DEVELOPMENT OF REGIONAL IMPACT
(DRI#: 2491)
TRAFFIC STUDY
FOR
BROADMOOR INDUSTRIAL DEVELOPMENT

SUGAR HILL, GWINNETT COUNTY, GEORGIA

Prepared for:

Panattoni Development Company
1230 Peachtree St NE, Suite 250
Atlanta, GA 30609

Prepared By:

A&R Engineering Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel: (770) 690-9255 Fax: (770) 690-9210
www.areng.com

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EXECUTIVE SUMMARY

Traffic impacts were evaluated for the added traffic from the Broadmoor Industrial development proposed to the northwest of the intersection of Buford Drive (SR 20) at Buford Highway (SR 13). The development will consist of:

- High Cube Warehouse – 1,126,320 sf
- General Light Industrial – 65,000 sf
- Warehousing – 168,000 sf
- General Office – 35,000 sf

The development proposes to have access from Broadmoor Boulevard as an extension of the existing roadway. Existing and future operations after completion of the project were analyzed at the intersections of:

- Buford Drive (SR 20) at Peachtree Industrial Boulevard
- Buford Drive (SR 20) at Broadmoor Boulevard
- Buford Drive (SR 20) at Commerce Drive
- Buford Drive (SR 20) at Buford Highway (SR 13)

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions for the year 2020, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found within the study network for the "No-Build" conditions, without the addition of traffic from the proposed development. The following system improvements and recommendations have identified for the intersections that have an overall level-of-service "E" or "F" in the No-Build conditions.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. No reasonable system improvements have been identified for the intersection.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. As the intersection already has dual left turn lanes and a right turn lane on each approach no other reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D".

Site Access Configuration

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

- Broadmoor Boulevard
    - This driveway will consist of two entering and two exiting lanes.
    - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound and westbound left turn movements.
    - Entering left turn movements will be made from the dedicated eastbound left turn bay.
    - Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. Because operations would not be significantly impacted beyond the projected "No-Build" conditions, mitigation improvements have not been identified.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. Site added traffic will bring the overall LOS of the intersection to "F". No reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D".

SR 20 at Broadmoor Blvd

The intersection has been found to have a level-of-service "C" in the Existing and Future No-Build conditions. Site added traffic will bring the overall LOS of the intersection to "F". Because the level-of-service can be improved with timing changes, no additional mitigation improvements have been identified.

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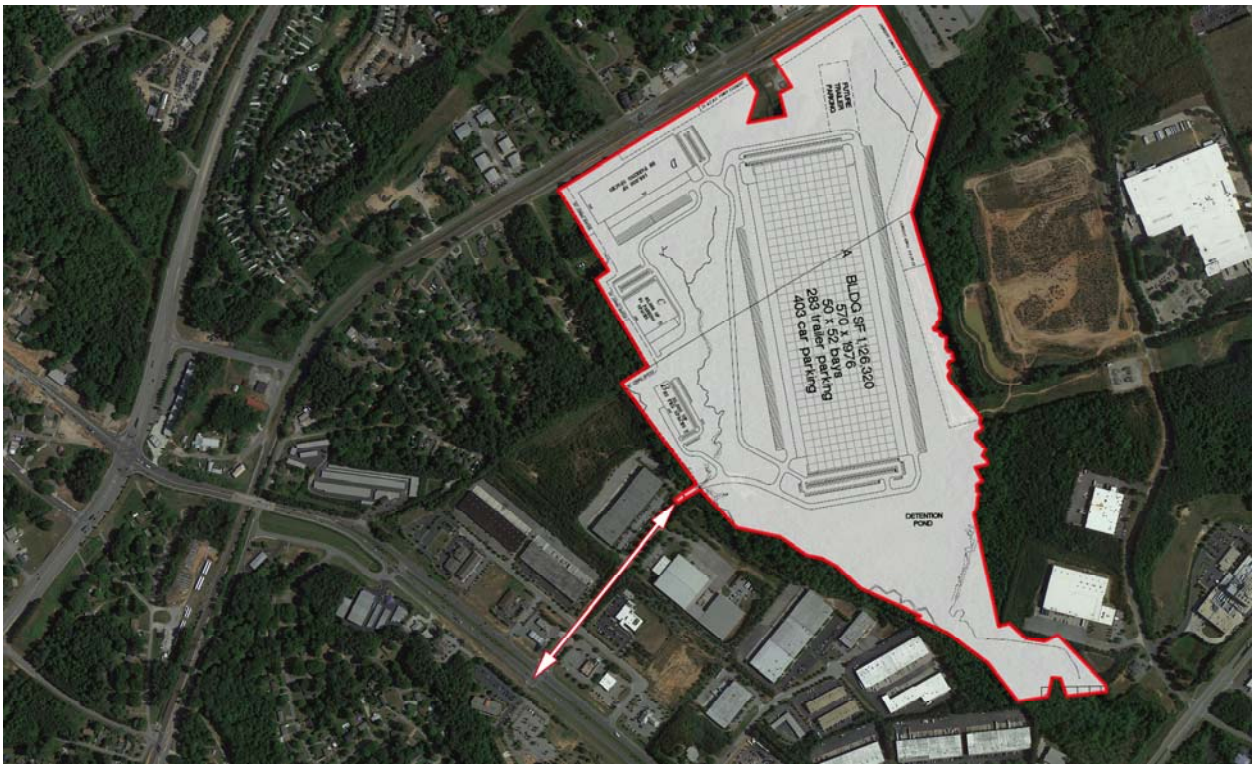
INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the Broadmoor Industrial development proposed to the northwest of the intersection of Buford Drive (SR 20) at Buford Highway (SR 13). The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The proposed development will consist of:

- High Cube Warehouse – 1,126,320 sf
- General Light Industrial – 65,000 sf
- Warehousing – 168,000 sf
- General Office – 35,000 sf



The development proposes to have access from Broadmoor Boulevard as an extension of the existing roadway.

The AM and PM peak hours have been analyzed in this study. This study includes the evaluation of traffic operations at the intersections of:

- Buford Drive (SR 20) at Peachtree Industrial Boulevard
- Buford Drive (SR 20) at Broadmoor Boulevard / North Gwinnett Medical Plaza Driveway
- Buford Drive (SR 20) at Commerce Drive / Frontier Drive
- Buford Drive (SR 20) at Buford Highway (SR 13)

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

STUDY NETWORK DETERMINATION

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

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

1. Buford Drive (SR 20) at Peachtree Industrial Boulevard
2. Buford Drive (SR 20) at Broadmoor Boulevard
3. Buford Drive (SR 20) at Commerce Drive
4. Buford Drive (SR 20) at Buford Highway (SR 13)

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

Existing Roadway Facilities

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

Buford Drive (SR 20)

Buford Drive (SR 20) is an east-west, four-lane, divided roadway with a posted speed limit of 50 mph in the vicinity of the site. GDOT traffic counts (Station ID 1350112 & 1350114) indicate that the daily traffic volume on Buford Drive (SR 20) is 38,180 vehicles per day east of Broadmoor Boulevard and 41,310 vehicles per day east of Buford Highway (SR 13).

Peachtree Industrial Boulevard

Peachtree Industrial Boulevard is a north-south, six-lane, divided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 1350547 & 1350543) indicate that the daily traffic volume on Peachtree Industrial Boulevard is 15,900 vehicles per day south of Poplar Street and 17,370 vehicles per day north of Price Road.

Broadmoor Boulevard

Broadmoor Boulevard is a north-south, two-lane, undivided roadway.

Commerce Drive

Commerce Drive is a north-south, five-lane, undivided roadway with a two-way left turn lane in the center and is posted with a speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID 1356761) indicate that the daily traffic volume on Commerce Drive is 4,750 vehicles per day.

Buford Highway (SR 13)

Buford Highway (SR 13) is a north-south, four-lane, divided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 1350094 & 1350092) indicate that the daily traffic volume on Buford Highway (SR 13) is 23,640 vehicles per day north of Commerce Drive and 10,640 vehicles per day west of Old Suwanee Road.

Existing Bicycle and Pedestrian Facilities

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

Nearby local or regional trails

There are no major local or regional trails in the study area.

Bicycle paths or sidewalks

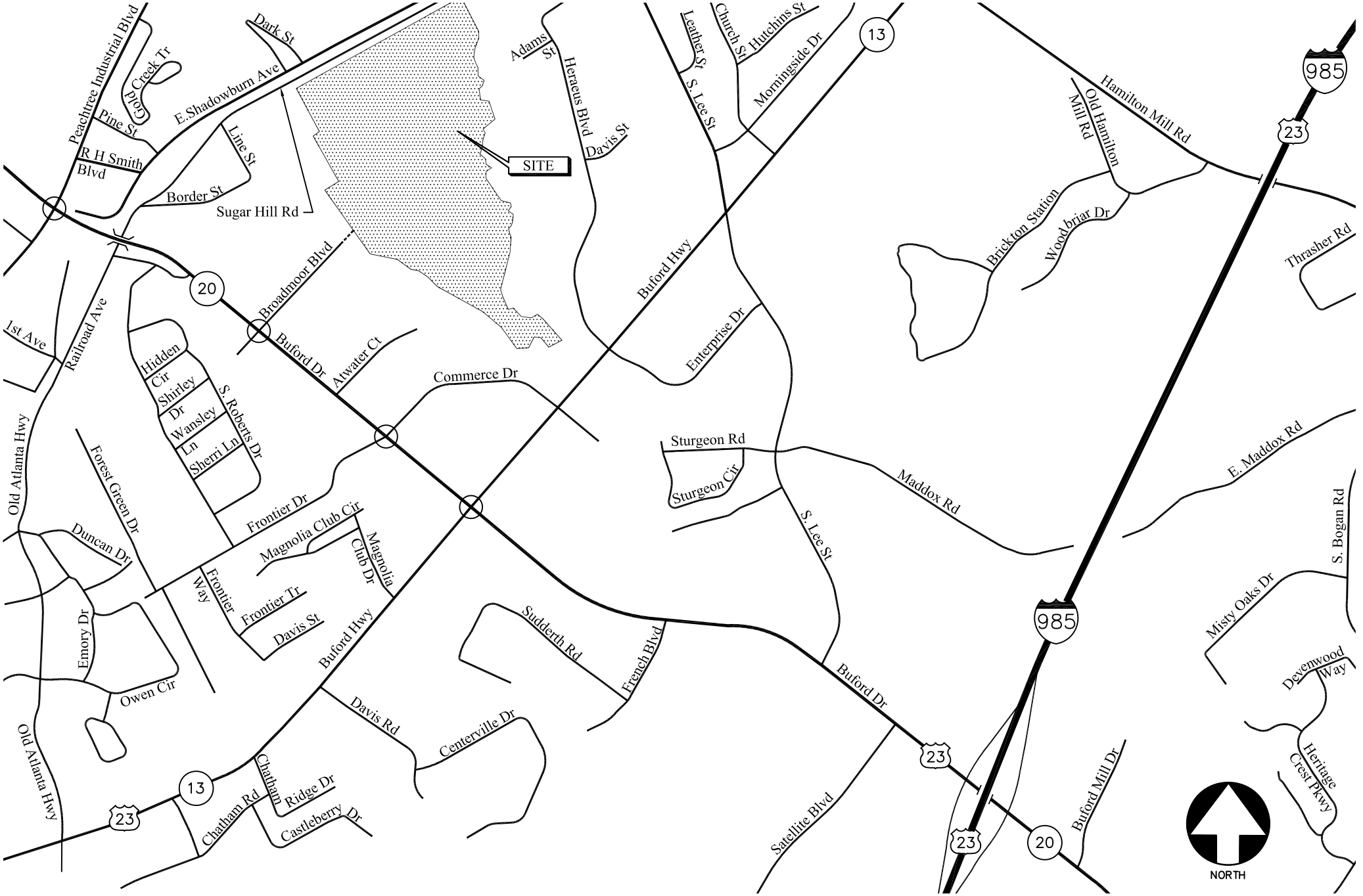
Sidewalks and pedestrian facilities are present intermittently along the following roadways in the study network:

- SR 20: south side of the road, between Peachtree Industrial Blvd and SR 13.
- Broadmoor Blvd: east side of the road, between SR 20 and USA Bouquet Driveway.
- Buford Hwy: west side of the road, between SR 20 and Church St.
- Peachtree Industrial Blvd: west side of road, between SR 20 and Pine St. East side of road between from SR 20 and 1st Street.

Bike paths are not present on the study network.

Existing Transit Facilities

There is no public transit services near the site.



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

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STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 2000 edition (HCM 2000). Synchro software, which utilizes the HCM 2000 methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

Unsignalized Intersections

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

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

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

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

Source: 2000 Highway Capacity Manual

Signalized Intersections

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

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

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

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

Source: 2000 Highway Capacity Manual

EXISTING TRAFFIC ANALYSIS

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

- Buford Drive (SR 20) at Peachtree Industrial Boulevard
- Buford Drive (SR 20) at Broadmoor Boulevard
- Buford Drive (SR 20) at Commerce Drive
- Buford Drive (SR 20) at Buford Highway (SR 13)

Turning movement counts were collected on Thursday, February 19, 2015. All turning movement counts were recorded during the AM and PM peak hours between 7:00am to 9:00am and 4:00pm to 6:00pm, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.

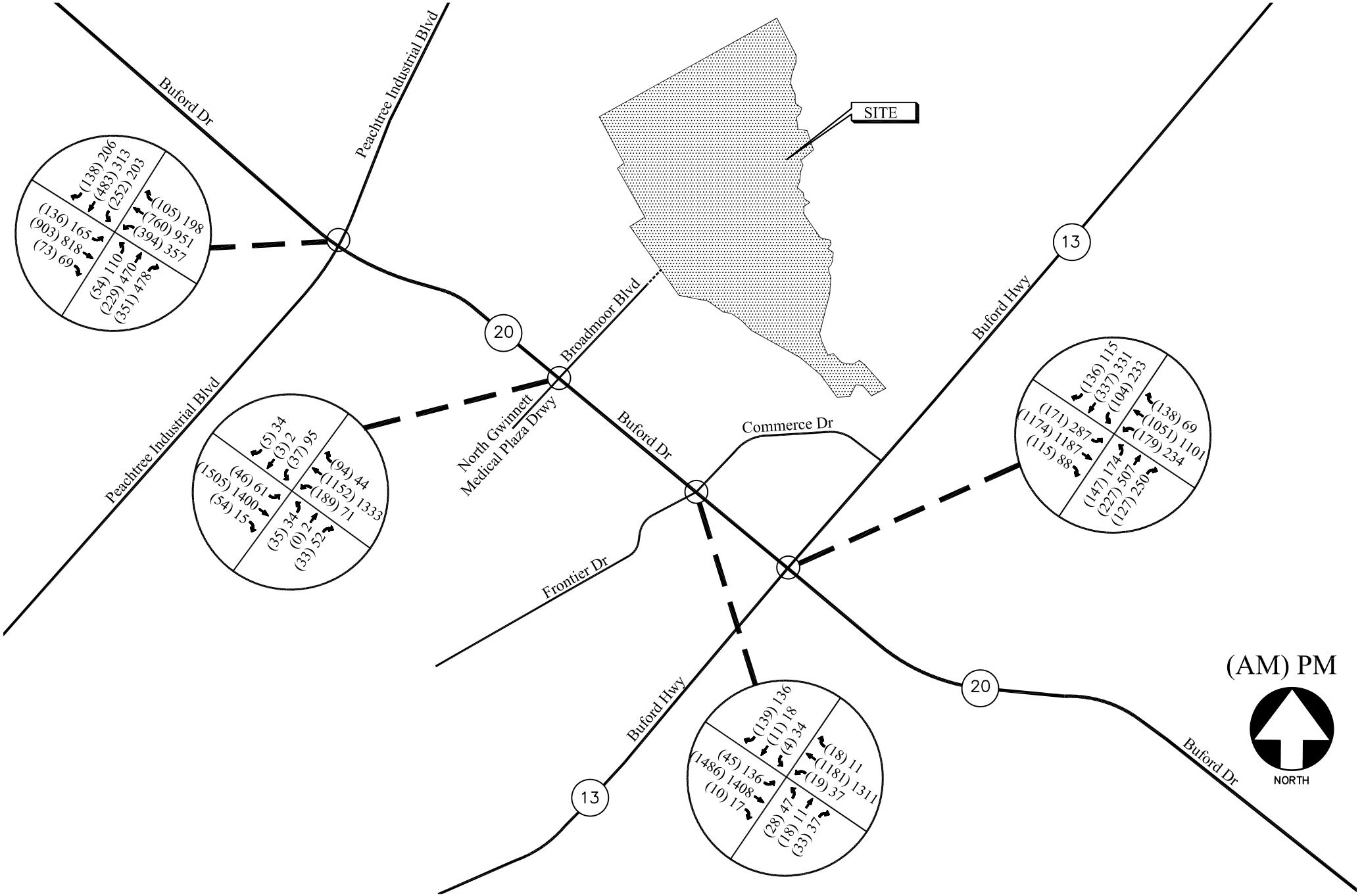
Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. To account for existing levels of heavy vehicle traffic, an 8% truck volume was modeled for through movements on SR 20 and Peachtree Industrial Blvd. In addition, a queue length analysis was also performed. The results of the analyses are shown in Tables 3 and 4. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
1	**SR 20 @ Peachtree Industrial Blvd**	Signalized	**E (77.5)**	0.98	**E (57.9)**	0.89
	-Eastbound Approach		D (53.7)		E (55.8)	
	-Westbound Approach		F (102.3)		D (48.4)	
	-Northbound Approach		F (92.5)		E (70.4)	
	-Southbound Approach		E (58.6)		E (62.8)	
2	**SR 20 @ Broadmoor Blvd**	Signalized	**C (24.0)**	1.02	**B (19.1)**	0.61
	-Eastbound Approach		B (16.6)		B (18.0)	
	-Westbound Approach		C (25.9)		A (9.3)	
	-Northbound Approach		E (70.2)		E (71.1)	
	-Southbound Approach		E (59.3)		F (88.3)	
3	**SR 20 @ Commerce Dr**	Signalized	**B (16.7)**	0.57	**C (32.0)**	0.6
	-Eastbound Approach		A (5.0)		B (14.8)	
	-Westbound Approach		C (20.8)		D (42.2)	
	-Northbound Approach		E (63.8)		E (69.1)	
	-Southbound Approach		E (61.9)		E (71.4)	
4	**SR 20 @ SR 13**	Signalized	**D (47.7)**	0.71	**E (66.0)**	0.94
	-Eastbound Approach		D (48.9)		E (61.1)	
	-Westbound Approach		D (42.3)		E (70.6)	
	-Northbound Approach		D (54.2)		E (64.4)	
	-Southbound Approach		D (50.3)		E (69.3)	

The results of existing traffic operations analysis indicates that SR 20 at Peachtree Industrial Blvd is not operating at an acceptable overall level-of-service (“D” or better by local standards) in both the AM and PM peak hours. Additionally, SR 20 at SR 13 is not operating at an acceptable overall level-of-service (“D” or better by local standards) in the PM peak hours.



EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 2

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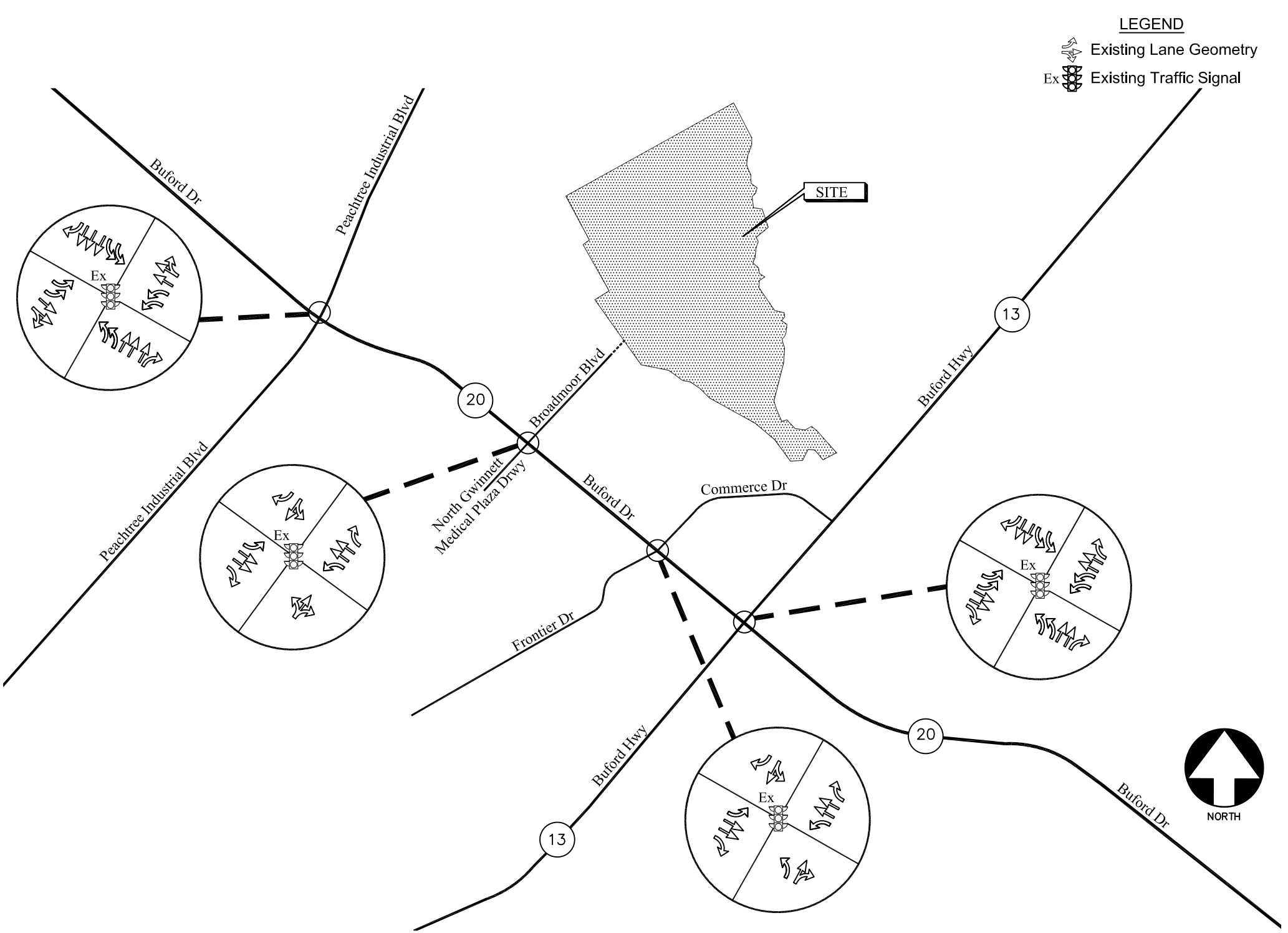

EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

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PROJECT DESCRIPTION

The proposed Broadmoor Industrial site will be located to the northwest of the intersection of Buford Drive (SR 20) at Buford Highway (SR 13). The development will consist of:

- High Cube Warehouse – 1,126,320 sf
- General Light Industrial – 65,000 sf
- Warehousing – 168,000 sf
- General Office – 35,000 sf

The development proposes to have access from Broadmoor Boulevard as an extension of the existing roadway.

Site Plan

A site plan is shown in Figure 4. A larger size drawing and a digital copy of the site plan are also provided with this report.

Planned Bicycle and Pedestrian Facilities

No bicycle or pedestrian facilities are planned for the development.

Planned Transit Facilities

There is no public transit service near the site.

Consistency with Adopted Comprehensive Plan

The following is an explanation as to how the proposed DRI relates to the local government's Comprehensive Plan in particular the transportation and capital improvements element, and any transportation improvements listed in the Short-Term Work Program(s) within the vicinity of the DRI. The City of Buford is currently in the process of updating its 2034 Comprehensive Plan Update. The draft outlines aspirational GDOT widening projects but does not mention any projects that would affect this DRI.

Project Phasing

A phasing schedule shall be provided for any proposed DRIs involving multiple phases. The phasing schedule shall include the types and amounts of land uses to be developed and should be identified by phase, the site location of each land use by phase, the amenities to be developed with each phase, and all transportation elements. The transportation elements shall focus upon infrastructure in place, access to the development, and internal mobility during each phase analyzed. This project has been evaluated for the complete build-out of the development in 2020.

Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses: 110 – General Light Industrial, 150 – Warehousing, 152 – High Cube Warehouse and 710 – General Office. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
110 – General Light Industrial	65,000 sf	53	7	60	8	55	63	453
150 – Warehousing	168,000 sf	87	23	110	21	62	83	770
152 – High Cube Warehouse	1,126,320 sf	81	51	132	70	73	143	1,892
710 – General Office	35,000 sf	73	10	83	20	98	118	591
Total Trips:		**294**	**91**	**385**	**119**	**288**	**407**	**3,706**

The additional information provided in the ITE Trip Generation Manual (9th Edition) was also consulted for the number of trucks generated by the development. The following estimates were used to distribute non-work/home trips. The developer has indicated that the market for this site will most likely attract a user that deals with the Metro Atlanta market.

- Building A (High Cube Warehouse) – 0.64 trucks per 1,000sf / 38% of weekday traffic
- Building B (General Office / Service) – no guidance provided / presumed negligible
- Building C (General Light Industrial) – no guidance provided / 15% generated traffic used
- Building D (Warehousing) – data point from one site / 20% of generated traffic

Truck Traffic: 941 trips per day or 25% of the site traffic

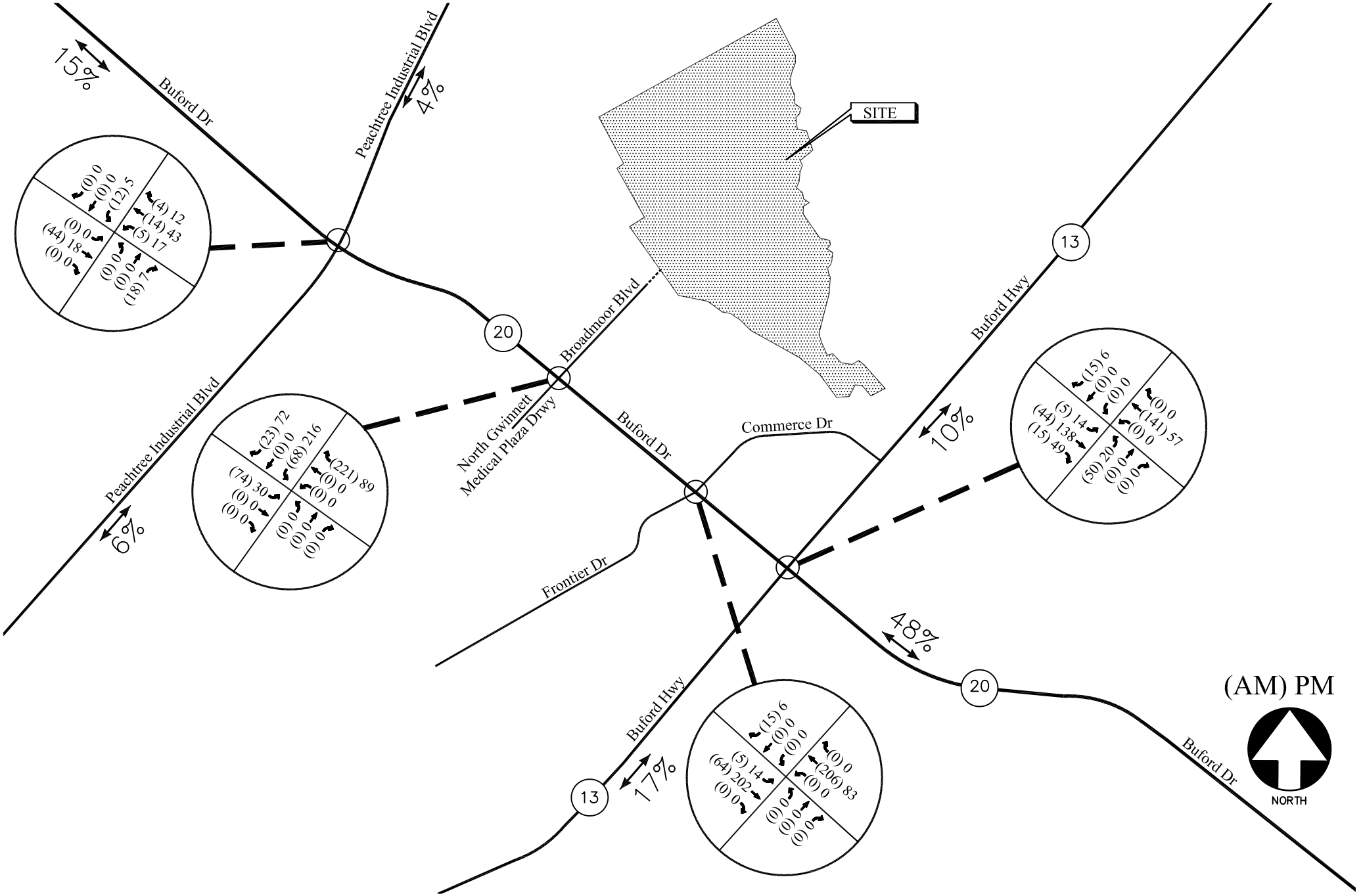
- 5% to Peachtree Ind Blvd
- 20% to I-985 / I-85

To account for increases in heavy vehicle traffic, the percent of trucks on SR 20, SR 13 and Peachtree Industrial Blvd were increased from 8% to 9% in the build analysis. At the site driveway a percentage of 25% was assumed for the amount of heavy vehicles leaving the site. Truck traffic accounts for 25% of the trips generated by the site (941 trips per day).

Trip Distribution

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

Figure 4 – Site Plan



TRIP DISTRIBUTION AND SITE-GENERATED PEAK HOUR VOLUMES

FIGURE 5

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FUTURE TRAFFIC ANALYSIS

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

Improvements that are identified as "System Improvements" address deficiencies that are found within the road network for the "No-Build" conditions, without the addition of traffic from the proposed development. Improvements that are identified as "Site Mitigation Improvements" address site added impacts that are in addition to those caused by the background traffic. The results of the analysis are shown in Tables 6 and 7.

Background Traffic Description

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

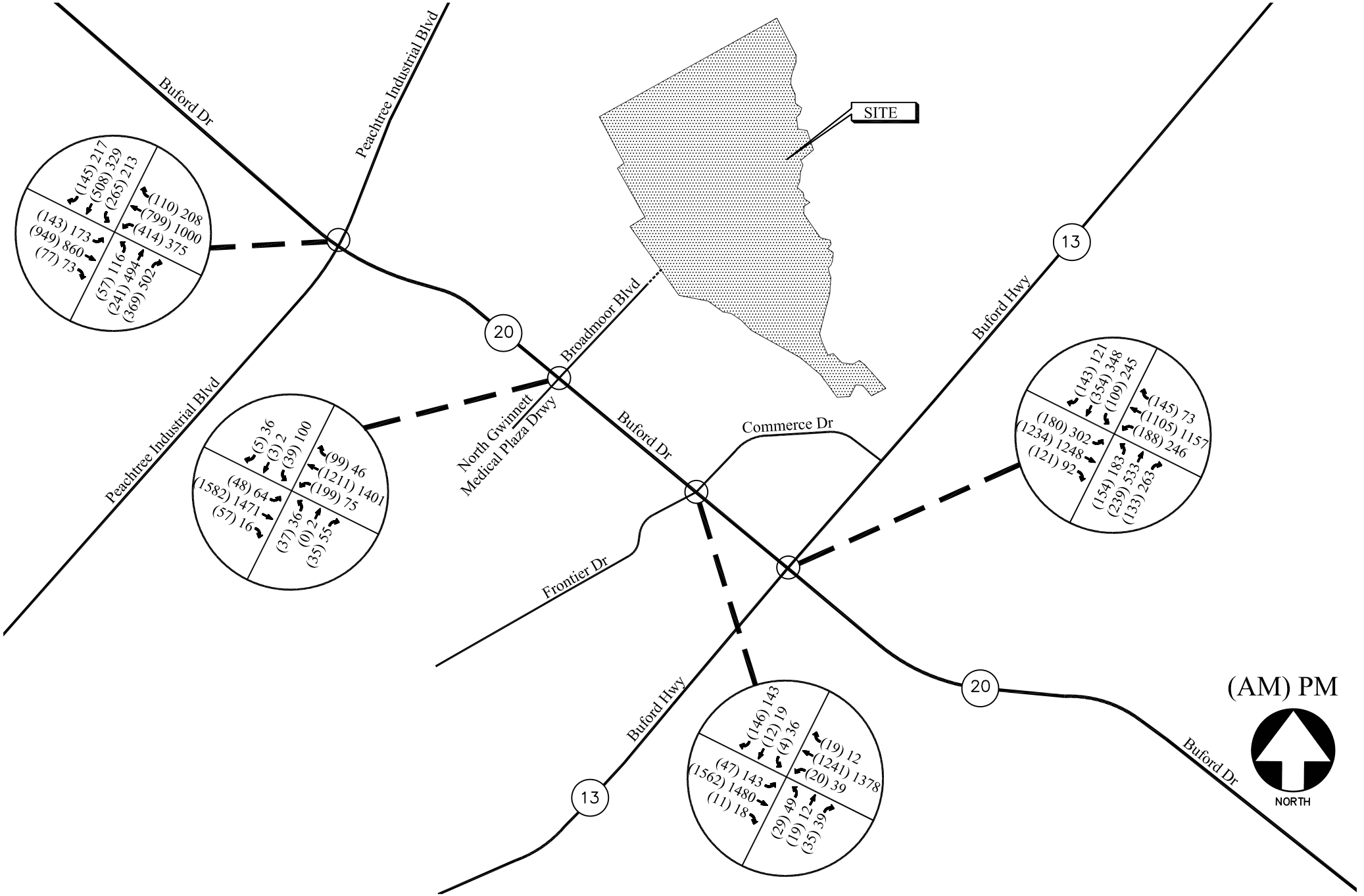
Annual Growth Rate

In order to evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last several years revealed no consistent positive growth of through traffic; therefore, a growth rate of 1% was used in the analysis. This growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future "No-Build" volumes on the roadway are shown in Figure 6.

Planned and Programmed Improvements in Study Area

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

TABLE 5 – PLANNED AND PROGRAMMED IMPROVEMENTS				
ARC Number / GDOT Number / Local Number	Route	Type of Improvement	Scheduled Completion Year	Source
ASP-GW-362/ PI 0002393	SR 13 (Buford Hwy) from Sugarloaf Parkway to SR 20	General Purpose Roadway Capacity (2 to 4 lanes)	TBD	Plan 2040
PI 0004430	SR 20 from E of Burnette Trail to Peachtree Ind Blvd	General Purpose Roadway Capacity (2 to 4 lanes)	Let Date: 01-18-13	TransPi



FUTURE (NO-BUILD) PEAK HOUR VOLUMES

FIGURE 6

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Site Access Configuration

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

- Broadmoor Boulevard
  - This driveway will consist of two entering and two exiting lanes.
  - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound and westbound left turn movements.
  - Entering left turn movements will be made from the dedicated eastbound left turn bay.
  - Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.

Intersection Operations Analysis (Background and Future)

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes (Figure 7) were used to evaluate the "Build" condition, which includes the projected site traffic. The results of the "No-Build" and "Build" operations analyses with the assumed site access configuration are shown in Tables 6 and 7.

TABLE 6 – FUTURE INTERSECTION OPERATIONS

	Intersection	No-Build: LOS (Delay)		Build: LOS (Delay)	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 20 @ Peachtree Industrial Blvd**	**F (87.6)**	**E (62.6)**	**F (94.5)**	**E (65.8)**
	-Eastbound Approach	D (54.3)	E (56.7)	E (55.6)	E (55.6)
	-Westbound Approach	F (111.9)	D (48.8)	F (111.6)	D (49.7)
	-Northbound Approach	F (128.7)	F (85.6)	F (168.1)	F (98.2)
	-Southbound Approach	E (61.3)	E (66.2)	E (63.7)	E (68.5)
2	**SR 20 @ Broadmoor Blvd**	**C (29.6)**	**C (20.1)**	**D (44.4)**	**F (135.2)**
	-Eastbound Approach	B (18.1)	B (18.3)	C (21.8)	B (20.0)
	-Westbound Approach	D (36.4)	B (10.6)	D (48.1)	B (10.5)
	-Northbound Approach	E (71.5)	E (73.3)	F (93.5)	F (1200.8)
	-Southbound Approach	E (58.8)	F (93.1)	F (161.9)	F (686.1)
3	**SR 20 @ Commerce Dr**	**B (17.2)**	**C (33.3)**	**B (19.5)**	**C (33.0)**
	-Eastbound Approach	A (5.3)	B (16.2)	A (7.4)	B (15.3)
	-Westbound Approach	C (21.6)	D (43.8)	C (24.2)	D (45.9)
	-Northbound Approach	E (63.9)	E (68.7)	E (63.7)	E (68.7)
	-Southbound Approach	E (61.8)	E (71.1)	E (61.8)	E (71.0)
4	**SR 20 @ SR 13**	**D (48.5)**	**E (71.8)**	**D (54.2)**	**F (86.4)**
	-Eastbound Approach	D (49.3)	E (66.8)	D (50.3)	F (93.7)
	-Westbound Approach	D (42.3)	E (78.4)	D (47.3)	F (92.7)
	-Northbound Approach	E (56.9)	E (67.9)	F (80.1)	E (71.1)
	-Southbound Approach	D (52.2)	E (74.1)	D (53.8)	E (75.6)

Table 7 – Future Intersection 95th Percentile Queues						
	Intersection	Available Storage	No-Build: feet		Build: feet	
			AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 20 @ Peachtree Industrial Blvd**					
	-Eastbound Left	315’	116	171	117	172
	-Eastbound Through/Right	-	620	588	693	618
	-Westbound Left	340’	382	238	384	237
	-Westbound Through/Right	-	466	831	486	866
	-Northbound Left	-	56	101	56	101
	-Northbound Through	-	118	239	119	240
	-Northbound Right	-	471	593	485	599
	-Southbound Left	590’	231	200	232	201
	-Southbound Through	-	233	158	234	158
	-Southbound Right	550’	57	129	57	138
2	**SR 20 @ Broadmoor Blvd**					
	-Eastbound Left	130’	22	8	49	12
	-Eastbound Through	-	651	756	658	751
	-Eastbound Right	130’	26	6	26	6
	-Westbound Left	140’	238	11	260	11
	-Westbound Through	-	400	88	452	88
	-Westbound Right	290’	18	1	42	1
	-Northbound Left/Through/Right	-	184	72	246	140
	-Southbound Left/Through	-	29	100	63	408
	-Southbound Right	-	9	28	14	62
3	**SR 20 @ Commerce Dr**					
	-Eastbound Left	155’	73	249	71	226
	-Eastbound Through	-	49	446	295	483
	-Eastbound Right	230’	0	9	0	6
	-Westbound Left	480’	33	54	31	50
	-Westbound Through	-	580	817	677	828
	-Westbound Right	-	14	12	10	12
	-Northbound Left	-	60	98	60	98
	-Northbound Through/Right	-	42	38	42	38
	-Southbound Left/Through	-	39	92	39	92
	-Southbound Right	-	58	70	60	73
4	**SR 20 @ SR 13**					
	-Eastbound Left	240’	126	222	131	246
	-Eastbound Through	-	742	903	784	1088
	-Eastbound Right	800’	56	48	54	69
	-Westbound Left	295’	140	222	141	223
	-Westbound Through	-	556	856	675	936
	-Westbound Right	220’	63	63	72	64
	-Northbound Left	235’	119	161	184	189
	-Northbound Through	-	159	371	160	372
	-Northbound Right	155’	33	194	33	199
	-Southbound Left	270’	88	219	88	220
	-Southbound Through	-	233	240	233	240
	-Southbound Right	570’	53	57	57	58

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found within the study network for the "No-Build" conditions, without the addition of traffic from the proposed development. The following system improvements and recommendations have identified for the intersections that have an overall level-of-service "E" or "F" in the No-Build conditions.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. The delays at this intersection are a result of the demand at the signal exceeding the capacity of each of the approaches. As the intersection already has dual left turn lanes on each approach, right turn lanes on Peachtree Industrial Blvd, and analyses have shown no significant benefit to adding right turn lanes on SR 20, no other capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D" or better apart from increasing the number of through lanes at the intersection. The westbound left turn storage is being exceeded in the morning peak hour; however, extending the storage for this lane would likely impact the bridge segment over the railway to the east. No reasonable system improvements have been identified for the intersection.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. The delays at this intersection are a result of the demand at the signal exceeding the capacity of each of the approaches. As the intersection already has dual left turn lanes and a right turn lane on each approach no other reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D". There is potential to shift traffic from the eastbound left movement by adding dual eastbound left turns for the upstream intersection at Commerce Drive (thus reducing demand and green time needed to serve the movement at SR 13); however, scenarios of this option have not shown significant benefits to the overall operations at either intersection.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by fewer than 7 seconds in the AM peak period and fewer than 4 seconds in the PM peak period for the average vehicle and have minimal effects on the approach queues. Because operations would not be significantly impacted beyond the projected "No-Build" conditions, mitigation improvements have not been identified.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by 15 seconds for the average vehicle in the PM peak hour, bringing the overall level-of-service for the intersection to "F". As discussed in the System Recommendations and Improvements section, no other reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D".

SR 20 at Broadmoor Blvd

The intersection has been found to have a level-of-service "C" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by approximately 15 seconds in the AM peak period and by approximately 115 seconds in the PM peak period. Because the level-of-service can be improved with timing changes, no mitigation improvements have been identified.

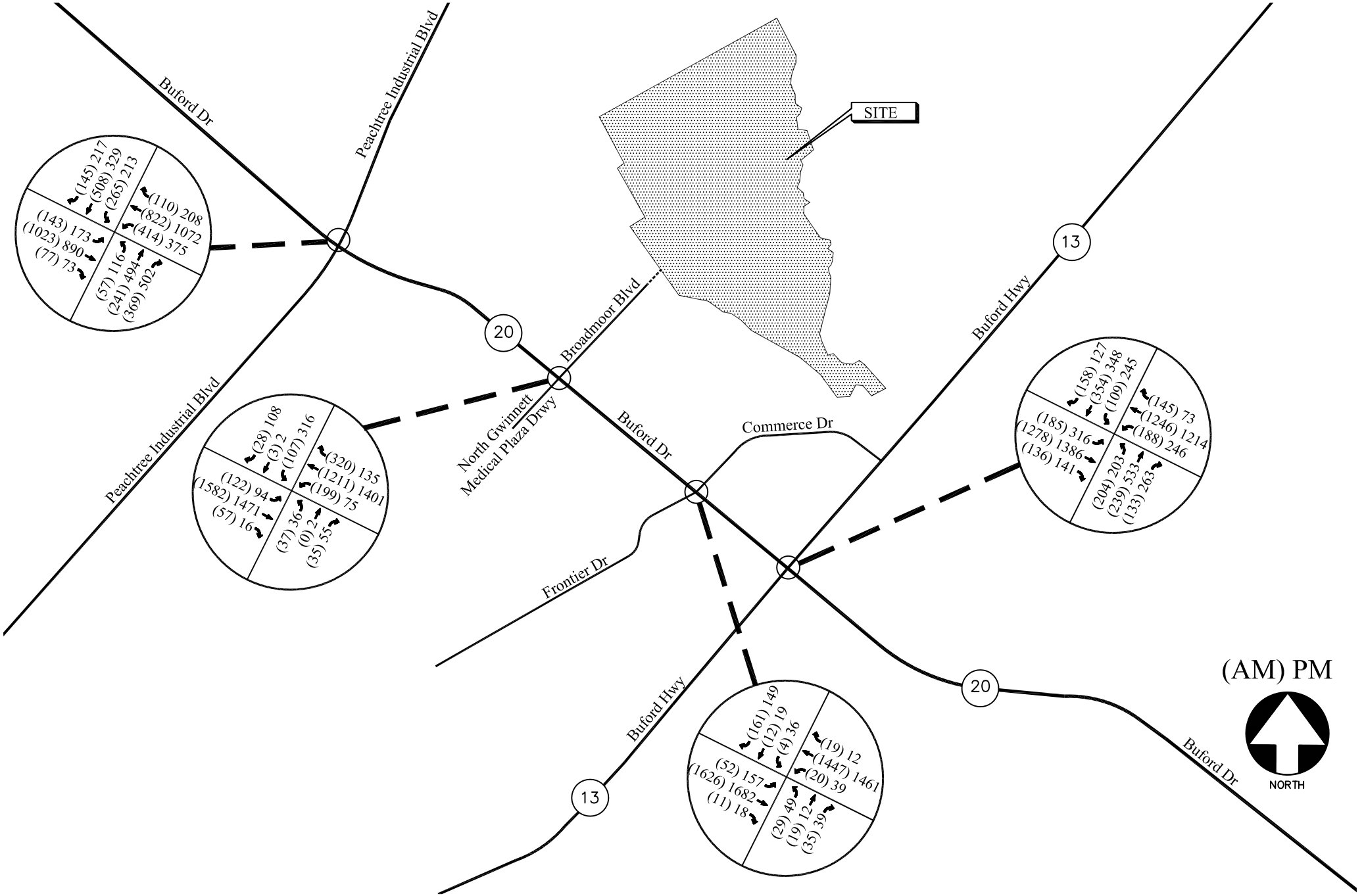
Improvements that have been identified as "Site Mitigation" improvements were added to the model of the study network for the "Build" conditions. Items that were identified as "System Improvements" have added to the model of the study network for both the "No-Build" and "Build" conditions. The results of the improved conditions are shown in Tables 8 and 9, below.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	No-Build: LOS (Delay)		Build Improved: LOS (Delay)	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 20 @ Peachtree Industrial Blvd**	**F (87.6)**	**E (62.6)**	**F (94.5)**	**E (65.5)**
	-Eastbound Approach	D (54.3)	E (56.7)	E (55.6)	E (55.6)
	-Westbound Approach	F (111.9)	D (48.8)	F (111.6)	D (48.9)
	-Northbound Approach	F (128.7)	F (85.6)	F (168.1)	F (98.2)
	-Southbound Approach	E (61.3)	E (66.2)	E (63.7)	E (68.5)
2	**SR 20 @ Broadmoor Blvd**	**C (29.6)**	**C (20.1)**	**D (44.4)**	**D (44.3)**
	-Eastbound Approach	B (18.1)	B (18.3)	C (21.8)	C (26.4)
	-Westbound Approach	D (36.4)	B (10.6)	D (48.1)	B (16.9)
	-Northbound Approach	E (71.5)	E (73.3)	F (93.5)	D (51.9)
	-Southbound Approach	E (58.8)	F (93.1)	F (161.9)	F (200.4)
3	**SR 20 @ Commerce Dr**	**B (17.2)**	**C (33.3)**	**B (19.5)**	**C (34.4)**
	-Eastbound Approach	A (5.3)	B (16.2)	A (7.4)	B (18.1)
	-Westbound Approach	C (21.6)	D (43.8)	C (24.2)	D (45.9)
	-Northbound Approach	E (63.9)	E (68.7)	E (63.7)	E (68.7)
	-Southbound Approach	E (61.8)	E (71.1)	E (61.8)	E (71.0)
4	**SR 20 @ SR 13**	**D (48.5)**	**E (71.8)**	**D (54.2)**	**F (86.9)**
	-Eastbound Approach	D (49.3)	E (66.8)	D (50.3)	F (95.2)
	-Westbound Approach	D (42.3)	E (78.4)	D (47.3)	F (92.7)
	-Northbound Approach	E (56.9)	E (67.9)	F (80.1)	E (71.1)
	-Southbound Approach	D (52.2)	E (74.1)	D (53.8)	E (75.6)

TABLE 9 – FUTURE INTERSECTION 95TH PERCENTILE QUEUES						
	Intersection	Available Storage	No-Build: feet		Build: feet	
			AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 20 @ Peachtree Industrial Blvd**					
	-Eastbound Left	315’	116	171	117	172
	-Eastbound Through/Right	-	620	588	693	618
	-Westbound Left	340’	382	238	384	237
	-Westbound Through/Right	-	466	831	486	887
	-Northbound Left	-	56	101	56	101
	-Northbound Through	-	118	239	119	240
	-Northbound Right	-	471	593	485	599
	-Southbound Left	590’	231	200	232	201
	-Southbound Through	-	233	158	234	158
	-Southbound Right	550’	57	129	57	138
2	**SR 20 @ Broadmoor Blvd**					
	-Eastbound Left	130’	22	8	49	18
	-Eastbound Through	-	651	756	658	777
	-Eastbound Right	130’	26	6	26	7
	-Westbound Left	140’	238	11	260	66
	-Westbound Through	-	400	88	452	152
	-Westbound Right	290’	18	1	42	1
	-Northbound Left/Through/Right	-	184	72	246	58
	-Southbound Left/Through	-	29	100	63	262
	-Southbound Right	-	9	28	14	35
3	**SR 20 @ Commerce Dr**					
	-Eastbound Left	155’	73	249	71	195
	-Eastbound Through	-	49	446	295	573
	-Eastbound Right	230’	0	9	0	5
	-Westbound Left	480’	33	54	31	50
	-Westbound Through	-	580	817	677	828
	-Westbound Right	-	14	12	10	12
	-Northbound Left	-	60	98	60	98
	-Northbound Through/Right	-	42	38	42	38
	-Southbound Left/Through	-	39	92	39	92
	-Southbound Right	-	58	70	60	73
4	**SR 20 @ SR 13**					
	-Eastbound Left	240’	126	222	131	246
	-Eastbound Through	-	742	903	784	1088
	-Eastbound Right	800’	56	48	54	70
	-Westbound Left	295’	140	222	141	223
	-Westbound Through	-	556	856	675	936
	-Westbound Right	220’	63	63	72	64
	-Northbound Left	235’	119	161	184	189
	-Northbound Through	-	159	371	160	372
	-Northbound Right	155’	33	194	33	199
	-Southbound Left	270’	88	219	88	220
	-Southbound Through	-	233	240	233	240
	-Southbound Right	570’	53	57	57	58

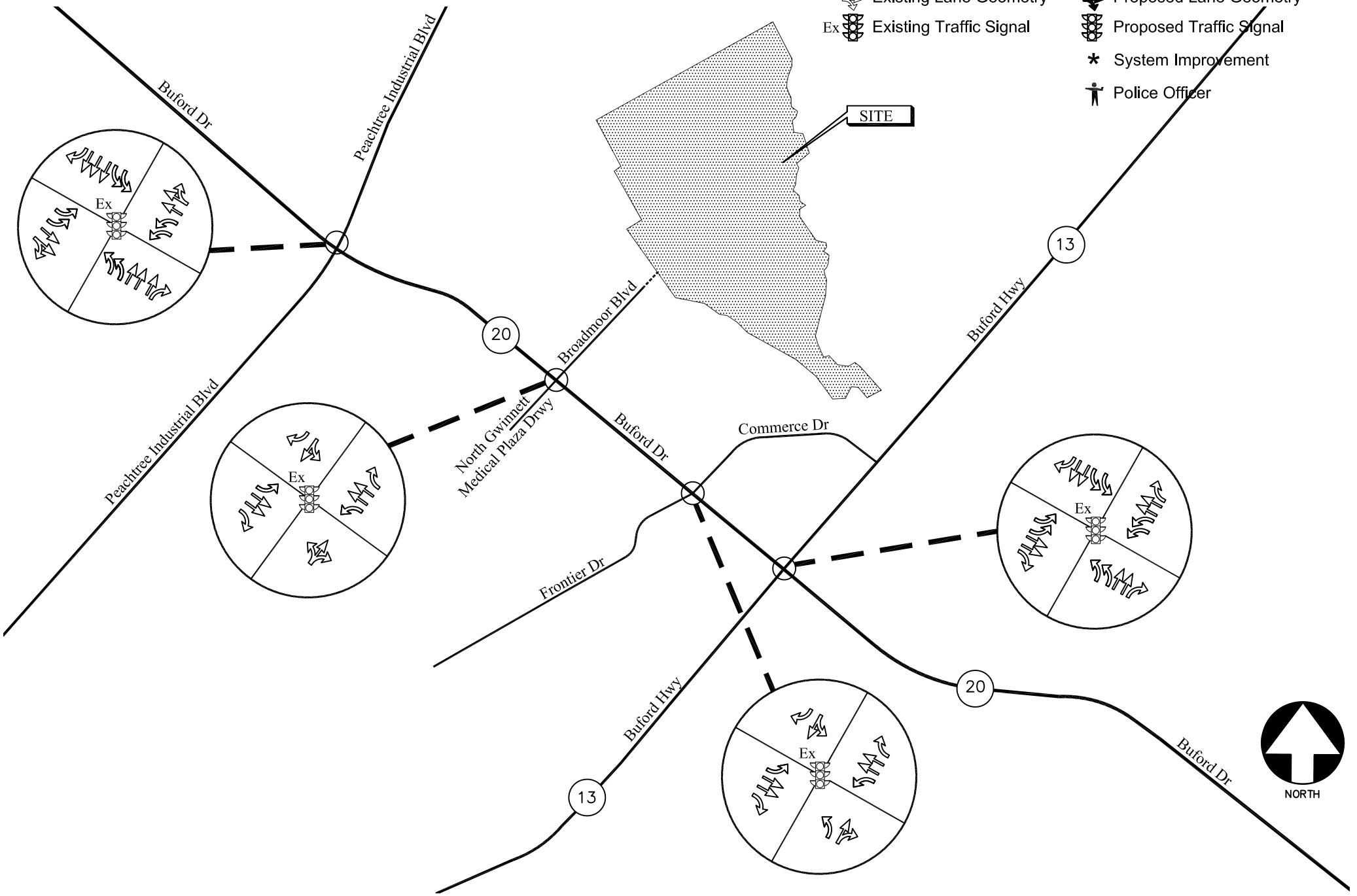
Recommendations on traffic control and lane geometry are shown graphically in Figure 8.



FUTURE (BUILD) PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 8

A&R Engineering Inc.

CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the Broadmoor Industrial development proposed to the northwest of the intersection of Buford Drive (SR 20) at Buford Highway (SR 13). The development will consist of:

- High Cube Warehouse – 1,126,320 sf
- General Light Industrial – 65,000 sf
- Warehousing – 168,000 sf
- General Office – 35,000 sf

The development proposes to have access from Broadmoor Boulevard as an extension of the existing roadway. Existing and future operations after completion of the project were analyzed at the intersections of:

- Buford Drive (SR 20) at Peachtree Industrial Boulevard
- Buford Drive (SR 20) at Broadmoor Boulevard / North Gwinnett Medical Plaza Driveway
- Buford Drive (SR 20) at Commerce Drive / Frontier Drive
- Buford Drive (SR 20) at Buford Highway (SR 13)

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

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found within the study network for the "No-Build" conditions, without the addition of traffic from the proposed development. The following system improvements and recommendations have identified for the intersections that have an overall level-of-service "E" or "F" in the No-Build conditions.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. The delays at this intersection are a result of the demand at the signal exceeding the capacity of each of the approaches. As the intersection already has dual left turn lanes on each approach, right turn lanes on Peachtree Industrial Blvd, and analyses have shown no significant benefit to adding right turn lanes on SR 20, no other capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D" or better apart from increasing the number of through lanes at the intersection. The westbound left turn storage is being exceeded in the morning peak hour; however, extending the storage for this lane would likely impact the bridge segment over the railway to the east. No reasonable system improvements have been identified for the intersection.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. The delays at this intersection are a result of the demand at the signal exceeding the capacity of each of the approaches. As the intersection already has dual left turn lanes and a right turn

lane on each approach no other reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D". There is potential to shift traffic from the eastbound left movement by adding dual eastbound left turns for the upstream intersection at Commerce Drive (thus reducing demand and green time needed to serve the movement at SR 13); however, scenarios of this option have not shown significant benefits to the overall operations at either intersection.

Site Access Configuration

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

- Broadmoor Boulevard
    - This driveway will consist of two entering and two exiting lanes.
    - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound and westbound left turn movements.
    - Entering left turn movements will be made from the dedicated eastbound left turn bay.
    - Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development.

SR 20 at Peachtree Industrial Blvd

The intersection has been found to have a level-of-service "E" or "F" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by fewer than 7 seconds in the AM peak period and fewer than 4 seconds in the PM peak period for the average vehicle and have minimal effects on the approach queues. Because operations would not be significantly impacted beyond the projected "No-Build" conditions, mitigation improvements have not been identified.

SR 20 at SR 13

The intersection has been found to have a level-of-service "E" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by 15 seconds for the average vehicle in the PM peak hour, bringing the overall level-of-service for the intersection to "F". As discussed in the System Recommendations and Improvements section, no other reasonable capacity improvements can be identified to bring the level-of-service for the intersection to LOS "D".

SR 20 at Broadmoor Blvd

The intersection has been found to have a level-of-service "C" in the Existing and Future No-Build conditions. The addition of site traffic at the intersection is anticipated to increase overall delays by approximately 15 seconds in the AM peak period and by approximately 115 seconds in the PM peak period. Because the level-of-service can be improved with timing changes, no mitigation improvements have been identified.

Improvements that have been identified as “Site Mitigation” improvements were added to the model of the study network for the “Build” conditions. Items that were identified as “System Improvements” have added to the model of the study network for both the “No-Build” and “Build” conditions. The results of the improved conditions are shown in Tables 8 and 9.

Appendix

Existing Intersection Traffic Counts

Reliable Traffic Data Services, LLC

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TMC Data
SR 20 @ Peachtree Industrial Blvd

7-9am I 4-6pm

File Name : 36520001
Site Code : 36520001
Start Date : 2/19/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Peachtree Industrial Blvd Northbound					Peachtree Industrial Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	13	63	65	0	141	47	87	29	0	163	37	205	29	0	271	93	210	40	0	343	918
07:15 AM	16	52	73	0	141	55	126	32	0	213	38	208	17	0	263	128	218	32	0	378	995
07:30 AM	13	56	71	0	140	71	120	30	0	221	39	255	30	0	324	87	187	20	0	294	979
07:45 AM	15	63	91	0	169	64	134	40	0	238	29	223	16	0	268	85	169	27	0	281	956
Total	57	234	300	0	591	237	467	131	0	835	143	891	92	0	1126	393	784	119	0	1296	3848
08:00 AM	10	58	116	0	184	62	103	36	0	201	30	217	10	0	257	94	186	26	0	306	948
08:15 AM	13	53	106	0	172	45	107	35	0	187	39	210	16	0	265	80	161	50	0	291	915
08:30 AM	13	56	100	0	169	35	75	33	0	143	26	208	15	0	249	75	188	36	0	299	860
08:45 AM	24	51	103	0	178	66	84	34	0	184	18	200	13	0	231	74	195	32	0	301	894
Total	60	218	425	0	703	208	369	138	0	715	113	835	54	0	1002	323	730	144	0	1197	3617
*** BREAK ***																					
04:00 PM	31	125	110	0	266	39	64	48	0	151	42	252	15	0	309	82	207	50	0	339	1065
04:15 PM	26	124	133	0	283	49	82	50	0	181	46	200	18	0	264	93	268	56	0	417	1145
04:30 PM	35	102	108	0	245	53	77	54	0	184	36	202	16	0	254	85	229	59	0	373	1056
04:45 PM	20	116	126	0	262	46	79	50	0	175	41	219	19	0	279	84	212	34	0	330	1046
Total	112	467	477	0	1056	187	302	202	0	691	165	873	68	0	1106	344	916	199	0	1459	4312
05:00 PM	29	128	111	0	268	55	75	52	0	182	42	197	16	0	255	95	242	49	0	386	1091
05:15 PM	24	111	95	0	230	42	81	69	0	192	46	221	14	0	281	107	245	42	0	394	1097
05:30 PM	25	97	91	0	213	28	60	53	0	141	26	177	17	0	220	76	257	39	0	372	946
05:45 PM	28	135	104	0	267	45	84	47	0	176	47	201	19	0	267	86	214	59	0	359	1069
Total	106	471	401	0	978	170	300	221	0	691	161	796	66	0	1023	364	958	189	0	1511	4203
Grand Total	335	1390	1603	0	3328	802	1438	692	0	2932	582	3395	280	0	4257	1424	3388	651	0	5463	15980
Apprch %	10.1	41.8	48.2	0		27.4	49	23.6	0		13.7	79.8	6.6	0		26.1	62	11.9	0		
Total %	2.1	8.7	10	0	20.8	5	9	4.3	0	18.3	3.6	21.2	1.8	0	26.6	8.9	21.2	4.1	0	34.2	

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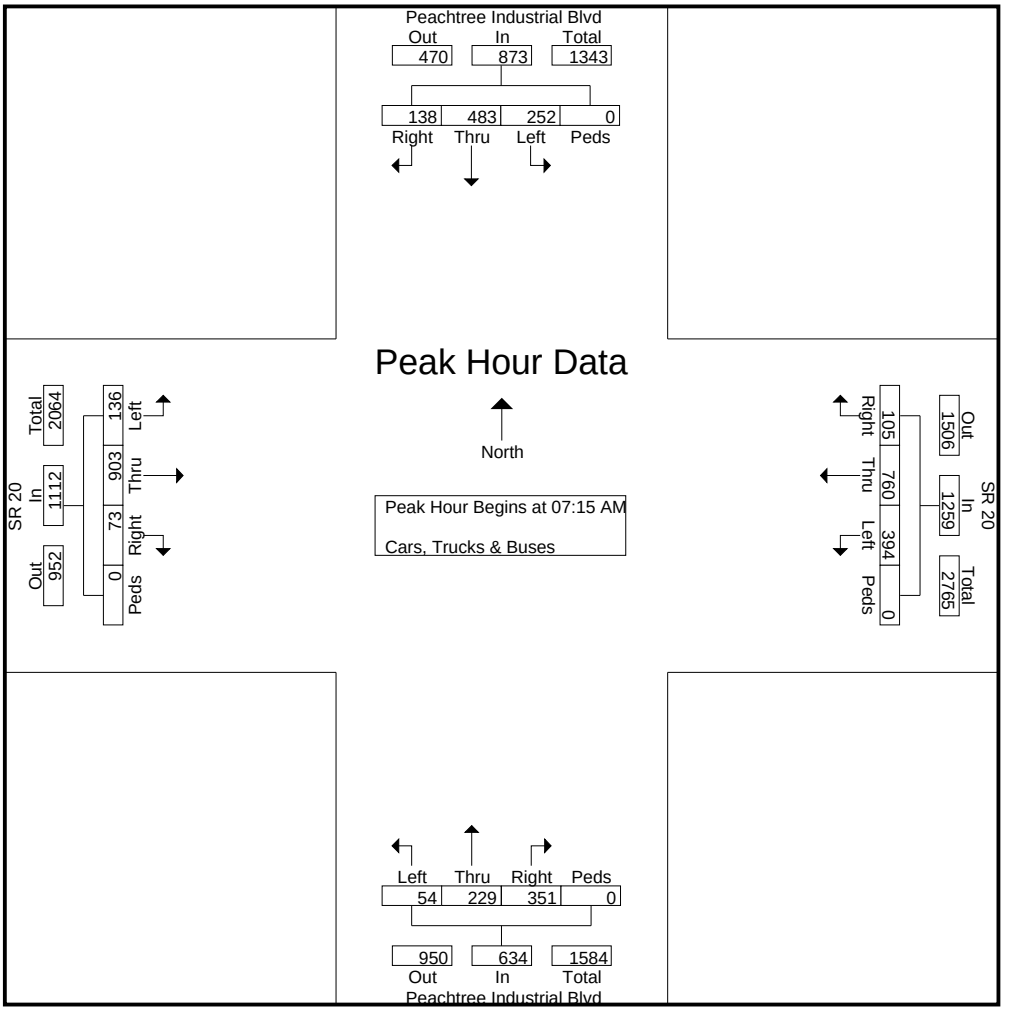
TMC Data
SR 20 @ Peachtree Industrial Blvd

7-9am I 4-6pm

File Name : 36520001
Site Code : 36520001
Start Date : 2/19/2015
Page No : 2

	Peachtree Industrial Blvd Northbound					Peachtree Industrial Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	**16**	52	73	0	141	55	126	32	0	213	38	208	17	0	263	**128**	**218**	**32**	0	**378**	**995**
07:30 AM	13	56	71	0	140	**71**	120	30	0	221	**39**	**255**	**30**	0	**324**	87	187	20	0	294	979
07:45 AM	15	**63**	91	0	169	64	**134**	**40**	0	**238**	29	223	16	0	268	85	169	27	0	281	956
08:00 AM	10	58	**116**	0	**184**	62	103	36	0	201	30	217	10	0	257	94	186	26	0	306	948
Total Volume	54	229	351	0	634	252	483	138	0	873	136	903	73	0	1112	394	760	105	0	1259	3878
% App. Total	8.5	36.1	55.4	0		28.9	55.3	15.8	0		12.2	81.2	6.6	0		31.3	60.4	8.3	0		
PHF	.844	.909	.756	.000	.861	.887	.901	.863	.000	.917	.872	.885	.608	.000	.858	.770	.872	.820	.000	.833	.974



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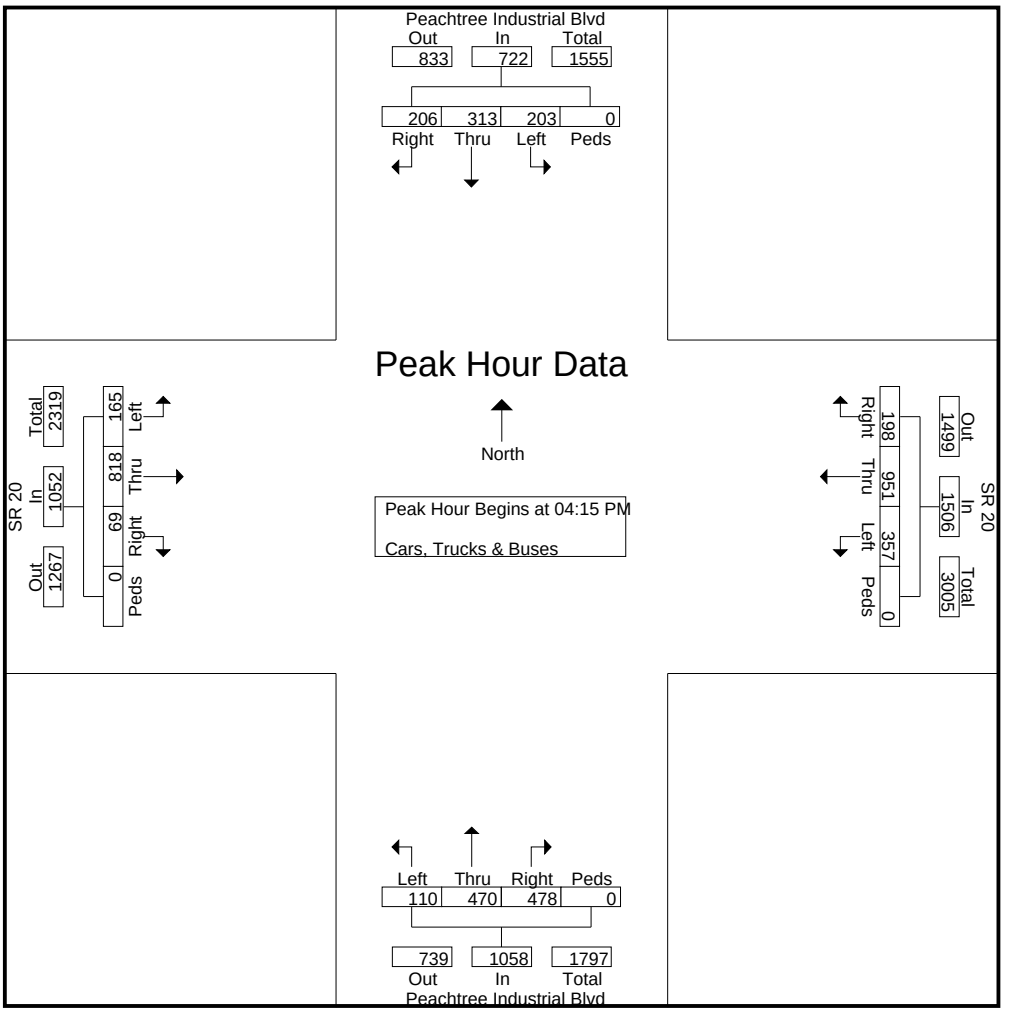
TMC Data
SR 20 @ Peachtree Industrial Blvd

7-9am I 4-6pm

File Name : 36520001
Site Code : 36520001
Start Date : 2/19/2015
Page No : 3

	Peachtree Industrial Blvd Northbound					Peachtree Industrial Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	26	124	**133**	0	**283**	49	**82**	50	0	181	**46**	200	18	0	264	93	**268**	56	0	**417**	**1145**
04:30 PM	**35**	102	108	0	245	53	77	**54**	0	**184**	36	202	16	0	254	85	229	**59**	0	373	1056
04:45 PM	20	116	126	0	262	46	79	50	0	175	41	**219**	**19**	0	**279**	84	212	34	0	330	1046
05:00 PM	29	**128**	111	0	268	**55**	75	52	0	182	42	197	16	0	255	**95**	242	49	0	386	1091
Total Volume	110	470	478	0	1058	203	313	206	0	722	165	818	69	0	1052	357	951	198	0	1506	4338
% App. Total	10.4	44.4	45.2	0		28.1	43.4	28.5	0		15.7	77.8	6.6	0		23.7	63.1	13.1	0		
PHF	.786	.918	.898	.000	.935	.923	.954	.954	.000	.981	.897	.934	.908	.000	.943	.939	.887	.839	.000	.903	.947



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TMC Data
SR 20 @ Broadmoor Blvd/
Medical Plaza Drwy
7-9am I 4-6pm

File Name : 36520002
Site Code : 36520002
Start Date : 2/19/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	North Gwinnett Medical Plaza Drwy Northbound					Broadmoor Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	0	1	0	3	2	0	0	0	2	6	290	1	0	297	6	335	11	0	352	654
07:15 AM	1	0	4	0	5	2	0	0	0	2	11	310	16	0	337	8	338	10	0	356	700
07:30 AM	0	0	3	0	3	7	0	2	0	9	12	376	9	0	397	25	273	12	0	310	719
07:45 AM	1	0	2	0	3	6	0	0	0	6	8	388	15	0	411	47	295	11	0	353	773
Total	4	0	10	0	14	17	0	2	0	19	37	1364	41	0	1442	86	1241	44	0	1371	2846
08:00 AM	14	0	15	0	29	15	3	1	0	19	12	370	18	0	400	71	289	37	0	397	845
08:15 AM	20	0	13	0	33	9	0	2	0	11	14	371	12	0	397	46	295	34	0	375	816
08:30 AM	2	0	4	0	6	7	0	4	0	11	15	310	12	0	337	30	273	13	0	316	670
08:45 AM	7	1	19	0	27	6	0	5	0	11	18	334	22	0	374	22	311	13	0	346	758
Total	43	1	51	0	95	37	3	12	0	52	59	1385	64	0	1508	169	1168	97	0	1434	3089
*** BREAK ***																					
04:00 PM	10	0	11	0	21	26	0	11	0	37	14	356	1	0	371	12	332	9	0	353	782
04:15 PM	6	1	10	0	17	23	1	7	0	31	16	332	3	0	351	30	347	14	0	391	790
04:30 PM	12	0	18	0	30	22	1	9	0	32	14	353	9	0	376	18	324	7	0	349	787
04:45 PM	6	1	13	0	20	24	0	7	0	31	17	359	2	0	378	11	330	14	0	355	784
Total	34	2	52	0	88	95	2	34	0	131	61	1400	15	0	1476	71	1333	44	0	1448	3143
05:00 PM	7	1	7	0	15	17	2	5	0	24	9	325	0	0	334	10	335	12	0	357	730
05:15 PM	1	0	6	0	7	29	0	5	0	34	10	279	4	0	293	9	356	6	0	371	705
05:30 PM	8	0	1	0	9	34	0	12	0	46	17	340	3	0	360	13	374	6	0	393	808
05:45 PM	1	0	5	0	6	17	0	8	0	25	23	405	2	0	430	21	333	12	0	366	827
Total	17	1	19	0	37	97	2	30	0	129	59	1349	9	0	1417	53	1398	36	0	1487	3070
Grand Total	98	4	132	0	234	246	7	78	0	331	216	5498	129	0	5843	379	5140	221	0	5740	12148
Apprch %	41.9	1.7	56.4	0		74.3	2.1	23.6	0		3.7	94.1	2.2	0		6.6	89.5	3.9	0		
Total %	0.8	0	1.1	0	1.9	2	0.1	0.6	0	2.7	1.8	45.3	1.1	0	48.1	3.1	42.3	1.8	0	47.3	

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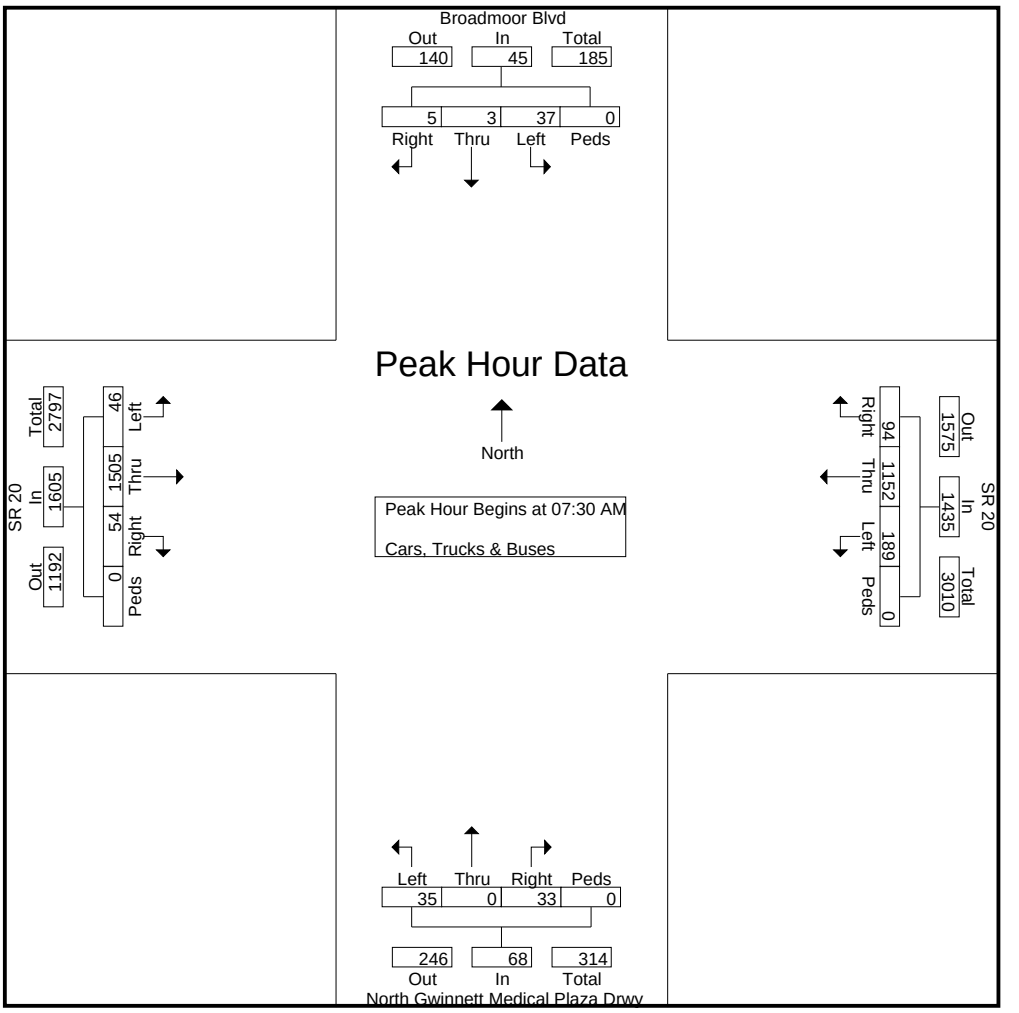
TMC Data
SR 20 @ Broadmoor Blvd/
Medical Plaza Drwy
7-9am I 4-6pm

File Name : 36520002
Site Code : 36520002
Start Date : 2/19/2015
Page No : 2

	North Gwinnett Medical Plaza Drwy Northbound					Broadmoor Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	3	0	3	7	0	**2**	0	9	12	376	9	0	397	25	273	12	0	310	719
07:45 AM	1	0	2	0	3	6	0	0	0	6	8	**388**	15	0	**411**	47	**295**	11	0	353	773
08:00 AM	14	0	**15**	0	29	**15**	**3**	1	0	**19**	12	370	**18**	0	400	**71**	289	**37**	0	**397**	**845**
08:15 AM	**20**	0	13	0	**33**	9	0	2	0	11	**14**	371	12	0	397	46	295	34	0	375	816
Total Volume	35	0	33	0	68	37	3	5	0	45	46	1505	54	0	1605	189	1152	94	0	1435	3153
% App. Total	51.5	0	48.5	0		82.2	6.7	11.1	0		2.9	93.8	3.4	0		13.2	80.3	6.6	0		
PHF	.438	.000	.550	.000	.515	.617	.250	.625	.000	.592	.821	.970	.750	.000	.976	.665	.976	.635	.000	.904	.933



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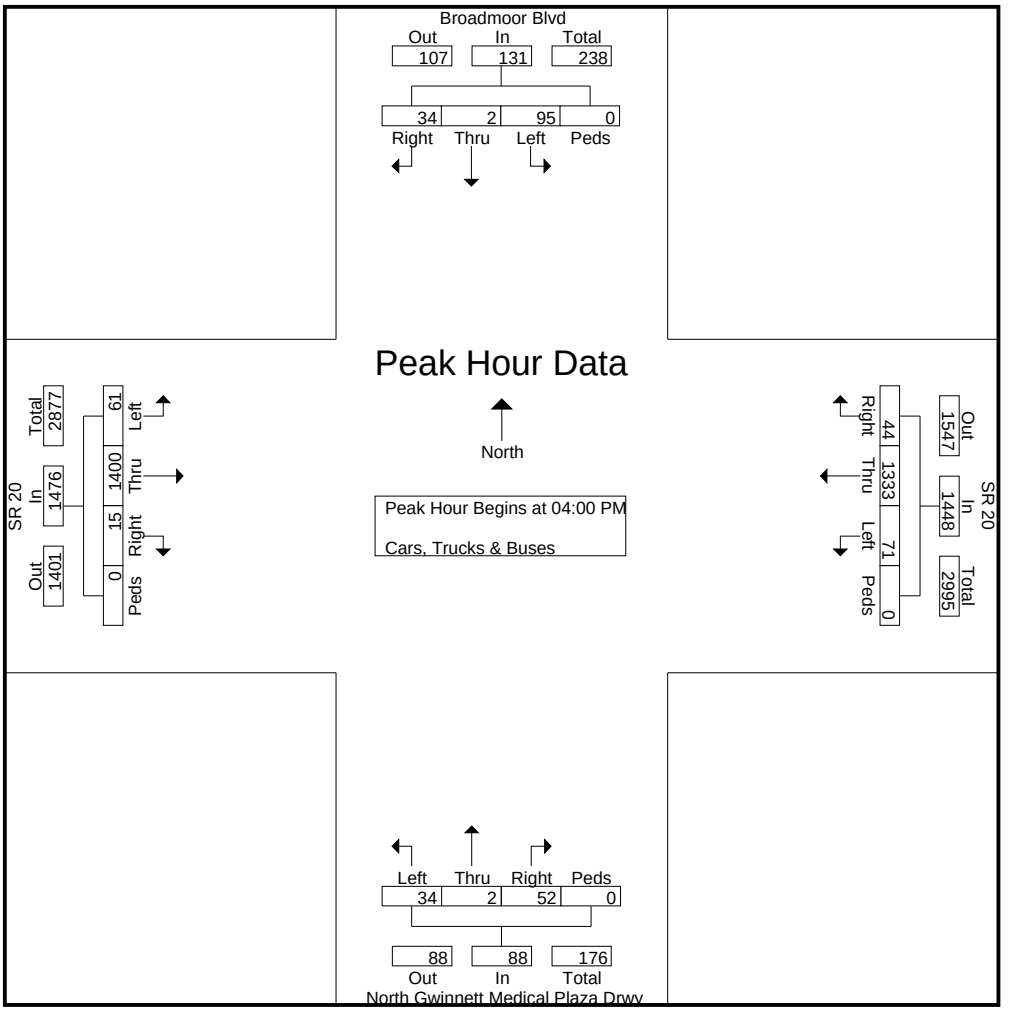
TMC Data
SR 20 @ Broadmoor Blvd/
Medical Plaza Drwy
7-9am I 4-6pm

File Name : 36520002
Site Code : 36520002
Start Date : 2/19/2015
Page No : 3

	North Gwinnett Medical Plaza Drwy Northbound					Broadmoor Blvd Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	10	0	11	0	21	**26**	0	**11**	0	**37**	14	356	1	0	371	12	332	9	0	353	782
04:15 PM	6	**1**	10	0	17	23	**1**	7	0	31	16	332	3	0	351	**30**	**347**	**14**	0	**391**	**790**
04:30 PM	**12**	0	**18**	0	**30**	22	1	9	0	32	14	353	**9**	0	376	18	324	7	0	349	787
04:45 PM	6	1	13	0	20	24	0	7	0	31	**17**	**359**	2	0	**378**	11	330	14	0	355	784
Total Volume	34	2	52	0	88	95	2	34	0	131	61	1400	15	0	1476	71	1333	44	0	1448	3143
% App. Total	38.6	2.3	59.1	0		72.5	1.5	26	0		4.1	94.9	1	0		4.9	92.1	3	0		
PHF	.708	.500	.722	.000	.733	.913	.500	.773	.000	.885	.897	.975	.417	.000	.976	.592	.960	.786	.000	.926	.995



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TMC Data
SR 20 @ Commerce Dr/Frontier Dr

7-9am I 4-6pm

File Name : 36520003
Site Code : 36520003
Start Date : 2/19/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Frontier Dr Northbound					Commerce Dr Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	6	2	8	0	16	1	0	32	0	33	6	287	0	0	293	0	336	2	0	338	680
07:15 AM	3	5	9	0	17	1	3	25	0	29	4	323	0	0	327	1	342	3	0	346	719
07:30 AM	9	3	12	0	24	1	4	30	0	35	9	376	0	0	385	5	273	6	0	284	728
07:45 AM	6	7	10	0	23	1	4	41	0	46	13	389	3	0	405	5	298	3	0	306	780
Total	24	17	39	0	80	4	11	128	0	143	32	1375	3	0	1410	11	1249	14	0	1274	2907
08:00 AM	8	6	6	0	20	0	1	34	0	35	11	367	2	0	380	1	294	4	0	299	734
08:15 AM	5	2	5	0	12	2	2	34	0	38	12	354	5	0	371	8	316	5	0	329	750
08:30 AM	6	1	10	0	17	5	1	31	0	37	4	332	0	0	336	5	318	0	0	323	713
08:45 AM	9	2	9	0	20	6	0	36	0	42	18	328	3	0	349	5	311	8	0	324	735
Total	28	11	30	0	69	13	4	135	0	152	45	1381	10	0	1436	19	1239	17	0	1275	2932
*** BREAK ***																					
04:00 PM	14	1	10	0	25	9	4	38	0	51	27	358	4	0	389	10	330	3	0	343	808
04:15 PM	11	4	11	0	26	14	1	36	0	51	36	334	2	0	372	7	328	2	0	337	786
04:30 PM	11	3	8	0	22	5	5	32	0	42	36	362	6	0	404	7	323	2	0	332	800
04:45 PM	11	3	8	0	22	6	8	30	0	44	37	354	5	0	396	13	330	4	0	347	809
Total	47	11	37	0	95	34	18	136	0	188	136	1408	17	0	1561	37	1311	11	0	1359	3203
05:00 PM	10	3	4	0	17	15	2	40	0	57	37	341	4	0	382	5	331	6	0	342	798
05:15 PM	11	3	6	0	20	6	1	36	0	43	18	297	6	0	321	11	339	0	0	350	734
05:30 PM	16	2	4	0	22	12	0	30	0	42	47	337	10	0	394	8	358	2	0	368	826
05:45 PM	8	1	5	0	14	10	4	18	0	32	32	358	4	0	394	7	336	1	0	344	784
Total	45	9	19	0	73	43	7	124	0	174	134	1333	24	0	1491	31	1364	9	0	1404	3142
Grand Total	144	48	125	0	317	94	40	523	0	657	347	5497	54	0	5898	98	5163	51	0	5312	12184
Apprch %	45.4	15.1	39.4	0		14.3	6.1	79.6	0		5.9	93.2	0.9	0		1.8	97.2	1	0		
Total %	1.2	0.4	1	0	2.6	0.8	0.3	4.3	0	5.4	2.8	45.1	0.4	0	48.4	0.8	42.4	0.4	0	43.6	

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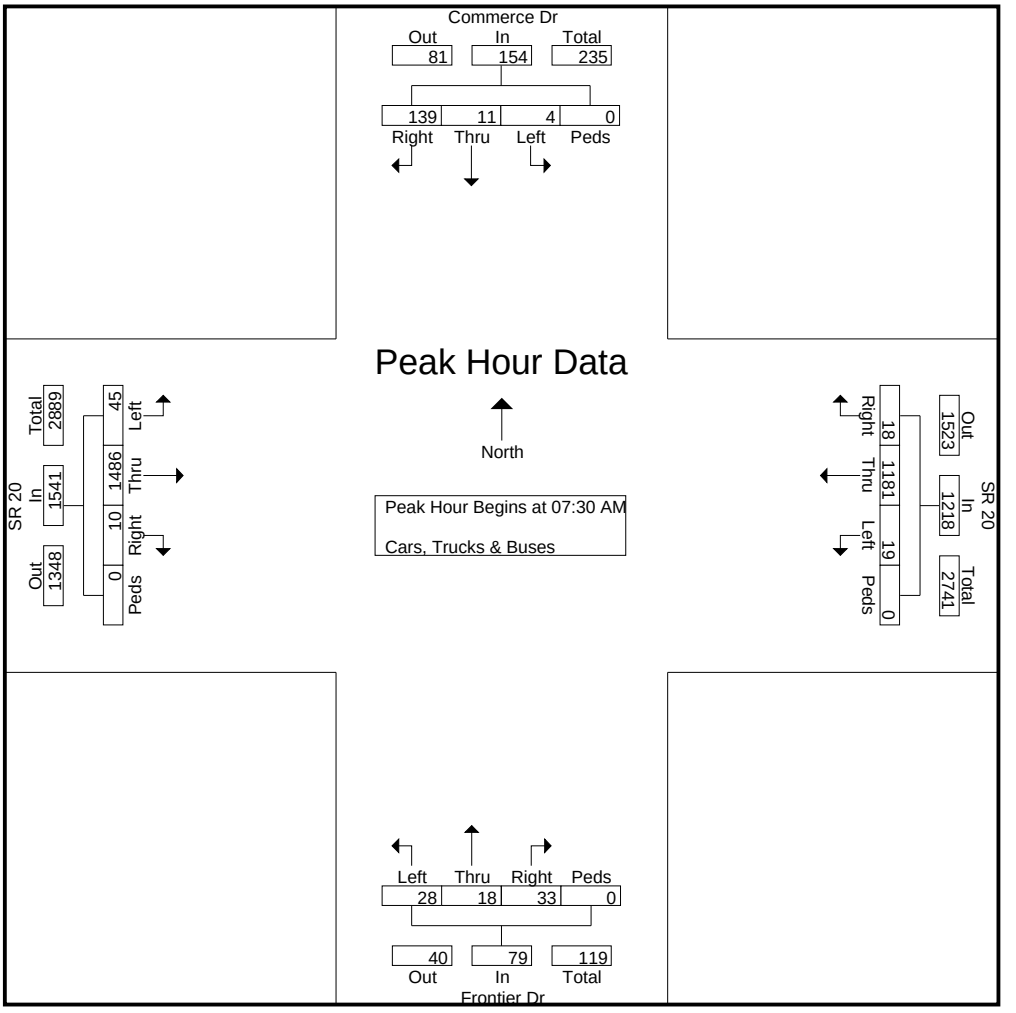
TMC Data
SR 20 @ Commerce Dr/Frontier Dr

7-9am I 4-6pm

File Name : 36520003
Site Code : 36520003
Start Date : 2/19/2015

	Frontier Dr Northbound					Commerce Dr Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	**9**	3	**12**	0	**24**	1	**4**	30	0	35	9	376	0	0	385	5	273	**6**	0	284	728
07:45 AM	6	**7**	10	0	23	1	4	**41**	0	**46**	**13**	**389**	3	0	**405**	5	298	3	0	306	**780**
08:00 AM	8	6	6	0	20	0	1	34	0	35	11	367	2	0	380	1	294	4	0	299	734
08:15 AM	5	2	5	0	12	**2**	2	34	0	38	12	354	**5**	0	371	**8**	**316**	5	0	**329**	750
Total Volume	28	18	33	0	79	4	11	139	0	154	45	1486	10	0	1541	19	1181	18	0	1218	2992
% App. Total	35.4	22.8	41.8	0		2.6	7.1	90.3	0		2.9	96.4	0.6	0		1.6	97	1.5	0		
PHF	.778	.643	.688	.000	.823	.500	.688	.848	.000	.837	.865	.955	.500	.000	.951	.594	.934	.750	.000	.926	.959



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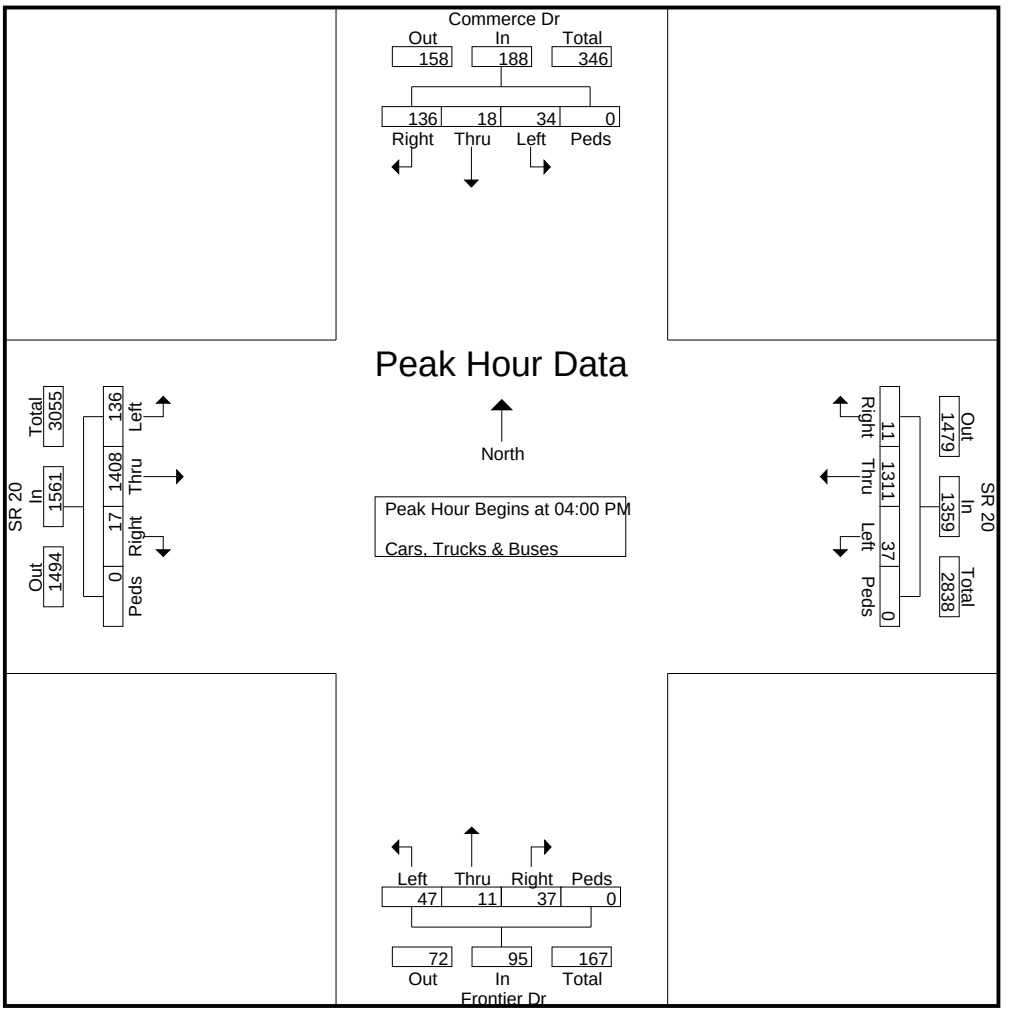
TMC Data
SR 20 @ Commerce Dr/Frontier Dr

7-9am I 4-6pm

File Name : 36520003
Site Code : 36520003
Start Date : 2/19/2015
Page No : 3

	Frontier Dr Northbound					Commerce Dr Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	**14**	1	10	0	25	9	4	**38**	0	**51**	27	358	4	0	389	10	**330**	3	0	343	808
04:15 PM	11	**4**	**11**	0	**26**	**14**	1	36	0	51	36	334	2	0	372	7	328	2	0	337	786
04:30 PM	11	3	8	0	22	5	5	32	0	42	36	**362**	**6**	0	**404**	7	323	2	0	332	800
04:45 PM	11	3	8	0	22	6	**8**	30	0	44	**37**	354	5	0	396	**13**	330	**4**	0	**347**	**809**
Total Volume	47	11	37	0	95	34	18	136	0	188	136	1408	17	0	1561	37	1311	11	0	1359	3203
% App. Total	49.5	11.6	38.9	0		18.1	9.6	72.3	0		8.7	90.2	1.1	0		2.7	96.5	0.8	0		
PHF	.839	.688	.841	.000	.913	.607	.563	.895	.000	.922	.919	.972	.708	.000	.966	.712	.993	.688	.000	.979	.990



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TMC Data
SR 20 @ Buford Hwy (SR13)

7-9am I 4-6pm

File Name : 36520004
Site Code : 36520004
Start Date : 2/19/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Buford Hwy (SR13) Northbound					Buford Hwy (SR13) Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	52	65	35	0	152	34	76	39	0	149	35	234	26	0	295	25	253	32	0	310	906
07:15 AM	38	47	35	0	120	21	82	48	0	151	37	263	20	0	320	35	260	29	0	324	915
07:30 AM	36	51	27	0	114	31	82	30	0	143	33	278	20	0	331	42	256	31	0	329	917
07:45 AM	31	56	28	0	115	25	79	29	0	133	42	316	28	0	386	31	271	33	0	335	969
Total	157	219	125	0	501	111	319	146	0	576	147	1091	94	0	1332	133	1040	125	0	1298	3707
08:00 AM	41	60	22	0	123	22	90	35	0	147	43	298	24	0	365	49	275	39	0	363	998
08:15 AM	29	69	35	0	133	29	95	32	0	156	50	292	38	0	380	50	263	35	0	348	1017
08:30 AM	46	42	42	0	130	28	73	40	0	141	36	268	25	0	329	49	242	31	0	322	922
08:45 AM	43	45	32	0	120	39	90	25	0	154	38	236	20	0	294	43	251	34	0	328	896
Total	159	216	131	0	506	118	348	132	0	598	167	1094	107	0	1368	191	1031	139	0	1361	3833
*** BREAK ***																					
04:00 PM	43	112	45	0	200	58	78	29	0	165	74	285	24	0	383	59	258	20	0	337	1085
04:15 PM	44	120	48	0	212	45	82	35	0	162	71	307	31	0	409	45	289	17	0	351	1134
04:30 PM	47	134	66	0	247	51	98	28	0	177	68	289	24	0	381	56	236	19	0	311	1116
04:45 PM	47	111	62	0	220	52	70	26	0	148	77	291	21	0	389	51	262	15	0	328	1085
Total	181	477	221	0	879	206	328	118	0	652	290	1172	100	0	1562	211	1045	71	0	1327	4420
05:00 PM	33	129	73	0	235	73	70	31	0	174	77	326	23	0	426	56	312	18	0	386	1221
05:15 PM	47	133	49	0	229	57	93	30	0	180	65	281	20	0	366	71	291	17	0	379	1154
05:30 PM	29	113	45	0	187	50	82	21	0	153	67	273	27	0	367	36	304	19	0	359	1066
05:45 PM	31	121	51	0	203	64	80	27	0	171	52	254	23	0	329	62	265	22	0	349	1052
Total	140	496	218	0	854	244	325	109	0	678	261	1134	93	0	1488	225	1172	76	0	1473	4493
Grand Total	637	1408	695	0	2740	679	1320	505	0	2504	865	4491	394	0	5750	760	4288	411	0	5459	16453
Apprch %	23.2	51.4	25.4	0		27.1	52.7	20.2	0		15	78.1	6.9	0		13.9	78.5	7.5	0		
Total %	3.9	8.6	4.2	0	16.7	4.1	8	3.1	0	15.2	5.3	27.3	2.4	0	34.9	4.6	26.1	2.5	0	33.2	

Reliable Traffic Data Services, LLC
Tel: (770) 578-8158 | Fax: (770) 578-8159
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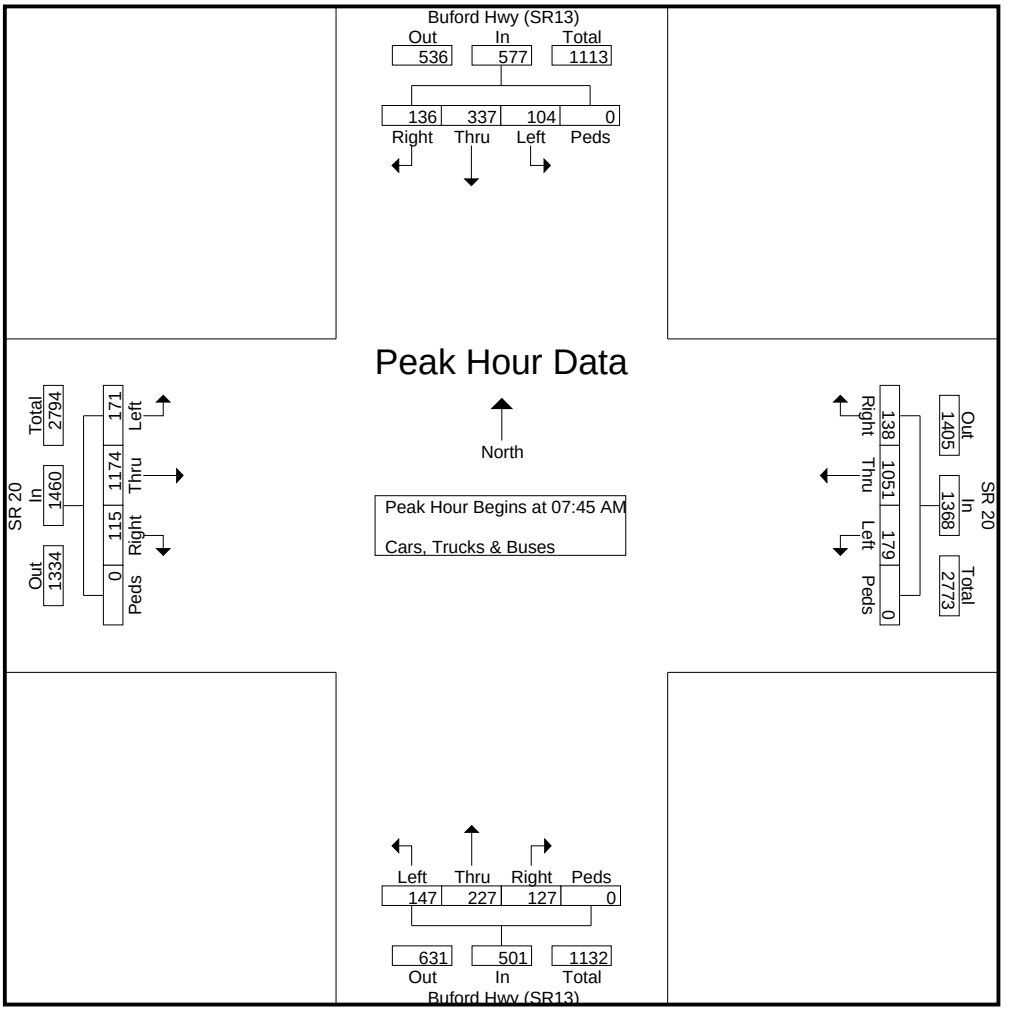
TMC Data
SR 20 @ Buford Hwy (SR13)

7-9am I 4-6pm

File Name : 36520004
Site Code : 36520004
Start Date : 2/19/2015
Page No : 2

	Buford Hwy (SR13) Northbound					Buford Hwy (SR13) Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	31	56	28	0	115	25	79	29	0	133	42	**316**	28	0	**386**	31	271	33	0	335	969
08:00 AM	41	60	22	0	123	22	90	35	0	147	43	298	24	0	365	49	**275**	**39**	0	**363**	998
08:15 AM	29	**69**	35	0	**133**	**29**	**95**	32	0	**156**	**50**	292	**38**	0	380	**50**	263	35	0	348	**1017**
08:30 AM	**46**	42	**42**	0	130	28	73	**40**	0	141	36	268	25	0	329	49	242	31	0	322	922
Total Volume	147	227	127	0	501	104	337	136	0	577	171	1174	115	0	1460	179	1051	138	0	1368	3906
% App. Total	29.3	45.3	25.3	0		18	58.4	23.6	0		11.7	80.4	7.9	0		13.1	76.8	10.1	0		
PHF	.799	.822	.756	.000	.942	.897	.887	.850	.000	.925	.855	.929	.757	.000	.946	.895	.955	.885	.000	.942	.960



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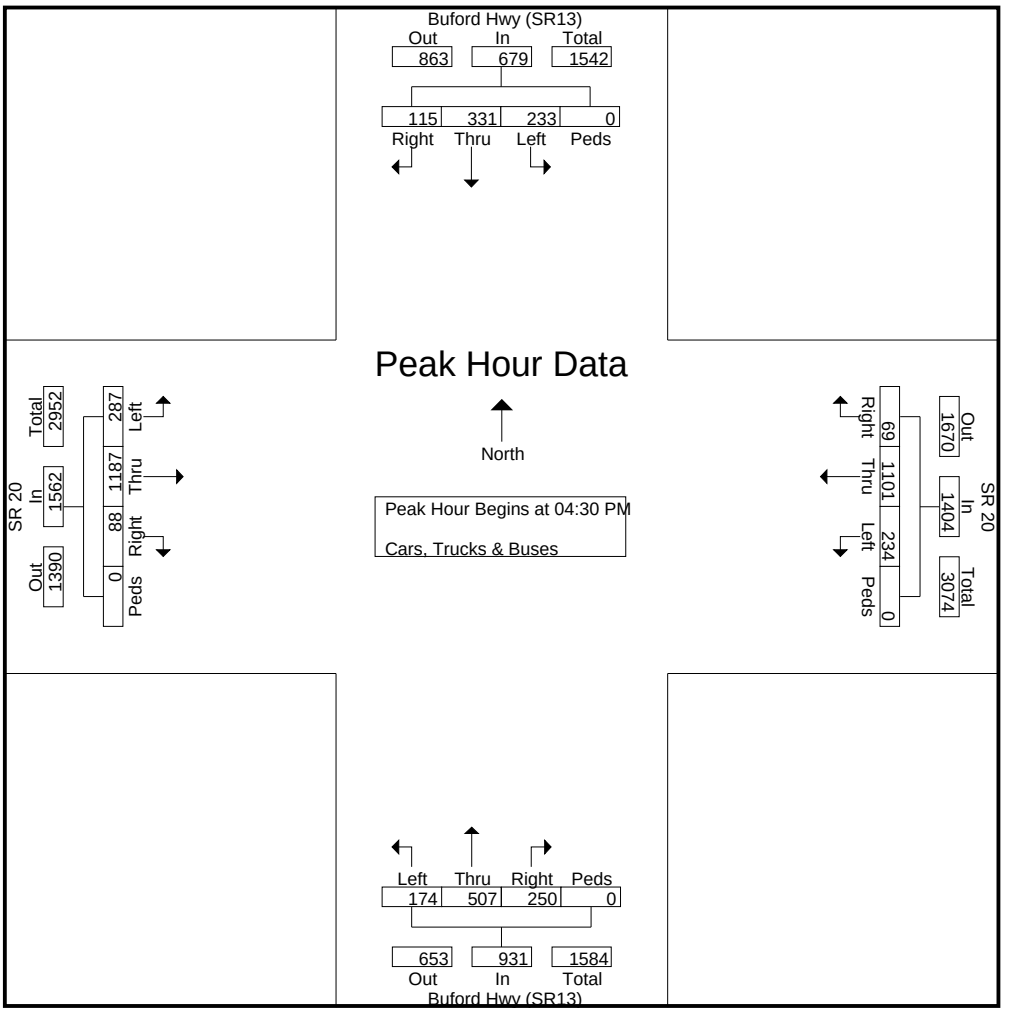
TMC Data
SR 20 @ Buford Hwy (SR13)

7-9am I 4-6pm

File Name : 36520004
Site Code : 36520004
Start Date : 2/19/2015
Page No : 3

	Buford Hwy (SR13) Northbound					Buford Hwy (SR13) Southbound					SR 20 Eastbound					SR 20 Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	**47**	**134**	66	0	**247**	51	**98**	28	0	177	68	289	**24**	0	381	56	236	**19**	0	311	1116
04:45 PM	47	111	62	0	220	52	70	26	0	148	**77**	291	21	0	389	51	262	15	0	328	1085
05:00 PM	33	129	**73**	0	235	**73**	70	**31**	0	174	77	**326**	23	0	**426**	56	**312**	18	0	**386**	**1221**
05:15 PM	47	133	49	0	229	57	93	30	0	**180**	65	281	20	0	366	**71**	291	17	0	379	1154
Total Volume	174	507	250	0	931	233	331	115	0	679	287	1187	88	0	1562	234	1101	69	0	1404	4576
% App. Total	18.7	54.5	26.9	0		34.3	48.7	16.9	0		18.4	76	5.6	0		16.7	78.4	4.9	0		
PHF	.926	.946	.856	.000	.942	.798	.844	.927	.000	.943	.932	.910	.917	.000	.917	.824	.882	.908	.000	.909	.937



SR20
Peachtree Indl Blvd. (45 mph)
North Gwinnett Medical Plaza Drwy
Broadmoor Blvd
SR20 (South)
Frontier Dr. (25 mph)
Commerce Dr. (35 mph)
SR13
Buford Hwy (45 mph)
SR13
SR20 (South)
Buford Dr.

GRTA Notice of Decision

LETTER OF UNDERSTANDING

February 17, 2015

Dayne Pryor
Panattoni Development Company, Inc.
1230 Peachtree Street, NE Suite 250
Atlanta, Georgia 30309

RE: **Broadmoor Industrial DRI**

Dear Mr. Pryor:

The purpose of this letter is to document the discussions during the Pre-Review and Methodology Meeting held at ARC's office on February 9, 2015 regarding **Broadmoor Industrial DRI.** Some of the following items were discussed in this meeting and should assist you and your consultant team in preparing the DRI Review Package.

PROJECT OVERVIEW

- The project is located in City of Buford. The proposed development is located on the northern side of SR 20/Buford Drive with existing direct access from Broadmoor Boulevard.
- The DRI trigger for this development is a land disturbance permit.
- The proposed development is a total size of 1,295,364 square feet consisting of approximately 1,126,320 sq ft of high cube warehouse, 35,000 sq. ft. general office/service, 65,000 sq. ft. light industrial and 168,000 sq ft warehousing.
- The projected build out for this DRI is 2020.
- The applicant is applying for approval under GRTA's non-expedited review process.

STUDY NETWORK

1. SR 20/Buford Drive at Broadmoor Boulevard
2. SR 20/Buford Drive at Commerce Drive
3. SR 20/Buford Drive at SR 13/Buford Highway
4. SR 20/Buford Drive at Peachtree Industrial Boulevard

[NOTE: No other site driveways are proposed]

METHODOLOGY

- All intersections identified as within the study network shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions [may not be applicable for the site driveways], and (3) future "build" conditions. This DRI shall be reviewed in one phase to be completed by 2020.
- 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. As appropriate, pedestrian counts and heavy vehicle counts shall be collected with vehicle counts and considered within the capacity analysis.

Turning movement counts shall be collected while local schools are in session and ordinarily not between the week of Thanksgiving and the second week of January or any week of a major holiday.

- A 1.0% background traffic growth rate shall be used for all roadways.
- The level of service standard for all analyses shall be LOS D.
- No trips reductions are allowed.
- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account.
- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis.

ADDITIONAL INFORMATION

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

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

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

DRI REVIEW PACKAGE CHECKLIST

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

The site plan shall be prepared in accordance with Section 4-104 of the DRI Review Package Technical Guidelines and it shall be dated, and shall be at a scale of 1"= 250'*or larger (showing more detail).

The site plan shall be consistent with GRTA's Site Plan Information Guidelines, which represents the minimum required information on site plans. [*This is an exception for this DRI site plan].

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

DRI REVIEW PACKAGE SUBMITTAL

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

- Provide one (1) paper copy of all materials:
  - Transportation analysis
  - Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
  - Provide a PDF of each document
  - Provide the native format for each document
    - .dwg is the preferred CAD format (AutoCAD)
    - .doc is the preferred word processing format (Word)
    - .xls is the preferred spreadsheet format (Excel)
    - .sy6 or .sy7 is the preferred capacity analysis format (Synchro)

As part of the completeness certification process, please have your consultant forward one copy of the completed GRTA DRI Review Package (traffic analysis, site plan, CD) to the GDOT District Office, Regional Commission and local government Planning & Development and Transportation group (contact information provided below). GRTA shall be copied on each of the transmittal letters.

GDOT DISTRICT 1	GWINNETT CO DOT	CITY OF BUFORD	ATLANTA REGIONAL COMMISSION
David Olson PO Box 1057 Gainesville, GA 30503-1057	Lewis Cooksey 75 Langley Drive Lawrenceville, GA 30046	Kim Wolfe 2300 Buford Highway Buford, GA 30518	Jon Tuley 40 Courtland Street, NE Atlanta, Georgia 30303

We encourage your consultant team to verify the items covered in this letter prior to compiling the submittal materials. If you have any questions, please feel free to contact me directly at 404-463-3068 (lbeall@grta.org).

Sincerely,

Laura F. Beall, AICP
Program Manager

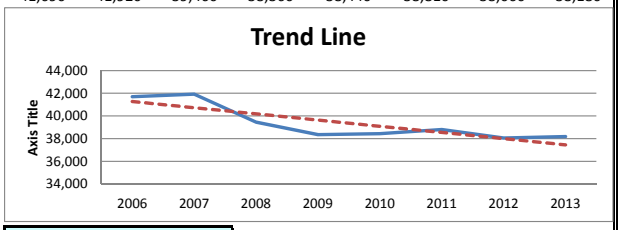
cc:

Jon West, DCA
Jon Tuley, ARC
David Olson, GDOT District 1
Kim Wolfe, City of Buford
Kaipo Awana, City of Sugar Hill
Lewis Cooksey, Gwinnett Co DOT
Geoff Warr, A & R Engineering

Linear Regression of Daily Traffic

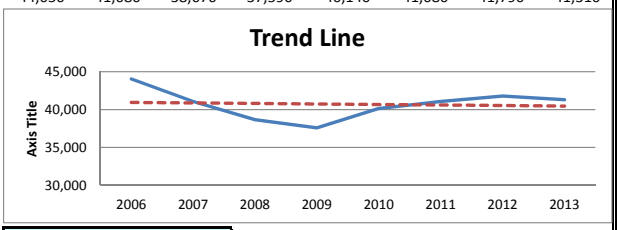
Location	Growth Rate	Station ID	Route	2006	2007	2008	2009	2010	2011	2012	2013
uford Dr) West of Bufc	-1.4%	1350112	002000	41,690	41,920	39,460	38,360	38,440	38,810	38,060	38,180
Buford Dr) East of Bufo	-0.2%	1350114	002000	44,050	41,080	38,670	37,590	40,140	41,080	41,790	41,310
Buford Hwy) North of S	-0.4%	1350098	001300	19,190	19,190	18,060	18,050	18,110	18,090	18,650	18,740
Buford Hwy) South of S	-1.7%	1350094	001300	28,840	24,190	22,770	23,525	24,280	24,250	23,530	23,640
Lee St North of Buford	-4.0%	1350574	194200	15,350	15,620	14,700	14,290	12,350	12,340	12,270	12,330

Location	Traffic Counter	RCLINK	2006	2007	2008	2009	2010	2011	2012	2013
SR 20 (Buford Dr) West of Buford Hwy	1350112	002000	41,690	41,920	39,460	38,360	38,440	38,810	38,060	38,180



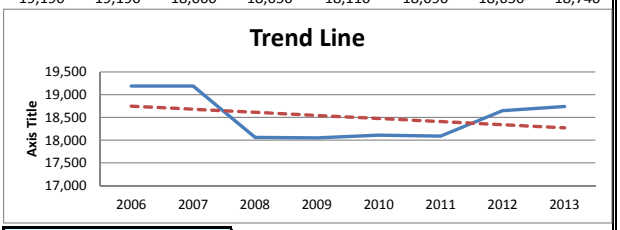
Growth Rate	-1.4%	Intercept	1,133,586	Slope	-544.52
Trend Line	41,271	40,726	40,182	39,637	39,093	38,548	38,004	37,459

Location	Traffic Counter	RCLINK	2006	2007	2008	2009	2010	2011	2012	2013
SR 20 (Buford Dr) East of Buford Hwy	1350114	002000	44,050	41,080	38,670	37,590	40,140	41,080	41,790	41,310



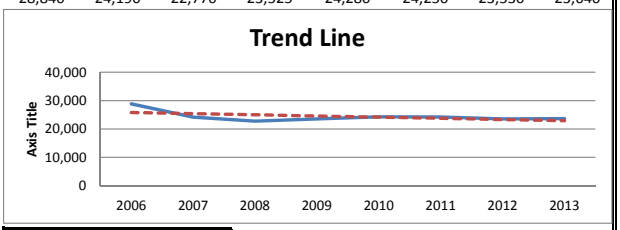
Growth Rate	-0.2%	Intercept	180,661	Slope	-69.64
Trend Line	40,958	40,888	40,818	40,749	40,679	40,609	40,540	40,470

Location	Traffic Counter	RCLINK	2006	2007	2008	2009	2010	2011	2012	2013
SR 13 (Buford Hwy) North of S Lee St	1350098	001300	19,190	19,190	18,060	18,050	18,110	18,090	18,650	18,740



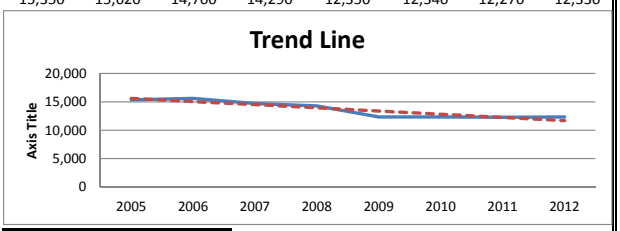
Growth Rate	-0.4%	Intercept	154,869	Slope	-67.86
Trend Line	18,748	18,680	18,612	18,544	18,476	18,408	18,340	18,273

Location	Traffic Counter	RCLINK	2006	2007	2008	2009	2010	2011	2012	2013
SR 13 (Buford Hwy) South of S Lee St	1350094	001300	28,840	24,190	22,770	23,525	24,280	24,250	23,530	23,640



Growth Rate	-1.7%	Intercept	849,828	Slope	-410.77
Trend Line	25,816	25,405	24,994	24,584	24,173	23,762	23,351	22,940

Location	Traffic Counter	RCLINK	2005	2006	2007	2008	2009	2010	2011	2012
S Lee St North of Buford Dr	1350574	194200	15,350	15,620	14,700	14,290	12,350	12,340	12,270	12,330



Growth Rate	-4.0%	Intercept	1,135,308	Slope	-558.45
Trend Line	15,611	15,052	14,494	13,935	13,377	12,819	12,260	11,702

Fact Sheets for Planned and Programmed Improvements

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION
0002393	Gwinnett	**SR 13 FM SUGARLOAF PKWY TO SR 20 IN BUFORD**

Mgmt Let Date:

PROJ NO:	STP00-0002-00(393)	**SPONSOR:**	GDOT
MPO TIP#:		**PROJ MGR:**	Shelby, Albert
MPO:	Atlanta TMA	**DOT DIST:**	1
PROJ LENGTH (MI):	8.03	**CONG DIST:**	7
TYPE WORK:	Widening	**TYPE WORK:**	Widening
LET RESPONSIBILITY:	GDOT Let	**HOUSE DIST:**	102,097
BIKE PROVISIONS INCLUDED?	Y	**SENATE DIST:**	045,048

Phase	FY Approved	Approved FY Estimate *	Fund	Phase Status
Engineering	LR2	$4,325,596.44	M230S	PRECST
Right of Way	LR2	$44,448,695.00	M230S	PRECST
Construction	LR2	$54,069,955.55	M230S	PRECST
UTL	LR2	$16,766,679.00	M230S	PRECST

*** Inflation Included in Estimate**

Right of Way Aqcuisition Information:

Preliminary Parcel Count: **Total Parcel Count:** **Acquired by:** DOT

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION
0004430	Gwinnett	**SR 20 FM E OF BURNETTE TRAIL TO PEACHTREE IND BLVD-GRTA**

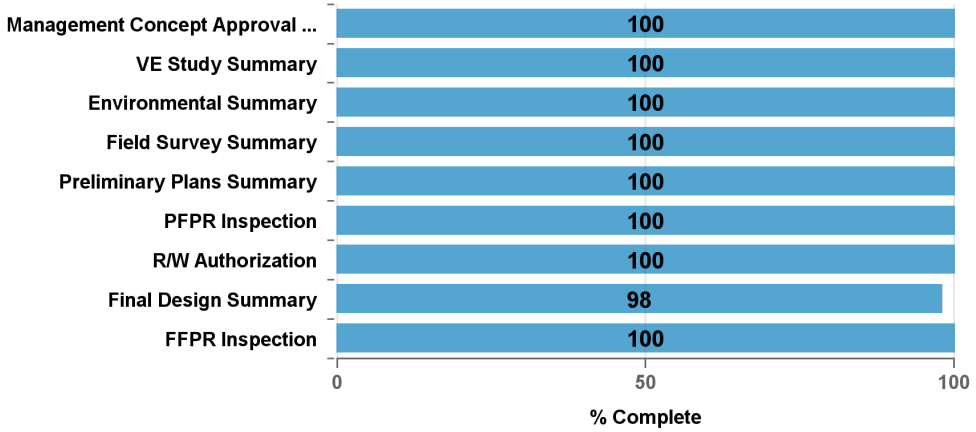
Mgmt Let Date: 1/18/2013

The proposed project would widen SR 20 from a two lane rural section to a four lane urban section from approximately 1,000 feet west of Mountain Ridge Road to Peachtree Industrial Boulevard in Gwinnett County. The typical section will include four- through lanes, a 44-foot grassed median, 16-foot shoulders, curb & gutter on the outside pavement edges, and five-foot concrete sidewalks on both sides of the roadway. Design will accommodate for the future widening of two additional lanes. Project length is 3.91 miles.

PROJ NO: MSL00-0004-00(430)
MPO TIP#: GW-020A1
MPO: Atlanta TMA
PROJ LENGTH (MI): 3.71
TYPE WORK: Widening
LET RESPONSIBILITY: Local Let
BIKE PROVISIONS INCLUDED? Y

SPONSOR: Georgia Regional Transportation Authority
PROJ MGR: Patel, Hiral P.
DOT DIST: 1
CONG DIST: 7
TYPE WORK: Widening
HOUSE DIST: 098,097
SENATE DIST: 045

Phase	FY Approved	Approved FY Estimate *	Fund	Phase Status
Engineering	2003	$966,143.93	CFTS	AUTHORIZED
Engineering	2003	$1,228,829.43	Q23	AUTHORIZED
Right of Way	2011	$28,500,000.00	L050	AUTHORIZED
Right of Way	2011	$11,000,000.00	L240	AUTHORIZED
Construction	2013	$29,889,461.00	M001	AUTHORIZED
UTL	2013	$4,725,769.74	H17A	AUTHORIZED
UTL	2013	$491,965.00	H66A	AUTHORIZED
				IZED
				IZED



Activity	Actual Start Date	Actual Finish Date
Management Concept Approval Complete	2/17/2006	2/17/2006
VE Study Summary	8/8/2007	6/26/2008
Environmental Summary	3/15/2005	6/2/2010
Field Survey Summary	7/12/2005	
Preliminary Plans Summary	2/28/2006	6/21/2010
PFPR Inspection	3/26/2008	3/26/2008
R/W Authorization	12/10/2010	12/10/2010
Final Design Summary	12/1/2010	
FFPR Inspection	6/19/2012	6/20/2012

Right of Way Aqcuisition Information:

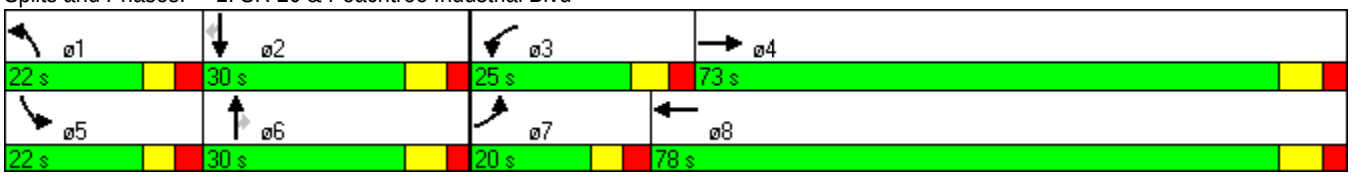
Preliminary Parcel Count: 173 **Total Parcel Count:** 208 **Acquired by:** LOC

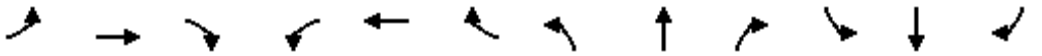
Existing Intersection Analysis

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	136	903	394	760	54	229	351	252	483	138
Lane Group Flow (vph)	156	1135	512	1002	64	252	462	283	537	160
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	20.0	73.0	25.0	78.0	22.0	30.0	30.0	22.0	30.0	30.0
Total Split (%)	13.3%	48.7%	16.7%	52.0%	14.7%	20.0%	20.0%	14.7%	20.0%	20.0%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.64	0.88	1.33	0.70	0.40	0.26	1.02	0.87	0.42	0.31
Control Delay	79.5	51.1	213.9	36.3	76.1	53.1	80.0	92.0	48.9	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.5	51.1	213.9	36.3	76.1	53.1	80.0	92.0	48.9	8.7
Queue Length 50th (ft)	77	533	~334	406	31	78	~324	142	164	0
Queue Length 95th (ft)	112	576	#357	436	53	113	#415	#214	222	55
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	292	1436	385	1542	333	961	454	335	1278	515
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	0.53	0.79	1.33	0.65	0.19	0.26	1.02	0.84	0.42	0.31

Intersection Summary
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 73 (49%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	903	73	394	760	105	54	229	351	252	483	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3290		3242	3279		3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3290		3242	3279		3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.87	0.89	0.61	0.77	0.87	0.82	0.84	0.91	0.76	0.89	0.90	0.86
Adj. Flow (vph)	156	1015	120	512	874	128	64	252	462	283	537	160
RTOR Reduction (vph)	0	7	0	0	8	0	0	0	155	0	0	119
Lane Group Flow (vph)	156	1128	0	512	994	0	64	252	307	283	537	41
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.2	58.2		17.8	65.5		6.4	30.1	30.1	15.0	38.6	38.6
Effective Green, g (s)	11.2	58.2		17.8	65.5		6.4	30.1	30.1	15.0	38.6	38.6
Actuated g/C Ratio	0.07	0.39		0.12	0.44		0.04	0.20	0.20	0.10	0.26	0.26
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	242	1277		385	1432		138	964	300	324	1236	385
v/s Ratio Prot	0.05	c0.34		c0.16	0.30		0.02	0.05		c0.09	0.11	
v/s Ratio Perm									c0.21			0.03
v/c Ratio	0.64	0.88		1.33	0.69		0.46	0.26	1.02	0.87	0.43	0.11
Uniform Delay, d1	67.5	42.7		66.1	34.2		70.1	50.6	59.9	66.6	46.6	42.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	8.4		165.4	2.2		0.9	0.7	58.0	21.4	1.1	0.6
Delay (s)	71.8	51.2		231.5	36.4		71.0	51.2	118.0	87.9	47.7	43.1
Level of Service	E	D		F	D		E	D	F	F	D	D
Approach Delay (s)		53.7			102.3			92.5			58.6	
Approach LOS		D			F			F			E	

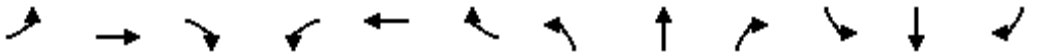
Intersection Summary			
HCM Average Control Delay	77.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.9
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	46	1505	54	189	1152	94	35	0	37	3	5
Lane Group Flow (vph)	56	1552	72	282	1176	147	0	140	0	72	8
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	93.0	93.0	17.0	93.0	93.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	12.1%	66.4%	66.4%	12.1%	66.4%	66.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.16	0.71	0.07	1.06	0.50	0.13		0.72		0.47	0.04
Control Delay	5.5	18.4	5.5	99.6	7.5	1.9		68.8		65.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	5.5	18.4	5.5	99.6	7.5	1.9		68.8		65.5	26.2
Queue Length 50th (ft)	10	453	11	~153	52	0		104		61	0
Queue Length 95th (ft)	22	593	24	#181	345	14		174		29	9
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	391	2196	1052	267	2329	1147		245		199	267
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	0.14	0.71	0.07	1.06	0.50	0.13		0.57		0.36	0.03

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 60 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	1505	54	189	1152	94	35	0	33	37	3	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.96	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583		1706			1788	1583
Flt Permitted	0.21	1.00	1.00	0.10	1.00	1.00		0.78			0.65	1.00
Satd. Flow (perm)	388	3343	1583	186	3343	1583		1374			1211	1583
Peak-hour factor, PHF	0.82	0.97	0.75	0.67	0.98	0.64	0.44	0.92	0.55	0.62	0.25	0.62
Adj. Flow (vph)	56	1552	72	282	1176	147	80	0	60	60	12	8
RTOR Reduction (vph)	0	0	13	0	0	46	0	20	0	0	0	7
Lane Group Flow (vph)	56	1552	59	282	1176	101	0	120	0	0	72	1
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	98.5	92.0	92.0	107.4	96.3	96.3		17.7			17.7	17.7
Effective Green, g (s)	98.5	92.0	92.0	107.4	96.3	96.3		17.7			17.7	17.7
Actuated g/C Ratio	0.70	0.66	0.66	0.77	0.69	0.69		0.13			0.13	0.13
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	337	2197	1040	268	2300	1089		174			153	200
v/s Ratio Prot	0.01	0.46		c0.08	0.35							
v/s Ratio Perm	0.11		0.04	c0.72		0.06		c0.09			0.06	0.00
v/c Ratio	0.17	0.71	0.06	1.05	0.51	0.09		0.69			0.47	0.01
Uniform Delay, d1	7.0	15.4	8.5	32.3	10.5	7.3		58.5			56.8	53.5
Progression Factor	1.00	1.00	1.00	1.45	0.60	1.18		1.00			1.00	1.00
Incremental Delay, d2	0.3	1.9	0.1	66.6	0.7	0.2		11.7			3.1	0.0
Delay (s)	7.2	17.3	8.7	113.4	7.1	8.8		70.2			59.9	53.5
Level of Service	A	B	A	F	A	A		E			E	D
Approach Delay (s)		16.6			25.9			70.2			59.3	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	45	1486	10	19	1181	18	28	18	4	11	139
Lane Group Flow (vph)	52	1564	20	32	1270	24	36	76	0	24	164
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	40.0	93.0	93.0	17.0	70.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	28.6%	66.4%	66.4%	12.1%	50.0%	50.0%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.43	0.63	0.02	0.31	0.52	0.02	0.38	0.48		0.22	0.65
Control Delay	92.0	2.5	0.1	48.5	22.1	9.8	73.0	37.0		65.0	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	92.0	2.5	0.1	48.5	22.1	9.8	73.0	37.0		65.0	20.6
Queue Length 50th (ft)	50	32	0	27	446	7	32	25		21	0
Queue Length 95th (ft)	m72	46	m0	m34	546	m12	59	40		39	58
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	432	2488	1183	148	2441	1161	230	321		266	386
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	0.12	0.63	0.02	0.22	0.52	0.02	0.16	0.24		0.09	0.42

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR 20 & Commerce Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	1486	10	19	1181	18	28	18	33	4	11	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583	1770	1686			1832	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00			0.86	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3343	1583	1381	1686			1601	1495
Peak-hour factor, PHF	0.86	0.95	0.50	0.59	0.93	0.75	0.78	0.64	0.69	0.50	0.69	0.85
Adj. Flow (vph)	52	1564	20	32	1270	24	36	28	48	8	16	164
RTOR Reduction (vph)	0	0	4	0	0	5	0	45	0	0	0	153
Lane Group Flow (vph)	52	1564	16	32	1270	19	36	31	0	0	24	11
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	8%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	9.5	104.2	104.2	8.0	102.2	102.2	9.5	9.5			9.5	9.5
Effective Green, g (s)	9.5	104.2	104.2	8.0	102.2	102.2	9.5	9.5			9.5	9.5
Actuated g/C Ratio	0.07	0.74	0.74	0.06	0.73	0.73	0.07	0.07			0.07	0.07
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	120	2488	1178	101	2440	1156	94	114			109	101
v/s Ratio Prot	c0.03	c0.47		0.02	0.38			0.02				
v/s Ratio Perm			0.01			0.01	c0.03				0.01	0.01
v/c Ratio	0.43	0.63	0.01	0.32	0.52	0.02	0.38	0.27			0.22	0.11
Uniform Delay, d1	62.7	8.6	4.6	63.4	8.2	5.2	62.4	62.0			61.7	61.3
Progression Factor	1.36	0.18	0.04	0.68	2.40	3.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.8	0.9	0.0	1.3	0.6	0.0	2.6	1.3			1.0	0.5
Delay (s)	87.0	2.4	0.2	44.6	20.3	15.5	65.0	63.3			62.8	61.8
Level of Service	F	A	A	D	C	B	E	E			E	E
Approach Delay (s)		5.0			20.8			63.8			61.9	
Approach LOS		A			C			E			E	

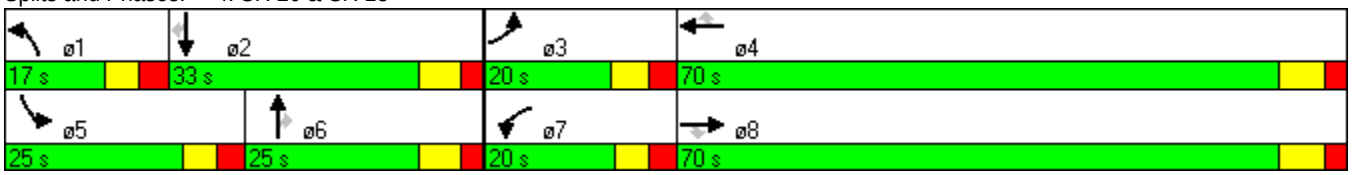
Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

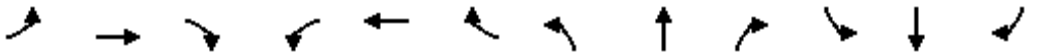
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	1174	115	179	1051	138	147	227	127	104	337	136
Lane Group Flow (vph)	201	1262	151	199	1106	155	184	277	167	116	379	160
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	20.0	70.0	70.0	20.0	70.0	70.0	17.0	25.0	25.0	25.0	33.0	33.0
Total Split (%)	14.3%	50.0%	50.0%	14.3%	50.0%	50.0%	12.1%	17.9%	17.9%	17.9%	23.6%	23.6%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	3.5	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.72	0.91	0.21	0.71	0.80	0.22	0.78	0.35	0.35	0.53	0.49	0.34
Control Delay	66.7	45.5	9.2	76.4	40.4	7.1	86.0	48.2	9.0	71.8	50.9	9.1
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	66.7	45.5	9.2	76.4	40.4	7.1	86.0	48.2	9.0	71.8	50.9	9.1
Queue Length 50th (ft)	84	624	43	91	451	18	86	114	0	53	163	0
Queue Length 95th (ft)	120	707	60	134	517	58	113	152	33	85	221	52
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	306	1497	753	315	1497	737	243	791	481	431	770	467
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	0.66	0.84	0.20	0.63	0.74	0.21	0.76	0.35	0.35	0.27	0.49	0.34

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 105 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 4: SR 20 & SR 13





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	1174	115	179	1051	138	147	227	127	104	337	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Peak-hour factor, PHF	0.85	0.93	0.76	0.90	0.95	0.89	0.80	0.82	0.76	0.90	0.89	0.85
Adj. Flow (vph)	201	1262	151	199	1106	155	184	277	167	116	379	160
RTOR Reduction (vph)	0	0	88	0	0	71	0	0	128	0	0	123
Lane Group Flow (vph)	201	1262	63	199	1106	84	184	277	39	116	379	37
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	58.4	58.4	12.1	58.1	58.1	10.2	33.1	33.1	9.4	32.2	32.2
Effective Green, g (s)	12.0	58.4	58.4	12.1	58.1	58.1	10.2	33.1	33.1	9.4	32.2	32.2
Actuated g/C Ratio	0.09	0.42	0.42	0.09	0.42	0.42	0.07	0.24	0.24	0.07	0.23	0.23
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	278	1395	624	280	1387	620	236	790	353	218	769	344
v/s Ratio Prot	c0.06	c0.38		0.06	0.33		c0.06	0.08		0.04	c0.11	
v/s Ratio Perm			0.04			0.06			0.03			0.02
v/c Ratio	0.72	0.90	0.10	0.71	0.80	0.13	0.78	0.35	0.11	0.53	0.49	0.11
Uniform Delay, d1	62.4	38.2	24.8	62.2	35.8	25.4	63.8	44.5	41.9	63.2	46.8	42.5
Progression Factor	0.87	0.98	2.58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	7.7	0.2	6.9	4.0	0.3	13.7	1.2	0.6	1.3	2.3	0.6
Delay (s)	60.6	45.2	64.2	69.1	39.8	25.7	77.5	45.7	42.6	64.4	49.1	43.2
Level of Service	E	D	E	E	D	C	E	D	D	E	D	D
Approach Delay (s)		48.9			42.3			54.2			50.3	
Approach LOS		D			D			D			D	

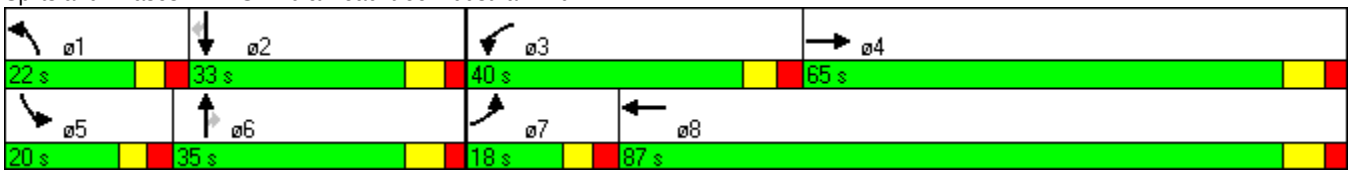
Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

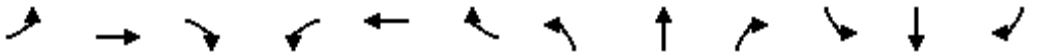
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	165	818	357	951	110	470	478	203	313	206
Lane Group Flow (vph)	183	956	380	1305	139	511	531	221	329	217
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	18.0	65.0	40.0	87.0	22.0	35.0	35.0	20.0	33.0	33.0
Total Split (%)	11.3%	40.6%	25.0%	54.4%	13.8%	21.9%	21.9%	12.5%	20.6%	20.6%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.81	0.78	0.78	0.88	0.61	0.48	0.91	0.83	0.30	0.44
Control Delay	98.8	49.8	59.1	45.9	83.6	57.7	44.7	97.4	53.6	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.8	49.8	59.1	45.9	83.6	57.7	44.7	97.4	53.6	12.7
Queue Length 50th (ft)	98	458	173	735	74	175	248	119	106	17
Queue Length 95th (ft)	#160	544	227	789	96	228	#522	#185	150	103
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	233	1233	665	1621	312	1056	582	274	1109	497
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	0.79	0.78	0.57	0.81	0.45	0.48	0.91	0.81	0.30	0.44

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 98 (61%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	818	69	357	951	198	110	470	478	203	313	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3303		3242	3252		3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3303		3242	3252		3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.93	0.91	0.94	0.89	0.84	0.79	0.92	0.90	0.92	0.95	0.95
Adj. Flow (vph)	183	880	76	380	1069	236	139	511	531	221	329	217
RTOR Reduction (vph)	0	4	0	0	13	0	0	0	253	0	0	152
Lane Group Flow (vph)	183	952	0	380	1292	0	139	511	278	221	329	65
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.2	58.9		24.0	72.4		11.2	35.1	35.1	13.1	36.9	36.9
Effective Green, g (s)	11.2	58.9		24.0	72.4		11.2	35.1	35.1	13.1	36.9	36.9
Actuated g/C Ratio	0.07	0.37		0.15	0.45		0.07	0.22	0.22	0.08	0.23	0.23
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	227	1216		486	1472		227	1054	328	265	1108	345
v/s Ratio Prot	0.06	0.29		c0.12	c0.40		0.04	0.11		c0.07	0.07	
v/s Ratio Perm									c0.19			0.04
v/c Ratio	0.81	0.78		0.78	0.88		0.61	0.48	0.85	0.83	0.30	0.19
Uniform Delay, d1	73.3	44.9		65.5	39.8		72.3	54.6	59.9	72.4	50.8	49.5
Progression Factor	1.00	1.00		0.75	1.01		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.6	4.2		7.0	6.2		3.4	1.6	22.9	18.9	0.7	1.2
Delay (s)	90.9	49.1		56.0	46.2		75.7	56.1	82.8	91.3	51.5	50.7
Level of Service	F	D		E	D		E	E	F	F	D	D
Approach Delay (s)		55.8			48.4			70.4			62.8	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	57.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.9
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

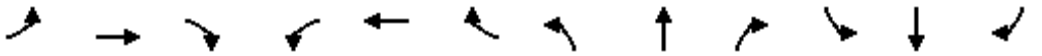
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	61	1400	15	71	1333	44	34	2	95	2	34
Lane Group Flow (vph)	68	1443	36	120	1389	56	0	124	0	108	44
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	113.0	113.0	17.0	113.0	113.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.6%	70.6%	70.6%	10.6%	70.6%	70.6%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.23	0.62	0.03	0.44	0.60	0.05		0.64		0.81	0.18
Control Delay	3.6	20.0	4.3	14.0	9.1	0.3		61.2		107.2	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	3.6	20.0	4.3	14.0	9.1	0.3		61.2		107.2	17.2
Queue Length 50th (ft)	14	671	10	15	765	0		87		110	0
Queue Length 95th (ft)	m10	738	7	11	85	1		68		95	28
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	308	2345	1117	303	2317	1114		216		150	265
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	0.62	0.03	0.40	0.60	0.05		0.57		0.72	0.17

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 74 (46%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

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

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	1400	15	71	1333	44	34	2	52	95	2	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583		1684			1777	1583
Flt Permitted	0.14	1.00	1.00	0.14	1.00	1.00		0.75			0.56	1.00
Satd. Flow (perm)	269	3343	1583	259	3343	1583		1285			1045	1583
Peak-hour factor, PHF	0.90	0.97	0.42	0.59	0.96	0.79	0.71	0.50	0.72	0.91	0.50	0.77
Adj. Flow (vph)	68	1443	36	120	1389	56	48	4	72	104	4	44
RTOR Reduction (vph)	0	0	6	0	0	17	0	31	0	0	0	38
Lane Group Flow (vph)	68	1443	30	120	1389	39	0	93	0	0	108	6
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	121.6	112.3	112.3	119.1	110.9	110.9		20.3			20.3	20.3
Effective Green, g (s)	121.6	112.3	112.3	119.1	110.9	110.9		20.3			20.3	20.3
Actuated g/C Ratio	0.76	0.70	0.70	0.74	0.69	0.69		0.13			0.13	0.13
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	292	2346	1111	270	2317	1097		163			133	201
v/s Ratio Prot	0.01	c0.43		c0.02	0.42							
v/s Ratio Perm	0.16		0.02	0.31		0.02		0.07			c0.10	0.00
v/c Ratio	0.23	0.62	0.03	0.44	0.60	0.04		0.57			0.81	0.03
Uniform Delay, d1	8.0	12.5	7.2	9.1	12.9	7.7		65.7			68.0	61.2
Progression Factor	0.62	1.46	0.90	2.15	0.59	0.10		1.00			1.00	1.00
Incremental Delay, d2	0.3	0.7	0.0	1.1	1.0	0.1		5.4			31.3	0.1
Delay (s)	5.2	18.9	6.6	20.7	8.6	0.8		71.1			99.3	61.3
Level of Service	A	B	A	C	A	A		E			F	E
Approach Delay (s)		18.0			9.3			71.1			88.3	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

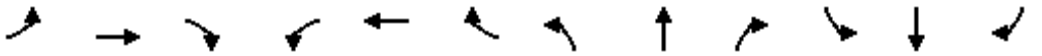
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	136	1408	17	37	1311	11	47	11	34	18	136
Lane Group Flow (vph)	148	1452	24	52	1324	16	56	60	0	88	151
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	42.0	113.0	113.0	17.0	88.0	88.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	26.3%	70.6%	70.6%	10.6%	55.0%	55.0%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.71	0.59	0.02	0.49	0.59	0.02	0.47	0.30		0.65	0.54
Control Delay	74.6	10.2	5.1	74.5	45.7	17.2	80.5	28.1		90.2	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	74.6	10.2	5.1	74.5	45.7	17.2	80.5	28.1		90.2	16.3
Queue Length 50th (ft)	161	208	1	48	754	7	57	16		90	0
Queue Length 95th (ft)	m241	372	m8	m54	m808	m11	96	37		88	70
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	400	2442	1163	129	2242	1066	181	279		209	347
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	0.37	0.59	0.02	0.40	0.59	0.02	0.31	0.22		0.42	0.44

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 66 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

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

Splits and Phases: 3: SR 20 & Commerce Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1408	17	37	1311	11	47	11	37	34	18	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583	1770	1658			1805	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.67	1.00			0.77	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3343	1583	1240	1658			1436	1495
Peak-hour factor, PHF	0.92	0.97	0.71	0.71	0.99	0.69	0.84	0.69	0.84	0.61	0.56	0.90
Adj. Flow (vph)	148	1452	24	52	1324	16	56	16	44	56	32	151
RTOR Reduction (vph)	0	0	6	0	0	4	0	40	0	0	0	137
Lane Group Flow (vph)	148	1452	18	52	1324	12	56	20	0	0	88	14
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	8%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	18.7	116.9	116.9	9.6	107.3	107.3	15.2	15.2			15.2	15.2
Effective Green, g (s)	18.7	116.9	116.9	9.6	107.3	107.3	15.2	15.2			15.2	15.2
Actuated g/C Ratio	0.12	0.73	0.73	0.06	0.67	0.67	0.09	0.09			0.09	0.09
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	207	2442	1157	106	2242	1062	118	158			136	142
v/s Ratio Prot	c0.08	c0.43		0.03	0.40			0.01				
v/s Ratio Perm			0.01			0.01	0.05				c0.06	0.01
v/c Ratio	0.71	0.59	0.02	0.49	0.59	0.01	0.47	0.13			0.65	0.10
Uniform Delay, d1	68.1	10.3	5.9	72.8	14.4	8.7	68.6	66.3			69.8	66.2
Progression Factor	0.88	0.84	1.69	0.93	2.84	2.67	1.00	1.00			1.00	1.00
Incremental Delay, d2	8.9	0.8	0.0	1.7	0.5	0.0	3.0	0.4			10.1	0.3
Delay (s)	68.9	9.4	9.9	69.3	41.4	23.3	71.6	66.7			79.9	66.5
Level of Service	E	A	A	E	D	C	E	E			E	E
Approach Delay (s)		14.8			42.2			69.1			71.4	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

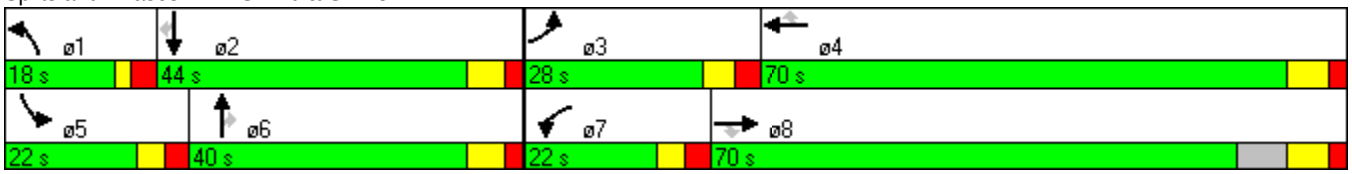
c Critical Lane Group

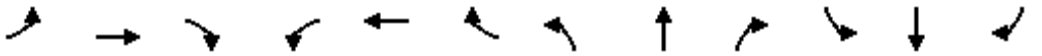
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	1187	88	234	1101	69	174	507	250	233	331	115
Lane Group Flow (vph)	309	1304	96	285	1251	76	187	534	291	291	394	124
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	28.0	70.0	70.0	22.0	70.0	70.0	18.0	40.0	40.0	22.0	44.0	44.0
Total Split (%)	17.5%	43.8%	43.8%	13.8%	43.8%	43.8%	11.3%	25.0%	25.0%	13.8%	27.5%	27.5%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	2.0	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.81	0.95	0.14	0.91	0.97	0.13	0.76	0.70	0.59	0.92	0.46	0.26
Control Delay	95.7	55.4	7.8	103.5	66.2	15.8	92.2	63.3	22.9	105.3	53.0	8.9
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	95.7	55.4	7.8	103.5	66.2	15.8	92.2	63.3	22.9	105.3	53.0	8.9
Queue Length 50th (ft)	158	756	9	154	667	22	100	276	82	158	187	0
Queue Length 95th (ft)	210	830	44	#205	#785	59	#146	352	171	#202	228	56
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	430	1435	697	316	1310	611	263	762	496	316	863	478
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	0.72	0.91	0.14	0.90	0.95	0.12	0.71	0.70	0.59	0.92	0.46	0.26

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: SR 20 & SR 13



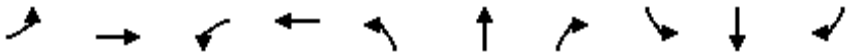


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	1187	88	234	1101	69	174	507	250	233	331	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Peak-hour factor, PHF	0.93	0.91	0.92	0.82	0.88	0.91	0.93	0.95	0.86	0.80	0.84	0.93
Adj. Flow (vph)	309	1304	96	285	1251	76	187	534	291	291	394	124
RTOR Reduction (vph)	0	0	57	0	0	26	0	0	155	0	0	92
Lane Group Flow (vph)	309	1304	39	285	1251	50	187	534	136	291	394	32
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	18.7	65.6	65.6	15.4	61.9	61.9	12.1	36.5	36.5	15.5	41.3	41.3
Effective Green, g (s)	18.7	65.6	65.6	15.4	61.9	61.9	12.1	36.5	36.5	15.5	41.3	41.3
Actuated g/C Ratio	0.12	0.41	0.41	0.10	0.39	0.39	0.08	0.23	0.23	0.10	0.26	0.26
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	379	1371	613	312	1293	578	245	763	341	314	863	386
v/s Ratio Prot	c0.10	c0.39		0.09	0.37		0.06	c0.16		c0.09	c0.12	
v/s Ratio Perm			0.03			0.03			0.09			0.02
v/c Ratio	0.82	0.95	0.06	0.91	0.97	0.09	0.76	0.70	0.40	0.93	0.46	0.08
Uniform Delay, d1	69.0	45.6	28.6	71.6	48.1	31.1	72.5	56.7	52.4	71.7	49.9	45.0
Progression Factor	1.17	0.91	1.57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	13.3	0.1	29.2	18.1	0.2	11.9	5.3	3.5	31.7	1.7	0.4
Delay (s)	91.4	55.1	45.0	100.8	66.2	31.3	84.5	62.0	55.9	103.4	51.7	45.4
Level of Service	F	E	D	F	E	C	F	E	E	F	D	D
Approach Delay (s)		61.1			70.6			64.4			69.3	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	34.3
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

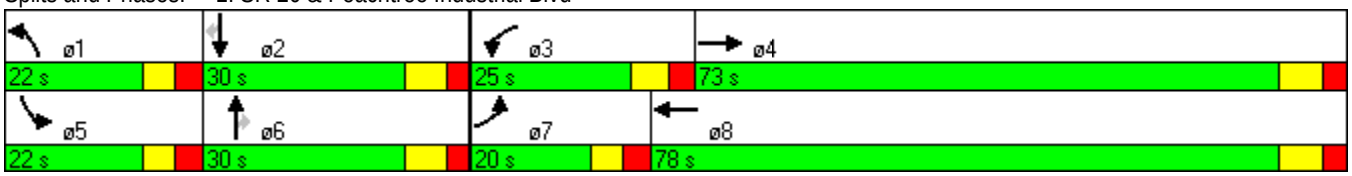
Future “No-Build” Intersection Analysis

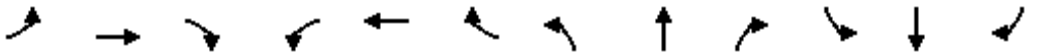


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	143	949	414	799	57	241	369	265	508	145
Lane Group Flow (vph)	164	1192	538	1052	68	265	486	298	564	169
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	20.0	73.0	25.0	78.0	22.0	30.0	30.0	22.0	30.0	30.0
Total Split (%)	13.3%	48.7%	16.7%	52.0%	14.7%	20.0%	20.0%	14.7%	20.0%	20.0%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.66	0.90	1.40	0.71	0.42	0.30	1.12	0.90	0.46	0.33
Control Delay	80.1	51.7	240.1	36.2	76.3	54.9	114.3	96.3	50.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.1	51.7	240.1	36.2	76.3	54.9	114.3	96.3	50.9	8.8
Queue Length 50th (ft)	81	558	~361	423	34	83	~403	151	178	0
Queue Length 95th (ft)	116	620	#382	466	56	118	#471	#231	233	57
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	292	1436	385	1542	333	897	432	335	1216	505
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	0.56	0.83	1.40	0.68	0.20	0.30	1.13	0.89	0.46	0.33

Intersection Summary
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 73 (49%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	949	77	414	799	110	57	241	369	265	508	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3290		3242	3279		3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3290		3242	3279		3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.87	0.89	0.61	0.77	0.87	0.82	0.84	0.91	0.76	0.89	0.90	0.86
Adj. Flow (vph)	164	1066	126	538	918	134	68	265	486	298	564	169
RTOR Reduction (vph)	0	7	0	0	8	0	0	0	153	0	0	128
Lane Group Flow (vph)	164	1185	0	538	1044	0	68	265	333	298	564	41
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.5	60.0		17.8	67.0		6.5	28.0	28.0	15.3	36.7	36.7
Effective Green, g (s)	11.5	60.0		17.8	67.0		6.5	28.0	28.0	15.3	36.7	36.7
Actuated g/C Ratio	0.08	0.40		0.12	0.45		0.04	0.19	0.19	0.10	0.24	0.24
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	249	1316		385	1465		140	897	279	331	1175	366
v/s Ratio Prot	0.05	c0.36		c0.17	c0.32		0.02	0.06		c0.09	0.12	
v/s Ratio Perm									c0.22			0.03
v/c Ratio	0.66	0.90		1.40	0.71		0.49	0.30	1.19	0.90	0.48	0.11
Uniform Delay, d1	67.3	42.2		66.1	33.7		70.1	52.5	61.0	66.6	48.5	44.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	9.6		194.0	2.4		1.0	0.8	116.9	25.6	1.4	0.6
Delay (s)	72.1	51.8		260.1	36.1		71.1	53.3	177.9	92.2	49.9	44.6
Level of Service	E	D		F	D		E	D	F	F	D	D
Approach Delay (s)		54.3			111.9			128.7			61.3	
Approach LOS		D			F			F			E	

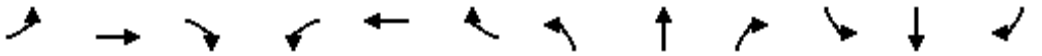
Intersection Summary			
HCM Average Control Delay	87.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.7
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	48	1582	57	199	1211	99	37	0	39	3	5
Lane Group Flow (vph)	59	1631	76	297	1236	155	0	148	0	75	8
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	93.0	93.0	17.0	93.0	93.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	12.1%	66.4%	66.4%	12.1%	66.4%	66.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.18	0.75	0.07	1.21	0.53	0.14		0.74		0.48	0.04
Control Delay	5.9	20.0	5.8	154.3	8.9	2.3		70.3		65.4	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	5.9	20.0	5.8	154.3	8.9	2.3		70.3		65.4	26.0
Queue Length 50th (ft)	11	506	12	~236	65	0		111		64	0
Queue Length 95th (ft)	22	651	26	#238	400	18		184		29	9
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	369	2181	1046	246	2318	1145		245		196	267
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	0.16	0.75	0.07	1.21	0.53	0.14		0.60		0.38	0.03

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 60 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	1582	57	199	1211	99	37	0	35	39	3	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.96	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583		1706			1788	1583
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00		0.78			0.64	1.00
Satd. Flow (perm)	356	3343	1583	157	3343	1583		1372			1196	1583
Peak-hour factor, PHF	0.82	0.97	0.75	0.67	0.98	0.64	0.44	0.92	0.55	0.62	0.25	0.62
Adj. Flow (vph)	59	1631	76	297	1236	155	84	0	64	63	12	8
RTOR Reduction (vph)	0	0	13	0	0	49	0	20	0	0	0	7
Lane Group Flow (vph)	59	1631	63	297	1236	106	0	128	0	0	75	1
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	97.6	91.3	91.3	106.9	95.8	95.8		18.4			18.4	18.4
Effective Green, g (s)	97.6	91.3	91.3	106.9	95.8	95.8		18.4			18.4	18.4
Actuated g/C Ratio	0.70	0.65	0.65	0.76	0.68	0.68		0.13			0.13	0.13
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	312	2180	1032	248	2288	1083		180			157	208
v/s Ratio Prot	0.01	0.49		c0.10	0.37							
v/s Ratio Perm	0.12		0.04	c0.82		0.07		c0.09			0.06	0.00
v/c Ratio	0.19	0.75	0.06	1.20	0.54	0.10		0.71			0.48	0.01
Uniform Delay, d1	7.5	16.5	8.8	36.2	11.1	7.5		58.3			56.3	52.8
Progression Factor	1.00	1.00	1.00	1.31	0.68	1.49		1.00			1.00	1.00
Incremental Delay, d2	0.3	2.4	0.1	118.3	0.8	0.2		13.3			3.1	0.0
Delay (s)	7.8	18.9	8.9	165.9	8.4	11.3		71.5			59.5	52.9
Level of Service	A	B	A	F	A	B		E			E	D
Approach Delay (s)		18.1			36.4			71.5			58.8	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	47	1562	11	20	1241	19	29	19	4	12	146
Lane Group Flow (vph)	55	1644	22	34	1334	25	37	81	0	25	172
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	40.0	93.0	93.0	17.0	70.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	28.6%	66.4%	66.4%	12.1%	50.0%	50.0%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.45	0.66	0.02	0.33	0.55	0.02	0.39	0.50		0.23	0.65
Control Delay	90.9	2.8	0.1	48.5	23.2	10.2	73.1	37.2		65.0	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	90.9	2.8	0.1	48.5	23.2	10.2	73.1	37.2		65.0	20.5
Queue Length 50th (ft)	53	35	0	28	481	8	33	27		22	0
Queue Length 95th (ft)	m73	49	m0	m33	580	m14	60	42		39	58
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	432	2482	1180	148	2432	1157	230	323		267	392
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	0.13	0.66	0.02	0.23	0.55	0.02	0.16	0.25		0.09	0.44

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

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

Splits and Phases: 3: SR 20 & Commerce Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	1562	11	20	1241	19	29	19	35	4	12	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583	1770	1687			1833	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00			0.86	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3343	1583	1380	1687			1606	1495
Peak-hour factor, PHF	0.86	0.95	0.50	0.59	0.93	0.75	0.78	0.64	0.69	0.50	0.69	0.85
Adj. Flow (vph)	55	1644	22	34	1334	25	37	30	51	8	17	172
RTOR Reduction (vph)	0	0	5	0	0	5	0	48	0	0	0	160
Lane Group Flow (vph)	55	1644	17	34	1334	20	37	33	0	0	25	12
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	8%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	9.7	104.0	104.0	8.1	101.9	101.9	9.6	9.6			9.6	9.6
Effective Green, g (s)	9.7	104.0	104.0	8.1	101.9	101.9	9.6	9.6			9.6	9.6
Actuated g/C Ratio	0.07	0.74	0.74	0.06	0.73	0.73	0.07	0.07			0.07	0.07
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	123	2483	1176	102	2433	1152	95	116			110	103
v/s Ratio Prot	c0.03	c0.49		0.02	0.40			0.02				
v/s Ratio Perm			0.01			0.01	c0.03				0.02	0.01
v/c Ratio	0.45	0.66	0.01	0.33	0.55	0.02	0.39	0.29			0.23	0.11
Uniform Delay, d1	62.6	9.1	4.7	63.4	8.6	5.3	62.4	62.0			61.7	61.2
Progression Factor	1.35	0.18	0.03	0.69	2.38	2.83	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.7	0.9	0.0	1.3	0.6	0.0	2.6	1.4			1.1	0.5
Delay (s)	86.1	2.6	0.2	44.7	21.1	14.9	65.0	63.3			62.7	61.7
Level of Service	F	A	A	D	C	B	E	E			E	E
Approach Delay (s)		5.3			21.6			63.9			61.8	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

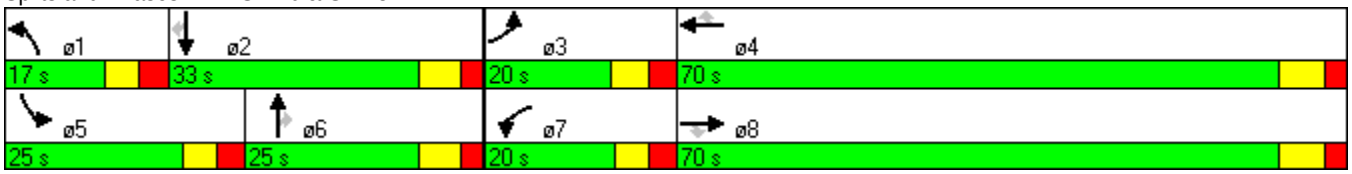
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1234	121	188	1105	145	154	239	133	109	354	143
Lane Group Flow (vph)	212	1327	159	209	1163	163	192	291	175	121	398	168
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	20.0	70.0	70.0	20.0	70.0	70.0	17.0	25.0	25.0	25.0	33.0	33.0
Total Split (%)	14.3%	50.0%	50.0%	14.3%	50.0%	50.0%	12.1%	17.9%	17.9%	17.9%	23.6%	23.6%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	3.5	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.75	0.93	0.22	0.73	0.81	0.23	0.81	0.39	0.37	0.54	0.55	0.37
Control Delay	69.7	46.6	8.3	77.4	40.5	7.7	88.8	50.1	9.2	71.8	53.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	46.6	8.3	77.4	40.5	7.7	88.8	50.1	9.2	71.8	53.3	9.2
Queue Length 50th (ft)	90	653	46	96	470	21	90	123	0	56	176	0
Queue Length 95th (ft)	126	742	56	140	556	63	#119	159	33	88	233	53
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	306	1497	757	315	1497	737	243	742	468	431	725	456
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	0.69	0.89	0.21	0.66	0.78	0.22	0.79	0.39	0.37	0.28	0.55	0.37

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 105 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: SR 20 & SR 13



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1234	121	188	1105	145	154	239	133	109	354	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Peak-hour factor, PHF	0.85	0.93	0.76	0.90	0.95	0.89	0.80	0.82	0.76	0.90	0.89	0.85
Adj. Flow (vph)	212	1327	159	209	1163	163	192	291	175	121	398	168
RTOR Reduction (vph)	0	0	91	0	0	70	0	0	136	0	0	132
Lane Group Flow (vph)	212	1327	68	209	1163	93	192	291	39	121	398	36
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.2	60.0	60.0	12.3	59.7	59.7	10.2	31.1	31.1	9.6	30.4	30.4
Effective Green, g (s)	12.2	60.0	60.0	12.3	59.7	59.7	10.2	31.1	31.1	9.6	30.4	30.4
Actuated g/C Ratio	0.09	0.43	0.43	0.09	0.43	0.43	0.07	0.22	0.22	0.07	0.22	0.22
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	283	1433	641	285	1426	638	236	743	332	222	726	325
v/s Ratio Prot	c0.07	c0.40		0.06	0.35		c0.06	0.09		0.04	c0.12	
v/s Ratio Perm			0.05			0.06			0.03			0.02
v/c Ratio	0.75	0.93	0.11	0.73	0.82	0.15	0.81	0.39	0.12	0.55	0.55	0.11
Uniform Delay, d1	62.4	37.9	23.9	62.3	35.3	24.6	64.0	46.4	43.5	63.1	48.7	44.0
Progression Factor	0.91	0.98	2.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	8.9	0.2	8.1	4.4	0.3	18.0	1.6	0.7	1.5	3.0	0.7
Delay (s)	63.5	46.1	57.0	70.4	39.7	24.9	82.0	47.9	44.2	64.6	51.7	44.7
Level of Service	E	D	E	E	D	C	F	D	D	E	D	D
Approach Delay (s)		49.3			42.3			56.9			52.2	
Approach LOS		D			D			E			D	

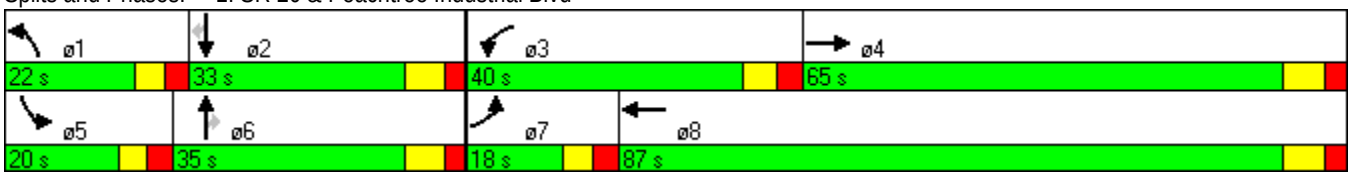
Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

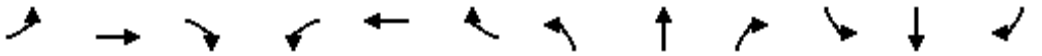
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	173	860	375	1000	116	494	502	213	329	217
Lane Group Flow (vph)	192	1005	399	1372	147	537	558	232	346	228
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	18.0	65.0	40.0	87.0	22.0	35.0	35.0	20.0	33.0	33.0
Total Split (%)	11.3%	40.6%	25.0%	54.4%	13.8%	21.9%	21.9%	12.5%	20.6%	20.6%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.84	0.81	0.79	0.90	0.63	0.54	0.99	0.87	0.34	0.49
Control Delay	102.4	50.4	61.0	45.9	83.5	60.4	63.3	101.2	55.9	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.4	50.4	61.0	45.9	83.5	60.4	63.3	101.2	55.9	16.7
Queue Length 50th (ft)	104	483	185	775	78	189	~333	125	115	35
Queue Length 95th (ft)	#171	588	238	831	101	239	#593	#200	158	129
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	233	1248	665	1621	312	986	561	274	1030	468
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	0.82	0.81	0.60	0.85	0.47	0.54	0.99	0.85	0.34	0.49

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 98 (61%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	860	73	375	1000	208	116	494	502	213	329	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3303		3242	3252		3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3303		3242	3252		3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.93	0.91	0.94	0.89	0.84	0.79	0.92	0.90	0.92	0.95	0.95
Adj. Flow (vph)	192	925	80	399	1124	248	147	537	558	232	346	228
RTOR Reduction (vph)	0	4	0	0	12	0	0	0	254	0	0	148
Lane Group Flow (vph)	192	1001	0	399	1360	0	147	537	304	232	346	80
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.3	60.2		24.9	74.5		11.6	32.8	32.8	13.2	34.3	34.3
Effective Green, g (s)	11.3	60.2		24.9	74.5		11.6	32.8	32.8	13.2	34.3	34.3
Actuated g/C Ratio	0.07	0.38		0.16	0.47		0.07	0.20	0.20	0.08	0.21	0.21
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	229	1243		505	1514		235	985	306	267	1030	320
v/s Ratio Prot	0.06	0.30		c0.12	c0.42		0.05	0.11		c0.07	0.07	
v/s Ratio Perm									c0.20			0.05
v/c Ratio	0.84	0.81		0.79	0.90		0.63	0.55	0.99	0.87	0.34	0.25
Uniform Delay, d1	73.4	44.7		65.0	39.3		72.1	56.9	63.5	72.5	53.2	52.2
Progression Factor	1.00	1.00		0.78	0.99		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	4.7		7.1	7.1		3.7	2.2	50.1	23.8	0.9	1.9
Delay (s)	95.2	49.3		58.0	46.1		75.8	59.1	113.7	96.4	54.1	54.1
Level of Service	F	D		E	D		E	E	F	F	D	D
Approach Delay (s)		56.7			48.8			85.6			66.2	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	62.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.9
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

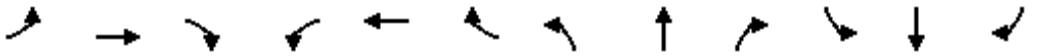
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	64	1471	16	75	1401	46	36	2	100	2	36
Lane Group Flow (vph)	71	1516	38	127	1459	58	0	131	0	114	47
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	113.0	113.0	17.0	113.0	113.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.6%	70.6%	70.6%	10.6%	70.6%	70.6%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.26	0.65	0.03	0.51	0.63	0.05		0.67		0.85	0.19
Control Delay	3.7	20.2	3.9	21.6	9.0	0.2		64.7		112.2	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	3.7	20.2	3.9	21.6	9.0	0.2		64.7		112.2	16.8
Queue Length 50th (ft)	14	704	10	27	699	0		95		117	0
Queue Length 95th (ft)	m8	m756	6	11	88	1		72		100	28
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	287	2330	1109	280	2305	1110		211		148	268
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	0.25	0.65	0.03	0.45	0.63	0.05		0.62		0.77	0.18

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 74 (46%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	1471	16	75	1401	46	36	2	55	100	2	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583		1684			1777	1583
Flt Permitted	0.13	1.00	1.00	0.12	1.00	1.00		0.73			0.55	1.00
Satd. Flow (perm)	240	3343	1583	228	3343	1583		1250			1029	1583
Peak-hour factor, PHF	0.90	0.97	0.42	0.59	0.96	0.79	0.71	0.50	0.72	0.91	0.50	0.77
Adj. Flow (vph)	71	1516	38	127	1459	58	51	4	76	110	4	47
RTOR Reduction (vph)	0	0	6	0	0	18	0	31	0	0	0	41
Lane Group Flow (vph)	71	1516	32	127	1459	40	0	100	0	0	114	6
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	120.8	111.5	111.5	118.7	110.3	110.3		20.9			20.9	20.9
Effective Green, g (s)	120.8	111.5	111.5	118.7	110.3	110.3		20.9			20.9	20.9
Actuated g/C Ratio	0.75	0.70	0.70	0.74	0.69	0.69		0.13			0.13	0.13
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	270	2330	1103	250	2305	1091		163			134	207
v/s Ratio Prot	0.02	c0.45		c0.03	0.44							
v/s Ratio Perm	0.18		0.02	0.35		0.03		0.08			c0.11	0.00
v/c Ratio	0.26	0.65	0.03	0.51	0.63	0.04		0.61			0.85	0.03
Uniform Delay, d1	9.0	13.4	7.5	10.8	13.7	7.9		65.7			68.0	60.7
Progression Factor	0.62	1.38	0.79	3.33	0.55	0.09		1.00			1.00	1.00
Incremental Delay, d2	0.3	0.7	0.0	1.4	1.1	0.1		7.6			38.5	0.1
Delay (s)	5.8	19.2	6.0	37.3	8.6	0.7		73.3			106.5	60.8
Level of Service	A	B	A	D	A	A		E			F	E
Approach Delay (s)		18.3			10.6			73.3			93.1	
Approach LOS		B			B			E			F	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

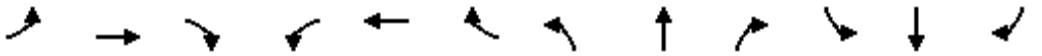
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	143	1480	18	39	1378	12	49	12	36	19	143
Lane Group Flow (vph)	155	1526	25	55	1392	17	58	63	0	93	159
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	42.0	113.0	113.0	17.0	88.0	88.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	26.3%	70.6%	70.6%	10.6%	55.0%	55.0%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.72	0.63	0.02	0.51	0.63	0.02	0.49	0.31		0.66	0.55
Control Delay	73.0	12.1	6.1	74.4	47.5	18.1	80.8	27.7		90.1	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	73.0	12.1	6.1	74.4	47.5	18.1	80.8	27.7		90.1	15.8
Queue Length 50th (ft)	167	254	1	51	794	8	59	16		95	0
Queue Length 95th (ft)	m249	446	m9	m54	m817	m12	98	38		92	70
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	400	2428	1155	129	2217	1054	175	281		209	354
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	0.39	0.63	0.02	0.43	0.63	0.02	0.33	0.22		0.44	0.45

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 66 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

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

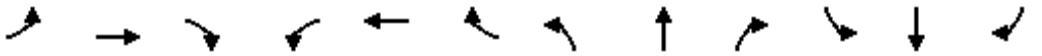
Splits and Phases: 3: SR 20 & Commerce Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	1480	18	39	1378	12	49	12	39	36	19	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3343	1583	1770	1659			1805	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.65	1.00			0.77	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3343	1583	1203	1659			1434	1495
Peak-hour factor, PHF	0.92	0.97	0.71	0.71	0.99	0.69	0.84	0.69	0.84	0.61	0.56	0.90
Adj. Flow (vph)	155	1526	25	55	1392	17	58	17	46	59	34	159
RTOR Reduction (vph)	0	0	6	0	0	4	0	41	0	0	0	143
Lane Group Flow (vph)	155	1526	19	55	1392	13	58	22	0	0	93	16
Heavy Vehicles (%)	2%	8%	2%	2%	8%	2%	2%	2%	2%	2%	2%	8%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	19.4	116.2	116.2	9.7	106.0	106.0	15.8	15.8			15.8	15.8
Effective Green, g (s)	19.4	116.2	116.2	9.7	106.0	106.0	15.8	15.8			15.8	15.8
Actuated g/C Ratio	0.12	0.73	0.73	0.06	0.66	0.66	0.10	0.10			0.10	0.10
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	215	2428	1150	107	2215	1049	119	164			142	148
v/s Ratio Prot	c0.09	c0.46		0.03	0.42			0.01				
v/s Ratio Perm			0.01			0.01	0.05				c0.06	0.01
v/c Ratio	0.72	0.63	0.02	0.51	0.63	0.01	0.49	0.13			0.65	0.11
Uniform Delay, d1	67.7	11.0	6.1	72.9	15.6	9.2	68.3	65.8			69.5	65.7
Progression Factor	0.87	0.92	1.81	0.94	2.72	2.60	1.00	1.00			1.00	1.00
Incremental Delay, d2	8.6	0.9	0.0	1.6	0.5	0.0	3.1	0.4			10.4	0.3
Delay (s)	67.6	11.1	11.0	69.8	43.0	23.9	71.4	66.2			79.8	66.0
Level of Service	E	B	B	E	D	C	E	E			E	E
Approach Delay (s)		16.2			43.8			68.7			71.1	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	302	1248	92	246	1157	73	183	533	263	245	348	121
Lane Group Flow (vph)	325	1371	100	300	1315	80	197	561	306	306	414	130
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	28.0	70.0	70.0	22.0	70.0	70.0	18.0	40.0	40.0	22.0	44.0	44.0
Total Split (%)	17.5%	43.8%	43.8%	13.8%	43.8%	43.8%	11.3%	25.0%	25.0%	13.8%	27.5%	27.5%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	2.0	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.84	0.98	0.15	0.95	1.00	0.13	0.79	0.77	0.63	0.97	0.50	0.28
Control Delay	95.0	62.2	8.2	109.8	73.5	16.4	94.2	66.9	26.3	113.7	54.7	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.0	62.2	8.2	109.8	73.5	16.4	94.2	66.9	26.3	113.7	54.7	8.8
Queue Length 50th (ft)	167	796	11	163	~728	25	105	295	103	167	200	0
Queue Length 95th (ft)	222	#903	m48	#222	#856	63	#161	371	194	#219	240	57
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	430	1435	699	316	1311	611	263	733	482	316	830	469
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	0.76	0.96	0.14	0.95	1.00	0.13	0.75	0.77	0.63	0.97	0.50	0.28

Intersection Summary

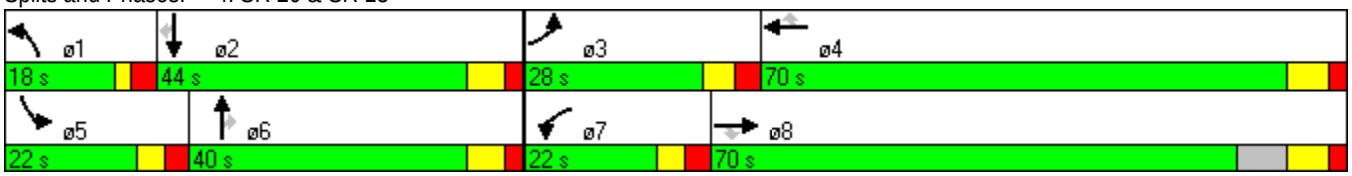
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

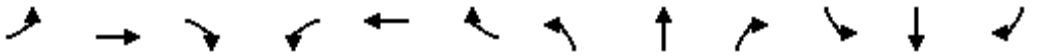
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 4: SR 20 & SR 13





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	302	1248	92	246	1157	73	183	533	263	245	348	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	3343	1495	3242	3343	1495	3242	3343	1495	3242	3343	1495
Peak-hour factor, PHF	0.93	0.91	0.92	0.82	0.88	0.91	0.93	0.95	0.86	0.80	0.84	0.93
Adj. Flow (vph)	325	1371	100	300	1315	80	197	561	306	306	414	130
RTOR Reduction (vph)	0	0	58	0	0	26	0	0	155	0	0	98
Lane Group Flow (vph)	325	1371	42	300	1315	54	197	561	151	306	414	32
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.2	66.7	66.7	15.6	62.7	62.7	12.3	35.1	35.1	15.6	39.8	39.8
Effective Green, g (s)	19.2	66.7	66.7	15.6	62.7	62.7	12.3	35.1	35.1	15.6	39.8	39.8
Actuated g/C Ratio	0.12	0.42	0.42	0.10	0.39	0.39	0.08	0.22	0.22	0.10	0.25	0.25
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	389	1394	623	316	1310	586	249	733	328	316	832	372
v/s Ratio Prot	c0.10	c0.41		0.09	0.39		0.06	c0.17		c0.09	c0.12	
v/s Ratio Perm			0.03			0.04			0.10			0.02
v/c Ratio	0.84	0.98	0.07	0.95	1.00	0.09	0.79	0.77	0.46	0.97	0.50	0.09
Uniform Delay, d1	68.9	46.1	28.0	71.8	48.6	30.7	72.6	58.6	54.2	72.0	51.5	46.1
Progression Factor	1.15	0.96	1.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	18.4	0.1	36.6	25.8	0.2	14.7	7.5	4.6	41.4	2.1	0.5
Delay (s)	90.9	62.5	47.4	108.4	74.4	30.9	87.3	66.1	58.9	113.4	53.7	46.6
Level of Service	F	E	D	F	E	C	F	E	E	F	D	D
Approach Delay (s)		66.8			78.4			67.9			74.1	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM Average Control Delay	71.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	34.3
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

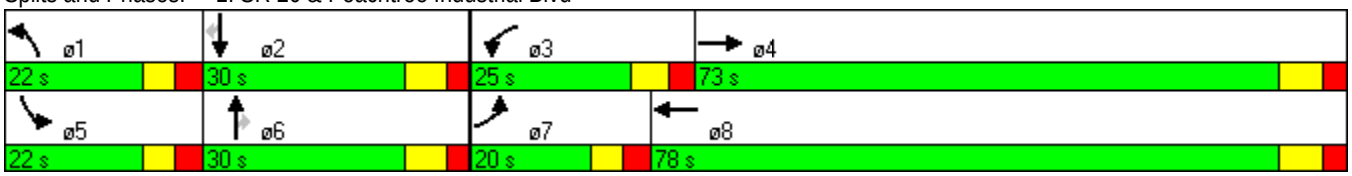
Future “Build” Intersections Analysis

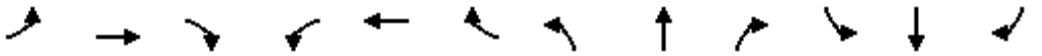
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	143	1023	414	822	57	241	369	265	508	145
Lane Group Flow (vph)	164	1275	538	1079	68	265	486	298	564	169
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	20.0	73.0	25.0	78.0	22.0	30.0	30.0	22.0	30.0	30.0
Total Split (%)	13.3%	48.7%	16.7%	52.0%	14.7%	20.0%	20.0%	14.7%	20.0%	20.0%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.66	0.93	1.41	0.71	0.42	0.33	1.22	0.91	0.51	0.35
Control Delay	80.2	53.5	245.9	34.7	76.3	57.1	149.6	97.2	53.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	53.5	245.9	34.7	76.3	57.1	149.6	97.2	53.4	9.1
Queue Length 50th (ft)	81	599	~363	422	34	86	~445	151	184	0
Queue Length 95th (ft)	117	693	#384	486	56	119	#485	#232	234	57
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	289	1424	381	1534	330	799	400	332	1116	477
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	0.57	0.90	1.41	0.70	0.21	0.33	1.22	0.90	0.51	0.35

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 73 (49%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	1023	77	414	822	110	57	241	369	265	508	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3263		3213	3250		3213	4759	1482	3213	4759	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3263		3213	3250		3213	4759	1482	3213	4759	1482
Peak-hour factor, PHF	0.87	0.89	0.61	0.77	0.87	0.82	0.84	0.91	0.76	0.89	0.90	0.86
Adj. Flow (vph)	164	1149	126	538	945	134	68	265	486	298	564	169
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	151	0	0	131
Lane Group Flow (vph)	164	1269	0	538	1072	0	68	265	335	298	564	38
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.6	62.8		17.8	69.7		6.6	25.2	25.2	15.3	33.8	33.8
Effective Green, g (s)	11.6	62.8		17.8	69.7		6.6	25.2	25.2	15.3	33.8	33.8
Actuated g/C Ratio	0.08	0.42		0.12	0.46		0.04	0.17	0.17	0.10	0.23	0.23
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	248	1366		381	1510		141	800	249	328	1072	334
v/s Ratio Prot	0.05	c0.39		c0.17	c0.33		0.02	0.06		c0.09	0.12	
v/s Ratio Perm									c0.23			0.03
v/c Ratio	0.66	0.93		1.41	0.71		0.48	0.33	1.35	0.91	0.53	0.11
Uniform Delay, d1	67.3	41.5		66.1	32.1		70.0	55.0	62.4	66.7	51.1	46.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	12.0		200.4	2.3		0.9	1.1	180.4	27.0	1.8	0.7
Delay (s)	72.3	53.4		266.5	34.4		71.0	56.1	242.8	93.7	52.9	46.9
Level of Service	E	D		F	C		E	E	F	F	D	D
Approach Delay (s)		55.6			111.6			168.1			63.7	
Approach LOS		E			F			F			E	

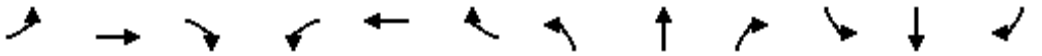
Intersection Summary			
HCM Average Control Delay	94.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.7
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	122	1582	57	199	1211	320	37	0	107	3	28
Lane Group Flow (vph)	149	1631	76	297	1236	500	0	148	0	185	45
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	93.0	93.0	17.0	93.0	93.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	12.1%	66.4%	66.4%	12.1%	66.4%	66.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.46	0.80	0.08	1.29	0.60	0.43		0.87		1.19	0.18
Control Delay	10.2	23.7	6.1	188.3	15.7	3.9		89.9		179.9	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	10.2	23.7	6.1	188.3	15.7	3.9		89.9		179.9	15.4
Queue Length 50th (ft)	34	555	13	~267	271	22		114		~202	0
Queue Length 95th (ft)	49	658	26	#260	452	42		#246		63	14
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	328	2051	994	230	2061	1174		170		156	250
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	0.45	0.80	0.08	1.29	0.60	0.43		0.87		1.19	0.18

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 60 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1582	57	199	1211	320	37	0	35	107	3	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.96	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583		1706			1452	1292
Flt Permitted	0.17	1.00	1.00	0.08	1.00	1.00		0.52			0.62	1.00
Satd. Flow (perm)	309	3312	1583	144	3312	1583		916			948	1292
Peak-hour factor, PHF	0.82	0.97	0.75	0.67	0.98	0.64	0.44	0.92	0.55	0.62	0.25	0.62
Adj. Flow (vph)	149	1631	76	297	1236	500	84	0	64	173	12	45
RTOR Reduction (vph)	0	0	14	0	0	189	0	19	0	0	0	38
Lane Group Flow (vph)	149	1631	62	297	1236	311	0	129	0	0	185	7
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	25%	25%	25%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	97.1	86.7	86.7	98.2	87.1	87.1		23.0			23.0	23.0
Effective Green, g (s)	97.1	86.7	86.7	98.2	87.1	87.1		23.0			23.0	23.0
Actuated g/C Ratio	0.69	0.62	0.62	0.70	0.62	0.62		0.16			0.16	0.16
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	323	2051	980	230	2061	985		150			156	212
v/s Ratio Prot	0.03	0.49		c0.10	0.37							
v/s Ratio Perm	0.29		0.04	c0.80		0.20		0.14			c0.20	0.01
v/c Ratio	0.46	0.80	0.06	1.29	0.60	0.32		0.86			1.19	0.03
Uniform Delay, d1	10.2	20.0	10.6	37.3	15.9	12.4		56.9			58.5	49.2
Progression Factor	1.00	1.00	1.00	1.15	0.90	3.10		1.00			1.00	1.00
Incremental Delay, d2	1.2	3.3	0.1	155.9	1.1	0.7		36.5			130.7	0.1
Delay (s)	11.4	23.3	10.7	198.6	15.4	39.3		93.5			189.2	49.3
Level of Service	B	C	B	F	B	D		F			F	D
Approach Delay (s)		21.8			48.1			93.5			161.9	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

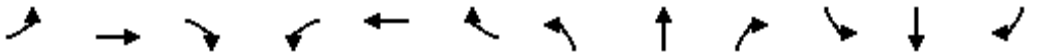
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	52	1626	11	20	1447	19	29	19	4	12	161
Lane Group Flow (vph)	60	1712	22	34	1556	25	37	81	0	25	189
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	40.0	93.0	93.0	17.0	70.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	28.6%	66.4%	66.4%	12.1%	50.0%	50.0%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.47	0.70	0.02	0.33	0.65	0.02	0.39	0.49		0.22	0.68
Control Delay	84.4	5.4	0.7	53.2	26.4	9.7	72.5	36.9		64.6	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	84.4	5.4	0.7	53.2	26.4	9.7	72.5	36.9		64.6	20.6
Queue Length 50th (ft)	58	88	0	28	596	8	33	27		22	0
Queue Length 95th (ft)	m71	m295	m0	m31	m677	m10	60	42		39	60
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	432	2457	1178	148	2398	1150	230	323		267	404
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	0.14	0.70	0.02	0.23	0.65	0.02	0.16	0.25		0.09	0.47

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

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

Splits and Phases: 3: SR 20 & Commerce Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	1626	11	20	1447	19	29	19	35	4	12	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583	1770	1687			1833	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00			0.86	1.00
Satd. Flow (perm)	1770	3312	1583	1770	3312	1583	1380	1687			1606	1482
Peak-hour factor, PHF	0.86	0.95	0.50	0.59	0.93	0.75	0.78	0.64	0.69	0.50	0.69	0.85
Adj. Flow (vph)	60	1712	22	34	1556	25	37	30	51	8	17	189
RTOR Reduction (vph)	0	0	4	0	0	4	0	47	0	0	0	176
Lane Group Flow (vph)	60	1712	18	34	1556	21	37	34	0	0	25	13
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	2%	2%	9%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	10.1	103.9	103.9	8.1	101.4	101.4	9.7	9.7			9.7	9.7
Effective Green, g (s)	10.1	103.9	103.9	8.1	101.4	101.4	9.7	9.7			9.7	9.7
Actuated g/C Ratio	0.07	0.74	0.74	0.06	0.72	0.72	0.07	0.07			0.07	0.07
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	128	2458	1175	102	2399	1147	96	117			111	103
v/s Ratio Prot	c0.03	c0.52		0.02	0.47			0.02				
v/s Ratio Perm			0.01			0.01	c0.03				0.02	0.01
v/c Ratio	0.47	0.70	0.01	0.33	0.65	0.02	0.39	0.29			0.23	0.13
Uniform Delay, d1	62.4	9.6	4.7	63.4	10.0	5.4	62.3	61.9			61.6	61.2
Progression Factor	1.27	0.42	0.22	0.78	2.30	2.40	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.4	0.9	0.0	0.9	0.7	0.0	2.6	1.4			1.0	0.6
Delay (s)	80.6	4.9	1.1	50.6	23.8	13.0	64.9	63.2			62.6	61.7
Level of Service	F	A	A	D	C	B	E	E			E	E
Approach Delay (s)		7.4			24.2			63.7			61.8	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

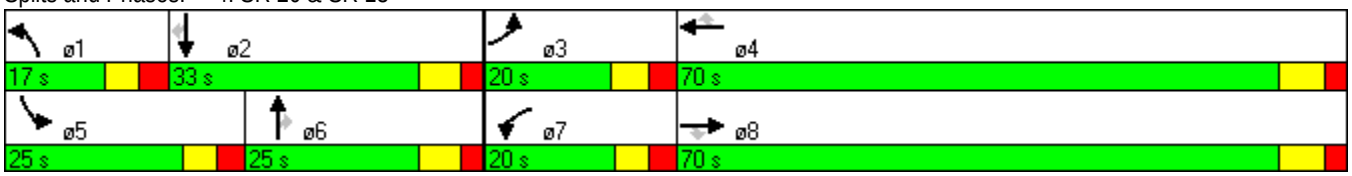
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	1278	136	188	1246	145	204	239	133	109	354	158
Lane Group Flow (vph)	218	1374	179	209	1312	163	255	291	175	121	398	186
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	20.0	70.0	70.0	20.0	70.0	70.0	17.0	25.0	25.0	25.0	33.0	33.0
Total Split (%)	14.3%	50.0%	50.0%	14.3%	50.0%	50.0%	12.1%	17.9%	17.9%	17.9%	23.6%	23.6%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	3.5	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.77	0.95	0.24	0.74	0.91	0.23	1.06	0.41	0.39	0.55	0.59	0.41
Control Delay	71.1	47.7	7.8	77.9	47.3	9.4	134.3	51.2	9.5	71.8	55.1	9.9
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	71.1	47.7	7.8	77.9	47.3	9.4	134.3	51.2	9.5	71.8	55.1	9.9
Queue Length 50th (ft)	94	689	48	96	567	28	~130	124	0	56	177	2
Queue Length 95th (ft)	131	#784	54	141	675	72	#184	160	33	88	233	57
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	303	1483	763	312	1483	723	241	702	452	427	680	450
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	0.72	0.93	0.23	0.67	0.88	0.23	1.06	0.41	0.39	0.28	0.59	0.41

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 105 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 135
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: 4: SR 20 & SR 13



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	1278	136	188	1246	145	204	239	133	109	354	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Peak-hour factor, PHF	0.85	0.93	0.76	0.90	0.95	0.89	0.80	0.82	0.76	0.90	0.89	0.85
Adj. Flow (vph)	218	1374	179	209	1312	163	255	291	175	121	398	186
RTOR Reduction (vph)	0	0	101	0	0	61	0	0	138	0	0	145
Lane Group Flow (vph)	218	1374	78	209	1312	102	255	291	37	121	398	41
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.3	61.3	61.3	12.4	61.0	61.0	10.5	29.6	29.6	9.7	28.7	28.7
Effective Green, g (s)	12.3	61.3	61.3	12.4	61.0	61.0	10.5	29.6	29.6	9.7	28.7	28.7
Actuated g/C Ratio	0.09	0.44	0.44	0.09	0.44	0.44	0.08	0.21	0.21	0.07	0.20	0.20
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	282	1450	649	285	1443	646	241	700	313	223	679	304
v/s Ratio Prot	c0.07	c0.41		0.07	0.40		c0.08	0.09		0.04	c0.12	
v/s Ratio Perm			0.05			0.07			0.02			0.03
v/c Ratio	0.77	0.95	0.12	0.73	0.91	0.16	1.06	0.42	0.12	0.54	0.59	0.13
Uniform Delay, d1	62.5	37.8	23.4	62.2	36.9	23.9	64.8	47.7	44.6	63.0	50.3	45.5
Progression Factor	0.92	0.97	2.34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	10.7	0.2	8.1	9.5	0.3	74.1	1.8	0.8	1.4	3.7	0.9
Delay (s)	65.9	47.2	54.8	70.3	46.4	24.3	138.9	49.5	45.4	64.4	54.0	46.4
Level of Service	E	D	D	E	D	C	F	D	D	E	D	D
Approach Delay (s)		50.3			47.3			80.1			53.8	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM Average Control Delay	54.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	173	890	375	1072	116	494	502	213	329	217
Lane Group Flow (vph)	192	1037	399	1452	147	537	558	232	346	228
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	18.0	65.0	40.0	87.0	22.0	35.0	35.0	20.0	33.0	33.0
Total Split (%)	11.3%	40.6%	25.0%	54.4%	13.8%	21.9%	21.9%	12.5%	20.6%	20.6%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.85	0.81	0.79	0.93	0.63	0.60	1.04	0.87	0.37	0.52
Control Delay	103.4	49.4	65.1	46.1	83.6	63.1	75.1	102.2	58.0	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.4	49.4	65.1	46.1	83.6	63.1	75.1	102.2	58.0	19.3
Queue Length 50th (ft)	104	492	186	812	78	194	~357	125	118	43
Queue Length 95th (ft)	#172	618	m237	m866	101	240	#599	#201	158	138
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	231	1281	659	1607	309	901	538	271	944	438
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	0.83	0.81	0.61	0.90	0.48	0.60	1.04	0.86	0.37	0.52

Intersection Summary

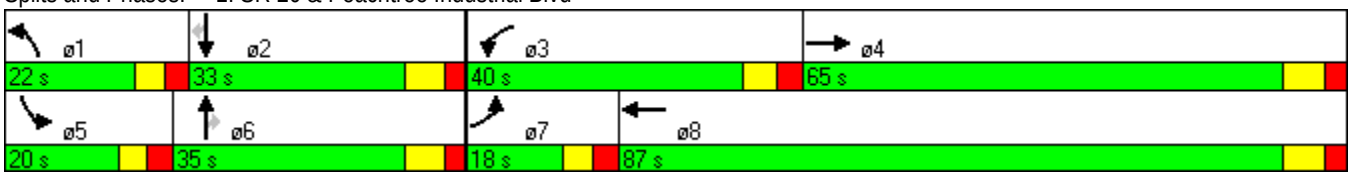
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 98 (61%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

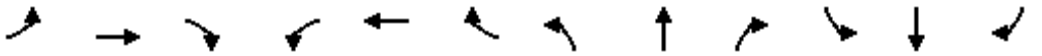
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	890	73	375	1072	208	116	494	502	213	329	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3274		3213	3227		3213	4759	1482	3213	4759	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3274		3213	3227		3213	4759	1482	3213	4759	1482
Peak-hour factor, PHF	0.90	0.93	0.91	0.94	0.89	0.84	0.79	0.92	0.90	0.92	0.95	0.95
Adj. Flow (vph)	192	957	80	399	1204	248	147	537	558	232	346	228
RTOR Reduction (vph)	0	4	0	0	11	0	0	0	257	0	0	144
Lane Group Flow (vph)	192	1033	0	399	1441	0	147	537	301	232	346	84
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.3	62.5		25.1	77.0		11.7	30.3	30.3	13.2	31.7	31.7
Effective Green, g (s)	11.3	62.5		25.1	77.0		11.7	30.3	30.3	13.2	31.7	31.7
Actuated g/C Ratio	0.07	0.39		0.16	0.48		0.07	0.19	0.19	0.08	0.20	0.20
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	227	1279		504	1553		235	901	281	265	943	294
v/s Ratio Prot	0.06	0.32		c0.12	c0.45		0.05	0.11		c0.07	0.07	
v/s Ratio Perm									c0.20			0.06
v/c Ratio	0.85	0.81		0.79	0.93		0.63	0.60	1.07	0.88	0.37	0.28
Uniform Delay, d1	73.5	43.4		64.9	38.9		72.0	59.3	64.8	72.6	55.5	54.5
Progression Factor	1.00	1.00		0.86	0.96		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.2	4.6		6.7	8.8		3.7	2.9	73.9	25.2	1.1	2.4
Delay (s)	96.7	48.0		62.4	46.2		75.7	62.2	138.7	97.8	56.6	56.9
Level of Service	F	D		E	D		E	E	F	F	E	E
Approach Delay (s)		55.6			49.7			98.2			68.5	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.9
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	94	1471	16	75	1401	135	36	2	316	2	108
Lane Group Flow (vph)	104	1516	38	127	1459	171	0	131	0	351	140
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	113.0	113.0	17.0	113.0	113.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.6%	70.6%	70.6%	10.6%	70.6%	70.6%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.39	0.67	0.03	0.52	0.66	0.15		2.15		2.88	0.49
Control Delay	6.3	21.5	3.9	20.5	9.6	0.4		587.7		888.6	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	6.3	21.5	3.9	20.5	9.6	0.4		587.7		888.6	21.7
Queue Length 50th (ft)	20	707	10	21	376	0		~186		~629	23
Queue Length 95th (ft)	m12	m751	6	11	88	1		#140		#408	62
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	276	2263	1088	274	2221	1118		61		122	284
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	0.38	0.67	0.03	0.46	0.66	0.15		2.15		2.88	0.49

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 74 (46%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: SR 20 & Broadmoor Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	1471	16	75	1401	135	36	2	55	316	2	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583		1684			1448	1292
Flt Permitted	0.12	1.00	1.00	0.12	1.00	1.00		0.12			0.56	1.00
Satd. Flow (perm)	229	3312	1583	223	3312	1583		207			848	1292
Peak-hour factor, PHF	0.90	0.97	0.42	0.59	0.96	0.79	0.71	0.50	0.72	0.91	0.50	0.77
Adj. Flow (vph)	104	1516	38	127	1459	171	51	4	76	347	4	140
RTOR Reduction (vph)	0	0	6	0	0	56	0	31	0	0	0	98
Lane Group Flow (vph)	104	1516	32	127	1459	115	0	100	0	0	351	42
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	25%	25%	25%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	119.5	109.3	109.3	115.8	107.3	107.3		23.0			23.0	23.0
Effective Green, g (s)	119.5	109.3	109.3	115.8	107.3	107.3		23.0			23.0	23.0
Actuated g/C Ratio	0.75	0.68	0.68	0.72	0.67	0.67		0.14			0.14	0.14
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	269	2263	1081	244	2221	1062		30			122	186
v/s Ratio Prot	0.02	c0.46		c0.03	0.44							
v/s Ratio Perm	0.26		0.02	0.35		0.07		c0.48			0.41	0.03
v/c Ratio	0.39	0.67	0.03	0.52	0.66	0.11		3.34			2.88	0.22
Uniform Delay, d1	11.0	14.8	8.2	11.9	15.5	9.4		68.5			68.5	60.6
Progression Factor	0.99	1.37	0.78	2.86	0.53	0.13		1.00			1.00	1.00
Incremental Delay, d2	0.5	0.7	0.0	1.6	1.2	0.2		1132.3			866.7	0.8
Delay (s)	11.4	21.0	6.4	35.8	9.4	1.4		1200.8			935.2	61.4
Level of Service	B	C	A	D	A	A		F			F	E
Approach Delay (s)		20.0			10.5			1200.8			686.1	
Approach LOS		C			B			F			F	

Intersection Summary			
HCM Average Control Delay	135.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

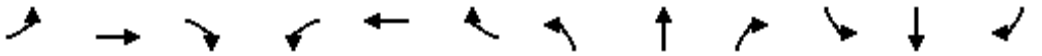
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	157	1682	18	39	1461	12	49	12	36	19	149
Lane Group Flow (vph)	171	1734	25	55	1476	17	58	63	0	93	166
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	42.0	113.0	113.0	17.0	88.0	88.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	26.3%	70.6%	70.6%	10.6%	55.0%	55.0%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.74	0.71	0.02	0.51	0.68	0.02	0.49	0.31		0.66	0.56
Control Delay	66.4	11.4	5.5	73.7	50.2	19.2	80.8	27.7		90.1	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	66.4	11.4	5.5	73.7	50.2	19.2	80.8	27.7		90.1	15.9
Queue Length 50th (ft)	186	263	1	51	846	8	59	16		95	0
Queue Length 95th (ft)	m226	m483	m6	m50	m828	m12	98	38		92	73
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	400	2428	1155	129	2166	1039	175	281		209	358
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	0.43	0.71	0.02	0.43	0.68	0.02	0.33	0.22		0.44	0.46

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 66 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR 20 & Commerce Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	1682	18	39	1461	12	49	12	39	36	19	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3312	1583	1770	1659			1805	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.65	1.00			0.77	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3312	1583	1203	1659			1434	1482
Peak-hour factor, PHF	0.92	0.97	0.71	0.71	0.99	0.69	0.84	0.69	0.84	0.61	0.56	0.90
Adj. Flow (vph)	171	1734	25	55	1476	17	58	17	46	59	34	166
RTOR Reduction (vph)	0	0	5	0	0	4	0	41	0	0	0	150
Lane Group Flow (vph)	171	1734	20	55	1476	13	58	22	0	0	93	16
Heavy Vehicles (%)	2%	8%	2%	2%	9%	2%	2%	2%	2%	2%	2%	9%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	20.8	116.2	116.2	9.7	104.6	104.6	15.8	15.8			15.8	15.8
Effective Green, g (s)	20.8	116.2	116.2	9.7	104.6	104.6	15.8	15.8			15.8	15.8
Actuated g/C Ratio	0.13	0.73	0.73	0.06	0.65	0.65	0.10	0.10			0.10	0.10
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	230	2428	1150	107	2165	1035	119	164			142	146
v/s Ratio Prot	c0.10	c0.52		0.03	0.45			0.01				
v/s Ratio Perm			0.01			0.01	0.05				c0.06	0.01
v/c Ratio	0.74	0.71	0.02	0.51	0.68	0.01	0.49	0.13			0.65	0.11
Uniform Delay, d1	67.0	12.5	6.1	72.9	17.3	9.7	68.3	65.8			69.5	65.7
Progression Factor	0.97	0.82	1.48	0.95	2.58	2.49	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.2	0.2	0.0	1.2	0.5	0.0	3.1	0.4			10.4	0.3
Delay (s)	66.4	10.3	9.0	70.5	45.2	24.1	71.4	66.2			79.8	66.1
Level of Service	E	B	A	E	D	C	E	E			E	E
Approach Delay (s)		15.3			45.9			68.7			71.0	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1386	141	246	1214	73	203	533	263	245	348	127
Lane Group Flow (vph)	340	1523	153	300	1380	80	218	561	306	306	414	137
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	28.0	70.0	70.0	22.0	70.0	70.0	18.0	40.0	40.0	22.0	44.0	44.0
Total Split (%)	17.5%	43.8%	43.8%	13.8%	43.8%	43.8%	11.3%	25.0%	25.0%	13.8%	27.5%	27.5%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	2.0	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.86	1.09	0.21	0.96	1.06	0.13	0.85	0.78	0.65	0.98	0.51	0.30
Control Delay	90.3	95.7	8.5	111.8	89.7	17.1	101.2	68.3	27.7	116.0	55.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.3	95.7	8.5	111.8	89.7	17.1	101.2	68.3	27.7	116.0	55.6	8.8
Queue Length 50th (ft)	175	~946	24	163	~833	26	118	298	108	167	202	0
Queue Length 95th (ft)	#246	#1088	m69	#223	#936	64	#189	372	199	#220	240	58
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	426	1422	724	313	1298	605	261	715	472	313	804	464
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	0.80	1.07	0.21	0.96	1.06	0.13	0.84	0.78	0.65	0.98	0.51	0.30

Intersection Summary

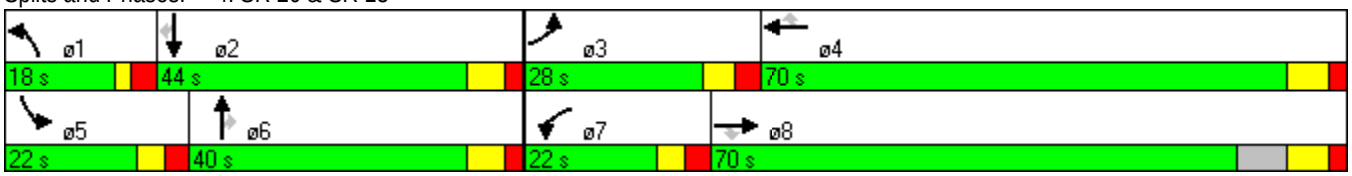
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 4: SR 20 & SR 13



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1386	141	246	1214	73	203	533	263	245	348	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Peak-hour factor, PHF	0.93	0.91	0.92	0.82	0.88	0.91	0.93	0.95	0.86	0.80	0.84	0.93
Adj. Flow (vph)	340	1523	153	300	1380	80	218	561	306	306	414	137
RTOR Reduction (vph)	0	0	89	0	0	24	0	0	152	0	0	104
Lane Group Flow (vph)	340	1523	64	300	1380	56	218	561	154	306	414	33
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.8	67.3	67.3	15.6	62.7	62.7	12.7	34.5	34.5	15.6	38.8	38.8
Effective Green, g (s)	19.8	67.3	67.3	15.6	62.7	62.7	12.7	34.5	34.5	15.6	38.8	38.8
Actuated g/C Ratio	0.12	0.42	0.42	0.10	0.39	0.39	0.08	0.22	0.22	0.10	0.24	0.24
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	398	1393	623	313	1298	581	255	714	320	313	803	359
v/s Ratio Prot	c0.11	c0.46		0.09	0.42		0.07	c0.17		c0.10	c0.13	
v/s Ratio Perm			0.04			0.04			0.10			0.02
v/c Ratio	0.85	1.09	0.10	0.96	1.06	0.10	0.85	0.79	0.48	0.98	0.52	0.09
Uniform Delay, d1	68.7	46.4	28.1	71.9	48.6	30.7	72.7	59.3	54.9	72.0	52.5	47.0
Progression Factor	1.08	1.02	2.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	51.5	0.2	39.1	43.6	0.2	22.6	8.5	5.1	44.1	2.4	0.5
Delay (s)	86.6	98.7	59.2	111.0	92.3	30.9	95.3	67.8	60.0	116.2	54.8	47.5
Level of Service	F	F	E	F	F	C	F	E	E	F	D	D
Approach Delay (s)		93.7			92.7			71.1			75.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	86.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	34.3
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

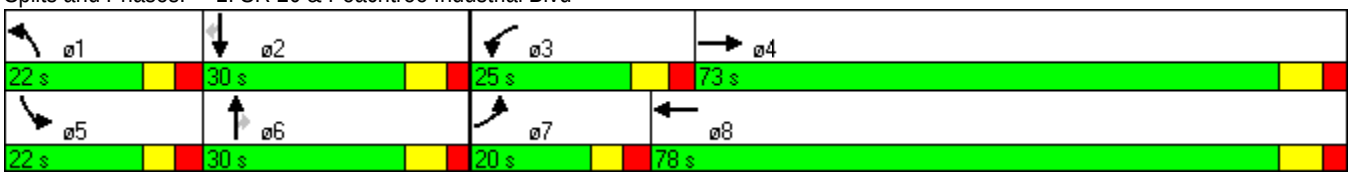
c Critical Lane Group

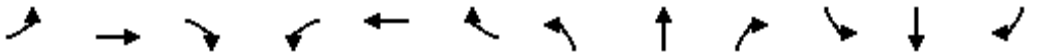
Future “Build - Improved” Intersections Analysis

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	143	1023	414	822	57	241	369	265	508	145
Lane Group Flow (vph)	164	1275	538	1079	68	265	486	298	564	169
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	20.0	73.0	25.0	78.0	22.0	30.0	30.0	22.0	30.0	30.0
Total Split (%)	13.3%	48.7%	16.7%	52.0%	14.7%	20.0%	20.0%	14.7%	20.0%	20.0%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.66	0.93	1.41	0.71	0.42	0.33	1.22	0.91	0.51	0.35
Control Delay	80.2	53.5	245.9	34.7	76.3	57.1	149.6	97.2	53.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.2	53.5	245.9	34.7	76.3	57.1	149.6	97.2	53.4	9.1
Queue Length 50th (ft)	81	599	~363	422	34	86	~445	151	184	0
Queue Length 95th (ft)	117	693	#384	486	56	119	#485	#232	234	57
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	289	1424	381	1534	330	799	400	332	1116	477
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	0.57	0.90	1.41	0.70	0.21	0.33	1.22	0.90	0.51	0.35

Intersection Summary
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 73 (49%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	1023	77	414	822	110	57	241	369	265	508	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3263		3213	3250		3213	4759	1482	3213	4759	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3263		3213	3250		3213	4759	1482	3213	4759	1482
Peak-hour factor, PHF	0.87	0.89	0.61	0.77	0.87	0.82	0.84	0.91	0.76	0.89	0.90	0.86
Adj. Flow (vph)	164	1149	126	538	945	134	68	265	486	298	564	169
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	151	0	0	131
Lane Group Flow (vph)	164	1269	0	538	1072	0	68	265	335	298	564	38
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.6	62.8		17.8	69.7		6.6	25.2	25.2	15.3	33.8	33.8
Effective Green, g (s)	11.6	62.8		17.8	69.7		6.6	25.2	25.2	15.3	33.8	33.8
Actuated g/C Ratio	0.08	0.42		0.12	0.46		0.04	0.17	0.17	0.10	0.23	0.23
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	248	1366		381	1510		141	800	249	328	1072	334
v/s Ratio Prot	0.05	c0.39		c0.17	c0.33		0.02	0.06		c0.09	0.12	
v/s Ratio Perm									c0.23			0.03
v/c Ratio	0.66	0.93		1.41	0.71		0.48	0.33	1.35	0.91	0.53	0.11
Uniform Delay, d1	67.3	41.5		66.1	32.1		70.0	55.0	62.4	66.7	51.1	46.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	12.0		200.4	2.3		0.9	1.1	180.4	27.0	1.8	0.7
Delay (s)	72.3	53.4		266.5	34.4		71.0	56.1	242.8	93.7	52.9	46.9
Level of Service	E	D		F	C		E	E	F	F	D	D
Approach Delay (s)		55.6			111.6			168.1			63.7	
Approach LOS		E			F			F			E	

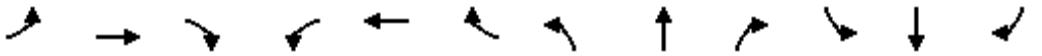
Intersection Summary			
HCM Average Control Delay	94.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.7
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	122	1582	57	199	1211	320	37	0	107	3	28
Lane Group Flow (vph)	149	1631	76	297	1236	500	0	148	0	185	45
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	93.0	93.0	17.0	93.0	93.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	12.1%	66.4%	66.4%	12.1%	66.4%	66.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.46	0.80	0.08	1.29	0.60	0.43		0.87		1.19	0.18
Control Delay	10.2	23.7	6.1	188.3	15.7	3.9		89.9		179.9	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	10.2	23.7	6.1	188.3	15.7	3.9		89.9		179.9	15.4
Queue Length 50th (ft)	34	555	13	~267	271	22		114		~202	0
Queue Length 95th (ft)	49	658	26	#260	452	42		#246		63	14
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	328	2051	994	230	2061	1174		170		156	250
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	0.45	0.80	0.08	1.29	0.60	0.43		0.87		1.19	0.18

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 60 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 20 & Broadmoor Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1582	57	199	1211	320	37	0	35	107	3	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.94			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.96	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583		1706			1452	1292
Flt Permitted	0.17	1.00	1.00	0.08	1.00	1.00		0.52			0.62	1.00
Satd. Flow (perm)	309	3312	1583	144	3312	1583		916			948	1292
Peak-hour factor, PHF	0.82	0.97	0.75	0.67	0.98	0.64	0.44	0.92	0.55	0.62	0.25	0.62
Adj. Flow (vph)	149	1631	76	297	1236	500	84	0	64	173	12	45
RTOR Reduction (vph)	0	0	14	0	0	189	0	19	0	0	0	38
Lane Group Flow (vph)	149	1631	62	297	1236	311	0	129	0	0	185	7
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	25%	25%	25%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	97.1	86.7	86.7	98.2	87.1	87.1		23.0			23.0	23.0
Effective Green, g (s)	97.1	86.7	86.7	98.2	87.1	87.1		23.0			23.0	23.0
Actuated g/C Ratio	0.69	0.62	0.62	0.70	0.62	0.62		0.16			0.16	0.16
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	323	2051	980	230	2061	985		150			156	212
v/s Ratio Prot	0.03	0.49		c0.10	0.37							
v/s Ratio Perm	0.29		0.04	c0.80		0.20		0.14			c0.20	0.01
v/c Ratio	0.46	0.80	0.06	1.29	0.60	0.32		0.86			1.19	0.03
Uniform Delay, d1	10.2	20.0	10.6	37.3	15.9	12.4		56.9			58.5	49.2
Progression Factor	1.00	1.00	1.00	1.15	0.90	3.10		1.00			1.00	1.00
Incremental Delay, d2	1.2	3.3	0.1	155.9	1.1	0.7		36.5			130.7	0.1
Delay (s)	11.4	23.3	10.7	198.6	15.4	39.3		93.5			189.2	49.3
Level of Service	B	C	B	F	B	D		F			F	D
Approach Delay (s)		21.8			48.1			93.5			161.9	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

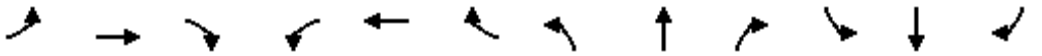
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	52	1626	11	20	1447	19	29	19	4	12	161
Lane Group Flow (vph)	60	1712	22	34	1556	25	37	81	0	25	189
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	40.0	93.0	93.0	17.0	70.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	28.6%	66.4%	66.4%	12.1%	50.0%	50.0%	21.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.47	0.70	0.02	0.33	0.65	0.02	0.39	0.49		0.22	0.68
Control Delay	84.4	5.4	0.7	53.2	26.4	9.7	72.5	36.9		64.6	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	84.4	5.4	0.7	53.2	26.4	9.7	72.5	36.9		64.6	20.6
Queue Length 50th (ft)	58	88	0	28	596	8	33	27		22	0
Queue Length 95th (ft)	m71	m295	m0	m31	m677	m10	60	42		39	60
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	432	2457	1178	148	2398	1150	230	323		267	404
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	0.14	0.70	0.02	0.23	0.65	0.02	0.16	0.25		0.09	0.47

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR 20 & Commerce Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	1626	11	20	1447	19	29	19	35	4	12	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583	1770	1687			1833	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00			0.86	1.00
Satd. Flow (perm)	1770	3312	1583	1770	3312	1583	1380	1687			1606	1482
Peak-hour factor, PHF	0.86	0.95	0.50	0.59	0.93	0.75	0.78	0.64	0.69	0.50	0.69	0.85
Adj. Flow (vph)	60	1712	22	34	1556	25	37	30	51	8	17	189
RTOR Reduction (vph)	0	0	4	0	0	4	0	47	0	0	0	176
Lane Group Flow (vph)	60	1712	18	34	1556	21	37	34	0	0	25	13
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	2%	2%	9%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	10.1	103.9	103.9	8.1	101.4	101.4	9.7	9.7			9.7	9.7
Effective Green, g (s)	10.1	103.9	103.9	8.1	101.4	101.4	9.7	9.7			9.7	9.7
Actuated g/C Ratio	0.07	0.74	0.74	0.06	0.72	0.72	0.07	0.07			0.07	0.07
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	128	2458	1175	102	2399	1147	96	117			111	103
v/s Ratio Prot	c0.03	c0.52		0.02	0.47			0.02				
v/s Ratio Perm			0.01			0.01	c0.03				0.02	0.01
v/c Ratio	0.47	0.70	0.01	0.33	0.65	0.02	0.39	0.29			0.23	0.13
Uniform Delay, d1	62.4	9.6	4.7	63.4	10.0	5.4	62.3	61.9			61.6	61.2
Progression Factor	1.27	0.42	0.22	0.78	2.30	2.40	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.4	0.9	0.0	0.9	0.7	0.0	2.6	1.4			1.0	0.6
Delay (s)	80.6	4.9	1.1	50.6	23.8	13.0	64.9	63.2			62.6	61.7
Level of Service	F	A	A	D	C	B	E	E			E	E
Approach Delay (s)		7.4			24.2			63.7			61.8	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

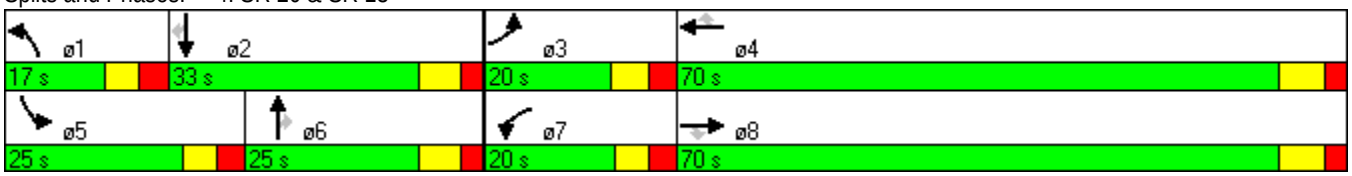
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	1278	136	188	1246	145	204	239	133	109	354	158
Lane Group Flow (vph)	218	1374	179	209	1312	163	255	291	175	121	398	186
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	20.0	70.0	70.0	20.0	70.0	70.0	17.0	25.0	25.0	25.0	33.0	33.0
Total Split (%)	14.3%	50.0%	50.0%	14.3%	50.0%	50.0%	12.1%	17.9%	17.9%	17.9%	23.6%	23.6%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	3.5	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.77	0.95	0.24	0.74	0.91	0.23	1.06	0.41	0.39	0.55	0.59	0.41
Control Delay	71.1	47.7	7.8	77.9	47.3	9.4	134.3	51.2	9.5	71.8	55.1	9.9
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	71.1	47.7	7.8	77.9	47.3	9.4	134.3	51.2	9.5	71.8	55.1	9.9
Queue Length 50th (ft)	94	689	48	96	567	28	~130	124	0	56	177	2
Queue Length 95th (ft)	131	#784	54	141	675	72	#184	160	33	88	233	57
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	303	1483	763	312	1483	723	241	702	452	427	680	450
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	0.72	0.93	0.23	0.67	0.88	0.23	1.06	0.41	0.39	0.28	0.59	0.41

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 105 (75%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 135
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: 4: SR 20 & SR 13



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	185	1278	136	188	1246	145	204	239	133	109	354	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Peak-hour factor, PHF	0.85	0.93	0.76	0.90	0.95	0.89	0.80	0.82	0.76	0.90	0.89	0.85
Adj. Flow (vph)	218	1374	179	209	1312	163	255	291	175	121	398	186
RTOR Reduction (vph)	0	0	101	0	0	61	0	0	138	0	0	145
Lane Group Flow (vph)	218	1374	78	209	1312	102	255	291	37	121	398	41
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.3	61.3	61.3	12.4	61.0	61.0	10.5	29.6	29.6	9.7	28.7	28.7
Effective Green, g (s)	12.3	61.3	61.3	12.4	61.0	61.0	10.5	29.6	29.6	9.7	28.7	28.7
Actuated g/C Ratio	0.09	0.44	0.44	0.09	0.44	0.44	0.08	0.21	0.21	0.07	0.20	0.20
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	6.5	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	282	1450	649	285	1443	646	241	700	313	223	679	304
v/s Ratio Prot	c0.07	c0.41		0.07	0.40		c0.08	0.09		0.04	c0.12	
v/s Ratio Perm			0.05			0.07			0.02			0.03
v/c Ratio	0.77	0.95	0.12	0.73	0.91	0.16	1.06	0.42	0.12	0.54	0.59	0.13
Uniform Delay, d1	62.5	37.8	23.4	62.2	36.9	23.9	64.8	47.7	44.6	63.0	50.3	45.5
Progression Factor	0.92	0.97	2.34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	10.7	0.2	8.1	9.5	0.3	74.1	1.8	0.8	1.4	3.7	0.9
Delay (s)	65.9	47.2	54.8	70.3	46.4	24.3	138.9	49.5	45.4	64.4	54.0	46.4
Level of Service	E	D	D	E	D	C	F	D	D	E	D	D
Approach Delay (s)		50.3			47.3			80.1			53.8	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM Average Control Delay	54.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.2
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Volume (vph)	173	890	375	1072	116	494	502	213	329	217
Lane Group Flow (vph)	192	1037	399	1452	147	537	558	232	346	228
Turn Type	Prot		Prot		Prot		Perm	Prot		Perm
Protected Phases	7	4	3	8	1	6		5	2	
Permitted Phases							6			2
Detector Phase	7	4	3	8	1	6	6	5	2	2
Switch Phase										
Minimum Initial (s)	5.0	20.0	5.0	20.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	11.5	46.8	12.2	51.8	11.6	45.4	45.4	11.5	46.4	46.4
Total Split (s)	18.0	65.0	40.0	87.0	22.0	35.0	35.0	20.0	33.0	33.0
Total Split (%)	11.3%	40.6%	25.0%	54.4%	13.8%	21.9%	21.9%	12.5%	20.6%	20.6%
Yellow Time (s)	3.5	5.0	4.2	5.0	3.6	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	3.0	2.8	3.0	2.8	3.0	2.6	2.6	3.0	2.6	2.6
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)	6.5	7.8	7.2	7.8	6.6	7.4	7.4	6.5	7.4	7.4
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.85	0.81	0.79	0.93	0.63	0.60	1.04	0.87	0.37	0.52
Control Delay	103.4	49.4	63.7	45.4	83.6	63.1	75.1	102.2	58.0	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.4	49.4	63.7	45.4	83.6	63.1	75.1	102.2	58.0	19.3
Queue Length 50th (ft)	104	492	186	820	78	194	~357	125	118	43
Queue Length 95th (ft)	#172	618	m237	887	101	240	#599	#201	158	138
Internal Link Dist (ft)		492		2643		790			1107	
Turn Bay Length (ft)	315		340				300	590		550
Base Capacity (vph)	231	1281	659	1607	309	901	538	271	944	438
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	0.83	0.81	0.61	0.90	0.48	0.60	1.04	0.86	0.37	0.52

Intersection Summary

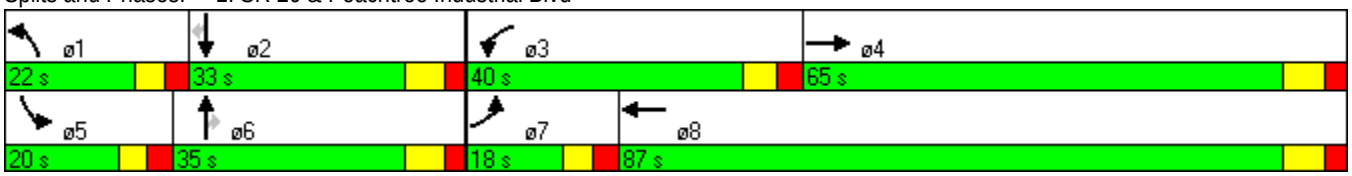
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 98 (61%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: SR 20 & Peachtree Industrial Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	890	73	375	1072	208	116	494	502	213	329	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Lane Util. Factor	0.97	0.95		0.97	0.95		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3274		3213	3227		3213	4759	1482	3213	4759	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3274		3213	3227		3213	4759	1482	3213	4759	1482
Peak-hour factor, PHF	0.90	0.93	0.91	0.94	0.89	0.84	0.79	0.92	0.90	0.92	0.95	0.95
Adj. Flow (vph)	192	957	80	399	1204	248	147	537	558	232	346	228
RTOR Reduction (vph)	0	4	0	0	11	0	0	0	257	0	0	144
Lane Group Flow (vph)	192	1033	0	399	1441	0	147	537	301	232	346	84
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases									6			2
Actuated Green, G (s)	11.3	62.5		25.1	77.0		11.7	30.3	30.3	13.2	31.7	31.7
Effective Green, g (s)	11.3	62.5		25.1	77.0		11.7	30.3	30.3	13.2	31.7	31.7
Actuated g/C Ratio	0.07	0.39		0.16	0.48		0.07	0.19	0.19	0.08	0.20	0.20
Clearance Time (s)	6.5	7.8		7.2	7.8		6.6	7.4	7.4	6.5	7.4	7.4
Vehicle Extension (s)	2.0	6.0		3.0	6.0		2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	227	1279		504	1553		235	901	281	265	943	294
v/s Ratio Prot	0.06	0.32		c0.12	c0.45		0.05	0.11		c0.07	0.07	
v/s Ratio Perm									c0.20			0.06
v/c Ratio	0.85	0.81		0.79	0.93		0.63	0.60	1.07	0.88	0.37	0.28
Uniform Delay, d1	73.5	43.4		64.9	38.9		72.0	59.3	64.8	72.6	55.5	54.5
Progression Factor	1.00	1.00		0.85	0.96		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.2	4.6		6.2	8.3		3.7	2.9	73.9	25.2	1.1	2.4
Delay (s)	96.7	48.0		61.2	45.5		75.7	62.2	138.7	97.8	56.6	56.9
Level of Service	F	D		E	D		E	E	F	F	E	E
Approach Delay (s)		55.6			48.9			98.2			68.5	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	65.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.9
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	94	1471	16	75	1401	135	36	2	316	2	108
Lane Group Flow (vph)	104	1516	38	127	1459	171	0	131	0	351	140
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases	6		6	2		2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.2	25.3	25.3	10.0	44.3	44.3	59.0	59.0	57.0	57.0	57.0
Total Split (s)	17.0	93.0	93.0	17.0	93.0	93.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	10.6%	58.1%	58.1%	10.6%	58.1%	58.1%	31.3%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	3.4	5.0	5.0	3.2	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.8	1.3	1.3	2.7	1.3	1.3	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	5.9	6.3	6.3	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.54	0.83	0.04	0.69	0.80	0.18		0.56		1.40	0.31
Control Delay	20.7	27.4	4.7	60.8	14.8	0.7		43.7		245.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay	20.7	27.4	4.7	60.8	14.8	0.7		43.7		245.9	9.3
Queue Length 50th (ft)	23	741	11	62	480	0		80		~489	4
Queue Length 95th (ft)	m18	m777	7	66	152	1		58		262	35
Internal Link Dist (ft)		2643			1875			358		797	
Turn Bay Length (ft)	130		130	140		290					
Base Capacity (vph)	203	1819	876	197	1814	929		234		250	446
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	0.51	0.83	0.04	0.64	0.80	0.18		0.56		1.40	0.31

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 74 (46%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 20 & Broadmoor Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	1471	16	75	1401	135	36	2	55	316	2	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.95	1.00
Satd. Flow (prot)	1770	3312	1583	1770	3312	1583		1684			1448	1292
Flt Permitted	0.08	1.00	1.00	0.07	1.00	1.00		0.44			0.61	1.00
Satd. Flow (perm)	153	3312	1583	133	3312	1583		753			932	1292
Peak-hour factor, PHF	0.90	0.97	0.42	0.59	0.96	0.79	0.71	0.50	0.72	0.91	0.50	0.77
Adj. Flow (vph)	104	1516	38	127	1459	171	51	4	76	347	4	140
RTOR Reduction (vph)	0	0	7	0	0	62	0	31	0	0	0	99
Lane Group Flow (vph)	104	1516	31	127	1459	109	0	100	0	0	351	41
Heavy Vehicles (%)	2%	9%	2%	2%	9%	2%	2%	2%	2%	25%	25%	25%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	97.8	87.9	87.9	97.5	87.6	87.6		43.0			43.0	43.0
Effective Green, g (s)	97.8	87.9	87.9	97.5	87.6	87.6		43.0			43.0	43.0
Actuated g/C Ratio	0.61	0.55	0.55	0.61	0.55	0.55		0.27			0.27	0.27
Clearance Time (s)	6.2	6.3	6.3	5.9	6.3	6.3		7.0			7.0	7.0
Vehicle Extension (s)	3.4	5.0	5.0	3.2	5.0	5.0		4.0			4.0	4.0
Lane Grp Cap (vph)	194	1820	870	182	1813	867		202			250	347
v/s Ratio Prot	0.03	c0.46		c0.04	0.44							
v/s Ratio Perm	0.29		0.02	0.38		0.07		0.13			c0.38	0.03
v/c Ratio	0.54	0.83	0.04	0.70	0.80	0.13		0.49			1.40	0.12
Uniform Delay, d1	23.2	30.0	16.6	26.6	29.3	17.6		49.3			58.5	44.2
Progression Factor	1.13	0.83	0.40	2.07	0.39	0.08		1.00			1.00	1.00
Incremental Delay, d2	1.4	2.1	0.0	8.9	3.1	0.2		2.6			204.1	0.2
Delay (s)	27.5	26.8	6.6	63.8	14.6	1.7		51.9			262.6	44.4
Level of Service	C	C	A	E	B	A		D			F	D
Approach Delay (s)		26.4			16.9			51.9			200.4	
Approach LOS		C			B			D			F	

Intersection Summary			
HCM Average Control Delay	44.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	157	1682	18	39	1461	12	49	12	36	19	149
Lane Group Flow (vph)	171	1734	25	55	1476	17	58	63	0	93	166
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm		Perm
Protected Phases	1	6		5	2			8		4	
Permitted Phases			6			2	8		4		4
Detector Phase	1	6	6	5	2	2	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	22.7	22.7	10.0	22.7	22.7	22.7	22.7	22.7	22.7	22.7
Total Split (s)	42.0	113.0	113.0	17.0	88.0	88.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	26.3%	70.6%	70.6%	10.6%	55.0%	55.0%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.3	4.7	4.7	3.1	4.7	4.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.5	1.6	1.6	2.2	1.6	1.6	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7	6.7	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.74	0.71	0.02	0.51	0.68	0.02	0.49	0.31		0.66	0.56
Control Delay	66.9	14.9	6.2	73.7	50.2	19.2	80.8	27.7		90.1	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	66.9	14.9	6.2	73.7	50.2	19.2	80.8	27.7		90.1	15.9
Queue Length 50th (ft)	184	424	2	51	846	8	59	16		95	0
Queue Length 95th (ft)	m195	m573	m5	m50	m828	m12	98	38		92	73
Internal Link Dist (ft)		1875			1266			368		613	
Turn Bay Length (ft)	155		230	480							
Base Capacity (vph)	400	2428	1155	129	2166	1039	175	281		209	358
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	0.43	0.71	0.02	0.43	0.68	0.02	0.33	0.22		0.44	0.46

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 66 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

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

Splits and Phases: 3: SR 20 & Commerce Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	1682	18	39	1461	12	49	12	39	36	19	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.97	1.00
Satd. Flow (prot)	1770	3343	1583	1770	3312	1583	1770	1659			1805	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.65	1.00			0.77	1.00
Satd. Flow (perm)	1770	3343	1583	1770	3312	1583	1203	1659			1434	1482
Peak-hour factor, PHF	0.92	0.97	0.71	0.71	0.99	0.69	0.84	0.69	0.84	0.61	0.56	0.90
Adj. Flow (vph)	171	1734	25	55	1476	17	58	17	46	59	34	166
RTOR Reduction (vph)	0	0	5	0	0	4	0	41	0	0	0	150
Lane Group Flow (vph)	171	1734	20	55	1476	13	58	22	0	0	93	16
Heavy Vehicles (%)	2%	8%	2%	2%	9%	2%	2%	2%	2%	2%	2%	9%
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8			4		4
Actuated Green, G (s)	20.8	116.2	116.2	9.7	104.6	104.6	15.8	15.8			15.8	15.8
Effective Green, g (s)	20.8	116.2	116.2	9.7	104.6	104.6	15.8	15.8			15.8	15.8
Actuated g/C Ratio	0.13	0.73	0.73	0.06	0.65	0.65	0.10	0.10			0.10	0.10
Clearance Time (s)	5.8	6.3	6.3	5.3	6.3	6.3	6.7	6.7			6.7	6.7
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	230	2428	1150	107	2165	1035	119	164			142	146
v/s Ratio Prot	c0.10	c0.52		0.03	0.45			0.01				
v/s Ratio Perm			0.01			0.01	0.05				c0.06	0.01
v/c Ratio	0.74	0.71	0.02	0.51	0.68	0.01	0.49	0.13			0.65	0.11
Uniform Delay, d1	67.0	12.5	6.1	72.9	17.3	9.7	68.3	65.8			69.5	65.7
Progression Factor	0.89	1.04	1.66	0.95	2.58	2.49	1.00	1.00			1.00	1.00
Incremental Delay, d2	4.8	0.7	0.0	1.2	0.5	0.0	3.1	0.4			10.4	0.3
Delay (s)	64.6	13.6	10.1	70.5	45.2	24.1	71.4	66.2			79.8	66.1
Level of Service	E	B	B	E	D	C	E	E			E	E
Approach Delay (s)		18.1			45.9			68.7			71.0	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1386	141	246	1214	73	203	533	263	245	348	127
Lane Group Flow (vph)	340	1523	153	300	1380	80	218	561	306	306	414	137
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0	4.0	12.0	12.0
Minimum Split (s)	10.8	39.3	39.3	10.4	40.3	40.3	10.5	39.9	39.9	10.4	38.9	38.9
Total Split (s)	28.0	70.0	70.0	22.0	70.0	70.0	18.0	40.0	40.0	22.0	44.0	44.0
Total Split (%)	17.5%	43.8%	43.8%	13.8%	43.8%	43.8%	11.3%	25.0%	25.0%	13.8%	27.5%	27.5%
Yellow Time (s)	3.8	4.8	4.8	3.4	4.8	4.8	2.0	4.4	4.4	3.4	4.4	4.4
All-Red Time (s)	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	2.5
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)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.86	1.09	0.21	0.96	1.06	0.13	0.85	0.78	0.65	0.98	0.51	0.30
Control Delay	91.1	96.8	9.2	111.8	89.7	17.1	101.2	68.3	27.7	116.0	55.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.1	96.8	9.2	111.8	89.7	17.1	101.2	68.3	27.7	116.0	55.6	8.8
Queue Length 50th (ft)	179	~947	28	163	~833	26	118	298	108	167	202	0
Queue Length 95th (ft)	#246	#1088	m70	#223	#936	64	#189	372	199	#220	240	58
Internal Link Dist (ft)		1266			1161			772			1390	
Turn Bay Length (ft)	240		800	295		220	235		155	270		570
Base Capacity (vph)	426	1422	724	313	1298	605	261	715	472	313	804	464
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	0.80	1.07	0.21	0.96	1.06	0.13	0.84	0.78	0.65	0.98	0.51	0.30

Intersection Summary

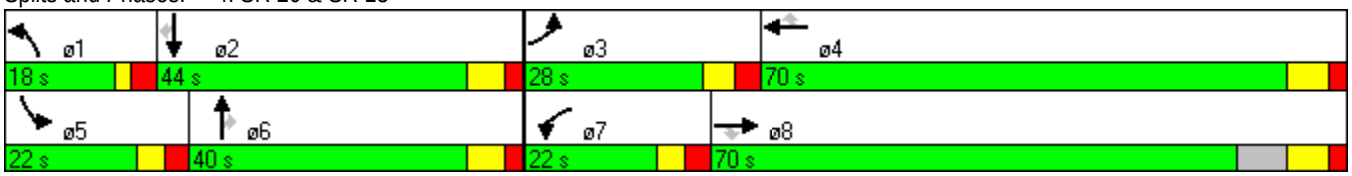
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 4: SR 20 & SR 13



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	316	1386	141	246	1214	73	203	533	263	245	348	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3213	3312	1482	3213	3312	1482	3213	3312	1482	3213	3312	1482
Peak-hour factor, PHF	0.93	0.91	0.92	0.82	0.88	0.91	0.93	0.95	0.86	0.80	0.84	0.93
Adj. Flow (vph)	340	1523	153	300	1380	80	218	561	306	306	414	137
RTOR Reduction (vph)	0	0	89	0	0	24	0	0	152	0	0	104
Lane Group Flow (vph)	340	1523	64	300	1380	56	218	561	154	306	414	33
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.8	67.3	67.3	15.6	62.7	62.7	12.7	34.5	34.5	15.6	38.8	38.8
Effective Green, g (s)	19.8	67.3	67.3	15.6	62.7	62.7	12.7	34.5	34.5	15.6	38.8	38.8
Actuated g/C Ratio	0.12	0.42	0.42	0.10	0.39	0.39	0.08	0.22	0.22	0.10	0.24	0.24
Clearance Time (s)	6.8	7.3	7.3	6.4	7.3	7.3	5.0	6.9	6.9	6.4	6.9	6.9
Vehicle Extension (s)	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0	2.0	6.0	6.0
Lane Grp Cap (vph)	398	1393	623	313	1298	581	255	714	320	313	803	359
v/s Ratio Prot	c0.11	c0.46		0.09	0.42		0.07	c0.17		c0.10	c0.13	
v/s Ratio Perm			0.04			0.04			0.10			0.02
v/c Ratio	0.85	1.09	0.10	0.96	1.06	0.10	0.85	0.79	0.48	0.98	0.52	0.09
Uniform Delay, d1	68.7	46.4	28.1	71.9	48.6	30.7	72.7	59.3	54.9	72.0	52.5	47.0
Progression Factor	1.09	1.05	2.28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	51.5	0.2	39.1	43.6	0.2	22.6	8.5	5.1	44.1	2.4	0.5
Delay (s)	87.5	100.0	64.2	111.0	92.3	30.9	95.3	67.8	60.0	116.2	54.8	47.5
Level of Service	F	F	E	F	F	C	F	E	E	F	D	D
Approach Delay (s)		95.2			92.7			71.1			75.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	86.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	34.3
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Traffic Volume Worksheets

15-005 Broadmoor Industrial Site - (Detailed) DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

1. Peachtree Ind Blvd @ SR 20

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	54	229	351	634	252	483	138	873	136	903	73	1112	394	760	105	1259
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	57	241	369	634	265	508	145	873	143	949	77	1112	414	799	110	1259
Total New Trips	0	0	18	18	12	0	0	12	0	44	0	44	5	14	4	23
Future Traffic Volumes:	57	241	387	685	277	508	145	930	143	993	77	1213	419	813	114	1346

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	110	470	478	1058	203	313	206	722	165	818	69	1052	357	951	198	1506
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	116	494	502	1058	213	329	217	722	173	860	73	1052	375	1000	208	1506
Total New Trips	0	0	7	7	5	0	0	5	0	18	0	18	17	43	12	72
Future Traffic Volumes:	116	494	509	1119	218	329	217	764	173	878	73	1124	392	1043	220	1655

15-005 Broadmoor Industrial Site - (Detailed) DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

2. Broadmoor Blvd @ SR 20

A.M. Peak Hour

	Northbound				Southbound				Eastbound				Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	35	0	33	68	37	3	5	45	46	1505	54	1605	189	1152	94	1435
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	37	0	35	68	39	3	5	45	48	1582	57	1605	199	1211	99	1435
Total New Trips	0	0	0	0	68	0	23	91	74	0	0	74	0	0	221	221
Future Traffic Volumes:	37	0	35	72	107	3	28	138	122	1582	57	1761	199	1211	320	1730

P.M. Peak Hour

	Northbound				Southbound				Eastbound				Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	34	2	52	88	95	2	34	131	61	1400	15	1476	71	1333	44	1448
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	36	2	55	88	100	2	36	131	64	1471	16	1476	75	1401	46	1448
Total New Trips	0	0	0	0	216	0	72	288	30	0	0	30	0	0	89	89
Future Traffic Volumes:	36	2	55	93	316	2	108	426	94	1471	16	1581	75	1401	135	1611

15-005 Broadmoor Industrial Site - (Detailed) DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

3. Commerce Dr @ SR 20

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	28	18	33	79	4	11	139	154	45	1486	10	1541	19	1181	18	1218
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	29	19	35	79	4	12	146	154	47	1562	11	1541	20	1241	19	1218
Total New Trips	0	0	0	0	0	0	15	15	5	64	0	69	0	206	0	206
Future Traffic Volumes:	29	19	35	83	4	12	161	177	52	1626	11	1689	20	1447	19	1486

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	47	11	37	95	34	18	136	188	136	1408	17	1561	37	1311	11	1359
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	49	12	39	95	36	19	143	188	143	1480	18	1561	39	1378	12	1359
Total New Trips	0	0	0	0	0	0	6	6	14	202	0	216	0	83	0	83
Future Traffic Volumes:	49	12	39	100	36	19	149	204	157	1682	18	1857	39	1461	12	1512

15-005 Broadmoor Industrial Site - (Detailed) DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

4. SR 13 @ SR 20

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	147	227	127	501	104	337	136	577	171	1174	115	1460	179	1051	138	1368
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	154	239	133	501	109	354	143	577	180	1234	121	1460	188	1105	145	1368
Total New Trips	50	0	0	50	0	0	15	15	5	44	15	64	0	141	0	141
Future Traffic Volumes:	204	239	133	576	109	354	158	621	185	1278	136	1599	188	1246	145	1579

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	174	507	250	931	233	331	115	679	287	1187	88	1562	234	1101	69	1404
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	183	533	263	931	245	348	121	679	302	1248	92	1562	246	1157	73	1404
Total New Trips	20	0	0	20	0	0	6	6	14	138	49	201	0	57	0	57
Future Traffic Volumes:	203	533	263	999	245	348	127	720	316	1386	141	1843	246	1214	73	1533