate, veh/h	212	122	9	48	271	201	10	603	0	68	352	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	23	0	11	4	0	0	2	37	5	2	4
Cap, veh/h	279	359	27	315	315	276	510	927		329	975	
Arrive On Green	0.11	0.25	0.25	0.03	0.17	0.17	0.01	0.50	0.00	0.04	0.52	0.00
Sat Flow, veh/h	1725	1434	106	1654	1841	1610	1810	1870	0	1739	1870	0
Grp Volume(v), veh/h	212	0	131	48	271	201	10	603	0	68	352	0
Grp Sat Flow(s),veh/h/ln	1725	0	1540	1654	1841	1610	1810	1870	0	1739	1870	0
Q Serve(g_s), s	11.8	0.0	8.4	2.9	17.2	14.2	0.3	28.8	0.0	2.3	13.3	0.0
Cycle Q Clear(g_c), s	11.8	0.0	8.4	2.9	17.2	14.2	0.3	28.8	0.0	2.3	13.3	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	279	0	386	315	315	276	510	927		329	975	
V/C Ratio(X)	0.76	0.00	0.34	0.15	0.86	0.73	0.02	0.65		0.21	0.36	
Avail Cap(c_a), veh/h	279	0	386	474	437	382	632	927		401	975	
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.4	0.0	36.8	39.1	48.3	47.1	15.1	22.5	0.0	17.4	16.9	0.0
Incr Delay (d2), s/veh	11.5	0.0	0.5	0.2	11.9	4.3	0.0	3.5	0.0	0.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	3.1	1.1	8.5	5.8	0.1	12.5	0.0	0.9	5.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	0.0	37.4	39.3	60.2	51.4	15.1	26.1	0.0	17.7	18.0	0.0
LnGrp LOS	D	A	D	D	E	D	B	C		B	B	
Approach Vol, veh/h		343			520			613			420	
Approach Delay, s/veh		43.2			54.9			25.9			17.9	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	68.0	9.5	35.6	10.0	65.0	19.0	26.0
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	46.5	15.5	26.5	9.5	46.5	13.5	28.5
Max Q Clear Time (g_c+I1), s	2.3	15.3	4.9	10.4	4.3	30.8	13.8	19.2
Green Ext Time (p_c), s	0.0	4.0	0.0	0.5	0.0	5.7	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Notes

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

Future “Build” Intersections Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	9	62	3	12	82	68	903	172	77	1036	14
Future Volume (vph)	234	9	62	3	12	82	68	903	172	77	1036	14
Lane Group Flow (vph)	254	10	67	3	13	89	74	982	187	84	1126	15
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	70.0	70.0	70.0	15.0	85.0	85.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	58.3%	58.3%	58.3%	12.5%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.94	0.02	0.16	0.01	0.03	0.20	0.87	0.48	0.19	0.24	0.90	0.02
Control Delay	87.2	34.7	8.0	34.3	34.8	8.4	97.5	16.5	2.3	5.9	17.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.2	34.7	8.0	34.3	34.8	8.4	97.5	16.5	2.3	5.9	17.9	0.9
Queue Length 50th (ft)	192	6	0	2	8	0	49	236	0	11	176	0
Queue Length 95th (ft)	#352	20	33	10	25	42	#157	302	33	m19	#1059	m0
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	279	467	436	343	467	456	85	2038	990	372	1249	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.02	0.15	0.01	0.03	0.20	0.87	0.48	0.19	0.23	0.90	0.02

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	9	62	3	12	82	68	903	172	77	1036	14
Future Volume (veh/h)	234	9	62	3	12	82	68	903	172	77	1036	14
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	1530	1900	1841	1870	1900	1870	1885	1856	1856	1870	1870	1307
Adj Flow Rate, veh/h	254	10	0	3	13	0	74	982	0	84	1126	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	25	0	4	2	0	2	1	3	3	2	2	40
Cap, veh/h	329	457		392	457		354	2055		371	1249	
Arrive On Green	0.24	0.24	0.00	0.24	0.24	0.00	0.58	0.58	0.00	0.08	1.00	0.00
Sat Flow, veh/h	1146	1900	1560	1405	1900	1585	504	3526	1572	1781	1870	1108
Grp Volume(v), veh/h	254	10	0	3	13	0	74	982	0	84	1126	0
Grp Sat Flow(s),veh/h/ln	1146	1900	1560	1405	1900	1585	504	1763	1572	1781	1870	1108
Q Serve(g_s), s	26.1	0.5	0.0	0.2	0.6	0.0	8.6	19.3	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	26.8	0.5	0.0	0.7	0.6	0.0	8.6	19.3	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	457		392	457		354	2055		371	1249	
V/C Ratio(X)	0.77	0.02		0.01	0.03		0.21	0.48		0.23	0.90	
Avail Cap(c_a), veh/h	336	467		400	467		354	2055		443	1249	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.51	0.51	0.00
Uniform Delay (d), s/veh	45.1	34.8	0.0	35.1	34.9	0.0	12.2	14.5	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	10.3	0.0	0.0	0.0	0.0	0.0	1.3	0.8	0.0	0.2	5.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.2	0.0	0.1	0.3	0.0	1.0	7.3	0.0	0.7	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	34.8	0.0	35.1	34.9	0.0	13.6	15.3	0.0	10.2	5.9	0.0
LnGrp LOS	E	C		D	C		B	B		B	A	
Approach Vol, veh/h		264			16			1056			1210	
Approach Delay, s/veh		54.6			34.9			15.1			6.2	
Approach LOS		D			C			B			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		85.6		34.4	10.2	75.5		34.4				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		79.5		29.5	9.5	64.5		29.5				
Max Q Clear Time (g_c+I1), s		2.0		28.8	4.2	21.3		2.7				
Green Ext Time (p_c), s		33.3		0.1	0.1	18.2		0.0				

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

Notes

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

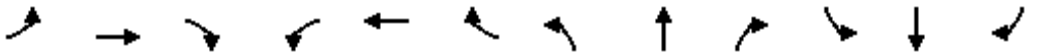
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	61	127	94	25	286	331	615	52	103	759	115
Future Volume (vph)	76	61	127	94	25	286	331	615	52	103	759	115
Lane Group Flow (vph)	0	146	135	0	127	304	352	654	55	110	807	122
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	26.0	88.0	88.0	62.0	62.0	62.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	21.7%	73.3%	73.3%	51.7%	51.7%	51.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.74	0.37		0.78	0.60	0.77	0.48	0.04	0.28	0.86	0.14
Control Delay		68.7	9.5		77.5	9.7	42.5	5.6	0.7	20.9	38.4	3.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		68.7	9.5		77.5	9.7	42.5	5.6	0.7	20.9	38.4	3.5
Queue Length 50th (ft)		109	0		96	0	190	112	0	50	566	0
Queue Length 95th (ft)		171	52		156	74	m#335	m195	m4	96	#842	33
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		281	461		231	593	455	1361	1228	400	935	879
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.52	0.29		0.55	0.51	0.77	0.48	0.04	0.28	0.86	0.14

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	61	127	94	25	286	331	615	52	103	759	115
Future Volume (veh/h)	76	61	127	94	25	286	331	615	52	103	759	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1885	1900	1870	1826	1900	1900	1856	1900
Adj Flow Rate, veh/h	81	65	0	100	27	0	352	654	0	110	807	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	1	0	2	5	0	0	3	0
Cap, veh/h	151	89		175	33		485	1445		576	1211	
Arrive On Green	0.12	0.12	0.00	0.12	0.12	0.00	0.19	1.00	0.00	0.65	0.65	0.00
Sat Flow, veh/h	893	761	1610	1034	279	1610	1781	1826	1610	791	1856	1610
Grp Volume(v), veh/h	146	0	0	127	0	0	352	654	0	110	807	0
Grp Sat Flow(s),veh/h/ln	1654	0	1610	1314	0	1610	1781	1826	1610	791	1856	1610
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	0.0	8.4	0.0	0.0	6.7	32.1	0.0
Cycle Q Clear(g_c), s	10.2	0.0	0.0	11.6	0.0	0.0	8.4	0.0	0.0	6.7	32.1	0.0
Prop In Lane	0.55		1.00	0.79		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	0		208	0		485	1445		576	1211	
V/C Ratio(X)	0.61	0.00		0.61	0.00		0.73	0.45		0.19	0.67	
Avail Cap(c_a), veh/h	405	0		356	0		624	1445		576	1211	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.82	0.82	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.2	0.0	0.0	52.0	0.0	0.0	12.1	0.0	0.0	8.4	12.8	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	2.9	0.0	0.0	2.5	0.8	0.0	0.7	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	3.9	0.0	0.0	3.8	0.3	0.0	1.1	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	0.0	0.0	54.9	0.0	0.0	14.6	0.8	0.0	9.1	15.7	0.0
LnGrp LOS	D	A		D	A		B	A		A	B	
Approach Vol, veh/h		146			127			1006			917	
Approach Delay, s/veh		53.7			54.9			5.7			14.9	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	16.6	83.8		19.6		100.4		19.6				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	20.5	56.5		26.5		82.5		26.5				
Max Q Clear Time (g_c+I1), s	10.4	34.1		12.2		2.0		13.6				
Green Ext Time (p_c), s	0.8	11.6		0.5		10.8		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		15.6	
HCM 6th LOS		B	

Notes

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

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	50	135	912	1001
Demand Flow Rate, veh/h	50	135	943	1028
Vehicles Circulating, veh/h	1054	854	76	131
Vehicles Exiting, veh/h	105	165	1028	858
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.2	7.5	6.3	7.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	50	135	443	500	483	545
Cap Entry Lane, veh/h	580	687	1259	1331	1197	1270
Entry HV Adj Factor	1.000	1.000	0.967	0.966	0.974	0.973
Flow Entry, veh/h	50	135	428	483	470	530
Cap Entry, veh/h	580	687	1217	1286	1165	1236
V/C Ratio	0.086	0.196	0.352	0.376	0.404	0.429
Control Delay, s/veh	7.2	7.5	6.3	6.3	7.2	7.2
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	2	2	2	2

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	309	901	774
Demand Flow Rate, veh/h	309	934	804
Vehicles Circulating, veh/h	533	26	286
Vehicles Exiting, veh/h	427	1064	556
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.8	5.9	7.4
Approach LOS	A	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	309	439	495	378	426
Cap Entry Lane, veh/h	903	1318	1389	1038	1114
Entry HV Adj Factor	1.000	0.964	0.964	0.962	0.963
Flow Entry, veh/h	309	423	477	364	410
Cap Entry, veh/h	903	1271	1339	999	1072
V/C Ratio	0.342	0.333	0.356	0.364	0.383
Control Delay, s/veh	7.8	5.9	5.9	7.5	7.3
LOS	A	A	A	A	A
95th %tile Queue, veh	2	1	2	2	2

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	281	125	539	596
Demand Flow Rate, veh/h	283	125	561	618
Vehicles Circulating, veh/h	588	594	256	185
Vehicles Exiting, veh/h	163	186	615	534
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.6	5.4	6.4	6.2
Approach LOS	A	A	A	A

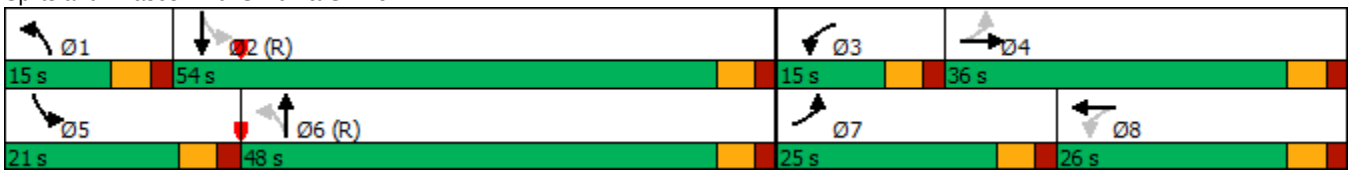
Lane	Left	Right	Left	Right	Left	Right	Bypass	Left	Right	Bypass
Designated Moves	L	TR	L	TR	L	TR	R	L	TR	R
Assumed Moves	L	TR	L	TR	L	TR	R	L	TR	R
RT Channelized							Yield			Yield
Lane Util	0.247	0.753	0.176	0.824	0.198	0.802		0.182	0.818	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535		2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	37	4.544	4.544	52
Entry Flow, veh/h	70	213	22	103	104	420	1141	103	463	1169
Cap Entry Lane, veh/h	832	832	827	827	1125	1125	1.000	1200	1200	1.000
Entry HV Adj Factor	1.000	0.992	1.000	1.000	0.981	0.952	37	1.000	0.952	52
Flow Entry, veh/h	70	211	22	103	102	400	1141	103	441	1169
Cap Entry, veh/h	832	825	827	827	1103	1071	0.032	1200	1143	0.045
V/C Ratio	0.084	0.256	0.027	0.125	0.092	0.373	3.4	0.086	0.386	3.4
Control Delay, s/veh	5.1	7.1	4.6	5.6	4.1	7.2	A	3.7	7.0	A
LOS	A	A	A	A	A	A	0	A	A	0
95th %tile Queue, veh	0	1	0	0	0	2		0	2	

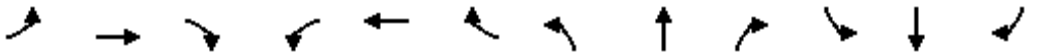
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	262	378	31	167	8	388	269	550
Future Volume (vph)	262	378	31	167	8	388	269	550
Lane Group Flow (vph)	270	409	32	218	8	468	277	818
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	25.0	36.0	15.0	26.0	15.0	48.0	21.0	54.0
Total Split (%)	20.8%	30.0%	12.5%	21.7%	12.5%	40.0%	17.5%	45.0%
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	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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.74	0.83	0.17	0.84	0.05	0.68	0.70	0.87
Control Delay	41.8	55.8	27.4	74.5	15.1	37.2	25.2	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	55.8	27.4	74.5	15.1	37.2	25.2	37.0
Queue Length 50th (ft)	153	301	16	156	3	311	115	524
Queue Length 95th (ft)	230	#503	38	#277	11	441	172	#940
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	378	494	215	280	209	692	412	938
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.83	0.15	0.78	0.04	0.68	0.67	0.87

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	378	18	31	167	45	8	388	66	269	550	243
Future Volume (veh/h)	262	378	18	31	167	45	8	388	66	269	550	243
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	1796	1737	1900	1633	1663	1707	1900	1826	1811	1870	1856	1811
Adj Flow Rate, veh/h	270	390	19	32	172	46	8	400	0	277	567	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	11	0	18	16	13	0	5	6	2	3	6
Cap, veh/h	331	445	22	140	192	51	328	756		491	943	
Arrive On Green	0.15	0.27	0.27	0.03	0.15	0.15	0.01	0.41	0.00	0.10	0.51	0.00
Sat Flow, veh/h	1711	1643	80	1555	1264	338	1810	1826	0	1781	1856	0
Grp Volume(v), veh/h	270	0	409	32	0	218	8	400	0	277	567	0
Grp Sat Flow(s),veh/h/ln	1711	0	1723	1555	0	1602	1810	1826	0	1781	1856	0
Q Serve(g_s), s	15.4	0.0	27.2	2.1	0.0	16.0	0.3	19.7	0.0	10.3	26.0	0.0
Cycle Q Clear(g_c), s	15.4	0.0	27.2	2.1	0.0	16.0	0.3	19.7	0.0	10.3	26.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	331	0	467	140	0	244	328	756		491	943	
V/C Ratio(X)	0.82	0.00	0.88	0.23	0.00	0.89	0.02	0.53		0.56	0.60	
Avail Cap(c_a), veh/h	359	0	467	221	0	274	454	756		536	943	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.0	0.0	41.8	42.0	0.0	49.9	20.9	26.4	0.0	18.1	20.9	0.0
Incr Delay (d2), s/veh	12.7	0.0	16.8	0.8	0.0	27.1	0.0	2.6	0.0	1.1	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	13.1	0.8	0.0	8.0	0.1	8.6	0.0	4.0	11.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	0.0	58.6	42.8	0.0	77.1	21.0	29.0	0.0	19.3	23.7	0.0
LnGrp LOS	D	A	E	D	A	E	C	C		B	C	
Approach Vol, veh/h		679			250			408			844	
Approach Delay, s/veh		54.3			72.7			28.9			22.2	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	66.5	8.8	38.0	18.0	55.2	23.1	23.8
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	48.5	9.5	30.5	15.5	42.5	19.5	20.5
Max Q Clear Time (g_c+I1), s	2.3	28.0	4.1	29.2	12.3	21.7	17.4	18.0
Green Ext Time (p_c), s	0.0	6.1	0.0	0.3	0.2	4.0	0.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

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

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	724	932	819
Demand Flow Rate, veh/h	772	991	828
Vehicles Circulating, veh/h	416	79	682
Vehicles Exiting, veh/h	79	1431	506
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.5	2.6	13.2
Approach LOS	A	A	B

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.530	0.470	1.000		0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	575	4.645	4.328
Entry Flow, veh/h	409	363	416	2052	389	439
Cap Entry Lane, veh/h	973	973	1273	0.926	721	795
Entry HV Adj Factor	0.938	0.937	0.962	532	0.989	0.988
Flow Entry, veh/h	384	340	400	1900	385	434
Cap Entry, veh/h	912	912	1224	0.280	713	786
V/C Ratio	0.421	0.373	0.327	0.0	0.540	0.552
Control Delay, s/veh	8.9	8.1	6.0	A	13.5	12.8
LOS	A	A	A	1	B	B
95th %tile Queue, veh	2	2	1		3	3

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	12	2	34	4	2	1	35	17	1	53	1
Future Vol, veh/h	3	12	2	34	4	2	1	35	17	1	53	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	-	-	175
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	8	10	0	0	2
Mvmt Flow	3	13	2	37	4	2	1	38	18	1	58	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	112	118	58	117	110	47	59	0	0	56	0	0
Stage 1	60	60	-	49	49	-	-	-	-	-	-	-
Stage 2	52	58	-	68	61	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	866	772	1008	864	780	1028	1545	-	-	1562	-	-
Stage 1	951	845	-	969	854	-	-	-	-	-	-	-
Stage 2	961	847	-	947	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	859	770	1008	850	778	1028	1545	-	-	1562	-	-
Mov Cap-2 Maneuver	859	770	-	850	778	-	-	-	-	-	-	-
Stage 1	950	844	-	968	853	-	-	-	-	-	-	-
Stage 2	953	846	-	929	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9.5	0.1	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1545	-	-	807	849	1562	-	-
HCM Lane V/C Ratio	0.001	-	-	0.023	0.051	0.001	-	-
HCM Control Delay (s)	7.3	-	-	9.6	9.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	31	37	82	14	60
Future Vol, veh/h	167	31	37	82	14	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	23	0	0	0	2
Mvmt Flow	194	36	43	95	16	70

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	230	0	393	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1350	-	615	828
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1350	-	594	828
Mov Cap-2 Maneuver	-	-	-	-	594	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1350	-
HCM Lane V/C Ratio	0.112	-	-	0.032	-
HCM Control Delay (s)	10.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	50	26	47	85	3
Future Vol, veh/h	3	50	26	47	85	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	33	0	0	3	2	0
Mvmt Flow	3	55	29	52	93	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	205	95	96	0	-	0
Stage 1	95	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.73	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	719	967	1510	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	705	967	1510	-	-	-
Mov Cap-2 Maneuver	705	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1510	-	947	-	-
HCM Lane V/C Ratio	0.019	-	0.062	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	152	101	75	142	17
Future Vol, veh/h	8	152	101	75	142	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	2	4	2	0	0
Mvmt Flow	9	171	113	84	160	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	197	0	-	0	344	155
Stage 1	-	-	-	-	155	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1388	-	-	-	657	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	652	896
Mov Cap-2 Maneuver	-	-	-	-	652	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12.3
HCM LOS			B

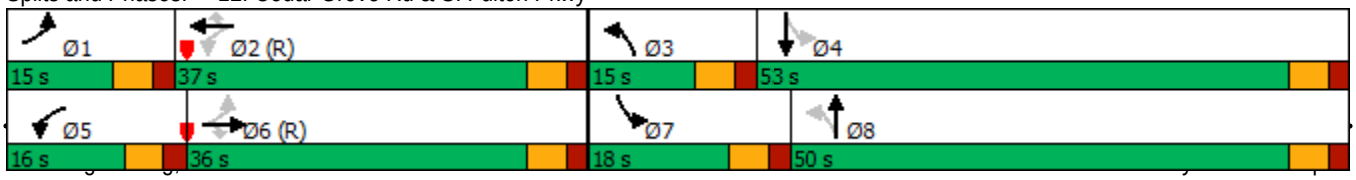
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	672
HCM Lane V/C Ratio	0.006	-	-	-	0.266
HCM Control Delay (s)	7.6	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.1

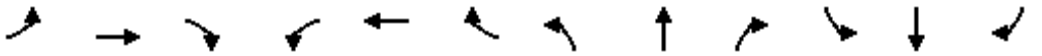
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	60	717	40	124	328	103	25	77	229	126
Future Volume (vph)	60	717	40	124	328	103	25	77	229	126
Lane Group Flow (vph)	65	771	43	133	353	111	27	307	246	203
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	36.0	36.0	16.0	37.0	37.0	15.0	50.0	18.0	53.0
Total Split (%)	12.5%	30.0%	30.0%	13.3%	30.8%	30.8%	12.5%	41.7%	15.0%	44.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.12	0.46	0.05	0.35	0.20	0.13	0.09	0.81	1.01	0.44
Control Delay	13.0	24.5	0.1	14.8	19.0	3.6	26.8	43.8	95.8	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	24.5	0.1	14.8	19.0	3.6	26.8	43.8	95.8	36.5
Queue Length 50th (ft)	20	206	0	42	79	0	15	137	~154	123
Queue Length 95th (ft)	49	323	0	88	134	30	32	221	#286	182
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	585	1663	824	399	1771	869	337	699	243	724
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.46	0.05	0.33	0.20	0.13	0.08	0.44	1.01	0.28

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	717	40	124	328	103	25	77	208	229	126	63
Future Volume (veh/h)	60	717	40	124	328	103	25	77	208	229	126	63
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	1796	1870	1900	1885	1856	1885	1900	1856	1885	1885	1885	1900
Adj Flow Rate, veh/h	65	771	0	133	353	0	27	83	224	246	135	68
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, %	7	2	0	1	3	1	0	3	1	1	1	0
Cap, veh/h	522	1576		366	1634		345	94	254	280	345	174
Arrive On Green	0.04	0.44	0.00	0.06	0.46	0.00	0.02	0.21	0.21	0.10	0.29	0.29
Sat Flow, veh/h	1711	3554	1610	1795	3526	1598	1810	443	1197	1795	1182	596
Grp Volume(v), veh/h	65	771	0	133	353	0	27	0	307	246	0	203
Grp Sat Flow(s),veh/h/ln	1711	1777	1610	1795	1763	1598	1810	0	1640	1795	0	1778
Q Serve(g_s), s	2.5	18.5	0.0	4.8	7.2	0.0	1.4	0.0	21.8	12.5	0.0	11.0
Cycle Q Clear(g_c), s	2.5	18.5	0.0	4.8	7.2	0.0	1.4	0.0	21.8	12.5	0.0	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		0.33
Lane Grp Cap(c), veh/h	522	1576		366	1634		345	0	348	280	0	518
V/C Ratio(X)	0.12	0.49		0.36	0.22		0.08	0.00	0.88	0.88	0.00	0.39
Avail Cap(c_a), veh/h	594	1576		421	1634		443	0	608	280	0	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	23.7	0.0	17.9	19.2	0.0	35.5	0.0	45.8	34.1	0.0	34.0
Incr Delay (d2), s/veh	0.1	1.1	0.0	0.6	0.3	0.0	0.1	0.0	7.6	25.5	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	0.9	7.4	0.0	1.9	2.8	0.0	0.6	0.0	9.3	7.3	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	24.8	0.0	18.5	19.5	0.0	35.6	0.0	53.4	59.6	0.0	34.5
LnGrp LOS	B	C		B	B		D	A	D	E	A	C
Approach Vol, veh/h		836			486			334			449	
Approach Delay, s/veh		24.2			19.2			51.9			48.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	61.1	8.5	40.5	12.3	58.7	18.0	31.0
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	31.5	9.5	47.5	10.5	30.5	12.5	44.5
Max Q Clear Time (g_c+I1), s	4.5	9.2	3.4	13.0	6.8	20.5	14.5	23.8
Green Ext Time (p_c), s	0.0	3.6	0.0	1.1	0.1	5.2	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	62	494	16	20	493
Future Vol, veh/h	49	62	494	16	20	493
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	250	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	11	2	2	13
Mvmt Flow	53	67	537	17	22	536

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1117	537	0	0	554	0
Stage 1	537	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	229	544	-	-	1016	-
Stage 1	586	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	224	544	-	-	1016	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.8	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	334	1016	-
HCM Lane V/C Ratio	-	-	0.361	0.021	-
HCM Control Delay (s)	-	-	21.8	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.1	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	43	54	163	3
Future Vol, veh/h	1	35	43	54	163	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	175	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	38	47	59	177	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	106	0	-	0	87	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1485	-	-	-	914	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1485	-	-	-	913	1022
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.9
HCM LOS			A

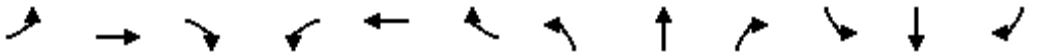
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1485	-	-	-	915
HCM Lane V/C Ratio	0.001	-	-	-	0.197
HCM Control Delay (s)	7.4	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	8	62	8	4	103	57	1346	235	214	929	8
Future Volume (vph)	321	8	62	8	4	103	57	1346	235	214	929	8
Lane Group Flow (vph)	331	8	64	8	4	106	59	1388	242	221	958	8
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			6		5	2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	6	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	32.5	32.5	32.5	32.5	32.5	32.5	28.5	28.5	28.5	15.0	32.5	32.5
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	66.0	66.0	66.0	15.0	81.0	81.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	55.0%	55.0%	55.0%	12.5%	67.5%	67.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lag	Lag	Lag	Lead		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.90	0.02	0.15	0.02	0.01	0.22	0.36	0.78	0.27	0.87	0.80	0.01
Control Delay	71.0	31.5	6.8	31.8	31.5	7.2	26.2	27.8	5.3	62.8	18.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.0	31.5	6.8	31.8	31.5	7.2	26.2	27.8	5.3	62.8	18.3	2.5
Queue Length 50th (ft)	241	5	0	5	2	0	27	449	22	128	269	0
Queue Length 95th (ft)	#396	17	28	17	11	43	67	544	66	m#252	479	m0
Internal Link Dist (ft)		574			335			1022			938	
Turn Bay Length (ft)	75		175	135		180	270		205	315		290
Base Capacity (vph)	400	530	473	398	424	527	163	1790	906	254	1203	1061
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	3	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.02	0.14	0.02	0.01	0.20	0.36	0.78	0.27	0.87	0.80	0.01

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: SR 92 & Thompson Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	321	8	62	8	4	103	57	1346	235	214	929	8
Future Volume (veh/h)	321	8	62	8	4	103	57	1346	235	214	929	8
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	1900	1900	1796	1900	1530	1900	1752	1856	1885	1900	1856	1900
Adj Flow Rate, veh/h	331	8	0	8	4	0	59	1388	0	221	958	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	7	0	25	0	10	3	1	0	3	0
Cap, veh/h	413	471		410	380		358	1912		287	1225	
Arrive On Green	0.25	0.25	0.00	0.25	0.25	0.00	0.54	0.54	0.00	0.14	1.00	0.00
Sat Flow, veh/h	1435	1900	1522	1430	1530	1610	549	3526	1598	1810	1856	1610
Grp Volume(v), veh/h	331	8	0	8	4	0	59	1388	0	221	958	0
Grp Sat Flow(s),veh/h/ln	1435	1900	1522	1430	1530	1610	549	1763	1598	1810	1856	1610
Q Serve(g_s), s	27.1	0.4	0.0	0.5	0.2	0.0	6.6	35.7	0.0	6.6	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.4	0.0	0.9	0.2	0.0	6.6	35.7	0.0	6.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	471		410	380		358	1912		287	1225	
V/C Ratio(X)	0.80	0.02		0.02	0.01		0.16	0.73		0.77	0.78	
Avail Cap(c_a), veh/h	458	530		455	427		358	1912		300	1225	
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	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.67	0.67	0.00
Uniform Delay (d), s/veh	44.3	34.1	0.0	34.4	34.0	0.0	14.1	20.7	0.0	19.5	0.0	0.0
Incr Delay (d2), s/veh	9.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4	0.0	7.6	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.2	0.0	0.2	0.1	0.0	0.9	14.0	0.0	3.5	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	34.1	0.0	34.4	34.0	0.0	15.1	23.2	0.0	27.1	3.4	0.0
LnGrp LOS	D	C		C	C		B	C		C	A	
Approach Vol, veh/h		339			12			1447			1179	
Approach Delay, s/veh		52.9			34.3			22.9			7.9	
Approach LOS		D			C			C			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		84.7		35.3	14.2	70.6		35.3				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		75.5		33.5	9.5	60.5		33.5				
Max Q Clear Time (g_c+I1), s		2.0		29.4	8.6	37.7		2.9				
Green Ext Time (p_c), s		22.3		0.4	0.1	17.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			20.4									
HCM 6th LOS			C									

Notes

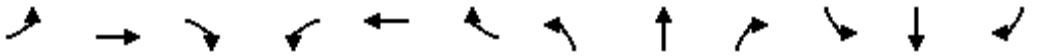
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	27	121	59	33	267	270	1073	70	78	772	66
Future Volume (vph)	112	27	121	59	33	267	270	1073	70	78	772	66
Lane Group Flow (vph)	0	143	125	0	95	275	278	1106	72	80	796	68
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6		6	2		2
Detector Phase	4	4	4	8	8	8	1	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	31.5	31.5	31.5	30.5	30.5	30.5	15.0	28.5	28.5	28.5	28.5	28.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	15.0	85.0	85.0	70.0	70.0	70.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	12.5%	70.8%	70.8%	58.3%	58.3%	58.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.5	5.5		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.70	0.35		0.54	0.78	0.65	0.80	0.06	0.38	0.74	0.07
Control Delay		64.5	9.6		56.8	42.1	26.3	11.9	0.6	22.1	24.8	2.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		64.5	9.6		56.8	42.1	26.3	11.9	0.6	22.1	24.9	2.9
Queue Length 50th (ft)		107	0		69	118	89	205	0	32	432	0
Queue Length 95th (ft)		163	49		116	200	m168	#345	m2	84	666	20
Internal Link Dist (ft)		1001			314			938			742	
Turn Bay Length (ft)			290			230	280			290		350
Base Capacity (vph)		326	491		278	487	426	1389	1232	209	1077	973
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	6	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.44	0.25		0.34	0.56	0.65	0.80	0.06	0.38	0.74	0.07

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 92 & Hall Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	27	121	59	33	267	270	1073	70	78	772	66
Future Volume (veh/h)	112	27	121	59	33	267	270	1073	70	78	772	66
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	1900	1900	1900	1900	1900	1900	1885	1856	1900	1900	1856	1900
Adj Flow Rate, veh/h	115	28	0	61	34	0	278	1106	0	80	796	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	3	0	0	3	0
Cap, veh/h	192	34		159	79		484	1474		413	1265	
Arrive On Green	0.11	0.11	0.00	0.11	0.11	0.00	0.13	1.00	0.00	0.68	0.68	0.00
Sat Flow, veh/h	1206	294	1610	964	692	1610	1795	1856	1610	518	1856	1610
Grp Volume(v), veh/h	143	0	0	95	0	0	278	1106	0	80	796	0
Grp Sat Flow(s),veh/h/ln	1500	0	1610	1655	0	1610	1795	1856	1610	518	1856	1610
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	7.0	28.7	0.0
Cycle Q Clear(g_c), s	11.2	0.0	0.0	6.3	0.0	0.0	5.9	0.0	0.0	7.0	28.7	0.0
Prop In Lane	0.80		1.00	0.64		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	0		238	0		484	1474		413	1265	
V/C Ratio(X)	0.63	0.00		0.40	0.00		0.57	0.75		0.19	0.63	
Avail Cap(c_a), veh/h	419	0		442	0		506	1474		413	1265	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.55	0.55	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	49.8	0.0	0.0	9.6	0.0	0.0	7.2	10.7	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	1.1	0.0	0.0	0.8	2.0	0.0	1.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	2.8	0.0	0.0	2.2	0.8	0.0	0.8	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	0.0	50.9	0.0	0.0	10.4	2.0	0.0	8.2	13.0	0.0
LnGrp LOS	D	A		D	A		B	A		A	B	
Approach Vol, veh/h		143			95			1384			876	
Approach Delay, s/veh		54.9			50.9			3.7			12.6	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.5	87.3		19.2		100.8		19.2				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	9.5	64.5		29.5		79.5		29.5				
Max Q Clear Time (g_c+I1), s	7.9	30.7		13.2		2.0		8.3				
Green Ext Time (p_c), s	0.1	14.4		0.5		31.9		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		11.5	
HCM 6th LOS		B	

Notes

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

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	16	160	1251	919
Demand Flow Rate, veh/h	16	160	1274	946
Vehicles Circulating, veh/h	1041	1158	34	110
Vehicles Exiting, veh/h	15	150	1023	1208
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	11.2	7.5	6.6
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	16	160	599	675	445	501
Cap Entry Lane, veh/h	586	531	1308	1380	1220	1293
Entry HV Adj Factor	1.000	1.000	0.982	0.983	0.971	0.972
Flow Entry, veh/h	16	160	588	663	432	487
Cap Entry, veh/h	586	531	1285	1356	1184	1258
V/C Ratio	0.027	0.302	0.458	0.489	0.365	0.387
Control Delay, s/veh	6.5	11.2	7.4	7.6	6.6	6.6
LOS	A	B	A	A	A	A
95th %tile Queue, veh	0	1	2	3	2	2

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	328	1127	629
Demand Flow Rate, veh/h	333	1158	647
Vehicles Circulating, veh/h	800	17	315
Vehicles Exiting, veh/h	375	945	818
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.7	6.8	6.6
Approach LOS	B	A	A

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	333	544	614	304	343
Cap Entry Lane, veh/h	719	1329	1400	1010	1086
Entry HV Adj Factor	0.985	0.974	0.973	0.972	0.971
Flow Entry, veh/h	328	530	597	295	333
Cap Entry, veh/h	709	1294	1362	982	1055
V/C Ratio	0.463	0.409	0.439	0.301	0.316
Control Delay, s/veh	11.7	6.7	6.9	6.7	6.6
LOS	B	A	A	A	A
95th %tile Queue, veh	2	2	2	1	1

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	246	237	731	450
Demand Flow Rate, veh/h	246	240	760	470
Vehicles Circulating, veh/h	459	799	184	261
Vehicles Exiting, veh/h	206	116	521	778
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.4	8.1	7.6	5.9
Approach LOS	A	A	A	A

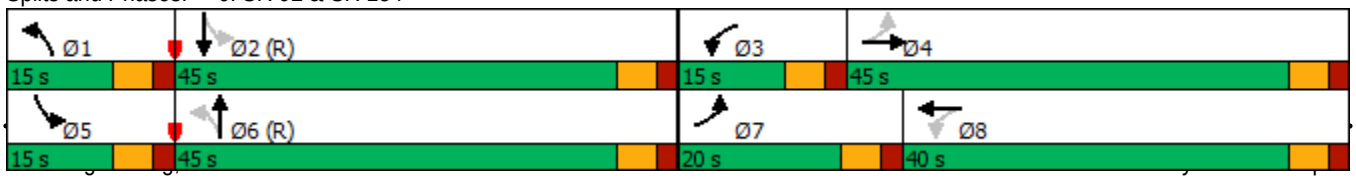
Lane	Left	Right	Left	Right	Left	Right	Bypass	Left	Right	Bypass
Designated Moves	L	TR	L	TR	L	TR	R	L	TR	R
Assumed Moves	L	TR	L	TR	L	TR	R	L	TR	R
RT Channelized							Yield			Yield
Lane Util	0.276	0.724	0.229	0.771	0.182	0.818		0.111	0.889	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535		2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	29	4.544	4.544	66
Entry Flow, veh/h	68	178	55	185	133	598	1226	45	359	1118
Cap Entry Lane, veh/h	935	935	686	686	1201	1201	0.962	1120	1120	1.000
Entry HV Adj Factor	1.000	1.000	0.982	0.989	1.000	0.952	28	1.000	0.943	66
Flow Entry, veh/h	68	178	54	183	133	570	1179	45	339	1118
Cap Entry, veh/h	935	935	674	678	1201	1144	0.024	1120	1056	0.059
V/C Ratio	0.073	0.190	0.080	0.270	0.111	0.498	3.2	0.040	0.321	3.7
Control Delay, s/veh	4.5	5.7	6.2	8.6	3.9	8.7	A	3.6	6.6	A
LOS	A	A	A	A	A	A	0	A	A	0
95th %tile Queue, veh	0	1	0	1	0	3		0	1	

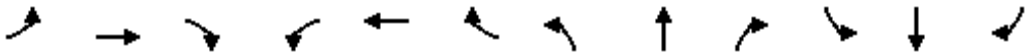
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	245	128	56	280	10	620	67	386
Future Volume (vph)	245	128	56	280	10	620	67	386
Lane Group Flow (vph)	247	138	57	484	10	655	68	691
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	1	6	5	2
Permitted Phases	4		8		6		2	
Detector Phase	7	4	3	8	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	15.0	28.5	15.0	28.5
Total Split (s)	20.0	45.0	15.0	40.0	15.0	45.0	15.0	45.0
Total Split (%)	16.7%	37.5%	12.5%	33.3%	12.5%	37.5%	12.5%	37.5%
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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.93	0.25	0.13	0.95	0.07	0.97	0.39	0.88
Control Delay	68.9	29.4	20.1	69.9	19.2	68.0	25.4	44.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	29.4	20.1	69.9	19.2	68.0	25.4	44.5
Queue Length 50th (ft)	137	75	24	345	4	~554	29	449
Queue Length 95th (ft)	#297	131	50	#554	14	#804	57	#823
Internal Link Dist (ft)		3937		1310		3134		1962
Turn Bay Length (ft)	245		205		195		190	
Base Capacity (vph)	267	551	448	521	206	672	193	782
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.25	0.13	0.93	0.05	0.97	0.35	0.88

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	128	9	56	280	199	10	620	29	67	386	298
Future Volume (veh/h)	245	128	9	56	280	199	10	620	29	67	386	298
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	1811	1559	1900	1737	1841	1900	1900	1870	1352	1826	1870	1841
Adj Flow Rate, veh/h	247	129	9	57	283	201	10	626	0	68	390	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	23	0	11	4	0	0	2	37	5	2	4
Cap, veh/h	272	535	37	453	288	204	323	697		169	745	
Arrive On Green	0.12	0.37	0.37	0.04	0.29	0.29	0.01	0.37	0.00	0.04	0.40	0.00
Sat Flow, veh/h	1725	1441	101	1654	1001	711	1810	1870	0	1739	1870	0
Grp Volume(v), veh/h	247	0	138	57	0	484	10	626	0	68	390	0
Grp Sat Flow(s),veh/h/ln	1725	0	1541	1654	0	1713	1810	1870	0	1739	1870	0
Q Serve(g_s), s	12.3	0.0	7.4	2.9	0.0	33.7	0.4	37.9	0.0	2.9	19.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	7.4	2.9	0.0	33.7	0.4	37.9	0.0	2.9	19.0	0.0
Prop In Lane	1.00		0.07	1.00		0.42	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	272	0	572	453	0	492	323	697		169	745	
V/C Ratio(X)	0.91	0.00	0.24	0.13	0.00	0.98	0.03	0.90		0.40	0.52	
Avail Cap(c_a), veh/h	274	0	572	525	0	492	445	697		242	745	
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	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.8	0.0	26.0	28.5	0.0	42.5	23.9	35.5	0.0	28.3	27.5	0.0
Incr Delay (d2), s/veh	31.5	0.0	0.2	0.1	0.0	36.0	0.0	16.7	0.0	1.5	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	2.6	1.1	0.0	18.2	0.2	19.4	0.0	1.2	8.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	0.0	26.3	28.6	0.0	78.5	24.0	52.2	0.0	29.8	30.1	0.0
LnGrp LOS	E	A	C	C	A	E	C	D		C	C	
Approach Vol, veh/h		385			541			636			458	
Approach Delay, s/veh		50.0			73.2			51.8			30.1	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	53.3	9.8	50.1	10.0	50.2	19.8	40.0
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	39.5	9.5	39.5	9.5	39.5	14.5	34.5
Max Q Clear Time (g_c+I1), s	2.4	21.0	4.9	9.4	4.9	39.9	14.3	35.7
Green Ext Time (p_c), s	0.0	3.7	0.0	0.6	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	52.3
HCM 6th LOS	D

Notes

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

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	2	1	2
Conflicting Circle Lanes	1	1	2
Adj Approach Flow, veh/h	735	1581	522
Demand Flow Rate, veh/h	759	1619	532
Vehicles Circulating, veh/h	1024	60	610
Vehicles Exiting, veh/h	60	1082	1173
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	23.3	10.4	8.4
Approach LOS	C	B	A

Lane	Left	Right	Left	Bypass	Left	Right
Designated Moves	L	LTR	T	R	LT	TR
Assumed Moves	L	LTR	T	R	LT	TR
RT Channelized				Free		
Lane Util	0.530	0.470	1.000		0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.609		2.667	2.535
Critical Headway, s	4.544	4.544	4.976	595	4.645	4.328
Entry Flow, veh/h	402	357	1024	1995	250	282
Cap Entry Lane, veh/h	559	559	1298	0.952	770	845
Entry HV Adj Factor	0.969	0.968	0.990	567	0.981	0.981
Flow Entry, veh/h	390	345	1014	1900	245	277
Cap Entry, veh/h	542	541	1285	0.298	755	829
V/C Ratio	0.719	0.638	0.789	0.0	0.325	0.334
Control Delay, s/veh	25.4	20.8	16.3	A	8.7	8.2
LOS	D	C	C	1	A	A
95th %tile Queue, veh	6	4	9		1	1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	8	1	29	14	3	2	59	26	3	40	3
Future Vol, veh/h	2	8	1	29	14	3	2	59	26	3	40	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	-	-	175
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	17	2	0	2	0	0	0	7	2
Mvmt Flow	2	9	1	32	15	3	2	65	29	3	44	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	143	148	44	141	137	80	47	0	0	94	0	0
Stage 1	50	50	-	84	84	-	-	-	-	-	-	-
Stage 2	93	98	-	57	53	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.27	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.27	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.27	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.653	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	826	743	1026	796	754	986	1560	-	-	1513	-	-
Stage 1	963	853	-	888	825	-	-	-	-	-	-	-
Stage 2	914	814	-	918	851	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	809	741	1026	786	752	986	1560	-	-	1513	-	-
Mov Cap-2 Maneuver	809	741	-	786	752	-	-	-	-	-	-	-
Stage 1	962	851	-	887	824	-	-	-	-	-	-	-
Stage 2	893	813	-	906	849	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.9	0.2	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1560	-	-	772	786	1513	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.064	0.002	-	-
HCM Control Delay (s)	7.3	-	-	9.7	9.9	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	141	23	56	191	38	54
Future Vol, veh/h	141	23	56	191	38	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	160	26	64	217	43	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	186	0	518	173
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	345	-
Critical Hdwy	-	-	4.12	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1388	-	521	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1388	-	494	876
Mov Cap-2 Maneuver	-	-	-	-	494	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	664	-	-	1388	-
HCM Lane V/C Ratio	0.157	-	-	0.046	-
HCM Control Delay (s)	11.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	34	49	84	62	9
Future Vol, veh/h	7	34	49	84	62	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	14	0	0	0	50
Mvmt Flow	8	40	58	99	73	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	294	79	84	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	701	949	1526	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	673	949	1526	-	-	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1526	-	887	-	-
HCM Lane V/C Ratio	0.038	-	0.054	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	109	212	137	85	8
Future Vol, veh/h	11	109	212	137	85	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	1	2	2	0
Mvmt Flow	12	118	230	149	92	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	379	0	-	0	447	305
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.1	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1191	-	-	-	569	740
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1191	-	-	-	563	740
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	12.6
HCM LOS			B

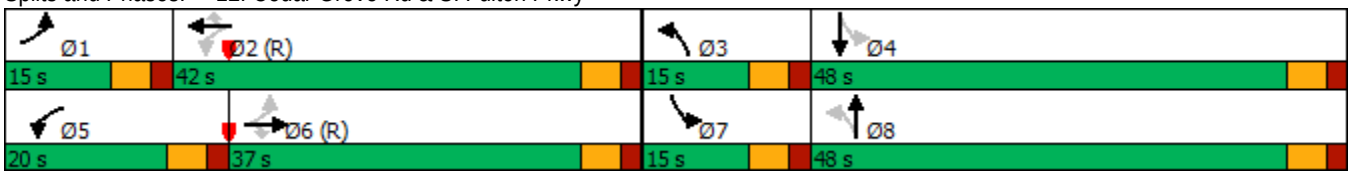
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1191	-	-	-	575
HCM Lane V/C Ratio	0.01	-	-	-	0.176
HCM Control Delay (s)	8.1	0	-	-	12.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

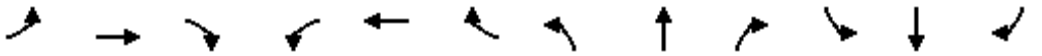
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	83	326	34	274	700	169	42	223	142	146
Future Volume (vph)	83	326	34	274	700	169	42	223	142	146
Lane Group Flow (vph)	93	366	38	308	787	190	47	454	160	211
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2	8		4	
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	6.0
Minimum Split (s)	15.0	31.5	31.5	15.0	28.5	28.5	15.0	45.5	15.0	41.5
Total Split (s)	15.0	37.0	37.0	20.0	42.0	42.0	15.0	48.0	15.0	48.0
Total Split (%)	12.5%	30.8%	30.8%	16.7%	35.0%	35.0%	12.5%	40.0%	12.5%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.32	0.32	0.06	0.59	0.59	0.27	0.12	0.86	0.69	0.36
Control Delay	21.8	33.3	0.2	25.3	33.3	9.5	20.1	53.4	37.7	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	33.3	0.2	25.3	33.3	9.5	20.1	53.4	37.7	31.1
Queue Length 50th (ft)	37	116	0	141	255	22	22	307	79	120
Queue Length 95th (ft)	76	167	0	234	356	80	40	393	111	172
Internal Link Dist (ft)		2109			2773			901		3276
Turn Bay Length (ft)	295		150	320		160	65		120	
Base Capacity (vph)	305	1152	593	528	1342	696	428	648	233	650
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.32	0.06	0.58	0.59	0.27	0.11	0.70	0.69	0.32

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 12: Cedar Grove Rd & S. Fulton Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	326	34	274	700	169	42	223	181	142	146	42
Future Volume (veh/h)	83	326	34	274	700	169	42	223	181	142	146	42
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	1900	1870	1856	1900	1856	1870	1796	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	93	366	0	308	787	0	47	251	203	160	164	47
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, %	0	2	3	0	3	2	7	1	0	0	2	0
Cap, veh/h	313	1189		545	1435		385	274	222	230	459	132
Arrive On Green	0.05	0.33	0.00	0.12	0.41	0.00	0.03	0.28	0.28	0.08	0.33	0.33
Sat Flow, veh/h	1810	3554	1572	1810	3526	1585	1711	965	780	1810	1398	401
Grp Volume(v), veh/h	93	366	0	308	787	0	47	0	454	160	0	211
Grp Sat Flow(s),veh/h/ln	1810	1777	1572	1810	1763	1585	1711	0	1745	1810	0	1798
Q Serve(g_s), s	4.0	9.2	0.0	13.0	20.4	0.0	2.3	0.0	30.2	7.3	0.0	10.7
Cycle Q Clear(g_c), s	4.0	9.2	0.0	13.0	20.4	0.0	2.3	0.0	30.2	7.3	0.0	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.22
Lane Grp Cap(c), veh/h	313	1189		545	1435		385	0	496	230	0	590
V/C Ratio(X)	0.30	0.31		0.57	0.55		0.12	0.00	0.91	0.69	0.00	0.36
Avail Cap(c_a), veh/h	369	1189		545	1435		464	0	618	234	0	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.8	29.6	0.0	20.9	27.2	0.0	28.9	0.0	41.5	30.6	0.0	30.7
Incr Delay (d2), s/veh	0.5	0.7	0.0	1.4	1.5	0.0	0.1	0.0	16.0	8.4	0.0	0.4
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	1.7	3.8	0.0	5.2	8.3	0.0	0.9	0.0	14.7	3.6	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	30.3	0.0	22.3	28.7	0.0	29.0	0.0	57.6	39.0	0.0	31.0
LnGrp LOS	C	C		C	C		C	A	E	D	A	C
Approach Vol, veh/h		459			1095			501			371	
Approach Delay, s/veh		29.3			26.9			54.9			34.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	54.4	9.5	44.9	20.0	45.6	14.7	39.6
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	36.5	9.5	42.5	14.5	31.5	9.5	42.5
Max Q Clear Time (g_c+I1), s	6.0	22.4	4.3	12.7	15.0	11.2	9.3	32.2
Green Ext Time (p_c), s	0.1	6.7	0.0	1.1	0.0	3.6	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	42	617	55	69	612
Future Vol, veh/h	33	42	617	55	69	612
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	250	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	10	2	2	8
Mvmt Flow	36	46	671	60	75	665

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1486	671	0	0	731	0
Stage 1	671	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	137	456	-	-	873	-
Stage 1	508	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	125	456	-	-	873	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	398	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.4	0	1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	211	873	-
HCM Lane V/C Ratio	-	-	0.386	0.086	-
HCM Control Delay (s)	-	-	32.4	9.5	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.3	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	53	47	183	111	2
Future Vol, veh/h	3	53	47	183	111	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	175	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	58	51	199	121	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	250	0	-	0	115	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	64	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1316	-	-	-	881	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	959	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1316	-	-	-	879	1017
Mov Cap-2 Maneuver	-	-	-	-	879	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	959	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1316	-	-	-	881
HCM Lane V/C Ratio	0.002	-	-	-	0.139
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5

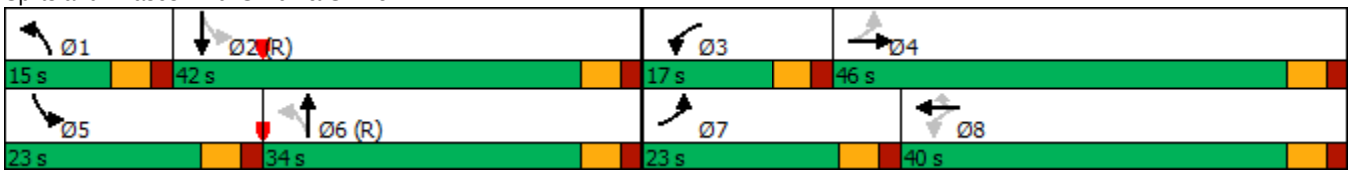
Future “Build” Intersections Analysis with Improvements

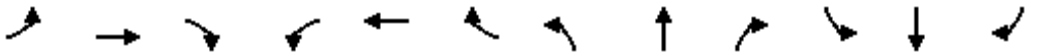
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	262	378	31	167	45	8	388	269	550
Future Volume (vph)	262	378	31	167	45	8	388	269	550
Lane Group Flow (vph)	270	409	32	172	46	8	468	277	818
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	30.5	15.0	28.5	15.0	28.5
Total Split (s)	23.0	46.0	17.0	40.0	40.0	15.0	34.0	23.0	42.0
Total Split (%)	19.2%	38.3%	14.2%	33.3%	33.3%	12.5%	28.3%	19.2%	35.0%
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	Lead	Lag	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
v/c Ratio	0.65	0.78	0.16	0.56	0.10	0.05	0.77	0.72	0.90
Control Delay	34.1	48.2	23.0	49.7	0.5	20.0	47.7	30.3	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	48.2	23.0	49.7	0.5	20.0	47.7	30.3	42.8
Queue Length 50th (ft)	150	297	15	120	0	3	335	118	539
Queue Length 95th (ft)	192	380	31	173	0	13	#620	#254	#1080
Internal Link Dist (ft)		3937		1310			3134		1962
Turn Bay Length (ft)	245		205		250	195		190	
Base Capacity (vph)	421	584	261	470	569	210	606	405	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.70	0.12	0.37	0.08	0.04	0.77	0.68	0.90

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	378	18	31	167	45	8	388	66	269	550	243
Future Volume (veh/h)	262	378	18	31	167	45	8	388	66	269	550	243
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	1796	1737	1900	1633	1663	1707	1900	1826	1811	1870	1856	1811
Adj Flow Rate, veh/h	270	390	19	32	172	46	8	400	0	277	567	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	11	0	18	16	13	0	5	6	2	3	6
Cap, veh/h	357	427	21	128	235	205	342	778		505	964	
Arrive On Green	0.15	0.26	0.26	0.03	0.14	0.14	0.01	0.43	0.00	0.10	0.52	0.00
Sat Flow, veh/h	1711	1643	80	1555	1663	1447	1810	1826	0	1781	1856	0
Grp Volume(v), veh/h	270	0	409	32	172	46	8	400	0	277	567	0
Grp Sat Flow(s),veh/h/ln	1711	0	1723	1555	1663	1447	1810	1826	0	1781	1856	0
Q Serve(g_s), s	15.6	0.0	27.6	2.1	11.9	3.4	0.3	19.3	0.0	10.0	25.4	0.0
Cycle Q Clear(g_c), s	15.6	0.0	27.6	2.1	11.9	3.4	0.3	19.3	0.0	10.0	25.4	0.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	357	0	448	128	235	205	342	778		505	964	
V/C Ratio(X)	0.76	0.00	0.91	0.25	0.73	0.22	0.02	0.51		0.55	0.59	
Avail Cap(c_a), veh/h	357	0	581	234	478	416	467	778		581	964	
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.6	0.0	43.1	43.1	49.3	45.7	20.0	25.3	0.0	17.3	20.0	0.0
Incr Delay (d2), s/veh	8.9	0.0	16.0	1.0	4.3	0.5	0.0	2.4	0.0	0.9	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	13.1	0.8	5.0	1.2	0.1	8.4	0.0	3.8	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	59.1	44.1	53.6	46.2	20.1	27.8	0.0	18.2	22.6	0.0
LnGrp LOS	D	A	E	D	D	D	C	C		B	C	
Approach Vol, veh/h		679			250			408			844	
Approach Delay, s/veh		53.3			51.0			27.6			21.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	67.8	8.8	36.7	17.9	56.6	23.0	22.5
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	36.5	11.5	40.5	17.5	28.5	17.5	34.5
Max Q Clear Time (g_c+I1), s	2.3	27.4	4.1	29.6	12.0	21.3	17.6	13.9
Green Ext Time (p_c), s	0.0	3.7	0.0	1.6	0.4	2.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

Notes

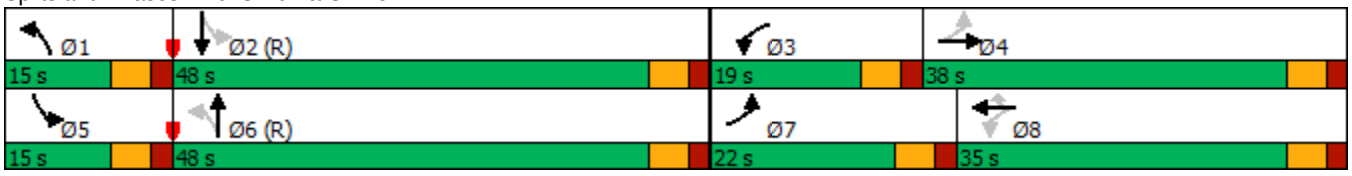
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

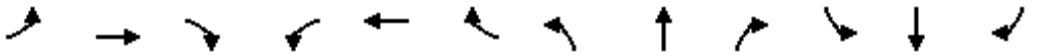
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	245	128	56	280	199	10	620	67	386
Future Volume (vph)	245	128	56	280	199	10	620	67	386
Lane Group Flow (vph)	247	138	57	283	201	10	655	68	691
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases	4		8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	15.0	31.5	15.0	30.5	30.5	15.0	28.5	15.0	28.5
Total Split (s)	22.0	38.0	19.0	35.0	35.0	15.0	48.0	15.0	48.0
Total Split (%)	18.3%	31.7%	15.8%	29.2%	29.2%	12.5%	40.0%	12.5%	40.0%
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	Lead	Lag	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
v/c Ratio	0.74	0.32	0.17	0.79	0.42	0.04	0.82	0.32	0.77
Control Delay	40.6	35.6	24.4	62.0	7.9	16.2	41.4	19.4	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	35.6	24.4	62.0	7.9	16.2	41.4	19.4	31.1
Queue Length 50th (ft)	137	84	28	210	0	4	454	25	383
Queue Length 95th (ft)	191	138	53	293	59	14	#767	54	#787
Internal Link Dist (ft)		3937		1310			3134		1962
Turn Bay Length (ft)	245		205		250	195		190	
Base Capacity (vph)	336	445	406	449	548	281	803	235	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.31	0.14	0.63	0.37	0.04	0.82	0.29	0.77

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & SR 154





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	128	9	56	280	199	10	620	29	67	386	298
Future Volume (veh/h)	245	128	9	56	280	199	10	620	29	67	386	298
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	1811	1559	1900	1737	1841	1900	1900	1870	1352	1826	1870	1841
Adj Flow Rate, veh/h	247	129	9	57	283	201	10	626	0	68	390	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	6	23	0	11	4	0	0	2	37	5	2	4
Cap, veh/h	310	389	27	330	328	287	449	881		285	929	
Arrive On Green	0.13	0.27	0.27	0.04	0.18	0.18	0.01	0.47	0.00	0.04	0.50	0.00
Sat Flow, veh/h	1725	1441	101	1654	1841	1610	1810	1870	0	1739	1870	0
Grp Volume(v), veh/h	247	0	138	57	283	201	10	626	0	68	390	0
Grp Sat Flow(s),veh/h/ln	1725	0	1541	1654	1841	1610	1810	1870	0	1739	1870	0
Q Serve(g_s), s	13.5	0.0	8.6	3.4	17.9	14.1	0.3	31.9	0.0	2.4	15.9	0.0
Cycle Q Clear(g_c), s	13.5	0.0	8.6	3.4	17.9	14.1	0.3	31.9	0.0	2.4	15.9	0.0
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	310	0	416	330	328	287	449	881		285	929	
V/C Ratio(X)	0.80	0.00	0.33	0.17	0.86	0.70	0.02	0.71		0.24	0.42	
Avail Cap(c_a), veh/h	323	0	417	453	453	396	571	881		358	929	
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.0	0.0	35.1	38.2	47.9	46.3	16.8	25.2	0.0	19.7	19.2	0.0
Incr Delay (d2), s/veh	12.7	0.0	0.5	0.2	12.0	3.3	0.0	4.8	0.0	0.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	3.1	1.3	8.9	5.6	0.1	14.2	0.0	0.9	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	0.0	35.6	38.4	59.9	49.6	16.8	30.0	0.0	20.2	20.6	0.0
LnGrp LOS	D	A	D	D	E	D	B	C		C	C	
Approach Vol, veh/h		385			541			636			458	
Approach Delay, s/veh		42.7			53.8			29.8			20.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	65.1	10.1	37.9	10.0	62.0	21.1	26.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	42.5	13.5	32.5	9.5	42.5	16.5	29.5
Max Q Clear Time (g_c+I1), s	2.3	17.9	5.4	10.6	4.4	33.9	15.5	19.9
Green Ext Time (p_c), s	0.0	4.2	0.0	0.6	0.0	4.0	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

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

Traffic Volume Worksheets

24-015 - DRI # 4371 Cascade Palmetto Highway & Ridge Road - City of South Fulton, GA

Traffic Volumes

A&R Engineering
June 2025

1. SR 92 @ Thompson Rd

A.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Thompson Road Eastbound				Thompson Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	65	840	165	1070	74	911	13	998	225	9	60	294	3	12	79	94
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	68	874	172	1114	77	947	14	1038	234	9	62	305	3	12	82	97
Total New Trips:	0	29	0	29	0	89	0	89	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	68	903	172	1143	77	1036	14	1127	234	9	62	305	3	12	82	97

P.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Thompson Road Eastbound				Thompson Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	55	1198	226	1479	206	835	8	1049	309	8	60	377	8	4	99	111
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	57	1246	235	1538	214	868	8	1090	321	8	62	391	8	4	103	115
Total New Trips:	0	100	0	100	0	61	0	61	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	57	1346	235	1638	214	929	8	1151	321	8	62	391	8	4	103	115

24-015 - DRI # 4371 Cascade Palmetto Highway & Ridge Road - City of South Fulton, GA

Traffic Volumes

A&R Engineering
June 2025

2. SR 92 @ Hall Rd

A.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Hall Road Eastbound				Hall Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	318	563	50	931	99	644	111	854	73	59	122	254	90	24	275	389
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	331	586	52	969	103	670	115	888	76	61	127	264	94	25	286	405
Total New Trips:	0	29	0	29	0	89	0	89	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	331	615	52	998	103	759	115	977	76	61	127	264	94	25	286	405

P.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Hall Road Eastbound				Hall Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	260	936	67	1263	75	684	63	822	108	26	116	250	57	32	257	346
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	270	973	70	1313	78	711	66	855	112	27	121	260	59	33	267	359
Total New Trips:	0	100	0	100	0	61	0	61	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	270	1073	70	1413	78	772	66	916	112	27	121	260	59	33	267	359

24-015 - DRI # 4371 Cascade Palmetto Highway & Ridge Road - City of South Fulton, GA

Traffic Volumes

A&R Engineering
June 2025

3. SR 92 @ Jones Rd

A.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Jones Road Eastbound				Jones Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	13	703	107	823	27	766	55	848	23	20	3	46	79	30	16	125
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	14	731	111	856	28	797	57	882	24	21	3	48	82	31	17	130
Total New Trips:	0	29	0	29	0	89	0	89	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	14	760	111	885	28	886	57	971	24	21	3	48	82	31	17	130

P.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Jones Road Eastbound				Jones Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	965	117	1082	17	782	9	808	8	8	0	16	98	6	47	151
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	1004	122	1126	18	813	9	840	8	8	0	16	102	6	49	157
Total New Trips:	0	100	0	100	0	61	0	61	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	0	1104	122	1226	18	874	9	901	8	8	0	16	102	6	49	157

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Traffic Volumes

A&R Engineering
June 2025

4. SR 92 @ Demooney Rd

A.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				- Eastbound				Demooney Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	397	329	726	22	540	0	562	0	0	0	0	239	0	19	258
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	413	342	755	23	562	0	585	0	0	0	0	249	0	20	269
Total New Trips:	0	29	0	29	0	89	0	89	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	0	442	342	784	23	651	0	674	0	0	0	0	249	0	20	269

P.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				- Eastbound				Demooney Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	607	327	934	15	500	0	515	0	0	0	0	285	0	14	299
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	631	340	971	16	520	0	536	0	0	0	0	296	0	15	311
Total New Trips:	0	100	0	100	0	61	0	61	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	0	731	340	1071	16	581	0	597	0	0	0	0	296	0	15	311

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Traffic Volumes

A&R Engineering
June 2025

5. SR 92 @ Ridge-Butner Rd

A.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Ridge Road Eastbound				Butner Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	64	362	34	460	93	399	34	526	24	64	32	120	20	50	39	109
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	67	376	35	478	97	415	35	547	25	67	33	125	21	52	41	114
Total New Trips:	29	0	0	29	0	0	14	14	41	9	89	139	0	3	0	3
Future 2027 Traffic Volumes:	96	376	35	507	97	415	49	561	66	76	122	264	21	55	41	117

P.M. Peak Hour

	SR 92 Northbound				SR 92 Southbound				Ridge Road Eastbound				Butner Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	24	515	25	564	40	307	15	362	35	59	38	132	49	55	101	205
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	25	536	26	587	42	319	16	377	36	61	40	137	51	57	105	213
Total New Trips:	100	0	0	100	0	0	46	46	28	6	61	95	0	10	0	10
Future 2027 Traffic Volumes:	125	536	26	687	42	319	62	423	64	67	101	232	51	67	105	223

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Traffic Volumes

A&R Engineering
June 2025

6. SR 92 @ SR 154

A.M. Peak Hour

Condition	SR 92 Northbound				SR 92 Southbound				SR 154 / SR 70 (Cascade Palmetto Highway) Eastbound				SR 70 (Cascade Palmetto Highway) Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	8	340	57	405	259	518	217	994	203	353	17	573	28	158	43	229
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	8	354	59	421	269	539	226	1034	211	367	18	596	29	164	45	238
Total New Trips:	0	34	7	41	0	11	17	28	51	11	0	62	2	3	0	5
Future 2027 Traffic Volumes:	8	388	66	462	269	550	243	1062	262	378	18	658	31	167	45	243

P.M. Peak Hour

Condition	SR 92 Northbound				SR 92 Southbound				SR 154 / SR 70 (Cascade Palmetto Highway) Eastbound				SR 70 (Cascade Palmetto Highway) Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	10	574	23	607	64	335	232	631	202	116	9	327	46	258	191	495
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	10	597	24	631	67	348	241	656	210	121	9	340	48	268	199	515
Total New Trips:	0	23	5	28	0	38	57	95	35	7	0	42	8	12	0	20
Future 2027 Traffic Volumes:	10	620	29	659	67	386	298	751	245	128	9	382	56	280	199	535

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Traffic Volumes

A&R Engineering
June 2025

7. SR 92-SR 154 @ SR 166

A.M. Peak Hour

	SR 92 / SR 154 Northbound				SR 166 Southbound				- Eastbound				SR 92 / SR 154 Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	309	434	743	68	641	0	709	0	0	0	0	551	0	77	628
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	321	451	772	71	667	0	738	0	0	0	0	573	0	80	653
Total New Trips:	0	47	38	85	0	16	0	16	0	0	0	0	13	0	0	13
Future 2027 Traffic Volumes:	0	368	489	857	71	683	0	754	0	0	0	0	586	0	80	666

P.M. Peak Hour

	SR 92 / SR 154 Northbound				SR 166 Southbound				- Eastbound				SR 92 / SR 154 Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	876	482	1358	53	363	0	416	0	0	0	0	484	0	133	617
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	911	501	1412	55	378	0	433	0	0	0	0	503	0	138	641
Total New Trips:	0	32	26	58	0	53	0	53	0	0	0	0	43	0	0	43
Future 2027 Traffic Volumes:	0	943	527	1470	55	431	0	486	0	0	0	0	546	0	138	684

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Traffic Volumes

A&R Engineering
June 2025

8. Ridge Rd @ Clark Rd-Drwy 2 W

A.M. Peak Hour

	Ridge Road Northbound				Ridge Road Southbound				Site Driveway 2 (Western) Eastbound				Clark Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	33	7	40	1	48	0	49	0	0	0	0	30	0	2	32
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	34	7	41	1	50	0	51	0	0	0	0	31	0	2	33
Total New Trips:	1	1	10	12	0	3	1	4	3	12	2	17	3	4	0	7
Future 2027 Traffic Volumes:	1	35	17	53	1	53	1	55	3	12	2	17	34	4	2	40

P.M. Peak Hour

	Ridge Road Northbound				Ridge Road Southbound				Site Driveway 2 (Western) Eastbound				Clark Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	54	18	72	3	37	0	40	0	0	0	0	16	0	3	19
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	56	19	75	3	38	0	41	0	0	0	0	17	0	3	20
Total New Trips:	2	3	7	12	0	2	3	5	2	8	1	11	12	14	0	26
Future 2027 Traffic Volumes:	2	59	26	87	3	40	3	46	2	8	1	11	29	14	3	46

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Traffic Volumes

A&R Engineering
June 2025

9. Ridge Rd @ Bethlehem Rd

A.M. Peak Hour

	Bethlehem Road Northbound				- Southbound				Ridge Road Eastbound				Ridge Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	5	0	58	63	0	0	0	0	0	27	4	31	36	35	0	71
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	5	0	60	65	0	0	0	0	0	28	4	32	37	36	0	73
Total New Trips:	9	0	0	9	0	0	0	0	0	139	27	166	0	46	0	46
Future 2027 Traffic Volumes:	14	0	60	74	0	0	0	0	0	167	31	198	37	82	0	119

P.M. Peak Hour

	Bethlehem Road Northbound				- Southbound				Ridge Road Eastbound				Ridge Road Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	8	0	52	60	0	0	0	0	0	44	5	49	54	34	0	88
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	8	0	54	62	0	0	0	0	0	46	5	51	56	35	0	91
Total New Trips:	30	0	0	30	0	0	0	0	0	95	18	113	0	156	0	156
Future 2027 Traffic Volumes:	38	0	54	92	0	0	0	0	0	141	23	164	56	191	0	247

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Traffic Volumes

A&R Engineering
June 2025

10. Bethlehem Rd @ Clark Rd

A.M. Peak Hour

	Bethlehem Road Northbound				Bethlehem Road Southbound				Clark Road Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	17	37	0	54	0	56	3	59	3	0	26	29	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	18	38	0	56	0	58	3	61	3	0	27	30	0	0	0	0
Total New Trips:	8	9	0	17	0	27	0	27	0	0	23	23	0	0	0	0
Future 2027 Traffic Volumes:	26	47	0	73	0	85	3	88	3	0	50	53	0	0	0	0

P.M. Peak Hour

	Bethlehem Road Northbound				Bethlehem Road Southbound				Clark Road Eastbound				- Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	22	52	0	74	0	42	9	51	7	0	17	24	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	23	54	0	77	0	44	9	53	7	0	18	25	0	0	0	0
Total New Trips:	26	30	0	56	0	18	0	18	0	0	16	16	0	0	0	0
Future 2027 Traffic Volumes:	49	84	0	133	0	62	9	71	7	0	34	41	0	0	0	0

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Traffic Volumes

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11. Cedar Grove @ Bethlehem Rd

A.M. Peak Hour

	-				Bethlehem Road				Cedar Grove Road				Cedar Grove Road			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	0	0	88	0	16	104	8	145	0	153	0	97	57	154
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	0	0	0	92	0	17	109	8	151	0	159	0	101	59	160
Total New Trips:	0	0	0	0	50	0	0	50	0	1	0	1	0	0	16	16
Future 2027 Traffic Volumes:	0	0	0	0	142	0	17	159	8	152	0	160	0	101	75	176

P.M. Peak Hour

	-				Bethlehem Road				Cedar Grove Road				Cedar Grove Road			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	0	0	49	0	8	57	11	104	0	115	0	203	78	281
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	0	0	0	51	0	8	59	11	108	0	119	0	211	81	292
Total New Trips:	0	0	0	0	34	0	0	34	0	1	0	1	0	1	56	57
Future 2027 Traffic Volumes:	0	0	0	0	85	0	8	93	11	109	0	120	0	212	137	349

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Traffic Volumes

A&R Engineering
June 2025

12. S. Fulton @ Cedar Grove Rd

A.M. Peak Hour

	Cedar Grove Road				Cedar Grove Road				South Fulton Parkway				South Fulton Parkway			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	24	73	200	297	199	118	36	353	49	689	38	776	119	315	92	526
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	25	76	208	309	207	123	37	367	51	717	40	808	124	328	96	548
Total New Trips:	0	1	0	1	22	3	26	51	9	0	0	9	0	0	7	7
Future 2027 Traffic Volumes:	25	77	208	310	229	126	63	418	60	717	40	817	124	328	103	555

P.M. Peak Hour

	Cedar Grove Road				Cedar Grove Road				South Fulton Parkway				South Fulton Parkway			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	40	212	174	426	122	138	23	283	52	313	33	398	263	673	138	1074
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	42	220	181	443	127	144	24	295	54	326	34	414	274	700	144	1118
Total New Trips:	0	3	0	3	15	2	18	35	29	0	0	29	0	0	25	25
Future 2027 Traffic Volumes:	42	223	181	446	142	146	42	330	83	326	34	443	274	700	169	1143

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Traffic Volumes

A&R Engineering
June 2025

13. SR 154 @ Drwy 1

A.M. Peak Hour

Condition	SR 154 / SR 70 (Cascade Palmetto Highway) Northbound				SR 154 / SR 70 (Cascade Palmetto Highway) Southbound				- Eastbound				Site Driveway 1 Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	475	0	475	0	474	0	474	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	494	0	494	0	493	0	493	0	0	0	0	0	0	0	0
Total New Trips:	0	0	16	16	20	0	0	20	0	0	0	0	49	0	62	111
Future 2027 Traffic Volumes:	0	494	16	510	20	493	0	513	0	0	0	0	49	0	62	111

P.M. Peak Hour

Condition	SR 154 / SR 70 (Cascade Palmetto Highway) Northbound				SR 154 / SR 70 (Cascade Palmetto Highway) Southbound				- Eastbound				Site Driveway 1 Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	593	0	593	0	588	0	588	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	617	0	617	0	612	0	612	0	0	0	0	0	0	0	0
Total New Trips:	0	0	55	55	69	0	0	69	0	0	0	0	33	0	42	75
Future 2027 Traffic Volumes:	0	617	55	672	69	612	0	681	0	0	0	0	33	0	42	75

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Traffic Volumes

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14. Ridge Rd @ Drwy 3 (E)

A.M. Peak Hour

	-				Site Driveway 3 (Eastern)				Ridge Road				Ridge Road			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	0	0	0	0	0	0	0	31	0	31	0	40	0	40
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	0	0	0	0	0	0	0	0	32	0	32	0	42	0	42
Total New Trips:	0	0	0	0	163	0	3	166	1	3	0	4	0	1	54	55
Future 2027 Traffic Volumes:	0	0	0	0	163	0	3	166	1	35	0	36	0	43	54	97

P.M. Peak Hour

	-				Site Driveway 3 (Eastern)				Ridge Road				Ridge Road			
	Northbound				**Southbound**				**Eastbound**				**Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	0	0	0	0	0	0	0	49	0	49	0	42	0	42
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2027 Volumes:	0	0	0	0	0	0	0	0	0	51	0	51	0	44	0	44
Total New Trips:	0	0	0	0	111	0	2	113	3	2	0	5	0	3	183	186
Future 2027 Traffic Volumes:	0	0	0	0	111	0	2	113	3	53	0	56	0	47	183	230