TRAFFIC IMPACT STUDY
FOR
RESIDENTIAL DEVELOPMENT
AT BROWNSVILLE ROAD AND OGLESBY ROAD
POWDER SPRINGS, GEORGIA

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A & R Project # 21-045

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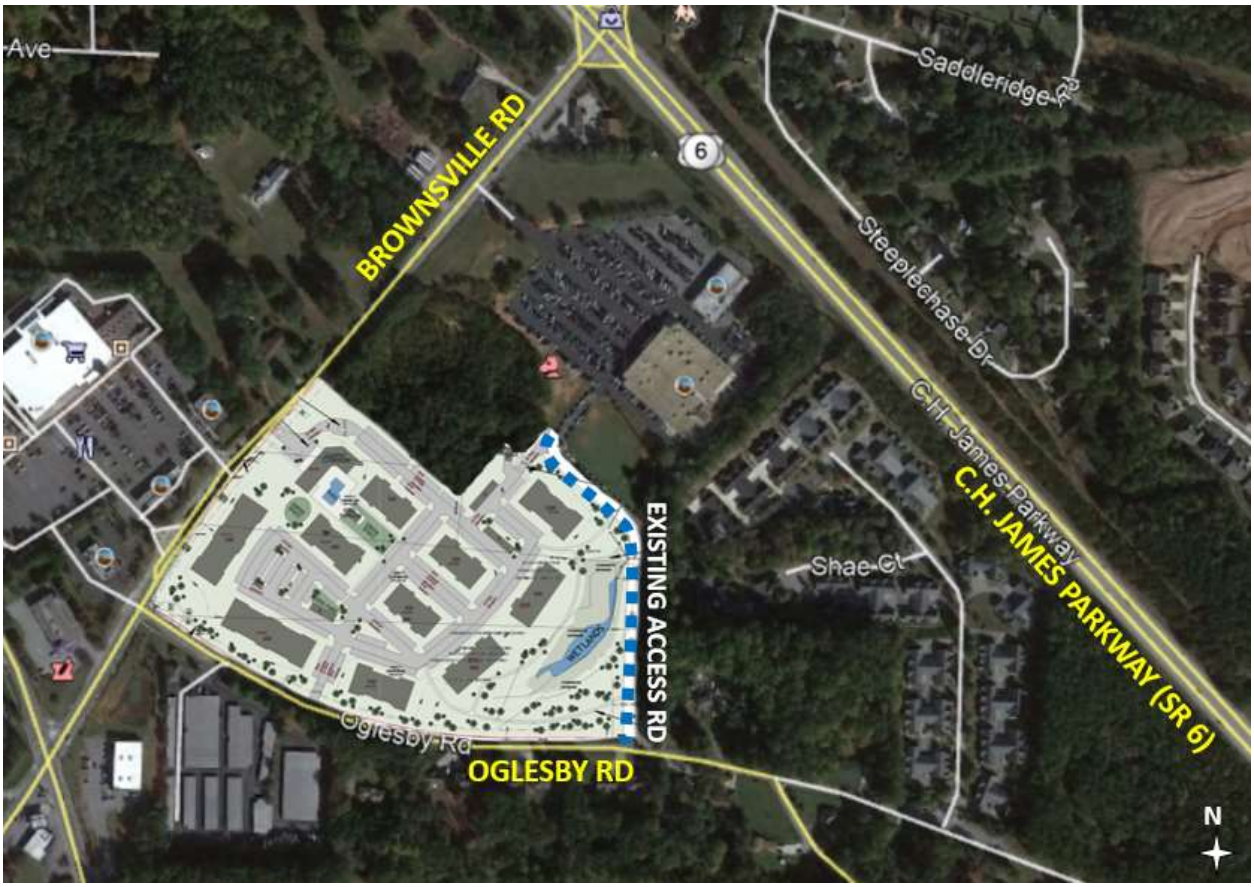
1.0 INTRODUCTION

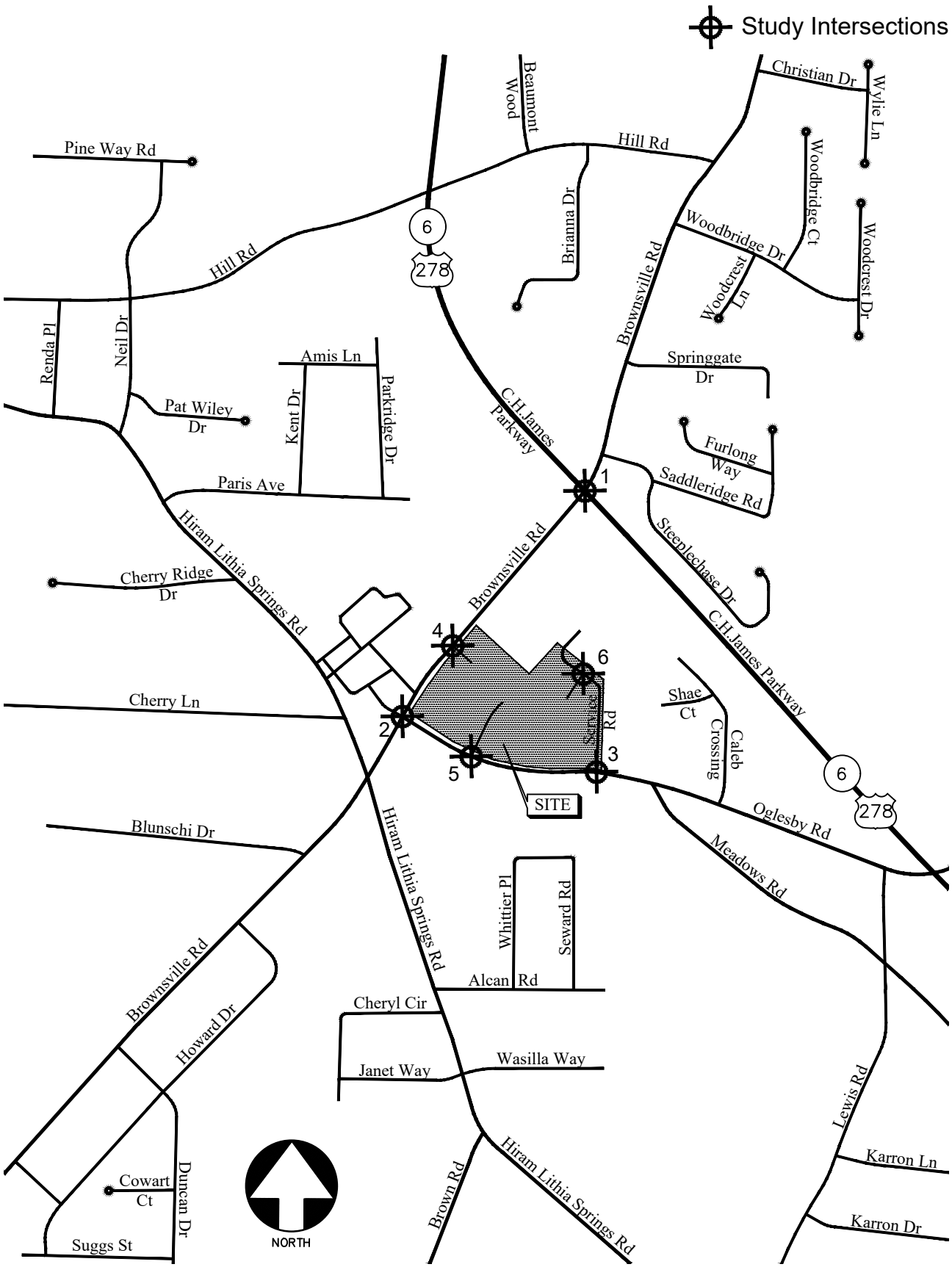
The purpose of this study is to determine the traffic impact that will result from the proposed 300-unit multi-family residential development located in the northeast of the intersection of Brownsville Road and Oglesby Road in Powder Springs, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development.



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

- SR 6/US 278 (C.H. James Parkway) at Brownsville Road
- Brownsville Road at Oglesby Road / Zaxby's Southern Driveway
- Oglesby Road at Access Road / Private Driveway

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report. The location of the development and the surrounding roadway network is shown in Figure 1.



LOCATION MAP FIGURE 1

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2.0 EXISTING FACILITIES / CONDITIONS

2.1 Roadway Facilities

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

2.1.1 SR 6/US 278 (C.H. James Parkway)

SR 6/US 278 (C.H. James Parkway) is a northwest-southeast, five-lane roadway with a two-way left turn lane and posted speed limit of 55 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID's 067-2330 & 067-2328) indicate that the daily traffic volume on SR 6/US 278 (C.H. James Parkway) in 2019 was 38,100 vehicles per day northwest of Brownsville Road and 32,500 vehicles per day southeast of Brownsville Road. GDOT classifies SR 6/US 278 (C.H. James Parkway) as an Urban Principal Arterial roadway.

2.1.2 Brownsville Road

Brownsville Road is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID's 067-0961 & 067-0958) indicate that the daily traffic volume on Brownsville Road in 2019 was 6,390 vehicles per day north of Hill Road and 11,200 vehicles per day south of Mann Drive. GDOT classifies Brownsville Road as an Urban Minor Arterial roadway.

2.1.3 Oglesby Road

Oglesby Road is an east-west, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site.

3.0 STUDY METHODOLOGY

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

3.1 Unsignalized Intersections

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

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

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

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

Source: Highway Capacity Manual

3.2 Signalized Intersections

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

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

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

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

Source: Highway Capacity Manual

4.0 EXISTING 2021 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

- SR 6/US 278 (C.H. James Parkway) at Brownsville Road
- Brownsville Road at Oglesby Road / Zaxby's Southern Driveway
- Oglesby Road at Access Road / Private Driveway

Turning movement counts were collected on Tuesday, April 13, 2021. Heavy trucks were included separately in the counts. All turning movement counts were recorded during the AM and PM peak hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.

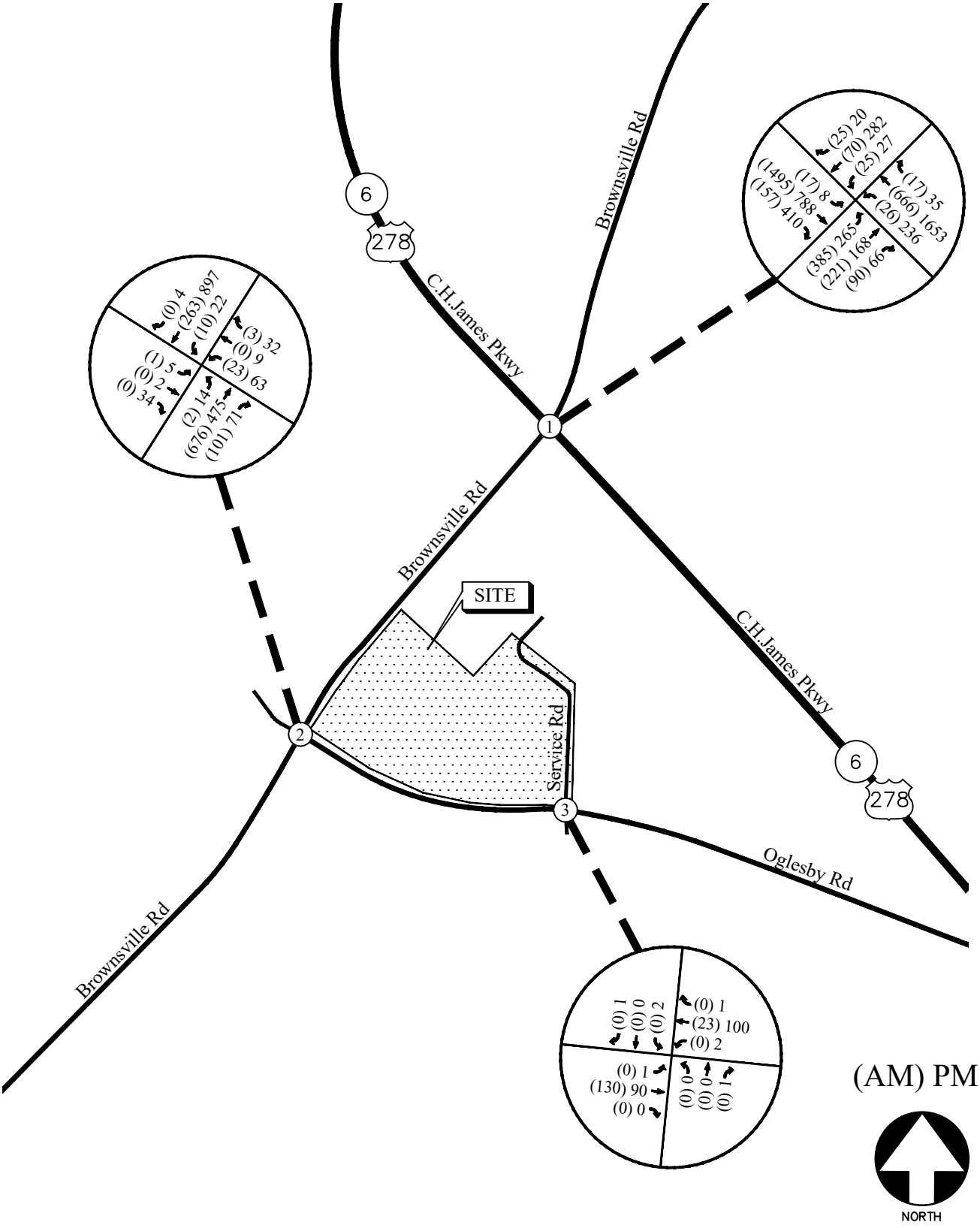
To account for abnormal traffic patterns due to the COVID-19 pandemic, an adjustment factor was determined by calculating the difference between GDOT historical bi-directional 2019 counts (projected to 2021) and current bi-directional counts (collected on April 13, 2021) for the AM and PM peak hours on Brownsville Road, north of C.H. James Parkway. After comparing the peak hours from both data sources, AM peak hour counts were 8% lower than the GDOT counts and PM peak hour counts were 18% lower than the GDOT counts. Therefore, current turning movement counts were increased by 8% in the AM peak hour and 18% in the PM peak hour. These adjusted 2021 peak hour volumes are shown in Figure 3 and were used in the existing traffic operations analysis.

4.2 Auto Parts and Retail (Opening Soon) on Brownsville Road

At the time of data collection, it was observed that an auto parts and small retail strip shopping center was newly constructed across from the proposed development on Brownsville Road and is planned to be operating in the upcoming weeks. Since traffic from these developments is not included in the data that was collected, ITE trip generation was used to project traffic volumes for the auto parts and small retail center based on the square footage. The ITE trip generation shown in Table 3 were added to the volumes shown in Figure 2. The traffic volumes shown in Figure 3 include projected traffic for the auto parts and retail store.

TABLE 3 – TRIP GENERATION (AUTO SHOP AND RETAIL STORE)

Land Use	Size	AM Peak Hour			PM Peak Hour			24-Hr
		Enter	Exit	Total	Enter	Exit	Total	2-way
ITE -943 - Automobile Parts and Service Center	7,627 sf	11	4	15	7	10	17	124
ITE - 820 - Shopping Center	6,000 sf	3	3	6	11	12	23	227
Total Trips		**14**	**7**	**21**	**18**	**22**	**40**	**351**



EXISTING WEEKDAY PEAK-HOUR VOLUMES (DURING COVID-19)

FIGURE 2

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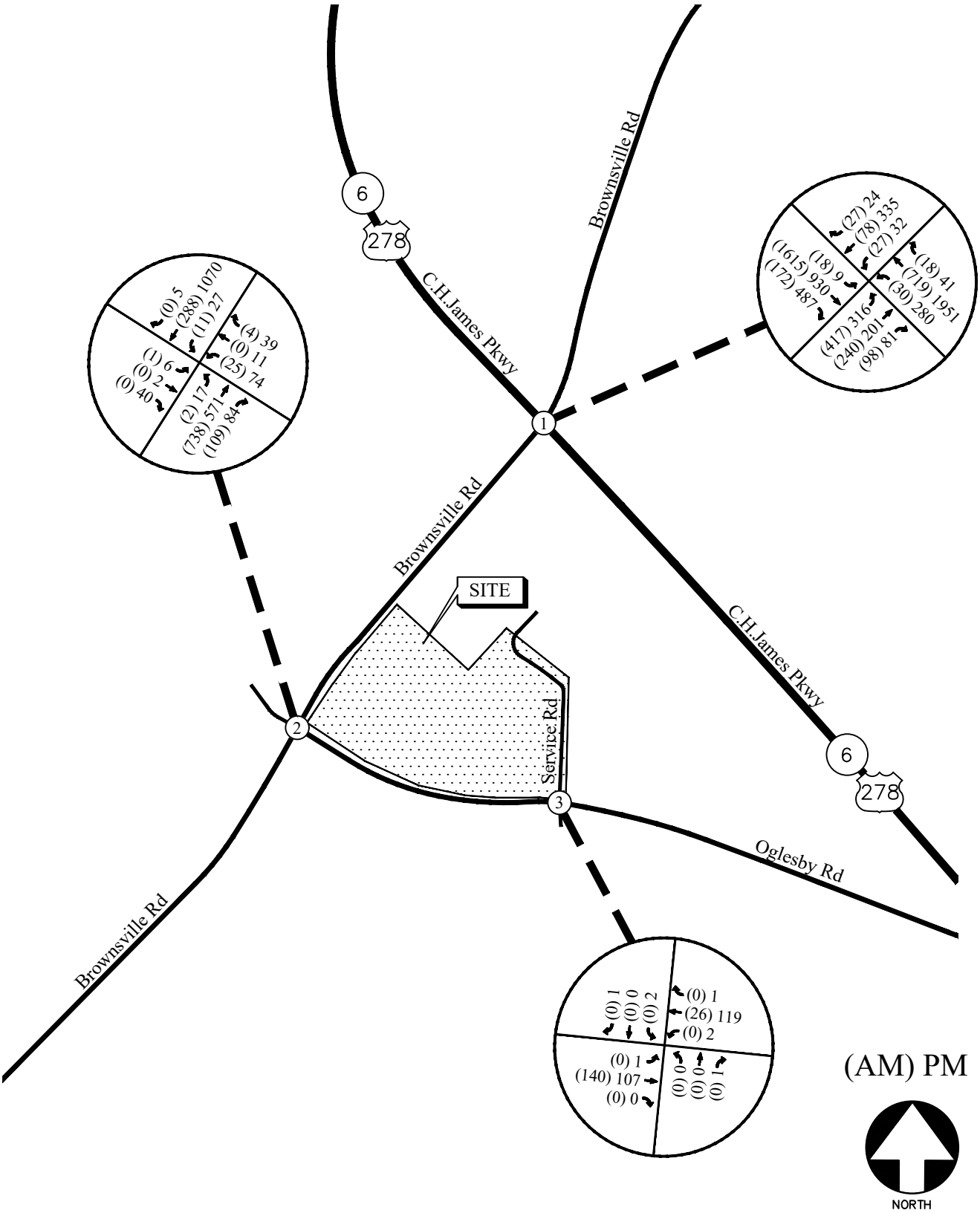

ADJUSTED EXISTING WEEKDAY PEAK-HOUR VOLUMES FIGURE 3

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4.3 Existing Traffic Operations

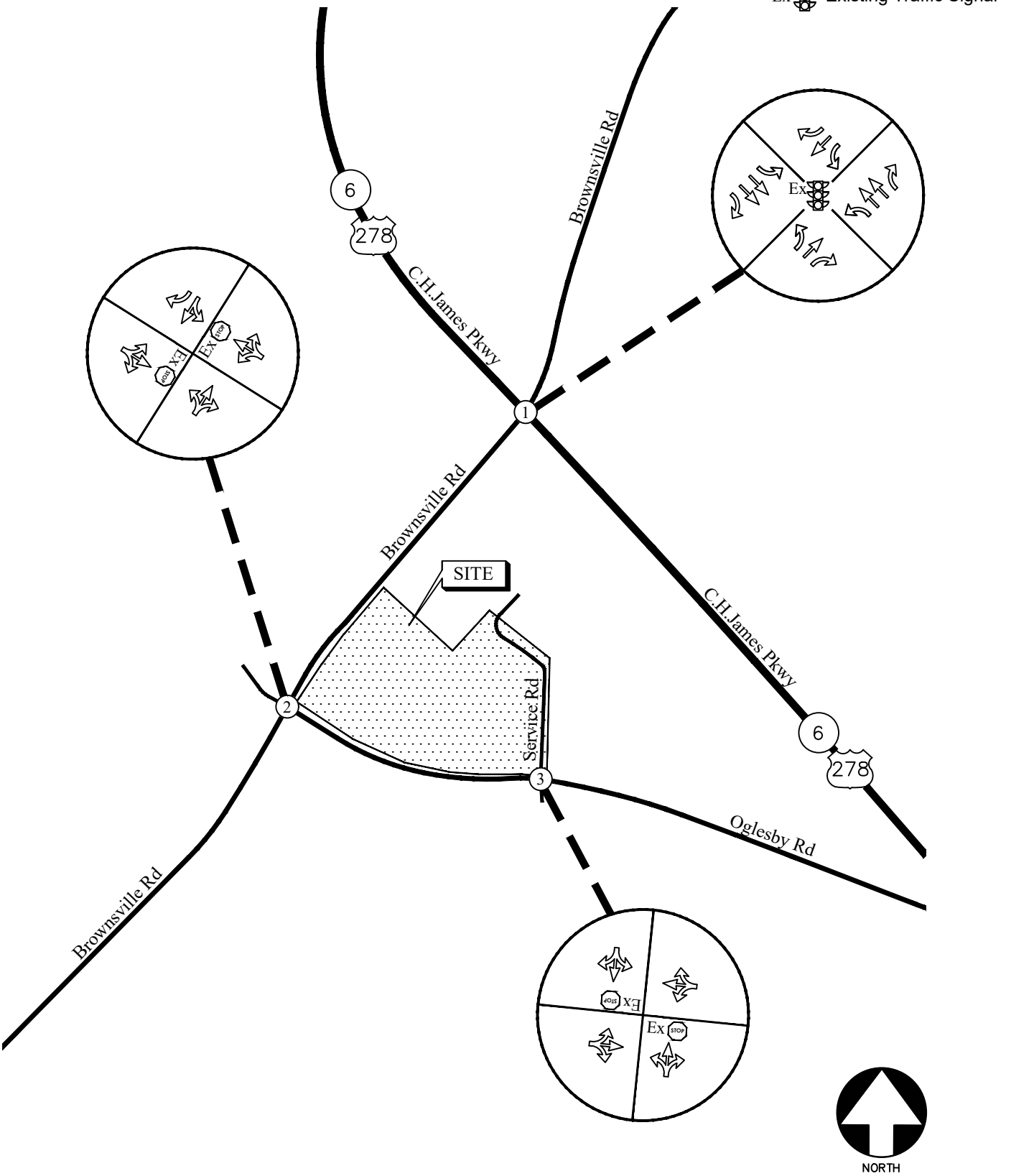
Existing 2021 traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The results of the analyses are shown in Table 4.

TABLE 4 – EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	**Brownsville Rd @ C.H. James Pkwy**	Signalized	**E (65.5)**	**E (75.1)**
	-Eastbound Approach		B (18.5)	D (37.9)
	-Westbound Approach		B (11.5)	E (79.1)
	-Northbound Approach		F (231.5)	F (144.7)
	-Southbound Approach		E (73.8)	F (80.9)
2	**Brownsville Rd @ Oglesby Rd**	Stop Controlled on EB and WB Approaches		
	-Eastbound Approach		D (27.0)	E (40.9)
	-Westbound Approach		D (28.7)	F (*)
	-Northbound Left		A (7.9)	B (10.8)
	-Southbound Left		A (9.8)	A (9.0)
3	**Oglesby Rd @ Access Rd**	Stop Controlled on SB and NB Approaches		
	-Eastbound Left		A (0.0)	A (7.5)
	-Westbound Left		A (0.0)	A (7.5)
	-Northbound Approach		A (0.0)	A (8.9)
	-Southbound Approach		A (0.0)	A (9.9)

* Delay exceeds 300 seconds

The intersection of C.H. James Parkway and Brownsville Road is operating a level-of-service "E" in both the AM and PM peak hours. As shown in Figure 3, the traffic volumes for the northbound left turn movement from Brownsville Road to C.H. James Parkway is 417 in the AM peak hour and 316 in the PM peak hour. This movement is currently operating out of a single left turn lane and is experiencing significant delays as shown by the level-of-service for the northbound approach at this intersection. In addition, the northbound approach has limited sight distance due to the southbound through lane shift and curve on the opposing roadway. The existing traffic control and lane geometry for the intersections are shown in Figure 4.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 4

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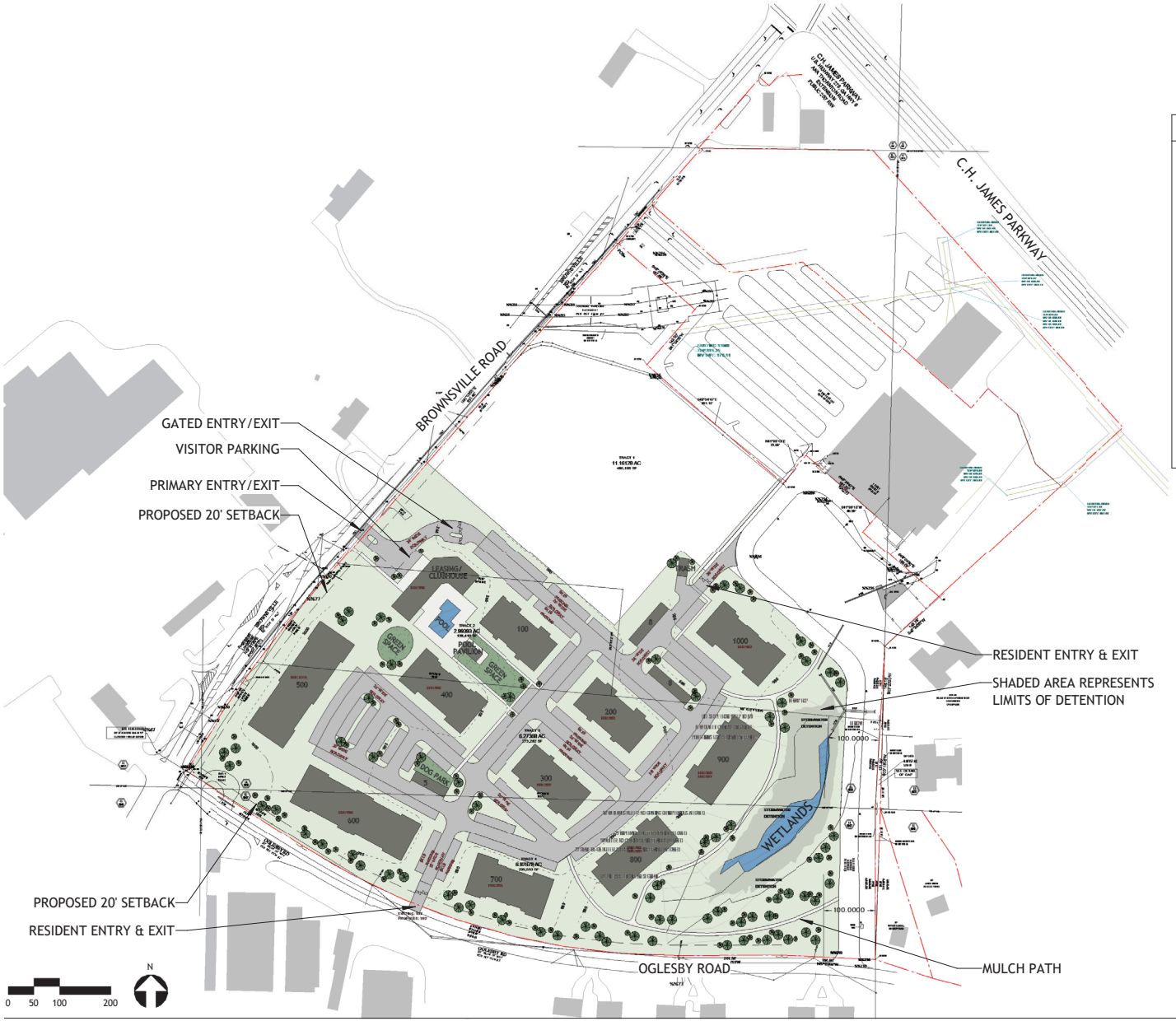
5.0 PROPOSED DEVELOPMENT

The proposed 300-unit multi-family residential development will be located in the northeast of the intersection of Brownsville Road and Oglesby Road in Powder Springs, Georgia.

The development proposes access at the following locations:

- Site Driveway 1: Full-access driveway on Brownsville Road
- Site Driveway 2: Full-access driveway on Oglesby Road
- Site Driveway 3: Full-access driveway on Access Road / Church and Retail Center

A site plan is shown in Figure 5 and a graphic is shown above.



BROWNSVILLE ROAD

DEVELOPMENT SUMMARY- PHASE 1:

MULTI-FAMILY APARTMENTS

LEASING/CLUBHOUSE & POOL PAVILION (+/- 9,000 SF)
10 RESIDENTIAL BUILDINGS (3-STORY AND 3/4 SPLIT)
+/- 300 UNITS
962 SF AVG
(48% 1-BR, 46% 2-BR, 6% 3-BR)

CONCEPTUAL AREAS

HEATED FLOOR AREA	316,000S SF
TOTAL FLOOR AREA	390,000 SF
*EXCLUDES BALCONIES	

PARKING

REQ. MULTI-FAMILY PARKING: 1.65 * 300= 495 SPACES
(PER ZONING: 1-BR @ 1.6, 2-BR @ 1.6, 3-BR @ 2.2)
PROVIDED PARKING:

SURFACE PARKING:	+/- 474 SPACES
GARAGE PARKING:	+/- 21 SPACES
TOTAL:	**+/- 495 SPACES**

5.1 Trip Generation

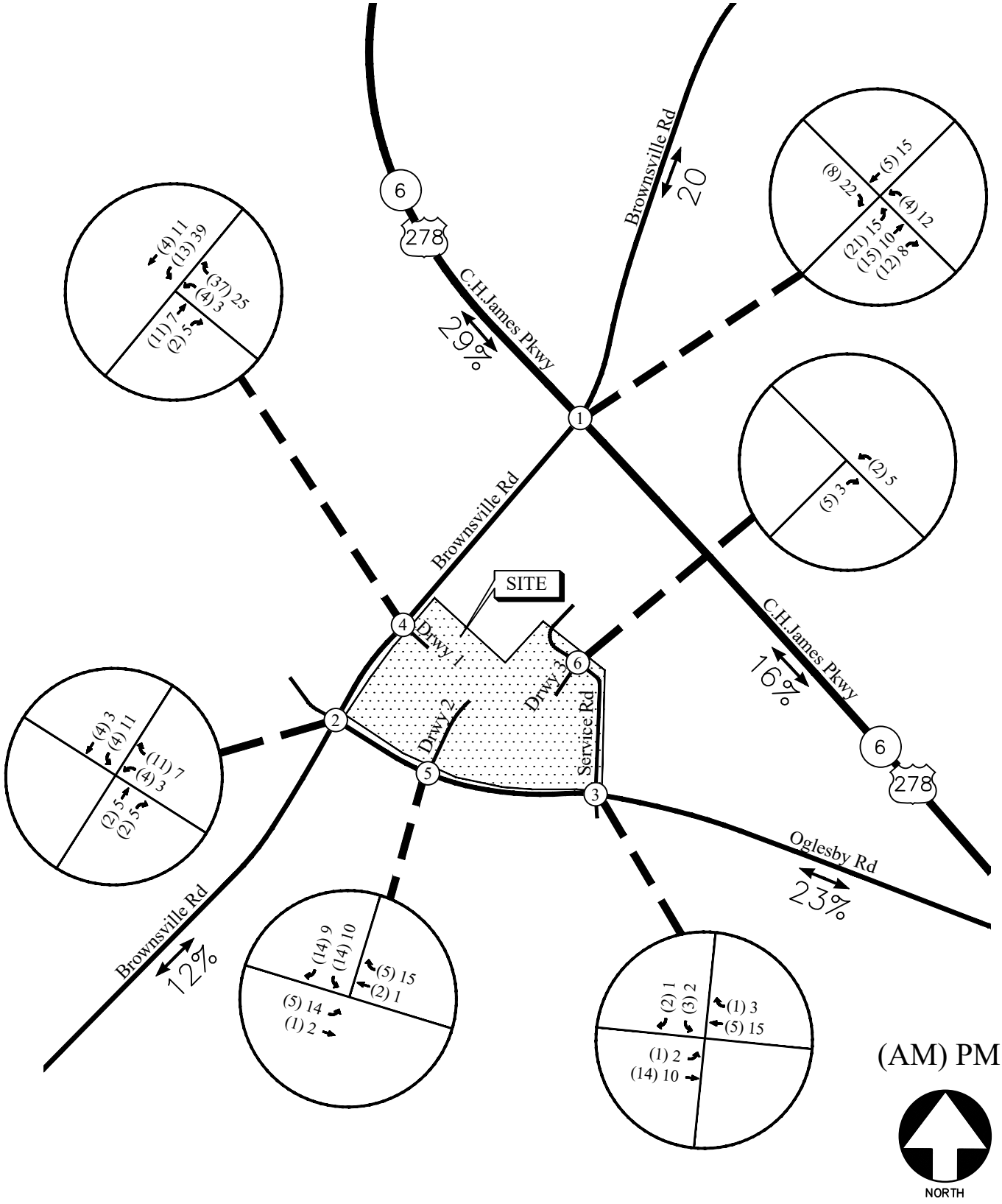
Trip generation estimates for the project were based on the rates and equations published in the 11th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Use*: 221 – Multifamily Housing (Mid-Rise)*. The calculated total trip generation for the proposed development is shown in Table 5.

TABLE 5 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	2-way
ITE 221 – Multifamily Housing (Mid-Rise)	300 units	26	74	100	77	50	127	1,633

5.2 Trip Distribution

The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of the existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes of the proposed residential development are shown in Table 5 and 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 proposed development are shown in Figure 6.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 6

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6.0 FUTURE 2023 TRAFFIC ANALYSIS

The future 2023 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.

6.1 Future "No-Build" Conditions

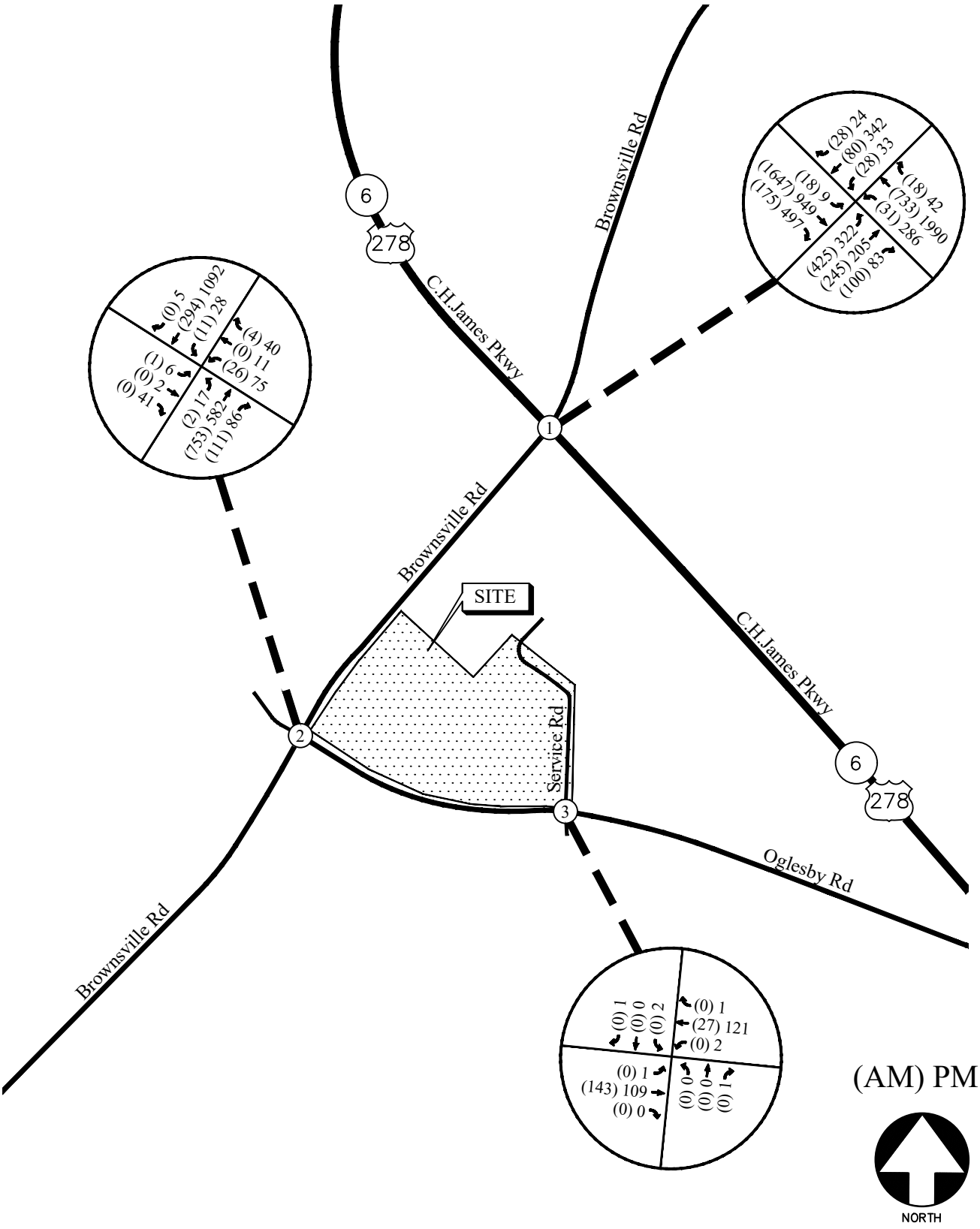
The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future "No-Build" volumes consist of the adjusted existing traffic volumes (Figure 3) plus increases for annual growth of through traffic.

6.1.1 Annual Traffic Growth

In order to evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last three 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 7.

6.2 Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 6) were added to base traffic volumes (Figure 7) to calculate the future traffic volumes after the construction of the development. These total future "Build" traffic volumes are shown in Figure 8.



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

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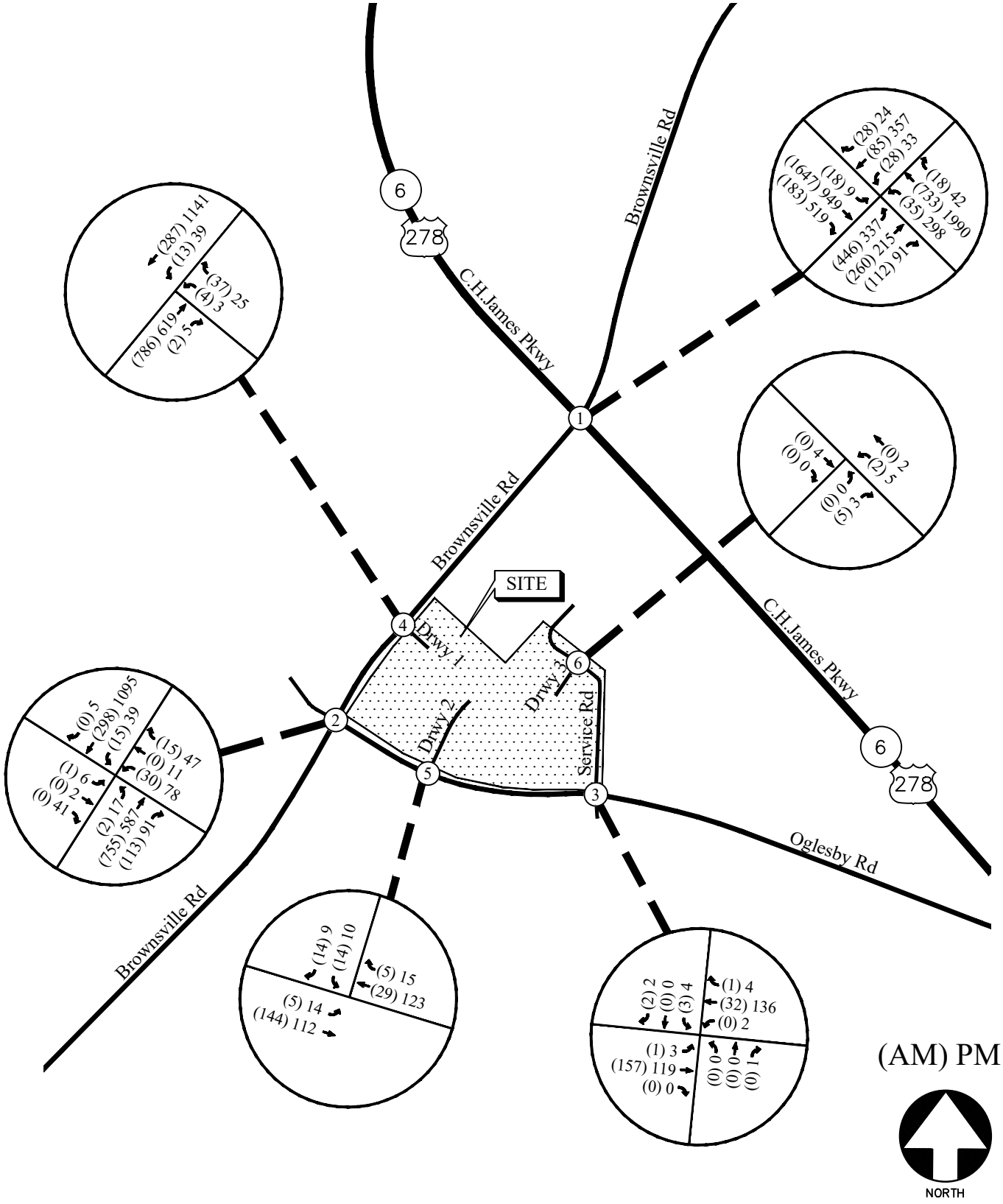

FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 8

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6.3 Auxiliary Lane Analysis

Included below are analyses for left-turn lanes and deceleration lanes for all site driveways per GDOT standards. The analyses below are based off the trip distribution included in Section 5.2.

6.3.1 Left Turn Lane Analysis

The projected left-turn volumes per day for each driveway are included below in Table 6.

TABLE 6 – GDOT REQUIREMENTS FOR LEFT TURN LANES

Intersection	Left-turn traffic (% total entering)	Left-turn Volume (veh/day)	Roadway Speed/ # lanes	GDOT Threshold (veh/day)
Brownsville Rd @ Site Drwy 1	50.3%	**411** (total trips) ÷ 2 × .503 = left turning vehicles (1633) ÷ 2 x .503= 411	45 mph / 2-Lane	175
Oglesby Rd @ Site Drwy 2	18.3%	149 (total trips) ÷ 2 × 0.183 = left turning vehicles (1633) ÷ 2 x 0.183 = 149	35 mph / 2-Lane	300
Service Road @ Site Drwy 3	6.31%	52 (total trips) ÷ 2 × 0.0631 = left turning vehicles (1633) ÷ 2 x 0.0631 = 52	25 mph / 2-Lane	300

Since the projected number of left-turning vehicles at site driveway 1 on Brownsville Road exceeds the threshold for left turning vehicles during a 24-hour period, a left turn lane is warranted at this driveway on Brownsville Road. Left turn lanes are not warranted per GDOT standards at site driveway 2 or 3.

6.3.2 Deceleration Turn Lane Analysis

The projected right-turn volumes per day for each driveway are included below in Table 7.

TABLE 7 – GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right-turn traffic (% total entering)	Right-turn Volume (veh/day)	Roadway Speed/ # lanes	GDOT Threshold (veh/day)
Brownsville Rd @ Site Drwy 1	6%	49 (total trips) ÷ 2 × 0.06 = right turning vehicles (1633) ÷ 2 x 0.06 = 49	45 mph / 2-Lane	75
Oglesby Rd @ Site Drwy 2	19.09%	156 (total trips) ÷ 2 × 0.1909 = right turning vehicles (1633) ÷ 2 x 0.1909 = 156	35 mph / 2-Lane	200
Service Road @ Site Drwy 3	0%	0	25 mph / 2-Lane	200

Deceleration lanes are not warranted at any of the site driveways.

6.3.3 Site Access Configuration

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

- Site Driveway 1: Full-access driveway on Brownsville Road
  - The westbound (driveway) approach will have a shared left /right-turn lane for exiting traffic.
  - The intersection is to be unsignalized with a STOP sign on the driveway approach.
  - A left turn lane is warranted per GDOT standards (section 6.3.1). A deceleration lane is not warranted per GDOT standards (section 6.3.2).
- Site Driveway 2: Full-access driveway on Oglesby Road
  - This driveway is proposed to consist of one entering lane and one exiting lane. The southbound (driveway) approach is proposed to have a shared left / right -turn lane for exiting traffic.
  - The intersection is proposed to be un-signalized with a STOP sign on the southbound approach.
- Site Driveway 3: Full-access driveway connecting to the Access Road and the Church Driveway
  - The site plan proposes this driveway with one entering and one exiting lanes. The eastbound (driveway) approach is shown to have a shared left / right-turn lane for exiting traffic.
  - The intersection is to be unsignalized with a STOP sign on the eastbound approach.

6.3.4 Future "No-Build" and "Build" Traffic Operations

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

TABLE 8 – FUTURE INTERSECTION OPERATIONS

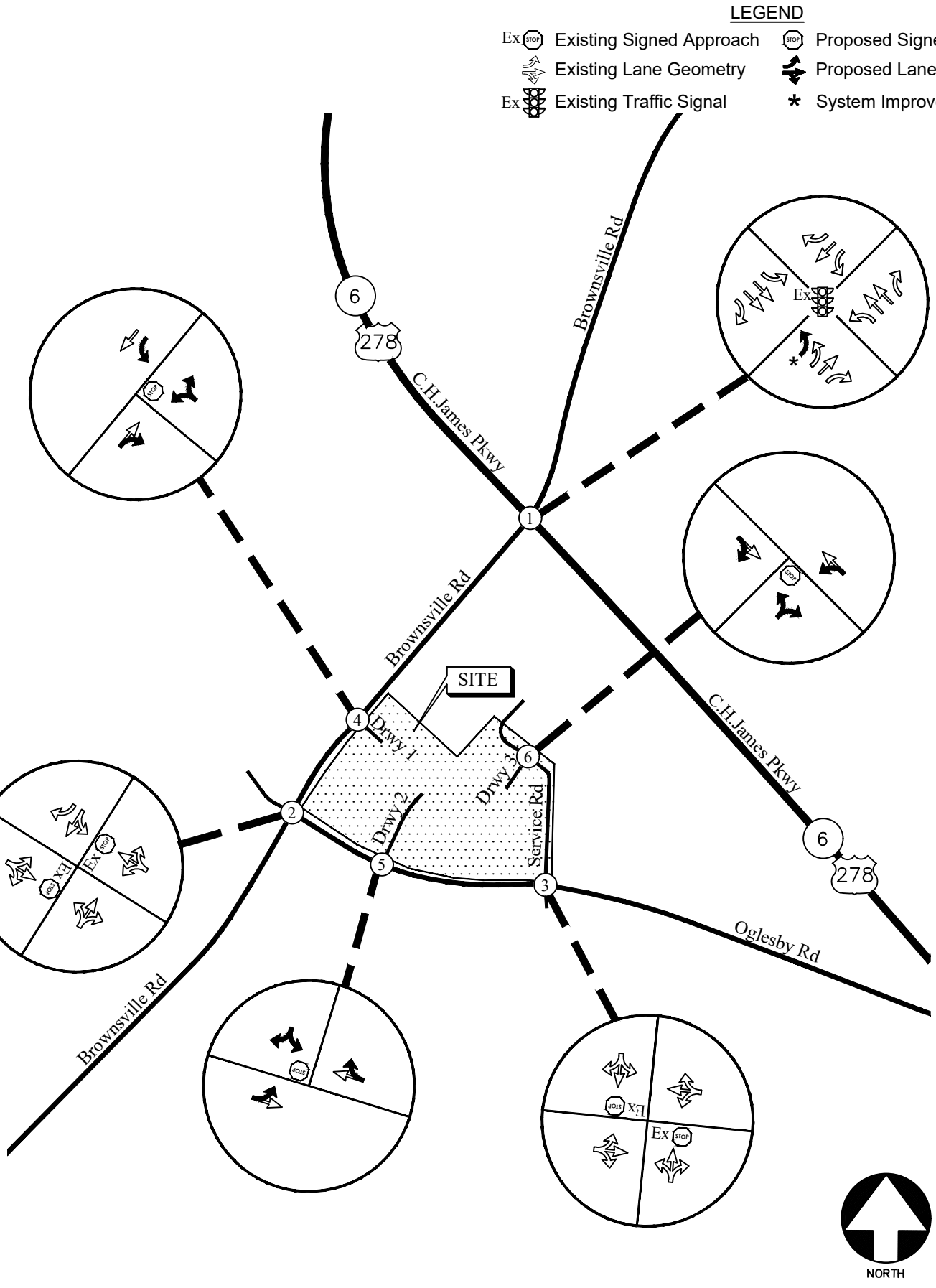
	Intersection	Future Condition: LOS (Delay; seconds)			
		NO-BUILD WITH SYSTEM IMPROVEMENTS		BUILD WITH SYSTEM IMPROVEMENTS	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Brownsville Road at C.H. James Parkway**	**D (41.4)**	**E (70.3)**	**D (45.8)**	**E (76.2)**
	-Eastbound Approach	B (19.4)	D (37.6)	C (20.6)	D (42.4)
	-Westbound Approach	B (11.9)	E (79.1)	B (12.6)	E (85.1)
	-Northbound Approach	F (119.5)	F (108.0)	F (131.5)	F (117.7)
	-Southbound Approach	E (72.5)	F (81.4)	E (69.5)	F (82.7)
2	**Brownsville Rd at Oglesby Rd**				
	-Eastbound Approach	D (27.8)	E (43.5)	D (29.3)	E (48.0)
	-Westbound Approach	D (30.0)	F (*)	D (29.6)	F (*)
	-Northbound Left	A (7.9)	B (10.9)	A (7.9)	B (10.9)
	-Southbound Left	A (9.9)	A (9.1)	A (9.9)	A (9.2)
3	**Oglesby Rd @ Access Rd**				
	-Eastbound Left	A (0.0)	A (7.5)	A (7.3)	A (7.6)
	-Westbound Left	A (0.0)	A (7.5)	A (0.0)	A (7.5)
	-Northbound Approach	A (0.0)	A (8.9)	A (0.0)	A (9.0)
	-Southbound Approach	A (0.0)	A (10.0)	A (9.5)	B (10.3)
4	**Brownsville Rd at Site Driveway 1**				
	-Westbound Approach	-	-	C (17.5)	C (19.9)
	-Southbound Left			A (9.7)	A (9.1)
5	**Oglesby Rd at Site Driveway 2**				
	-Eastbound Left	-	-	A (7.3)	A (7.5)
	-Southbound Approach			A (9.2)	A (9.8)
6	**Service Road at Site Driveway 3**				
	-Eastbound Approach	-	-	A (8.3)	A (8.3)
	-Northbound Left			A (7.2)	A (7.2)

* Delay exceeds 300 seconds

6.4 System Recommendations and Improvements

Given the large northbound left turn traffic volumes from Brownsville Road onto C.H. James Parkway and the results of the existing traffic operations analysis, we are recommending that the City of Powder Springs consider installing dual northbound left turn lanes on Brownsville Road with a protected left turn phase.

After the recommended system improvement is accounted, the intersection of Brownsville Road and C.H. James Parkway will operate at a level-of-service "D" and "E" during the AM and PM peak hours in both the "No-Build" and "Build" conditions. Recommendations on traffic control and lane geometry are shown graphically in Figure 9.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

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7.0 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study is to determine the traffic impact that will result from the proposed 300-unit multi-family residential development located in the northeast of the intersection of Brownsville Road and Oglesby Road in Powder Springs, Georgia.

The development proposes access at the following locations:

- Site Driveway 1: Full-access driveway on Brownsville Road
- Site Driveway 2: Full-access driveway on Oglesby Road
- Site Driveway 3: Full-access driveway on Access Road / Church and Retail Center

It is recommended that a left turn lane be accommodated at site driveway 1 on Brownsville Road. All driveways are recommended to be stop-sign controlled on the driveway approach.

7.1 Traffic Operations

The intersection of C.H. James Parkway and Brownsville Road is operating a level-of-service "E" in both the AM and PM peak hours. After the recommended system improvement is accounted, the intersection of Brownsville Road and C.H. James Parkway will operate at a level-of-service "D" and "E" during the AM and PM peak hours in both the "No-Build" and "Build" conditions.

7.2 System Recommendations and Improvements

Given the large northbound left turn traffic volumes from Brownsville Road onto C.H. James Parkway and the results of the existing traffic operations analysis, we are recommending that the City of Powder Springs consider installing dual northbound left turn lanes on Brownsville Road with a protected left turn phase.

Appendix

EXISTING INTERSECTION TRAFFIC COUNTS

A & R Engineering, Inc.

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

TMC DATA
Brownsville Rd @ C.H. James Pkwy
7-9 am | 4-6 pm

File Name : 20210101
Site Code : 20210101
Start Date : 4/13/2021
Page No : 1

Groups Printed- Cars,Buses - Trucks

	Brownsville Rd Northbound				State Route 6 Bus Southbound				C.H. James Pkwy Eastbound				C.H. James Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	91	31	24	146	9	13	1	23	2	320	22	344	10	127	2	139	652
07:15 AM	92	55	21	168	5	15	7	27	3	398	31	432	1	157	2	160	787
07:30 AM	112	68	31	211	6	17	3	26	1	403	45	449	9	165	2	176	862
07:45 AM	76	45	17	138	6	21	7	34	7	385	36	428	12	175	5	192	792
Total	371	199	93	663	26	66	18	110	13	1506	134	1653	32	624	11	667	3093
08:00 AM	105	53	21	179	8	17	8	33	6	309	45	360	4	169	8	181	753
08:15 AM	87	38	19	144	10	11	10	31	3	338	51	392	13	180	10	203	770
08:30 AM	73	47	20	140	10	18	7	35	1	254	42	297	11	162	3	176	648
08:45 AM	89	49	16	154	7	23	8	38	5	249	45	299	8	188	5	201	692
Total	354	187	76	617	35	69	33	137	15	1150	183	1348	36	699	26	761	2863
*** BREAK ***																	
04:00 PM	79	43	17	139	5	60	7	72	5	193	95	293	35	317	11	363	867
04:15 PM	54	49	17	120	5	46	2	53	2	186	101	289	38	372	10	420	882
04:30 PM	56	36	11	103	12	54	6	72	3	209	96	308	35	393	14	442	925
04:45 PM	53	30	17	100	5	82	7	94	3	187	99	289	62	412	4	478	961
Total	242	158	62	462	27	242	22	291	13	775	391	1179	170	1494	39	1703	3635
05:00 PM	64	42	12	118	7	69	5	81	3	184	109	296	51	431	9	491	986
05:15 PM	70	38	22	130	7	73	4	84	1	202	94	297	66	375	10	451	962
05:30 PM	78	58	15	151	8	58	4	70	1	215	108	324	57	435	12	504	1049
05:45 PM	70	44	7	121	6	70	2	78	0	196	130	326	45	294	11	350	875
Total	282	182	56	520	28	270	15	313	5	797	441	1243	219	1535	42	1796	3872
Grand Total	1249	726	287	2262	116	647	88	851	46	4228	1149	5423	457	4352	118	4927	13463
Apprch %	55.2	32.1	12.7		13.6	76	10.3		0.8	78	21.2		9.3	88.3	2.4		
Total %	9.3	5.4	2.1	16.8	0.9	4.8	0.7	6.3	0.3	31.4	8.5	40.3	3.4	32.3	0.9	36.6	
Cars,Buses	1232	726	285	2243	114	646	87	847	46	3996	1132	5174	449	4138	117	4704	12968
% Cars,Buses	98.6	100	99.3	99.2	98.3	99.8	98.9	99.5	100	94.5	98.5	95.4	98.2	95.1	99.2	95.5	96.3
Trucks	17	0	2	19	2	1	1	4	0	232	17	249	8	214	1	223	495
% Trucks	1.4	0	0.7	0.8	1.7	0.2	1.1	0.5	0	5.5	1.5	4.6	1.8	4.9	0.8	4.5	3.7

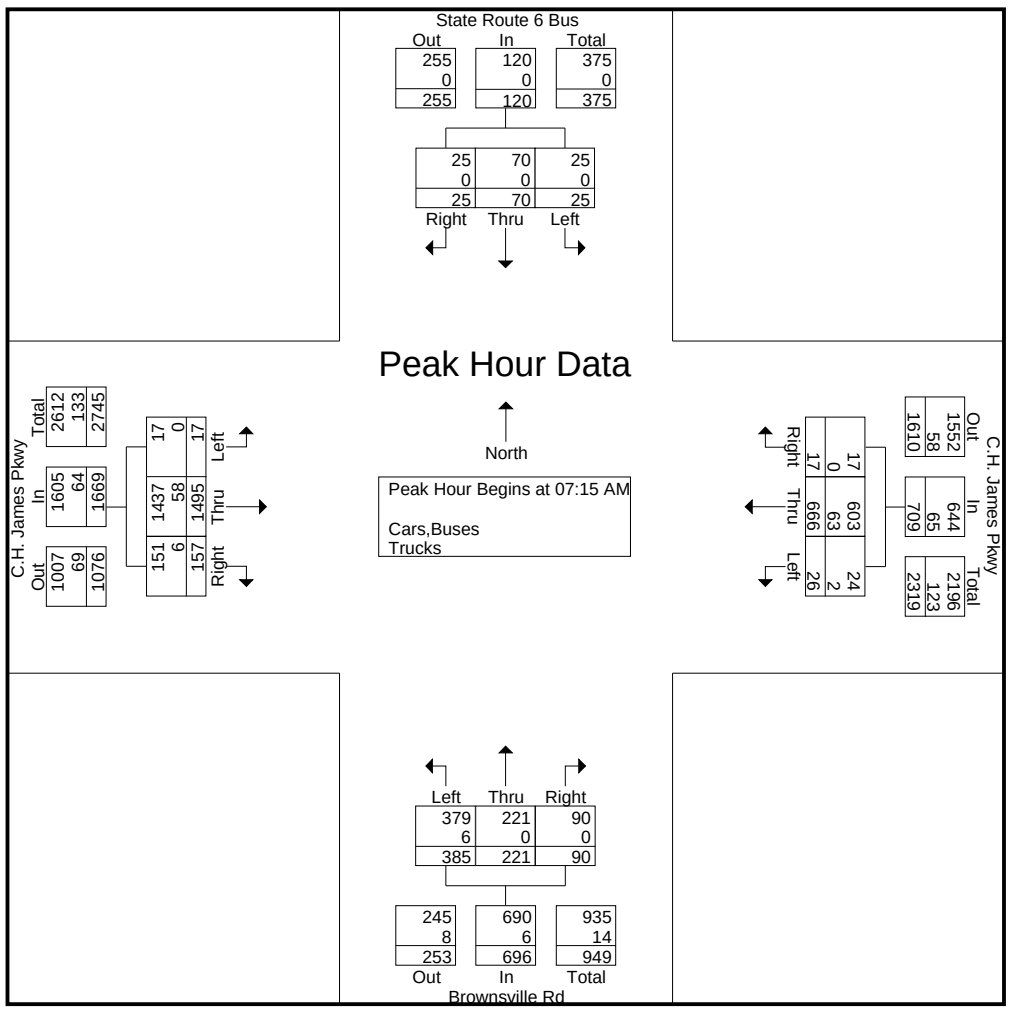
A & R Engineering, Inc.

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

TMC DATA
Brownsville Rd @ C.H. James Pkwy
7-9 am | 4-6 pm

File Name : 20210101
Site Code : 20210101
Start Date : 4/13/2021
Page No : 2

	Brownsville Rd Northbound				State Route 6 Bus Southbound				C.H. James Pkwy Eastbound				C.H. James Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	92	55	21	168	5	15	7	27	3	398	31	432	1	157	2	160	787
07:30 AM	**112**	**68**	**31**	**211**	6	17	3	26	1	**403**	**45**	**449**	9	165	2	176	**862**
07:45 AM	76	45	17	138	6	**21**	7	**34**	**7**	385	36	428	**12**	**175**	5	**192**	792
08:00 AM	105	53	21	179	**8**	17	**8**	33	6	309	45	360	4	169	**8**	181	753
Total Volume	385	221	90	696	25	70	25	120	17	1495	157	1669	26	666	17	709	3194
% App. Total	55.3	31.8	12.9		20.8	58.3	20.8		1	89.6	9.4		3.7	93.9	2.4		
PHF	.859	.813	.726	.825	.781	.833	.781	.882	.607	.927	.872	.929	.542	.951	.531	.923	.926
Cars,Buses	379	221	90	690	25	70	25	120	17	1437	151	1605	24	603	17	644	3059
% Cars,Buses	98.4	100	100	99.1	100	100	100	100	100	96.1	96.2	96.2	92.3	90.5	100	90.8	95.8
Trucks	6	0	0	6	0	0	0	0	0	58	6	64	2	63	0	65	135
% Trucks	1.6	0	0	0.9	0	0	0	0	0	3.9	3.8	3.8	7.7	9.5	0	9.2	4.2



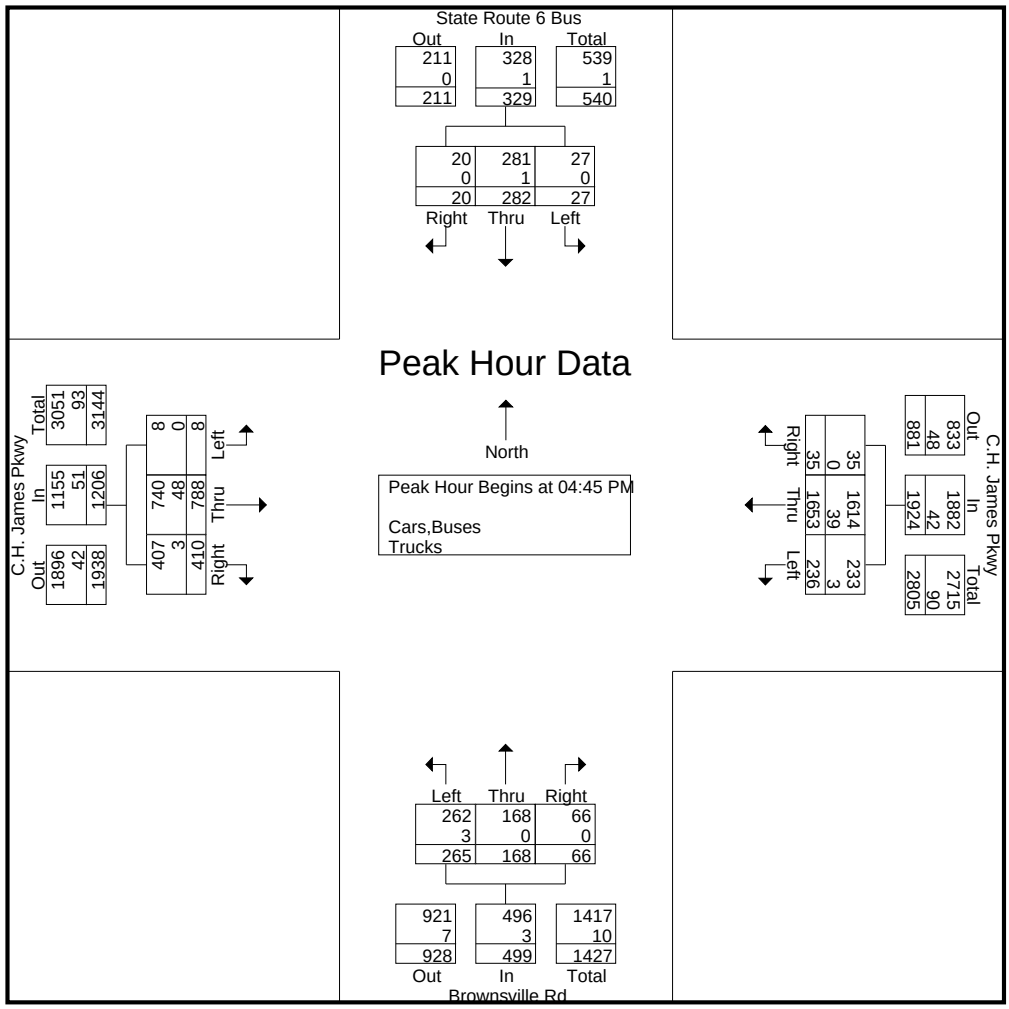
A & R Engineering, Inc.

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

TMC DATA
Brownsville Rd @ C.H. James Pkwy
7-9 am | 4-6 pm

File Name : 20210101
Site Code : 20210101
Start Date : 4/13/2021
Page No : 3

	Brownsville Rd Northbound				State Route 6 Bus Southbound				C.H. James Pkwy Eastbound				C.H. James Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	53	30	17	100	5	**82**	**7**	**94**	**3**	187	99	289	62	412	4	478	961
05:00 PM	64	42	12	118	7	69	5	81	3	184	**109**	296	51	431	9	491	986
05:15 PM	70	38	**22**	130	7	73	4	84	1	202	94	297	**66**	375	10	451	962
05:30 PM	**78**	**58**	15	**151**	**8**	58	4	70	1	**215**	108	**324**	57	**435**	**12**	**504**	**1049**
Total Volume	265	168	66	499	27	282	20	329	8	788	410	1206	236	1653	35	1924	3958
% App. Total	53.1	33.7	13.2		8.2	85.7	6.1		0.7	65.3	34		12.3	85.9	1.8		
PHF	.849	.724	.750	.826	.844	.860	.714	.875	.667	.916	.940	.931	.894	.950	.729	.954	.943
Cars,Buses	262	168	66	496	27	281	20	328	8	740	407	1155	233	1614	35	1882	3861
% Cars,Buses	98.9	100	100	99.4	100	99.6	100	99.7	100	93.9	99.3	95.8	98.7	97.6	100	97.8	97.5
Trucks	3	0	0	3	0	1	0	1	0	48	3	51	3	39	0	42	97
% Trucks	1.1	0	0	0.6	0	0.4	0	0.3	0	6.1	0.7	4.2	1.3	2.4	0	2.2	2.5



A & R Engineering. Inc.

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

TMC DATA
Brownsville Rd @ Oglesby Rd
7-9 am | 4-6 pm

File Name : 20210102
Site Code : 20210102
Start Date : 4/13/2021
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Brownsville Rd Northbound				Brownsville Rd Southbound				Zaxby's Drwy Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	144	43	187	1	40	0	41	0	0	0	0	2	2	4	8	236
07:15 AM	0	192	29	221	1	54	0	55	0	0	0	0	6	0	0	6	282
07:30 AM	1	164	27	192	4	81	0	85	1	0	0	1	4	0	2	6	284
07:45 AM	1	166	27	194	2	62	0	64	0	0	0	0	6	0	0	6	264
Total	2	666	126	794	8	237	0	245	1	0	0	1	18	2	6	26	1066
08:00 AM	0	154	18	172	3	66	0	69	0	0	0	0	7	0	1	8	249
08:15 AM	0	139	18	157	0	71	0	71	0	0	0	0	10	0	1	11	239
08:30 AM	1	133	29	163	2	76	1	79	0	0	0	0	4	0	1	5	247
08:45 AM	0	128	20	148	0	67	0	67	1	0	0	1	4	0	0	4	220
Total	1	554	85	640	5	280	1	286	1	0	0	1	25	0	3	28	955
*** BREAK ***																	
04:00 PM	1	121	10	132	9	184	1	194	0	0	10	10	12	2	9	23	359
04:15 PM	2	111	12	125	3	188	4	195	0	0	8	8	19	4	4	27	355
04:30 PM	5	96	21	122	5	178	5	188	2	1	11	14	9	2	7	18	342
04:45 PM	1	97	9	107	10	208	1	219	1	0	8	9	12	1	5	18	353
Total	9	425	52	486	27	758	11	796	3	1	37	41	52	9	25	86	1409
05:00 PM	1	124	14	139	5	234	2	241	0	1	10	11	13	1	10	24	415
05:15 PM	4	137	17	158	3	215	1	219	2	1	10	13	8	3	7	18	408
05:30 PM	3	122	22	147	8	214	1	223	1	0	7	8	22	1	8	31	409
05:45 PM	6	92	18	116	6	234	0	240	2	0	7	9	20	4	7	31	396
Total	14	475	71	560	22	897	4	923	5	2	34	41	63	9	32	104	1628
Grand Total	26	2120	334	2480	62	2172	16	2250	10	3	71	84	158	20	66	244	5058
Apprch %	1	85.5	13.5		2.8	96.5	0.7		11.9	3.6	84.5		64.8	8.2	27		
Total %	0.5	41.9	6.6	49	1.2	42.9	0.3	44.5	0.2	0.1	1.4	1.7	3.1	0.4	1.3	4.8	

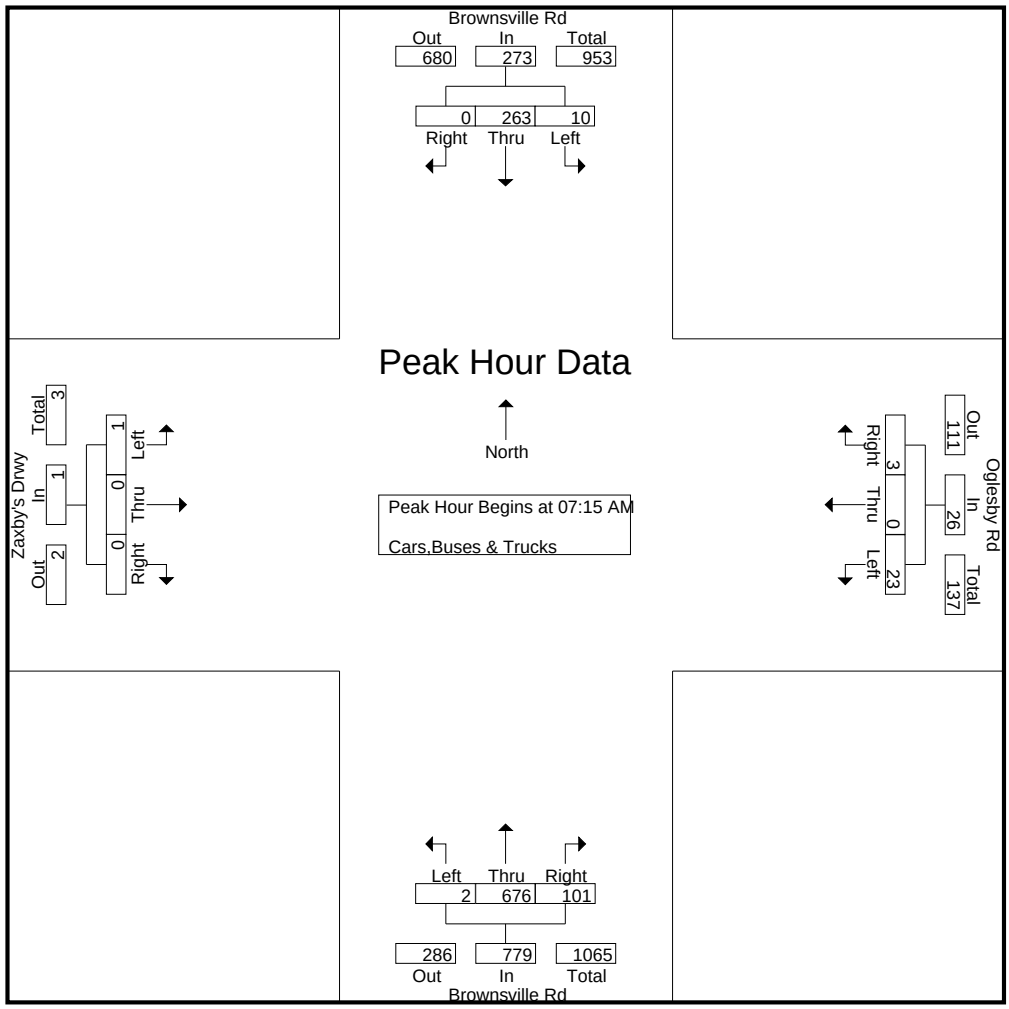
A & R Engineering. Inc.

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

TMC DATA
Brownsville Rd @ Oglesby Rd
7-9 am | 4-6 pm

File Name : 20210102
Site Code : 20210102
Start Date : 4/13/2021
Page No : 2

	Brownsville Rd Northbound				Brownsville Rd Southbound				Zaxby's Drwy Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**192**	**29**	**221**	1	54	0	55	0	0	0	0	6	0	0	6	282
07:30 AM	**1**	164	27	192	**4**	**81**	0	**85**	**1**	0	0	**1**	4	0	**2**	6	**284**
07:45 AM	1	166	27	194	2	62	0	64	0	0	0	0	6	0	0	6	264
08:00 AM	0	154	18	172	3	66	0	69	0	0	0	0	**7**	0	1	**8**	249
Total Volume	2	676	101	779	10	263	0	273	1	0	0	1	23	0	3	26	1079
% App. Total	0.3	86.8	13		3.7	96.3	0		100	0	0		88.5	0	11.5		
PHF	.500	.880	.871	.881	.625	.812	.000	.803	.250	.000	.000	.250	.821	.000	.375	.813	.950



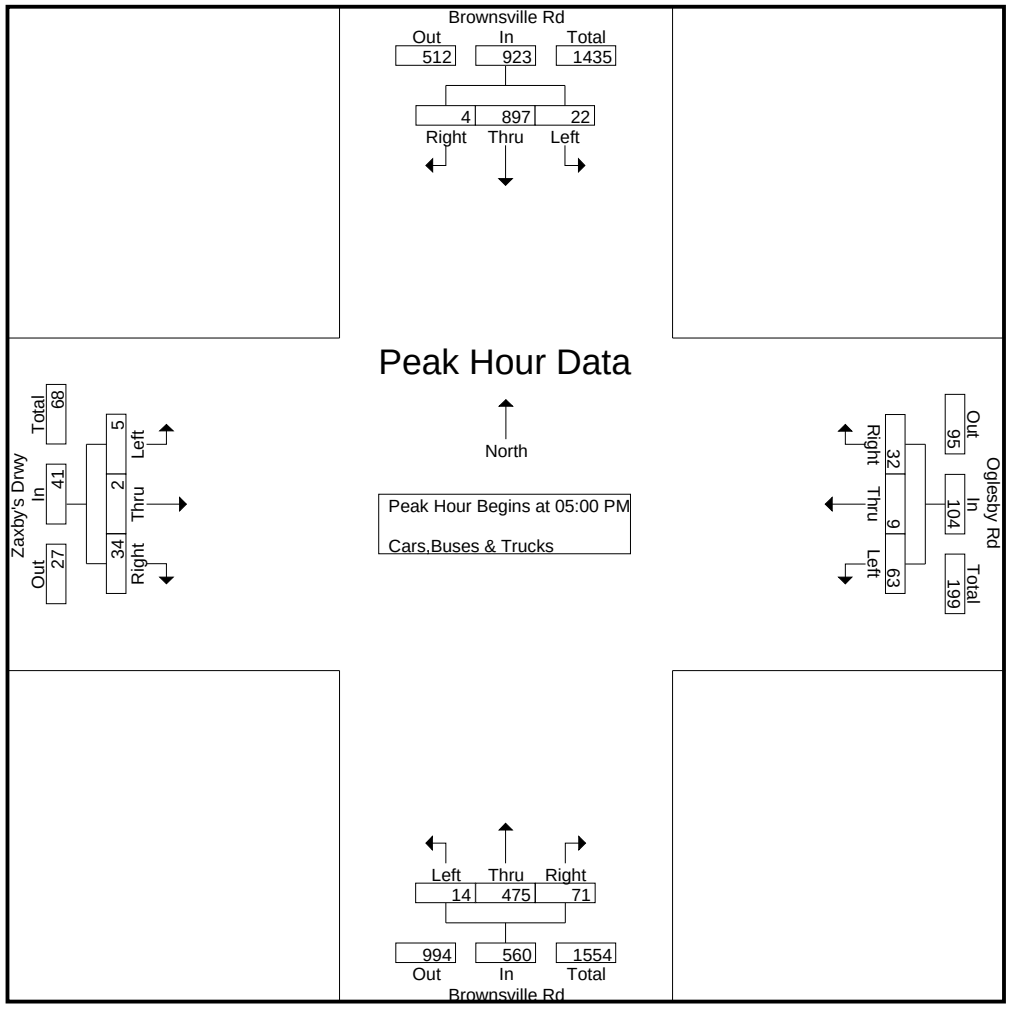
A & R Engineering. Inc.

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

TMC DATA
Brownsville Rd @ Oglesby Rd
7-9 am | 4-6 pm

File Name : 20210102
Site Code : 20210102
Start Date : 4/13/2021
Page No : 3

	Brownsville Rd Northbound				Brownsville Rd Southbound				Zaxby's Drwy Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	124	14	139	5	**234**	**2**	**241**	0	**1**	**10**	11	13	1	**10**	24	**415**
05:15 PM	4	**137**	17	**158**	3	215	1	219	**2**	1	10	**13**	8	3	7	18	408
05:30 PM	3	122	**22**	147	**8**	214	1	223	1	0	7	8	**22**	1	8	**31**	409
05:45 PM	**6**	92	18	116	6	234	0	240	2	0	7	9	20	**4**	7	31	396
Total Volume	14	475	71	560	22	897	4	923	5	2	34	41	63	9	32	104	1628
% App. Total	2.5	84.8	12.7		2.4	97.2	0.4		12.2	4.9	82.9		60.6	8.7	30.8		
PHF	.583	.867	.807	.886	.688	.958	.500	.957	.625	.500	.850	.788	.716	.563	.800	.839	.981



A & R Engineering. Inc.

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

TMC DATA
Oglesby Rd @ Access Rd
7-9 am | 4-6 pm

File Name : 20210103
Site Code : 20210103
Start Date : 4/13/2021
Page No : 1

Groups Printed- Cars,Buses & Trucks

	Pvt Drwy Northbound				Access Rd Southbound				Oglesby Rd Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	44	0	44	0	7	0	7	51
07:15 AM	0	0	0	0	0	0	0	0	0	31	0	31	0	5	0	5	36
07:30 AM	0	0	0	0	0	0	0	0	0	27	0	27	0	6	0	6	33
07:45 AM	0	0	0	0	0	0	0	0	0	28	0	28	0	5	0	5	33
Total	0	0	0	0	0	0	0	0	0	130	0	130	0	23	0	23	153
08:00 AM	0	0	0	0	0	0	0	0	0	23	0	23	0	10	1	11	34
08:15 AM	0	0	0	0	0	0	0	0	0	19	0	19	0	8	1	9	28
08:30 AM	0	0	0	0	0	0	0	0	0	31	0	31	0	5	0	5	36
08:45 AM	0	0	0	0	0	0	0	0	1	21	0	22	0	5	0	5	27
Total	0	0	0	0	0	0	0	0	1	94	0	95	0	28	2	30	125
*** BREAK ***																	
04:00 PM	0	0	0	0	1	0	0	1	0	17	0	17	0	25	1	26	44
04:15 PM	0	0	0	0	0	0	1	1	1	17	0	18	0	24	0	24	43
04:30 PM	0	0	0	0	0	1	0	1	1	25	0	26	0	21	0	21	48
04:45 PM	0	0	0	0	1	0	0	1	0	17	0	17	0	12	1	13	31
Total	0	0	0	0	2	1	1	4	2	76	0	78	0	82	2	84	166
05:00 PM	0	0	0	0	1	0	0	1	1	20	0	21	1	24	1	26	48
05:15 PM	0	0	1	1	1	0	1	2	0	20	0	20	0	16	0	16	39
05:30 PM	0	0	0	0	0	0	0	0	0	27	0	27	0	33	0	33	60
05:45 PM	0	0	0	0	0	0	0	0	0	23	0	23	1	27	1	29	52
Total	0	0	1	1	2	0	1	3	1	90	0	91	2	100	2	104	199
Grand Total	0	0	1	1	4	1	2	7	4	390	0	394	2	233	6	241	643
Apprch %	0	0	100		57.1	14.3	28.6		1	99	0		0.8	96.7	2.5		
Total %	0	0	0.2	0.2	0.6	0.2	0.3	1.1	0.6	60.7	0	61.3	0.3	36.2	0.9	37.5	

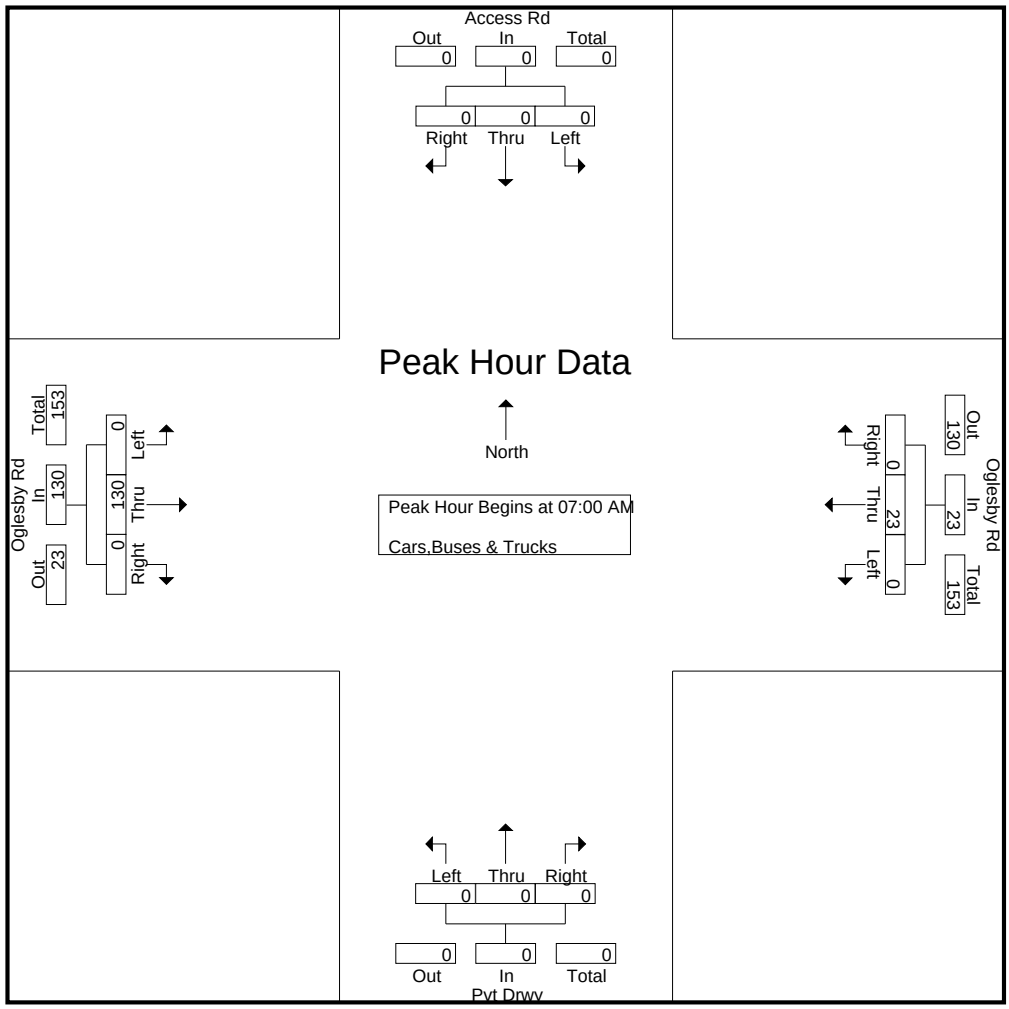
A & R Engineering. Inc.

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

TMC DATA
Oglesby Rd @ Access Rd
7-9 am | 4-6 pm

File Name : 20210103
Site Code : 20210103
Start Date : 4/13/2021
Page No : 2

	Pvt Drwy Northbound				Access Rd Southbound				Oglesby Rd Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	**44**	0	**44**	0	**7**	0	**7**	**51**
07:15 AM	0	0	0	0	0	0	0	0	0	31	0	31	0	5	0	5	36
07:30 AM	0	0	0	0	0	0	0	0	0	27	0	27	0	6	0	6	33
07:45 AM	0	0	0	0	0	0	0	0	0	28	0	28	0	5	0	5	33
Total Volume	0	0	0	0	0	0	0	0	0	130	0	130	0	23	0	23	153
% App. Total	0	0	0		0	0	0		0	100	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.739	.000	.739	.000	.821	.000	.821	.750



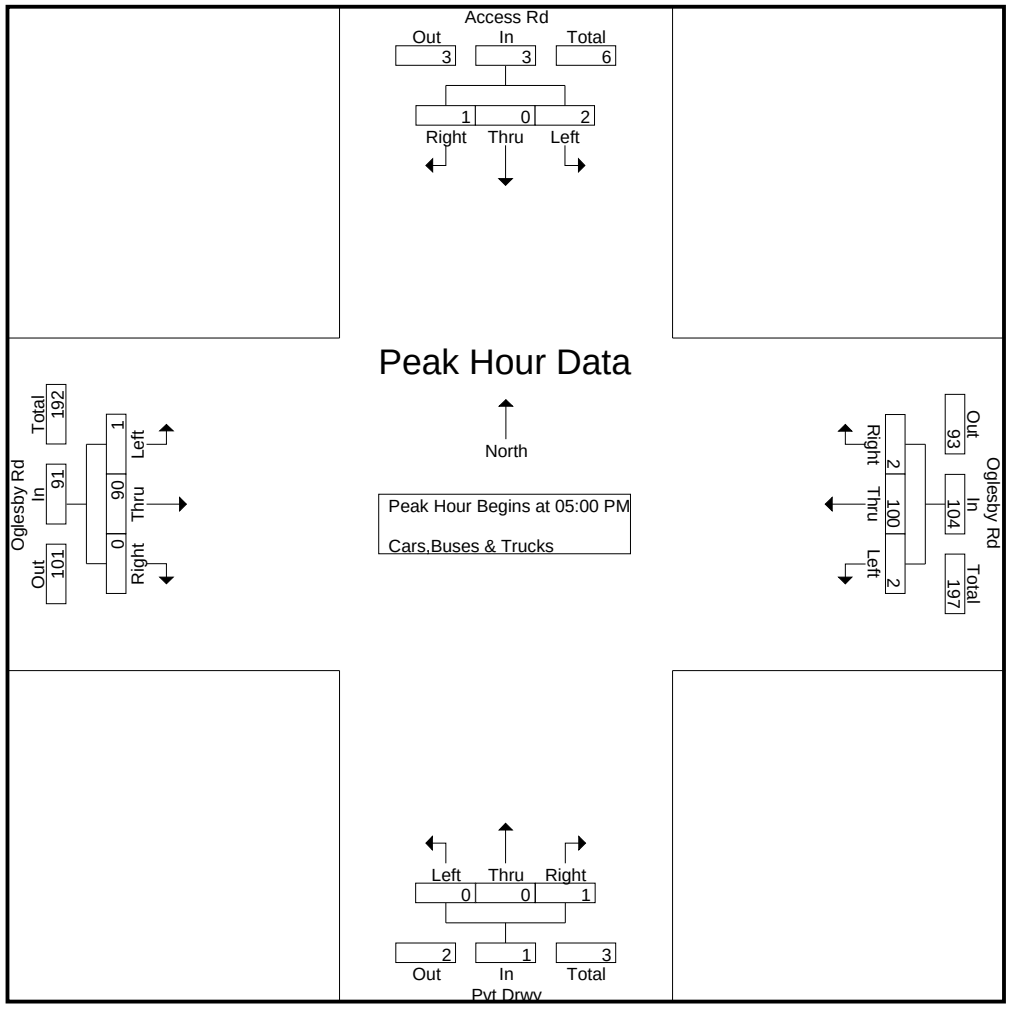
A & R Engineering. Inc.

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

TMC DATA
Oglesby Rd @ Access Rd
7-9 am | 4-6 pm

File Name : 20210103
Site Code : 20210103
Start Date : 4/13/2021
Page No : 3

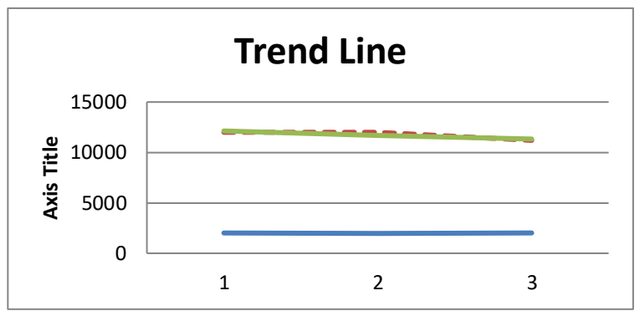
	Pvt Drwy Northbound				Access Rd Southbound				Oglesby Rd Eastbound				Oglesby Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	**1**	0	0	1	**1**	20	0	21	**1**	24	**1**	26	48
05:15 PM	0	0	**1**	**1**	1	0	**1**	**2**	0	20	0	20	0	16	0	16	39
05:30 PM	0	0	0	0	0	0	0	0	0	**27**	0	**27**	0	**33**	0	**33**	**60**
05:45 PM	0	0	0	0	0	0	0	0	0	23	0	23	1	27	1	29	52
Total Volume	0	0	1	1	2	0	1	3	1	90	0	91	2	100	2	104	199
% App. Total	0	0	100		66.7	0	33.3		1.1	98.9	0		1.9	96.2	1.9		
PHF	.000	.000	.250	.250	.500	.000	.250	.375	.250	.833	.000	.843	.500	.758	.500	.788	.829



LINEAR REGRESSION OF DAILY TRAFFIC

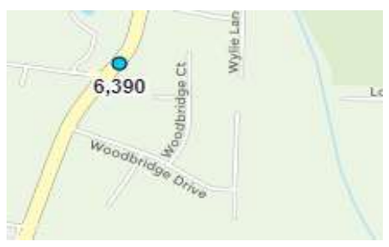
Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
Brownsville Rd (west of Oglesb	-3.4%	0.75	670958	211800	12,000	12,000	11,200
Brownsville Rd (east of Woodb	-10.3%	0.75	670961	211800	8,010	8,000	6,390
SR 6/CH James Parkway (next t	-0.9%	0.87	672328	600	33,100	33,000	32,500
Hiram Lithia Springs Rd (north	8.5%	0.81	678253	209100	4,210	4,270	4,940
Hill Road (north of Brownsville	1.9%	1.00	678259	211300	2,400	2,440	2,490
Weighted Average	**-1.8%**	0.75	Sum of Count Stations =		59,720	59,710	57,520

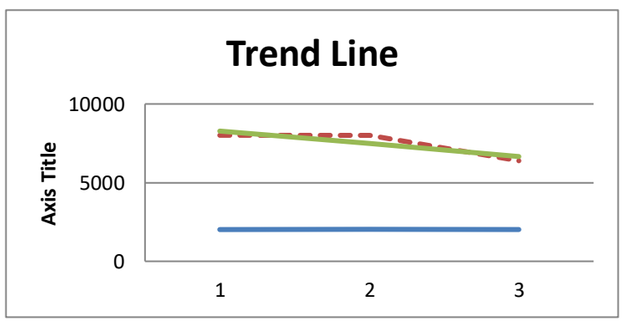
Location	Traffic Counter	RCLINK	2017	2018	2019
Brownsville Rd (west of Oglesby Rd)	670958	211800	12,000	12,000	11,200



Growth Rate	-3.4%	Intercept	818,933	Slope	-400.00
Trend Line			12,133	11,733	11,333

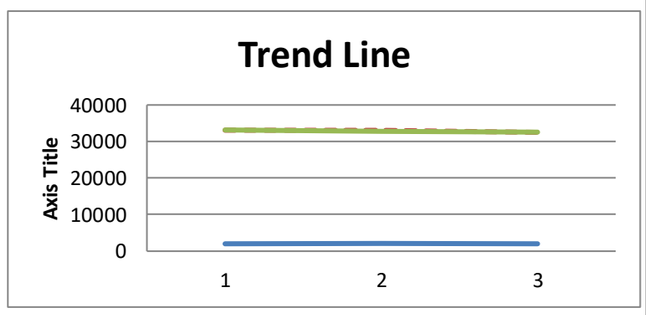
Location	Traffic Counter	RCLINK	2017	2018	2019
Brownsville Rd (east of Woodbridge Dr)	670961	211800	8,010	8,000	6,390





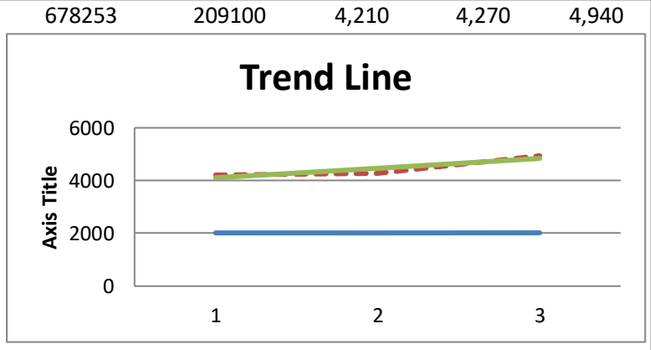
Growth Rate	-10.3%	Intercept	1,642,047	Slope	-810.00
Trend Line			8,277	7,467	6,657

Location	Traffic Counter	RCLINK	2017	2018	2019
SR 6/CH James Parkway (next to site)	672328	600	33,100	33,000	32,500



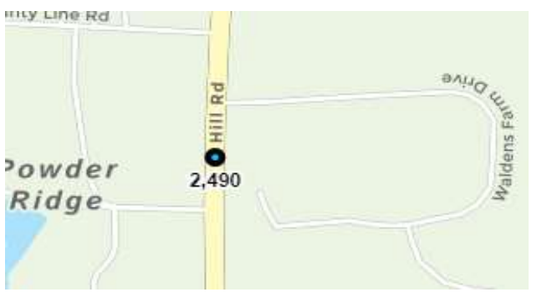
Growth Rate	-0.9%	Intercept	638,267	Slope	-300.00
Trend Line			33,167	32,867	32,567

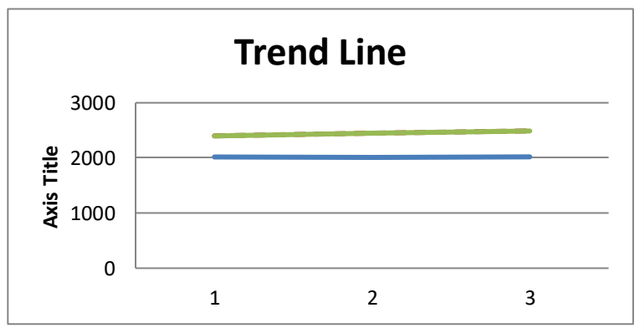
Location	Traffic Counter	RCLINK	2017	2018	2019
Hiram Lithia Springs Rd (north of Hill Rd)	678253	209100	4,210	4,270	4,940



Growth Rate	8.5%	Intercept	-732,097	Slope	365.00
Trend Line			4,108	4,473	4,838

Location	Traffic Counter	RCLINK	2017	2018	2019
Hill Road (north of Brownsville Rd)	678259	211300	2,400	2,440	2,490





Growth Rate	1.9%	Intercept	-88,367	Slope	45.00
Trend Line			2,398	2,443	2,488

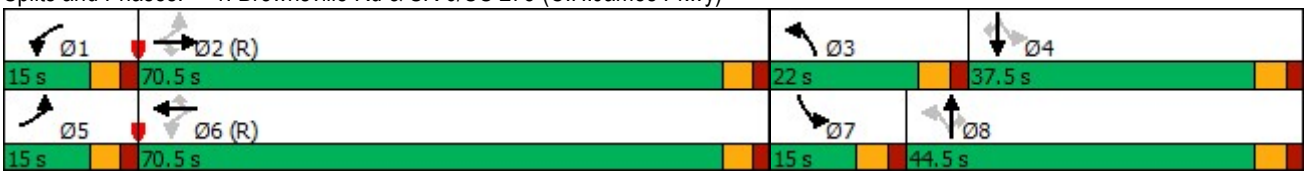
EXISTING INTERSECTION ANALYSIS

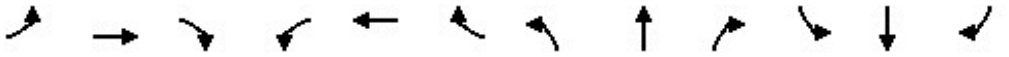
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1615	172	30	719	18	417	240	98	27	78	27
Future Volume (vph)	18	1615	172	30	719	18	417	240	98	27	78	27
Lane Group Flow (vph)	19	1737	185	32	773	19	448	258	105	29	84	29
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	70.5	70.5	15.0	70.5	70.5	22.0	44.5	44.5	15.0	37.5	37.5
Total Split (%)	10.3%	48.6%	48.6%	10.3%	48.6%	48.6%	15.2%	30.7%	30.7%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.05	0.82	0.18	0.26	0.38	0.02	1.30	0.68	0.26	0.15	0.41	0.10
Control Delay	10.9	28.7	5.2	15.6	16.9	0.1	195.1	62.9	9.5	39.1	63.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	28.7	5.2	15.6	16.9	0.1	195.1	62.9	9.5	39.1	63.6	0.6
Queue Length 50th (ft)	6	702	17	10	202	0	~538	236	0	21	75	0
Queue Length 95th (ft)	19	#1036	62	27	298	0	#691	318	50	43	121	0
Internal Link Dist (ft)		1243			1478			1900			1078	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	450	2114	1002	158	2008	1024	345	501	502	224	411	460
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	0.04	0.82	0.18	0.20	0.38	0.02	1.30	0.51	0.21	0.13	0.20	0.06

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1615	172	30	719	18	417	240	98	27	78	27
Future Volume (veh/h)	18	1615	172	30	719	18	417	240	98	27	78	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1781	1752	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	1737	185	32	773	19	448	258	105	29	84	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	4	4	8	10	2	2	2	2	2	2	2
Cap, veh/h	458	2291	1022	153	2198	1047	272	286	243	103	111	
Arrive On Green	0.01	0.66	0.66	0.02	0.66	0.66	0.11	0.15	0.15	0.02	0.06	0.00
Sat Flow, veh/h	1781	3497	1560	1697	3328	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	19	1737	185	32	773	19	448	258	105	29	84	0
Grp Sat Flow(s),veh/h/ln	1781	1749	1560	1697	1664	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	49.3	6.7	0.9	14.9	0.6	16.5	19.6	8.7	2.2	6.4	0.0
Cycle Q Clear(g_c), s	0.5	49.3	6.7	0.9	14.9	0.6	16.5	19.6	8.7	2.2	6.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	2291	1022	153	2198	1047	272	286	243	103	111	
V/C Ratio(X)	0.04	0.76	0.18	0.21	0.35	0.02	1.65	0.90	0.43	0.28	0.76	
Avail Cap(c_a), veh/h	548	2291	1022	230	2198	1047	272	503	426	184	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.7	17.1	9.8	17.6	10.9	8.5	58.4	60.3	55.7	62.6	67.2	0.0
Incr Delay (d2), s/veh	0.0	2.4	0.4	0.7	0.4	0.0	306.4	10.9	1.2	1.5	10.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	17.8	2.3	0.4	5.0	0.2	25.0	10.0	3.5	1.0	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.7	19.5	10.2	18.3	11.3	8.5	364.8	71.2	56.9	64.0	77.1	0.0
LnGrp LOS	A	B	B	B	B	A	F	E	E	E	E	
Approach Vol, veh/h		1941			824			811			113	A
Approach Delay, s/veh		18.5			11.5			231.5			73.8	
Approach LOS		B			B			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	100.5	22.0	14.1	7.6	101.3	8.4	27.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	65.0	16.5	32.0	9.5	65.0	9.5	39.0
Max Q Clear Time (g_c+I1), s	2.9	51.3	18.5	8.4	2.5	16.9	4.2	21.6
Green Ext Time (p_c), s	0.0	13.5	0.0	0.2	0.0	28.4	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	65.5
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↱
Traffic Vol, veh/h	1	0	0	25	0	4	2	738	109	11	288	0
Future Vol, veh/h	1	0	0	25	0	4	2	738	109	11	288	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	26	0	4	2	777	115	12	303	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1168	1223	303	1166	1166	835	303	0	0	892	0	0
Stage 1	327	327	-	839	839	-	-	-	-	-	-	-
Stage 2	841	896	-	327	327	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	170	179	737	171	194	368	1258	-	-	760	-	-
Stage 1	686	648	-	360	381	-	-	-	-	-	-	-
Stage 2	359	359	-	686	648	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	165	175	737	168	190	368	1258	-	-	760	-	-
Mov Cap-2 Maneuver	165	175	-	168	190	-	-	-	-	-	-	-
Stage 1	684	636	-	359	380	-	-	-	-	-	-	-
Stage 2	354	358	-	673	636	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27	28.7	0	0.4
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1258	-	-	165	182	760	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.168	0.015	-	-
HCM Control Delay (s)	7.9	0	-	27	28.7	9.8	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	140	0	0	26	0	0	0	0	0	0	0
Future Vol, veh/h	0	140	0	0	26	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	92	92	75	75	92	92	92	75	92	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	187	0	0	35	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	35	0	0	187	0	0	222	222	187	222	222	35
Stage 1	-	-	-	-	-	-	187	187	-	35	35	-
Stage 2	-	-	-	-	-	-	35	35	-	187	187	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1576	-	-	1387	-	-	734	677	855	734	677	1038
Stage 1	-	-	-	-	-	-	815	745	-	981	866	-
Stage 2	-	-	-	-	-	-	981	866	-	815	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1576	-	-	1387	-	-	734	677	855	734	677	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	734	677	-	734	677	-
Stage 1	-	-	-	-	-	-	815	745	-	981	866	-
Stage 2	-	-	-	-	-	-	981	866	-	815	745	-

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

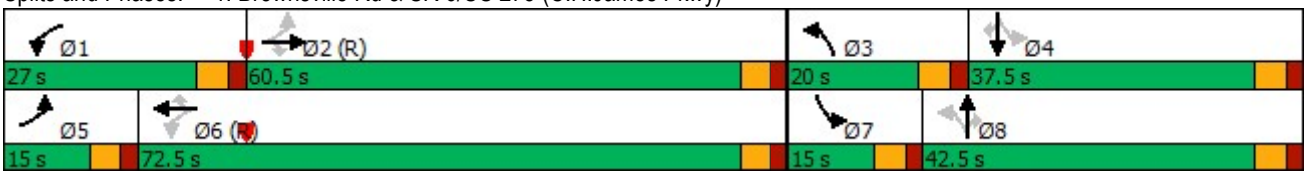
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1576	-	-	1387	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	930	487	280	1951	41	316	201	81	32	335	24
Future Volume (vph)	9	930	487	280	1951	41	316	201	81	32	335	24
Lane Group Flow (vph)	10	989	518	298	2076	44	336	214	86	34	356	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	60.5	60.5	27.0	72.5	72.5	20.0	42.5	42.5	15.0	37.5	37.5
Total Split (%)	10.3%	41.7%	41.7%	18.6%	50.0%	50.0%	13.8%	29.3%	29.3%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.08	0.72	0.63	0.87	1.08	0.05	1.42	0.42	0.16	0.10	0.92	0.06
Control Delay	16.9	40.7	18.4	52.1	77.1	0.1	240.8	46.9	0.8	31.9	84.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	40.7	18.4	52.1	77.1	0.1	240.8	46.9	0.8	31.9	84.2	0.2
Queue Length 50th (ft)	4	428	173	174	~1108	0	~361	168	0	21	327	0
Queue Length 95th (ft)	13	514	309	#323	#1391	0	#563	254	2	47	#498	0
Internal Link Dist (ft)		1243			1478			1900			1078	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	167	1377	817	363	1927	908	237	509	537	356	411	460
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	0.06	0.72	0.63	0.82	1.08	0.05	1.42	0.42	0.16	0.10	0.87	0.06

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	930	487	280	1951	41	316	201	81	32	335	24
Future Volume (veh/h)	9	930	487	280	1951	41	316	201	81	32	335	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	989	518	298	2076	44	336	214	86	34	356	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	6	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1481	682	323	1904	849	244	527	447	292	381	
Arrive On Green	0.01	0.43	0.43	0.11	0.54	0.54	0.10	0.28	0.28	0.02	0.20	0.00
Sat Flow, veh/h	1781	3441	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	10	989	518	298	2076	44	336	214	86	34	356	0
Grp Sat Flow(s),veh/h/ln	1781	1721	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	33.3	40.1	14.1	77.7	1.9	14.5	13.5	6.0	2.2	27.2	0.0
Cycle Q Clear(g_c), s	0.5	33.3	40.1	14.1	77.7	1.9	14.5	13.5	6.0	2.2	27.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1481	682	323	1904	849	244	527	447	292	381	
V/C Ratio(X)	0.15	0.67	0.76	0.92	1.09	0.05	1.37	0.41	0.19	0.12	0.94	
Avail Cap(c_a), veh/h	166	1481	682	384	1904	849	244	527	447	370	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.3	33.0	34.9	31.2	33.7	16.1	44.2	42.2	39.5	44.4	56.8	0.0
Incr Delay (d2), s/veh	1.1	2.4	7.8	25.0	50.0	0.1	192.3	0.5	0.2	0.2	27.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.6	16.4	7.8	43.4	0.7	19.8	6.2	2.3	1.0	15.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	35.4	42.7	56.3	83.7	16.2	236.4	42.7	39.7	44.6	84.4	0.0
LnGrp LOS	D	D	D	E	F	B	F	D	D	D	F	
Approach Vol, veh/h		1517			2418			636			390	A
Approach Delay, s/veh		37.9			79.1			144.7			80.9	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	67.9	20.0	35.0	6.8	83.2	8.6	46.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	55.0	14.5	32.0	9.5	67.0	9.5	37.0
Max Q Clear Time (g_c+I1), s	16.1	35.3	16.5	29.2	2.5	79.7	4.2	15.5
Green Ext Time (p_c), s	0.5	15.6	0.0	0.4	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	75.1
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	38.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↱
Traffic Vol, veh/h	6	2	40	74	11	39	17	571	84	27	1070	5
Future Vol, veh/h	6	2	40	74	11	39	17	571	84	27	1070	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	41	76	11	40	17	583	86	28	1092	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1834	1851	1092	1830	1808	626	1092	0	0	669	0	0
Stage 1	1148	1148	-	660	660	-	-	-	-	-	-	-
Stage 2	686	703	-	1170	1148	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	59	74	261	~ 59	79	484	639	-	-	921	-	-
Stage 1	242	273	-	452	460	-	-	-	-	-	-	-
Stage 2	438	440	-	235	273	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	65	261	~ 44	70	484	639	-	-	921	-	-
Mov Cap-2 Maneuver	43	65	-	~ 44	70	-	-	-	-	-	-	-
Stage 1	232	252	-	433	440	-	-	-	-	-	-	-
Stage 2	375	421	-	181	252	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.9	$ 579.8	0.3	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	639	-	-	148	65	921	-	-
HCM Lane V/C Ratio	0.027	-	-	0.331	1.947	0.03	-	-
HCM Control Delay (s)	10.8	0	-	40.9	$ 579.8	9	0	-
HCM Lane LOS	B	A	-	E	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	11.7	0.1	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	107	0	2	119	1	0	0	1	2	0	1
Future Vol, veh/h	1	107	0	2	119	1	0	0	1	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	92	92	83	83	92	92	92	83	92	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	129	0	2	143	1	0	0	1	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	129	0	0	279	279	129	280	279	144
Stage 1	-	-	-	-	-	-	131	131	-	148	148	-
Stage 2	-	-	-	-	-	-	148	148	-	132	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1438	-	-	1457	-	-	673	629	921	672	629	903
Stage 1	-	-	-	-	-	-	873	788	-	855	775	-
Stage 2	-	-	-	-	-	-	855	775	-	871	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1438	-	-	1457	-	-	671	628	921	670	628	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	671	628	-	670	628	-
Stage 1	-	-	-	-	-	-	872	787	-	854	774	-
Stage 2	-	-	-	-	-	-	853	774	-	869	787	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	8.9	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	921	1438	-	-	1457	-	-	733
HCM Lane V/C Ratio	0.001	0.001	-	-	0.001	-	-	0.005
HCM Control Delay (s)	8.9	7.5	0	-	7.5	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

FUTURE "NO-BUILD" INTERSECTION ANALYSIS

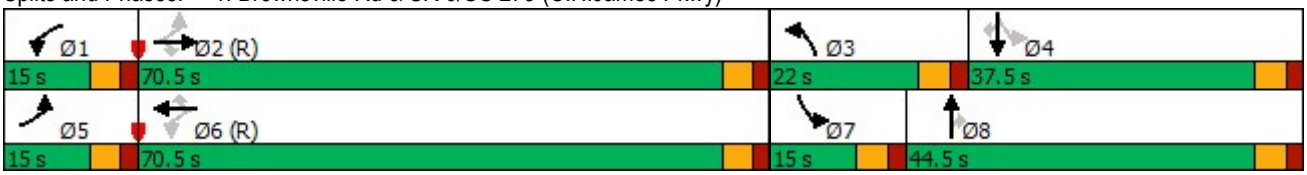
FUTURE "NO-BUILD" INTERSECTION ANALYSIS (WITH IMPROVEMENTS)

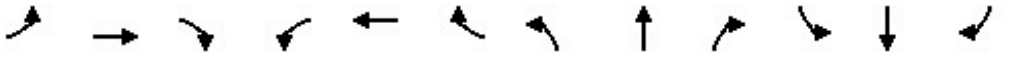
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1647	175	31	733	18	425	245	100	28	80	28
Future Volume (vph)	18	1647	175	31	733	18	425	245	100	28	80	28
Lane Group Flow (vph)	19	1771	188	33	788	19	457	263	108	30	86	30
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	70.5	70.5	15.0	70.5	70.5	22.0	44.5	44.5	15.0	37.5	37.5
Total Split (%)	10.3%	48.6%	48.6%	10.3%	48.6%	48.6%	15.2%	30.7%	30.7%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.05	0.86	0.19	0.26	0.39	0.02	1.17	0.68	0.26	0.15	0.41	0.10
Control Delay	11.1	32.2	5.5	15.9	17.2	0.1	155.3	62.8	9.3	38.9	63.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	32.2	5.5	15.9	17.2	0.1	155.3	62.8	9.3	38.9	63.2	0.6
Queue Length 50th (ft)	6	737	18	10	209	0	~264	240	0	21	77	0
Queue Length 95th (ft)	19	#1079	65	28	308	0	#377	322	50	44	123	0
Internal Link Dist (ft)		1243			1478			1900			1078	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	445	2050	976	158	2000	1020	390	501	504	223	411	460
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	0.04	0.86	0.19	0.21	0.39	0.02	1.17	0.52	0.21	0.13	0.21	0.07

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1647	175	31	733	18	425	245	100	28	80	28
Future Volume (veh/h)	18	1647	175	31	733	18	425	245	100	28	80	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1781	1752	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	1771	188	33	788	19	457	263	108	30	86	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	4	4	8	10	2	2	2	2	2	2	2
Cap, veh/h	448	2280	1017	147	2188	1042	393	291	246	104	117	
Arrive On Green	0.01	0.65	0.65	0.02	0.66	0.66	0.11	0.16	0.16	0.02	0.06	0.00
Sat Flow, veh/h	1781	3497	1560	1697	3328	1585	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	19	1771	188	33	788	19	457	263	108	30	86	0
Grp Sat Flow(s),veh/h/ln	1781	1749	1560	1697	1664	1585	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	51.8	6.9	0.9	15.4	0.6	16.5	20.0	9.0	2.3	6.6	0.0
Cycle Q Clear(g_c), s	0.5	51.8	6.9	0.9	15.4	0.6	16.5	20.0	9.0	2.3	6.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	2280	1017	147	2188	1042	393	291	246	104	117	
V/C Ratio(X)	0.04	0.78	0.18	0.22	0.36	0.02	1.16	0.91	0.44	0.29	0.74	
Avail Cap(c_a), veh/h	539	2280	1017	224	2188	1042	393	503	426	184	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	17.8	10.0	18.9	11.1	8.6	64.3	60.2	55.5	62.2	66.8	0.0
Incr Delay (d2), s/veh	0.0	2.7	0.4	0.8	0.5	0.0	97.5	11.7	1.2	1.5	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	18.8	2.3	0.4	5.2	0.2	12.5	10.3	3.6	1.1	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	20.5	10.4	19.6	11.6	8.6	161.8	71.9	56.7	63.7	75.6	0.0
LnGrp LOS	A	C	B	B	B	A	F	E	E	E	E	
Approach Vol, veh/h		1978			840			828			116	A
Approach Delay, s/veh		19.4			11.9			119.5			72.5	
Approach LOS		B			B			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	100.0	22.0	14.5	7.6	100.8	8.5	28.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	65.0	16.5	32.0	9.5	65.0	9.5	39.0
Max Q Clear Time (g_c+I1), s	2.9	53.8	18.5	8.6	2.5	17.4	4.3	22.0
Green Ext Time (p_c), s	0.0	11.1	0.0	0.2	0.0	28.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↱
Traffic Vol, veh/h	1	0	0	26	0	4	2	753	111	11	294	0
Future Vol, veh/h	1	0	0	26	0	4	2	753	111	11	294	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	27	0	4	2	793	117	12	309	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1191	1247	309	1189	1189	852	309	0	0	910	0	0
Stage 1	333	333	-	856	856	-	-	-	-	-	-	-
Stage 2	858	914	-	333	333	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	164	173	731	165	188	359	1252	-	-	748	-	-
Stage 1	681	644	-	352	374	-	-	-	-	-	-	-
Stage 2	352	352	-	681	644	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	159	169	731	162	184	359	1252	-	-	748	-	-
Mov Cap-2 Maneuver	159	169	-	162	184	-	-	-	-	-	-	-
Stage 1	679	632	-	351	373	-	-	-	-	-	-	-
Stage 2	347	351	-	668	632	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.8	30	0	0.4
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	159	175	748	-	-
HCM Lane V/C Ratio	0.002	-	-	0.007	0.18	0.015	-	-
HCM Control Delay (s)	7.9	0	-	27.8	30	9.9	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	143	0	0	27	0	0	0	0	0	0	0
Future Vol, veh/h	0	143	0	0	27	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	92	92	75	75	92	92	92	75	92	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	191	0	0	36	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	191	0	0	227	227	191	227	227	36
Stage 1	-	-	-	-	-	-	191	191	-	36	36	-
Stage 2	-	-	-	-	-	-	36	36	-	191	191	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1575	-	-	1383	-	-	728	672	851	728	672	1037
Stage 1	-	-	-	-	-	-	811	742	-	980	865	-
Stage 2	-	-	-	-	-	-	980	865	-	811	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1383	-	-	728	672	851	728	672	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	728	672	-	728	672	-
Stage 1	-	-	-	-	-	-	811	742	-	980	865	-
Stage 2	-	-	-	-	-	-	980	865	-	811	742	-

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

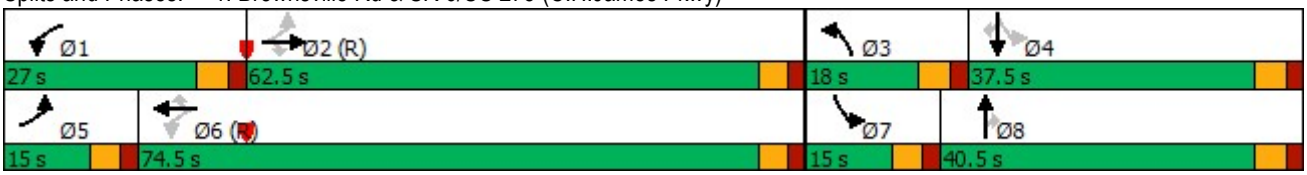
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1575	-	-	1383	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

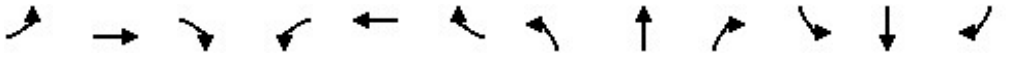
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	949	497	286	1990	42	322	205	83	33	342	24
Future Volume (vph)	9	949	497	286	1990	42	322	205	83	33	342	24
Lane Group Flow (vph)	10	1010	529	304	2117	45	343	218	88	35	364	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	62.5	62.5	27.0	74.5	74.5	18.0	40.5	40.5	15.0	37.5	37.5
Total Split (%)	10.3%	43.1%	43.1%	18.6%	51.4%	51.4%	12.4%	27.9%	27.9%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.08	0.71	0.64	0.88	1.08	0.05	1.16	0.45	0.17	0.11	0.92	0.06
Control Delay	16.0	39.5	18.8	53.1	76.0	0.1	159.7	49.0	1.2	33.2	85.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	39.5	18.8	53.1	76.0	0.1	159.7	49.0	1.2	33.2	85.3	0.2
Queue Length 50th (ft)	4	430	184	176	~1125	0	~196	175	0	22	336	0
Queue Length 95th (ft)	12	515	320	#330	#1408	0	#301	263	4	48	#514	0
Internal Link Dist (ft)		1243			1478			1900			1078	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	168	1413	827	365	1966	925	295	487	520	337	411	460
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	0.06	0.71	0.64	0.83	1.08	0.05	1.16	0.45	0.17	0.10	0.89	0.06

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	949	497	286	1990	42	322	205	83	33	342	24
Future Volume (veh/h)	9	949	497	286	1990	42	322	205	83	33	342	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	1010	529	304	2117	45	343	218	88	35	364	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	6	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1501	691	329	1939	865	298	508	430	277	388	
Arrive On Green	0.01	0.44	0.44	0.12	0.55	0.55	0.09	0.27	0.27	0.02	0.21	0.00
Sat Flow, veh/h	1781	3441	1585	1781	3554	1585	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	10	1010	529	304	2117	45	343	218	88	35	364	0
Grp Sat Flow(s),veh/h/ln	1781	1721	1585	1781	1777	1585	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	34.0	40.9	14.7	79.1	1.9	12.5	13.9	6.2	2.2	27.8	0.0
Cycle Q Clear(g_c), s	0.5	34.0	40.9	14.7	79.1	1.9	12.5	13.9	6.2	2.2	27.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1501	691	329	1939	865	298	508	430	277	388	
V/C Ratio(X)	0.15	0.67	0.77	0.92	1.09	0.05	1.15	0.43	0.20	0.13	0.94	
Avail Cap(c_a), veh/h	166	1501	691	382	1939	865	298	508	430	354	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.2	32.6	34.6	32.5	32.9	15.4	66.3	43.6	40.8	44.0	56.6	0.0
Incr Delay (d2), s/veh	1.1	2.4	7.9	25.9	50.4	0.1	99.6	0.6	0.2	0.2	28.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.9	16.7	8.2	44.1	0.7	9.5	6.4	2.4	1.0	15.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	35.0	42.5	58.4	83.4	15.5	165.8	44.1	41.0	44.2	85.0	0.0
LnGrp LOS	D	D	D	E	F	B	F	D	D	D	F	
Approach Vol, veh/h		1549			2466			649			399	A
Approach Delay, s/veh		37.6			79.1			108.0			81.4	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.7	68.8	18.0	35.6	6.8	84.6	8.7	44.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	21.5	57.0	12.5	32.0	9.5	69.0	9.5	35.0
Max Q Clear Time (g_c+I1), s	16.7	36.0	14.5	29.8	2.5	81.1	4.2	15.9
Green Ext Time (p_c), s	0.4	16.8	0.0	0.3	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	43

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↱
Traffic Vol, veh/h	6	2	41	75	11	40	17	582	86	28	1092	5
Future Vol, veh/h	6	2	41	75	11	40	17	582	86	28	1092	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	42	77	11	41	17	594	88	29	1114	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1870	1888	1114	1866	1844	638	1114	0	0	682	0	0
Stage 1	1172	1172	-	672	672	-	-	-	-	-	-	-
Stage 2	698	716	-	1194	1172	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	55	70	253	~ 56	75	477	627	-	-	911	-	-
Stage 1	234	266	-	445	454	-	-	-	-	-	-	-
Stage 2	431	434	-	228	266	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	61	253	~ 41	66	477	627	-	-	911	-	-
Mov Cap-2 Maneuver	40	61	-	~ 41	66	-	-	-	-	-	-	-
Stage 1	224	244	-	425	434	-	-	-	-	-	-	-
Stage 2	367	415	-	173	244	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.5	$ 656.9	0.3	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	627	-	-	142	61	911	-	-
HCM Lane V/C Ratio	0.028	-	-	0.352	2.108	0.031	-	-
HCM Control Delay (s)	10.9	0	-	43.5	$ 656.9	9.1	0	-
HCM Lane LOS	B	A	-	E	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	12.3	0.1	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	109	0	2	121	1	0	0	1	2	0	1
Future Vol, veh/h	1	109	0	2	121	1	0	0	1	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	92	92	83	83	92	92	92	83	92	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	131	0	2	146	1	0	0	1	2	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	147	0	0	131	0	0	284	284	131	285	284	147
Stage 1	-	-	-	-	-	-	133	133	-	151	151	-
Stage 2	-	-	-	-	-	-	151	151	-	134	133	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1435	-	-	1454	-	-	668	625	919	667	625	900
Stage 1	-	-	-	-	-	-	870	786	-	851	772	-
Stage 2	-	-	-	-	-	-	851	772	-	869	786	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1435	-	-	1454	-	-	666	624	919	665	624	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	624	-	665	624	-
Stage 1	-	-	-	-	-	-	869	785	-	850	771	-
Stage 2	-	-	-	-	-	-	849	771	-	867	785	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	8.9	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	919	1435	-	-	1454	-	-	728
HCM Lane V/C Ratio	0.001	0.001	-	-	0.001	-	-	0.005
HCM Control Delay (s)	8.9	7.5	0	-	7.5	0	-	10
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

FUTURE "BUILD" INTERSECTION ANALYSIS

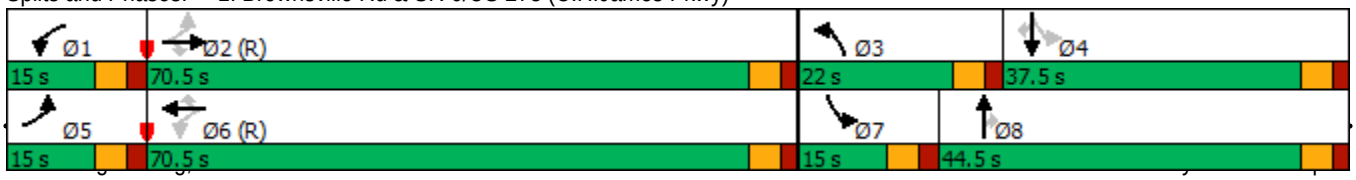
FUTURE "BUILD" INTERSECTION ANALYSIS (WITH IMPROVEMENTS)

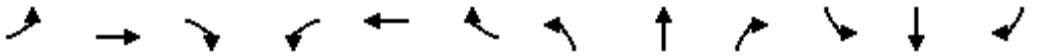
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	1647	183	35	733	18	446	260	112	28	85	28
Future Volume (vph)	18	1647	183	35	733	18	446	260	112	28	85	28
Lane Group Flow (vph)	19	1771	197	38	788	19	480	280	120	30	91	30
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	70.5	70.5	15.0	70.5	70.5	22.0	44.5	44.5	15.0	37.5	37.5
Total Split (%)	10.3%	48.6%	48.6%	10.3%	48.6%	48.6%	15.2%	30.7%	30.7%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.05	0.87	0.20	0.30	0.40	0.02	1.23	0.70	0.28	0.15	0.41	0.10
Control Delay	11.6	33.6	6.2	17.5	17.9	0.1	175.7	63.1	8.9	38.1	62.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	33.6	6.2	17.5	17.9	0.1	175.7	63.1	8.9	38.1	62.1	0.6
Queue Length 50th (ft)	6	756	22	12	214	0	~287	256	0	21	80	0
Queue Length 95th (ft)	20	#1100	74	33	314	0	#402	338	52	44	127	0
Internal Link Dist (ft)		1244			1478			716			979	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	439	2025	965	157	1979	1011	390	501	513	220	411	460
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	0.04	0.87	0.20	0.24	0.40	0.02	1.23	0.56	0.23	0.14	0.22	0.07

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1647	183	35	733	18	446	260	112	28	85	28
Future Volume (veh/h)	18	1647	183	35	733	18	446	260	112	28	85	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1781	1752	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	1771	197	38	788	19	480	280	120	30	91	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	4	4	8	10	2	2	2	2	2	2	2
Cap, veh/h	440	2244	1001	144	2158	1028	393	308	261	103	133	
Arrive On Green	0.01	0.64	0.64	0.02	0.65	0.65	0.11	0.16	0.16	0.02	0.07	0.00
Sat Flow, veh/h	1781	3497	1560	1697	3328	1585	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	19	1771	197	38	788	19	480	280	120	30	91	0
Grp Sat Flow(s),veh/h/ln	1781	1749	1560	1697	1664	1585	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	53.3	7.5	1.1	15.8	0.6	16.5	21.3	9.9	2.3	6.9	0.0
Cycle Q Clear(g_c), s	0.5	53.3	7.5	1.1	15.8	0.6	16.5	21.3	9.9	2.3	6.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	440	2244	1001	144	2158	1028	393	308	261	103	133	
V/C Ratio(X)	0.04	0.79	0.20	0.26	0.37	0.02	1.22	0.91	0.46	0.29	0.68	
Avail Cap(c_a), veh/h	531	2244	1001	219	2158	1028	393	503	426	183	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.4	18.9	10.7	20.4	11.7	9.1	64.3	59.5	54.8	61.0	65.7	0.0
Incr Delay (d2), s/veh	0.0	2.9	0.4	1.0	0.5	0.0	120.2	13.6	1.3	1.5	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	19.6	2.6	0.5	5.4	0.2	13.7	11.1	4.0	1.1	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	21.8	11.1	21.3	12.2	9.1	184.5	73.1	56.0	62.6	71.8	0.0
LnGrp LOS	A	C	B	C	B	A	F	E	E	E	E	
Approach Vol, veh/h		1987			845			880			121	A
Approach Delay, s/veh		20.6			12.6			131.5			69.5	
Approach LOS		C			B			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	98.5	22.0	15.8	7.6	99.5	8.5	29.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	65.0	16.5	32.0	9.5	65.0	9.5	39.0
Max Q Clear Time (g_c+I1), s	3.1	55.3	18.5	8.9	2.5	17.8	4.3	23.3
Green Ext Time (p_c), s	0.0	9.6	0.0	0.2	0.0	28.6	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↱
Traffic Vol, veh/h	1	0	0	30	0	15	2	755	113	15	298	0
Future Vol, veh/h	1	0	0	30	0	15	2	755	113	15	298	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	32	0	16	2	795	119	16	314	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1213	1264	314	1205	1205	855	314	0	0	914	0	0
Stage 1	346	346	-	859	859	-	-	-	-	-	-	-
Stage 2	867	918	-	346	346	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	159	169	726	161	184	358	1246	-	-	746	-	-
Stage 1	670	635	-	351	373	-	-	-	-	-	-	-
Stage 2	348	350	-	670	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	149	164	726	157	179	358	1246	-	-	746	-	-
Mov Cap-2 Maneuver	149	164	-	157	179	-	-	-	-	-	-	-
Stage 1	668	618	-	350	372	-	-	-	-	-	-	-
Stage 2	332	349	-	653	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.3	29.6	0	0.5
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1246	-	-	149	193	746	-	-
HCM Lane V/C Ratio	0.002	-	-	0.007	0.245	0.021	-	-
HCM Control Delay (s)	7.9	0	-	29.3	29.6	9.9	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	157	0	0	32	1	0	0	0	3	0	2
Future Vol, veh/h	1	157	0	0	32	1	0	0	0	3	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	92	92	75	75	92	92	92	75	92	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	209	0	0	43	1	0	0	0	4	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	44	0	0	209	0	0	256	255	209	255	255	44
Stage 1	-	-	-	-	-	-	211	211	-	44	44	-
Stage 2	-	-	-	-	-	-	45	44	-	211	211	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1564	-	-	1362	-	-	697	649	831	698	649	1026
Stage 1	-	-	-	-	-	-	791	728	-	970	858	-
Stage 2	-	-	-	-	-	-	969	858	-	791	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1564	-	-	1362	-	-	695	648	831	697	648	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	695	648	-	697	648	-
Stage 1	-	-	-	-	-	-	790	727	-	969	858	-
Stage 2	-	-	-	-	-	-	966	858	-	790	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	9.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1564	-	-	1362	-	-	800
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.008
HCM Control Delay (s)	0	7.3	0	-	0	-	-	9.5
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	37	786	2	13	287
Future Vol, veh/h	4	37	786	2	13	287
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	40	854	2	14	312

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1195	855	0	0	856	0
Stage 1	855	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	206	358	-	-	784	-
Stage 1	417	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	202	358	-	-	784	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	417	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	333	784	-
HCM Lane V/C Ratio	-	-	0.134	0.018	-
HCM Control Delay (s)	-	-	17.5	9.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	144	29	5	14	14
Future Vol, veh/h	5	144	29	5	14	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	157	32	5	15	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	202	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	787	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1574	-	-	-	785	1038
Mov Cap-2 Maneuver	-	-	-	-	785	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1574	-	-	-	894
HCM Lane V/C Ratio	0.003	-	-	-	0.034
HCM Control Delay (s)	7.3	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	2	0	0	0
Future Vol, veh/h	0	5	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	2	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	5	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1017	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1016	1084	1622	-	-	-
Mov Cap-2 Maneuver	1016	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.3	7.2	0
HCM LOS	A		

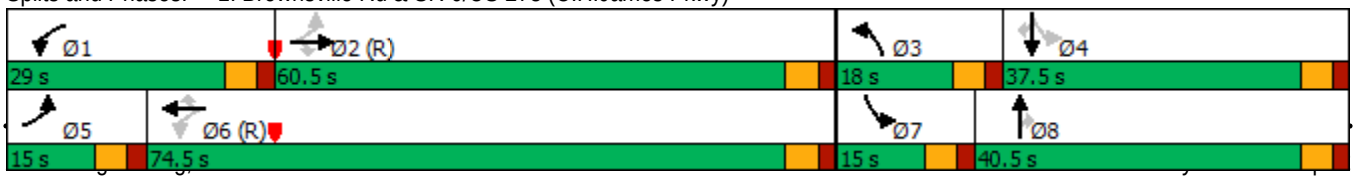
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	1084	-	-
HCM Lane V/C Ratio	0.001	-	0.005	-	-
HCM Control Delay (s)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

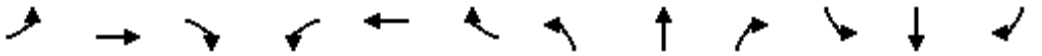
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	949	519	298	1990	42	337	215	91	33	357	24
Future Volume (vph)	9	949	519	298	1990	42	337	215	91	33	357	24
Lane Group Flow (vph)	10	1010	552	317	2117	45	359	229	97	35	380	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0	15.0	4.0	6.0	6.0	4.0	6.0	6.0
Minimum Split (s)	15.0	36.5	36.5	15.0	39.5	39.5	15.0	40.5	40.5	15.0	37.5	37.5
Total Split (s)	15.0	60.5	60.5	29.0	74.5	74.5	18.0	40.5	40.5	15.0	37.5	37.5
Total Split (%)	10.3%	41.7%	41.7%	20.0%	51.4%	51.4%	12.4%	27.9%	27.9%	10.3%	25.9%	25.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.08	0.74	0.69	0.89	1.08	0.05	1.22	0.46	0.18	0.11	0.95	0.06
Control Delay	16.4	42.1	22.6	57.5	78.9	0.1	177.7	49.3	2.3	33.2	89.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	42.1	22.6	57.5	78.9	0.1	177.7	49.3	2.3	33.2	89.1	0.2
Queue Length 50th (ft)	4	441	225	200	~1125	0	~212	185	0	22	355	0
Queue Length 95th (ft)	12	528	374	#360	#1408	0	#318	277	12	48	#549	0
Internal Link Dist (ft)		1244			1478			716			979	
Turn Bay Length (ft)	245		285	225		300	250		225	550		300
Base Capacity (vph)	168	1356	799	377	1953	919	295	494	525	334	411	460
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	0.06	0.74	0.69	0.84	1.08	0.05	1.22	0.46	0.18	0.10	0.92	0.06

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Brownsville Rd & SR 6/US 278 (C.H.James Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	949	519	298	1990	42	337	215	91	33	357	24
Future Volume (veh/h)	9	949	519	298	1990	42	337	215	91	33	357	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	1010	552	317	2117	45	359	229	97	35	380	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	6	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1428	658	342	1912	853	298	522	442	277	402	
Arrive On Green	0.01	0.41	0.41	0.13	0.54	0.54	0.09	0.28	0.28	0.02	0.21	0.00
Sat Flow, veh/h	1781	3441	1585	1781	3554	1585	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	10	1010	552	317	2117	45	359	229	97	35	380	0
Grp Sat Flow(s),veh/h/ln	1781	1721	1585	1781	1777	1585	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.5	35.3	45.3	16.7	78.0	2.0	12.5	14.6	6.8	2.2	29.0	0.0
Cycle Q Clear(g_c), s	0.5	35.3	45.3	16.7	78.0	2.0	12.5	14.6	6.8	2.2	29.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	66	1428	658	342	1912	853	298	522	442	277	402	
V/C Ratio(X)	0.15	0.71	0.84	0.93	1.11	0.05	1.21	0.44	0.22	0.13	0.95	
Avail Cap(c_a), veh/h	166	1428	658	395	1912	853	298	522	442	355	413	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	35.1	38.1	35.5	33.5	15.9	66.3	42.9	40.1	43.1	56.1	0.0
Incr Delay (d2), s/veh	1.1	3.0	12.2	25.9	56.6	0.1	119.7	0.6	0.2	0.2	30.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.6	19.2	9.2	45.2	0.7	10.4	6.7	2.7	1.0	16.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	38.1	50.3	61.4	90.1	16.0	185.9	43.5	40.4	43.3	86.4	0.0
LnGrp LOS	D	D	D	E	F	B	F	D	D	D	F	
Approach Vol, veh/h		1572			2479			685			415	A
Approach Delay, s/veh		42.4			85.1			117.7			82.7	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	65.7	18.0	36.7	6.8	83.5	8.7	46.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	23.5	55.0	12.5	32.0	9.5	69.0	9.5	35.0
Max Q Clear Time (g_c+I1), s	18.7	37.3	14.5	31.0	2.5	80.0	4.2	16.6
Green Ext Time (p_c), s	0.5	14.5	0.0	0.1	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	76.2
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	54.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	41	78	11	47	17	587	91	39	1095	5
Future Vol, veh/h	6	2	41	78	11	47	17	587	91	39	1095	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	-	-	-	-	-	-	70
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	2	42	80	11	48	17	599	93	40	1117	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1906	1923	1117	1899	1877	646	1117	0	0	692	0	0
Stage 1	1197	1197	-	680	680	-	-	-	-	-	-	-
Stage 2	709	726	-	1219	1197	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	52	67	252	~ 53	71	472	625	-	-	903	-	-
Stage 1	227	259	-	441	451	-	-	-	-	-	-	-
Stage 2	425	430	-	220	259	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	56	252	~ 38	60	472	625	-	-	903	-	-
Mov Cap-2 Maneuver	35	56	-	~ 38	60	-	-	-	-	-	-	-
Stage 1	217	228	-	421	431	-	-	-	-	-	-	-
Stage 2	355	411	-	160	228	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48	$ 786.6	0.3	0.3
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	625	-	-	132	58	903	-	-
HCM Lane V/C Ratio	0.028	-	-	0.379	2.393	0.044	-	-
HCM Control Delay (s)	10.9	0	-	48	$ 786.6	9.2	0	-
HCM Lane LOS	B	A	-	E	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	13.9	0.1	-	-

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	119	0	2	136	4	0	0	1	4	0	2
Future Vol, veh/h	3	119	0	2	136	4	0	0	1	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	92	92	83	83	92	92	92	83	92	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	143	0	2	164	5	0	0	1	5	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	143	0	0	323	324	143	323	322	167
Stage 1	-	-	-	-	-	-	151	151	-	171	171	-
Stage 2	-	-	-	-	-	-	172	173	-	152	151	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1409	-	-	1440	-	-	630	594	905	630	595	877
Stage 1	-	-	-	-	-	-	851	772	-	831	757	-
Stage 2	-	-	-	-	-	-	830	756	-	850	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1409	-	-	1440	-	-	626	591	905	627	592	877
Mov Cap-2 Maneuver	-	-	-	-	-	-	626	591	-	627	592	-
Stage 1	-	-	-	-	-	-	848	770	-	829	755	-
Stage 2	-	-	-	-	-	-	826	754	-	846	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	9	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	905	1409	-	-	1440	-	-	693
HCM Lane V/C Ratio	0.001	0.003	-	-	0.002	-	-	0.01
HCM Control Delay (s)	9	7.6	0	-	7.5	0	-	10.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	25	619	5	39	1141
Future Vol, veh/h	3	25	619	5	39	1141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	27	673	5	42	1240

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2000	676	0	0	678	0
Stage 1	676	-	-	-	-	-
Stage 2	1324	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	66	453	-	-	914	-
Stage 1	505	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	63	453	-	-	914	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	238	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	272	914	-
HCM Lane V/C Ratio	-	-	0.112	0.046	-
HCM Control Delay (s)	-	-	19.9	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	112	123	15	10	9
Future Vol, veh/h	14	112	123	15	10	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	122	134	16	11	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	294	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	152	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1431	-	-	-	697	906
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	689	906
Mov Cap-2 Maneuver	-	-	-	-	689	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1431	-	-	-	777
HCM Lane V/C Ratio	0.011	-	-	-	0.027
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	5	2	4	0
Future Vol, veh/h	0	3	5	2	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	5	2	4	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	16	4	4	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1002	1080	1618	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	999	1080	1618	-	-	-
Mov Cap-2 Maneuver	999	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.3	5.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1080	-	-
HCM Lane V/C Ratio	0.003	-	0.003	-	-
HCM Control Delay (s)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

TRAFFIC VOLUME WORKSHEETS

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

1. SR 6 @ Brownsville Rd

A.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				SR 6/US 278 (C.H.James Parkway) Eastbound				SR 6/US 278 (C.H.James Parkway) Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	385	221	90	696	25	70	25	120	17	1495	157	1669	26	666	17	709
Auto Shop and Retail Trips:	1	1	1	3	0	2	0	2	0	0	2	2	2	0	0	2
Adjusted Existing 2021 Volumes:	417	240	98	755	27	78	27	132	18	1615	172	1805	30	719	18	767
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	425	245	100	770	28	80	28	136	18	1647	175	1840	31	733	18	782
Proposed Residential Trips:	21	15	12	48	0	5	0	5	0	0	8	8	4	0	0	4
Future 2023 Traffic Volumes:	446	260	112	818	28	85	28	141	18	1647	183	1848	35	733	18	786

P.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				SR 6/US 278 (C.H.James Parkway) Eastbound				SR 6/US 278 (C.H.James Parkway) Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	265	168	66	499	27	282	20	329	8	788	410	1206	236	1653	35	1924
Auto Shop and Retail Trips:	3	3	3	9	0	2	0	2	0	0	3	3	2	0	0	2
Adjusted Existing 2021 Volumes:	316	201	81	598	32	335	24	391	9	930	487	1426	280	1951	41	2272
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	322	205	83	610	33	342	24	399	9	949	497	1455	286	1990	42	2318
Proposed Residential Trips:	15	10	8	33	0	15	0	15	0	0	22	22	12	0	0	12
Future 2023 Traffic Volumes:	337	215	91	643	33	357	24	414	9	949	519	1477	298	1990	42	2330

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

2. Brownsville Rd @ Oglesby Rd

A.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				Zaxby's Southern Driveway Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	2	676	101	779	10	263	0	273	1	0	0	1	23	0	3	26
Auto Shop and Retail Trips:	0	8	0	8	0	4	0	4	0	0	0	0	0	0	1	1
Adjusted Existing 2021 Volumes:	2	738	109	849	11	288	0	299	1	0	0	1	25	0	4	29
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	2	753	111	866	11	294	0	305	1	0	0	1	26	0	4	30
Proposed Residential Trips:	0	2	2	4	4	4	0	8	0	0	0	0	4	0	11	15
Future 2023 Traffic Volumes:	2	755	113	870	15	298	0	313	1	0	0	1	30	0	15	45

P.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				Zaxby's Southern Driveway Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	14	475	71	560	22	897	4	923	5	2	34	41	63	9	32	104
Auto Shop and Retail Trips:	0	10	0	10	1	12	0	13	0	0	0	0	0	0	1	1
Adjusted Existing 2021 Volumes:	17	571	84	672	27	1070	5	1102	6	2	40	48	74	11	39	124
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	17	582	86	685	28	1092	5	1125	6	2	41	49	75	11	40	126
Proposed Residential Trips:	0	5	5	10	11	3	0	14	0	0	0	0	3	0	7	10
Future 2023 Traffic Volumes:	17	587	91	695	39	1095	5	1139	6	2	41	49	78	11	47	136

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

3. Oglesby Rd @ Service Rd

A.M. Peak Hour

Condition	Private Driveway Northbound				Access Road Southbound				Oglesby Road Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	0	0	0	0	0	0	0	0	130	0	130	0	23	0	23
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Adjusted Existing 2021 Volumes:	0	0	0	0	0	0	0	0	0	140	0	140	0	26	0	26
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	0	0	0	0	0	0	0	0	143	0	143	0	27	0	27
Proposed Residential Trips:	0	0	0	0	3	0	2	5	1	14	0	15	0	5	1	6
Future 2023 Traffic Volumes:	0	0	0	0	3	0	2	5	1	157	0	158	0	32	1	33

P.M. Peak Hour

Condition	Private Driveway Northbound				Access Road Southbound				Oglesby Road Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	0	1	1	2	0	1	3	1	90	0	91	2	100	1	103
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
Adjusted Existing 2021 Volumes:	0	0	1	1	2	0	1	3	1	107	0	108	2	119	1	122
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	0	1	1	2	0	1	3	1	109	0	110	2	121	1	124
Proposed Residential Trips:	0	0	0	0	2	0	1	3	2	10	0	12	0	15	3	18
Future 2023 Traffic Volumes:	0	0	1	1	4	0	2	6	3	119	0	122	2	136	4	142

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

4. Brownsville Rd @ Drwy 1

A.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				- Eastbound				Site Driveway 1 Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	696	0	696	0	253	0	253	0	0	0	0	0	0	0	0
Auto Shop and Retail Trips:	0	8	0	8	0	4	0	4	0	0	0	0	0	0	0	0
Adjusted Existing 2021 Volumes:	0	760	0	760	0	277	0	277	0	0	0	0	0	0	0	0
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	775	0	775	0	283	0	283	0	0	0	0	0	0	0	0
Proposed Residential Trips:	0	11	2	13	13	4	0	17	0	0	0	0	4	0	37	41
Future 2023 Traffic Volumes:	0	786	2	788	13	287	0	300	0	0	0	0	4	0	37	41

P.M. Peak Hour

Condition	Brownsville Road Northbound				Brownsville Road Southbound				- Eastbound				Site Driveway 1 Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	499	0	499	0	928	0	928	0	0	0	0	0	0	0	0
Auto Shop and Retail Trips:	0	11	0	11	0	13	0	13	0	0	0	0	0	0	0	0
Adjusted Existing 2021 Volumes:	0	600	0	600	0	1108	0	1108	0	0	0	0	0	0	0	0
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	612	0	612	0	1130	0	1130	0	0	0	0	0	0	0	0
Proposed Residential Trips:	0	7	5	12	39	11	0	50	0	0	0	0	3	0	25	28
Future 2023 Traffic Volumes:	0	619	5	624	39	1141	0	1180	0	0	0	0	3	0	25	28

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

5. Oglesby Rd @ Drwy 2

A.M. Peak Hour

Condition	- Northbound				Site Driveway 2 Southbound				Oglesby Road Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	0	0	0	0	0	0	0	0	130	0	130	0	23	0	23
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Adjusted Existing 2021 Volumes:	0	0	0	0	0	0	0	0	0	140	0	140	0	26	0	26
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	0	0	0	0	0	0	0	0	143	0	143	0	27	0	27
Proposed Residential Trips:	0	0	0	0	14	0	14	28	5	1	0	6	0	2	5	7
Future 2023 Traffic Volumes:	0	0	0	0	14	0	14	28	5	144	0	149	0	29	5	34

P.M. Peak Hour

Condition	- Northbound				Site Driveway 2 Southbound				Oglesby Road Eastbound				Oglesby Road Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	0	0	0	0	0	0	0	0	91	0	91	0	101	0	101
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
Adjusted Existing 2021 Volumes:	0	0	0	0	0	0	0	0	0	108	0	108	0	120	0	120
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	0	0	0	0	0	0	0	0	110	0	110	0	122	0	122
Proposed Residential Trips:	0	0	0	0	10	0	9	19	14	2	0	16	0	1	15	16
Future 2023 Traffic Volumes:	0	0	0	0	10	0	9	19	14	112	0	126	0	123	15	138

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%

21-045 Residential Development at Brownsville Road and Oglesby Road

Traffic Volumes

A&R Engineering
April 2021

6. Service Rd @ Drwy 3

A.M. Peak Hour

Condition	Service Road Northbound				Service Road Southbound				Site Driveway 3 Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2021 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Residential Trips:	2	0	0	2	0	0	0	0	0	0	5	5	0	0	0	0
Future 2023 Traffic Volumes:	2	0	0	2	0	0	0	0	0	0	5	5	0	0	0	0

P.M. Peak Hour

Condition	Service Road Northbound				Service Road Southbound				Site Driveway 3 Eastbound				- Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2021 Counts during Covid-19:	0	2	0	2	0	3	0	3	0	0	0	0	0	0	0	0
Auto Shop and Retail Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2021 Volumes:	0	2	0	2	0	4	0	4	0	0	0	0	0	0	0	0
Growth Factor (%):	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
No-Build 2023 Volumes:	0	2	0	2	0	4	0	4	0	0	0	0	0	0	0	0
Proposed Residential Trips:	5	0	0	5	0	0	0	0	0	0	3	3	0	0	0	0
Future 2023 Traffic Volumes:	5	2	0	7	0	4	0	4	0	0	3	3	0	0	0	0

Number of Years =	2
Growth Factor (%) =	1
AM Covid-19 Factor =	8%
PM Covid-19 Factor =	18%