

Archibald Yell Boulevard Improvements

**Traffic Study
Addendum No. 1**

City of Fayetteville

Fayetteville, AR

Prepared by:



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Garver Project No.: 20T21030

Engineer's Certification

I hereby certify that this Traffic Study for the Archibald Yell Boulevard Improvements project was prepared by Garver under my direct supervision for City of Fayetteville.



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1.0 Introduction

Garver performed a traffic analysis to evaluate the proposed improvements for the intersections of Archibald Yell Boulevard/Martin Luther King, Jr. and Archibald Yell Boulevard/School Avenue as shown in **Figure 1**. Traffic analysis was conducted for the AM and PM peak hours for design years 2020 and 2040.

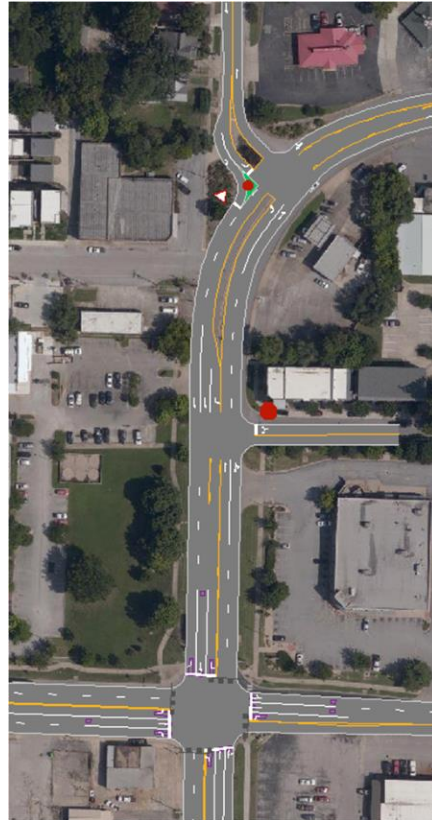


Figure 1: Proposed Improvements

2.0 Summary of Findings

The results of the two study intersections based on *HCM* methodology and *SimTraffic* methodology are summarized in **Tables 1 to 4**. The complete results are provided in **Appendix A - Operational Analysis Results**.

For design year 2020, the results show LOS D or better for all movements with the exception of the eastbound left-turn movement at School Avenue which shows LOS E and LOS F in the PM peak hour

according to the *HCM* methodology and *SimTraffic* methodology, respectively. It should be noted that low volumes are projected for the eastbound left-turn movement at School Avenue.

The *SimTraffic* results show extensive queueing at the eastbound and southbound approaches at the Martin Luther King, Jr. Boulevard intersection in the PM peak hour. The queueing along the southbound through lane, approximately 300 feet (95th percentile), extends past W 5th Street.

Table 1: 2020 Build Conditions – HCM Results

Intersection	Time Period	Control	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Archibald Yell Boulevard at MLK Boulevard	AM	Signal	LOS	C	B	A	C	D	C	C	C	C	C	C	C	C
			Delay	27.7	15.5	7.4	22.9	36.9	33.5	32.2	29.7	31.5	33.6	29.7		
	PM		LOS	D	D	C	D	D	C	C	B	D	D	D		
			Delay	45.5	41.4	27.7	36.0	53.7	29.8	23.2	18.0	41.3	39.0	38.3		
Archibald Yell Boulevard at School Avenue	AM	One-Way Stop	LOS	n/a ²		B			A	n/a ¹			n/a ¹	n/a		
			Delay			13.2		9.7								
	PM		LOS	E		D		B	n/a ¹		n/a ¹					
			Delay	37.3		34.0		12.2								

n/a
n/a¹ – Free-flow movement
n/a² – No volume modeled making this movement

Table 2: 2020 Build Conditions – SimTraffic Results

Intersection	Time Period	Control	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Archibald Yell Boulevard at MLK Boulevard	AM	Signal	LOS	C	B	A	B	C	B	C	C	C	D	C	A	C
			Delay	22.9	10.7	2.6	14.3	26.3	16.0	32.4	27.9	24.9	38.7	23.0	7.6	20.7
	PM		LOS	D	C	A	C	D	C	C	C	C	C	C	A	C
			Delay	36.5	33.5	5.0	27.7	40.9	20.5	30.9	21.3	20.5	26.9	28.5	7.9	26.2
Archibald Yell Boulevard at School Avenue	AM	One-Way Stop	LOS	n/a ²		A			A	A			A	A	A	
			Delay			1.2		4.7	0.7			0.6	0.1	1.2		
	PM		LOS	F		A		C	A			A	A	A		
			Delay	167.9		1.2		19.1	0.7			1.8	0.5	2.9		

n/a
n/a¹ – Free-flow movement
n/a² – No volume modeled making this movement

For design year 2040, the results show failing LOS E/F for the majority of movements at Martin Luther King, Jr. Boulevard during both peak hours. At the South Avenue intersection, all movements are LOS B or better in the AM peak hour. In the PM peak hour, the eastbound movements are LOS F according to the HCM methodology, and the eastbound and northbound left-turn movements are LOS F according to the *SimTraffic* methodology.

The *SimTraffic* simulation show queueing to worsen by 2040 at the Martin Luther King, Jr. Boulevard intersection for both peak hours. The queueing along the southbound right-turn lane extend to the School Avenue intersection and the southbound through lane extend past School Avenue in the PM peak hour. At the School Avenue intersection, the simulation shows merging issues for vehicles from School Avenue

needing to head south at Martin Luther King, Jr. Boulevard due to the lengthy queue on the southbound through lane.

Table 3: 2040 Build Conditions – HCM Results

Intersection	Time Period	Control	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Archibald Yell Boulevard at MLK Boulevard	AM	Signal	LOS	F	B	B	D	F	F	F	E	D	F	F	F	F
			Delay	106.0	15.1	13.0	36.2	88.3	107.3	69.0	42.1	104.6	316.3	105.4		
	PM		LOS	F	F	D	D	F	F	C	C	F	F	F		
			Delay	177.2	105.4	35.9	44.5	116.9	198.1	32.1	22.8	120.2	97.6	103.5		
Archibald Yell Boulevard at School Avenue	AM	One-Way Stop	LOS	n/a ²		C		B	n/a ¹			n/a ¹	n/a			
			Delay			17.7		12.1								
	PM		LOS	F		F		C	n/a ¹			n/a ¹	n/a			
			Delay	474.3		233.7		19.1								

n/a
n/a¹ – Free-flow movement
n/a² – No volume modeled making this movement

Table 4: 2040 Build Conditions – SimTraffic Results

Intersection	Time Period	Control	MOE	EB Movement			WB Movement			NB Movement			SB Movement			Overall
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Archibald Yell Boulevard at MLK Boulevard	AM	Signal	LOS	F	E	D	D	E	D	D	E	E	D	E	B	E
			Delay	107.7	62.2	41.3	53.2	56.9	48.3	43.1	62.6	65.0	48.4	63.6	16.0	60.6
	PM		LOS	F	F	F	F	F	F	F	E	E	D	D	B	F
			Delay	486.6	432.8	365.9	80.6	139.9	127.6	331.2	58.5	55.5	43.6	39.7	15.5	214.3
Archibald Yell Boulevard at School Avenue	AM	One-Way Stop	LOS	n/a ²		A		B	A			A	A	A		
			Delay			0.9		12.2	1.2			1.5	0.6	2.7		
	PM		LOS	F		A		F	A			B	A	B		
			Delay	327.4		4.7		68.3	1.1			11.9	8.7	12.2		

n/a
n/a¹ – Free-flow movement
n/a² – No volume modeled making this movement

APPENDIX A

Operational Analysis Results

HCM 6th Signalized Intersection Summary
 23: Archibald Yell Blvd & MLK Blvd.

08/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	269	118	14	546	69	91	404	12	24	219	299
Future Volume (veh/h)	376	269	118	14	546	69	91	404	12	24	219	299
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	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	437	313	137	16	635	80	106	470	14	28	255	348
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	788	668	350	752	95	266	853	25	280	463	392
Arrive On Green	0.21	0.46	0.46	0.01	0.26	0.26	0.04	0.26	0.26	0.04	0.27	0.27
Sat Flow, veh/h	1641	1723	1460	1641	2925	368	1641	3245	97	1641	1723	1460
Grp Volume(v), veh/h	437	313	137	16	355	360	106	237	247	28	255	348
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1641	1637	1656	1641	1637	1705	1641	1723	1460
Q Serve(g_s), s	15.8	10.3	3.5	0.6	17.6	17.7	0.0	10.7	10.7	0.0	10.9	10.9
Cycle Q Clear(g_c), s	15.8	10.3	3.5	0.6	17.6	17.7	0.0	10.7	10.7	0.0	10.9	10.9
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	474	788	668	350	421	426	266	430	448	280	463	392
V/C Ratio(X)	0.92	0.40	0.21	0.05	0.84	0.85	0.40	0.55	0.55	0.10	0.55	0.89
Avail Cap(c_a), veh/h	726	1077	913	470	564	571	339	430	448	354	463	392
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	1.00
Uniform Delay (d), s/veh	18.2	15.4	7.4	22.9	30.1	30.2	33.1	27.2	27.2	29.6	26.8	9.2
Incr Delay (d2), s/veh	9.5	0.1	0.1	0.0	6.7	6.7	0.4	5.0	4.8	0.1	4.7	24.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.1	7.1	2.7	0.4	12.1	12.3	3.6	8.1	8.4	0.9	8.5	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	15.5	7.4	22.9	36.8	36.9	33.5	32.2	32.0	29.7	31.5	33.6
LnGrp LOS	C	B	A	C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		887			731			590			631	
Approach Delay, s/veh		20.2			36.6			32.3			32.6	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	28.0	22.9	26.5	8.2	28.0	5.8	43.6				
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	23.0	31.5	29.5	7.5	22.5	7.5	53.5				
Max Q Clear Time (g_c+I1), s	2.0	12.9	17.8	19.7	2.0	12.7	2.6	12.3				
Green Ext Time (p_c), s	0.1	1.6	0.6	2.4	0.0	1.6	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay				29.7								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	1.8					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	0	63	198	770	498	6
Future Vol, veh/h	0	63	198	770	498	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	73	230	895	579	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1938	583	586	0	-	0
Stage 1	583	-	-	-	-	-
Stage 2	1355	-	-	-	-	-
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	72	512	989	-	-	-
Stage 1	558	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	55	512	989	-	-	-
Mov Cap-2 Maneuver	3	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	240	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	13.2	2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	989	-	-	512	-	-
HCM Lane V/C Ratio	0.233	-	-	0.143	-	-
HCM Control Delay (s)	9.7	-	0	13.2	-	-
HCM Lane LOS	A	-	A	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-	0.5	-	-

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:25	7:25	7:25	7:25	7:25	7:25
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	3345	3411	3431	3430	3499	3420
Vehs Exited	3342	3431	3441	3451	3499	3432
Starting Vehs	78	79	84	91	74	78
Ending Vehs	81	59	74	70	74	66
Denied Entry Before	0	0	3	1	0	0
Denied Entry After	1	0	1	0	1	0
Travel Distance (mi)	1448	1558	1533	1534	1572	1529
Travel Time (hr)	72.7	77.1	78.2	78.4	79.2	77.1
Total Delay (hr)	24.1	25.4	27.0	27.2	26.7	26.1
Total Stops	2956	2947	3053	3108	3095	3028
Fuel Used (gal)	57.9	62.0	61.1	62.0	63.3	61.3

Interval #0 Information Seeding

Start Time	7:25
End Time	7:30
Total Time (min)	5
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	767	835	777	821	779	791
Vehs Exited	779	850	803	830	779	808
Starting Vehs	78	79	84	91	74	78
Ending Vehs	66	64	58	82	74	64
Denied Entry Before	0	0	3	1	0	0
Denied Entry After	1	1	1	2	0	1
Travel Distance (mi)	344	395	352	364	360	363
Travel Time (hr)	16.8	19.4	16.8	18.3	17.0	17.7
Total Delay (hr)	5.3	6.3	5.0	6.1	5.0	5.6
Total Stops	664	744	671	726	667	695
Fuel Used (gal)	13.7	15.8	13.7	14.7	14.0	14.4

Interval #2 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1022	950	1014	1009	1004	998
Vehs Exited	975	910	943	979	978	956
Starting Vehs	66	64	58	82	74	64
Ending Vehs	113	104	129	112	100	104
Denied Entry Before	1	1	1	2	0	1
Denied Entry After	1	1	1	2	0	1
Travel Distance (mi)	419	425	431	444	429	430
Travel Time (hr)	22.6	22.1	23.5	24.8	23.1	23.2
Total Delay (hr)	8.5	8.0	9.2	10.0	8.7	8.9
Total Stops	932	823	926	989	925	921
Fuel Used (gal)	17.1	17.3	17.6	18.4	17.9	17.7

Interval #3 Information Recording

Start Time	8:00
End Time	8:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	769	815	819	839	878	826
Vehs Exited	827	857	874	848	899	857
Starting Vehs	113	104	129	112	100	104
Ending Vehs	55	62	74	103	79	73
Denied Entry Before	1	1	1	2	0	1
Denied Entry After	0	0	0	1	2	1
Travel Distance (mi)	346	382	382	370	408	378
Travel Time (hr)	17.1	18.4	19.8	18.4	20.3	18.8
Total Delay (hr)	5.5	5.7	7.1	6.0	6.7	6.2
Total Stops	680	712	741	700	781	722
Fuel Used (gal)	13.8	15.1	15.3	14.9	16.4	15.1

Interval #4 Information Recording

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	787	811	821	761	838	805
Vehs Exited	761	814	821	794	843	804
Starting Vehs	55	62	74	103	79	73
Ending Vehs	81	59	74	70	74	66
Denied Entry Before	0	0	0	1	2	1
Denied Entry After	1	0	1	0	1	0
Travel Distance (mi)	339	357	368	356	375	359
Travel Time (hr)	16.2	17.2	18.1	17.0	18.8	17.5
Total Delay (hr)	4.9	5.3	5.7	5.1	6.2	5.5
Total Stops	680	668	715	693	722	697
Fuel Used (gal)	13.3	13.9	14.6	14.0	15.0	14.2

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.3	1.2	0.6	0.0	0.0	0.0	3.2	0.3	0.5	0.0	0.0	0.0
Total Delay (hr)	2.4	0.8	0.1	0.1	4.1	0.3	0.8	3.3	0.1	0.2	1.4	0.7
Total Del/Veh (s)	22.9	10.7	2.6	14.3	26.3	16.0	32.4	27.9	24.9	38.7	23.0	7.6
Stop Delay (hr)	2.0	0.6	0.1	0.0	3.5	0.2	0.7	2.5	0.1	0.2	1.1	0.5
Stop Del/Veh (s)	19.1	8.2	2.1	12.2	22.6	14.4	29.3	21.7	21.3	36.3	19.0	6.2
Total Stops	313	118	49	10	425	41	75	296	8	21	137	207
Stop/Veh	0.81	0.44	0.43	0.77	0.76	0.72	0.82	0.70	0.80	0.95	0.64	0.67
Travel Dist (mi)	38.7	27.3	11.6	0.8	37.7	3.9	13.1	60.5	1.5	1.3	12.6	18.2
Travel Time (hr)	4.4	2.0	0.6	0.1	5.6	0.4	1.3	5.0	0.1	0.3	1.7	1.5
Avg Speed (mph)	9	14	19	10	7	9	10	12	12	5	7	12
Vehicles Entered	381	269	114	12	551	57	91	416	10	22	211	305
Vehicles Exited	382	269	114	12	557	57	90	416	10	22	210	306
Hourly Exit Rate	382	269	114	12	557	57	90	416	10	22	210	306
Input Volume	376	269	118	14	546	69	91	404	12	24	220	299
% of Volume	102	100	96	87	102	83	99	103	85	91	95	102
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	4	2	1	0	6	0	1	5	0	0	2	1

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	0.8
Total Delay (hr)	14.1
Total Del/Veh (s)	20.7
Stop Delay (hr)	11.7
Stop Del/Veh (s)	17.2
Total Stops	1700
Stop/Veh	0.69
Travel Dist (mi)	227.2
Travel Time (hr)	23.2
Avg Speed (mph)	10
Vehicles Entered	2439
Vehicles Exited	2445
Hourly Exit Rate	2445
Input Volume	2442
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	256
Occupancy (veh)	23

27: Archibald Yell Blvd & School Ave Performance by movement

Movement	SER	NEL	NET	SWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.3	0.2	0.1	0.0	0.5
Total Del/Veh (s)	1.2	4.7	0.7	0.6	0.1	1.2
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.2
Stop Del/Veh (s)	0.1	2.4	0.1	0.0	0.0	0.4
Total Stops	16	87	0	0	0	103
Stop/Veh	0.27	0.45	0.00	0.00	0.00	0.07
Travel Dist (mi)	1.8	11.4	45.7	28.4	0.4	87.7
Travel Time (hr)	0.1	0.7	1.6	0.9	0.0	3.4
Avg Speed (mph)	16	16	29	30	22	26
Vehicles Entered	60	193	766	493	7	1519
Vehicles Exited	59	193	767	494	7	1520
Hourly Exit Rate	59	193	767	494	7	1520
Input Volume	63	198	770	498	6	1535
% of Volume	93	98	100	99	112	99
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						368
Occupancy (veh)	0	1	2	1	0	3

Total Zone Performance

Denied Delay (hr)	0.6
Denied Del/Veh (s)	1.6
Total Delay (hr)	14.6
Total Del/Veh (s)	2927.8
Stop Delay (hr)	11.9
Stop Del/Veh (s)	2378.3
Total Stops	1803
Stop/Veh	100.17
Travel Dist (mi)	314.9
Travel Time (hr)	26.6
Avg Speed (mph)	12
Vehicles Entered	1282
Vehicles Exited	1
Hourly Exit Rate	1
Input Volume	3977
% of Volume	0
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	271
Occupancy (veh)	26

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	316	254	76	82	310	253	140	226	266	83	201	152
Average Queue (ft)	157	84	28	12	174	136	54	73	128	20	90	76
95th Queue (ft)	261	183	60	54	258	217	109	165	216	60	160	128
Link Distance (ft)		534	534		306	306		758	758		259	259
Upstream Blk Time (%)					0	0						0
Queuing Penalty (veh)					0	0						0
Storage Bay Dist (ft)	300			115			300			100		
Storage Blk Time (%)	1				27			0				8
Queuing Penalty (veh)	2				4			0				2

Intersection: 27: Archibald Yell Blvd & School Ave

Movement	SE	SE	NE	NE
Directions Served	L	R	L	T
Maximum Queue (ft)	44	63	106	6
Average Queue (ft)	3	20	43	0
95th Queue (ft)	24	63	80	5
Link Distance (ft)	122		256	256
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Zone Summary

Zone wide Queuing Penalty: 8

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Maximum Green (s)	7.5	23.0	31.5	29.5	7.5	22.5	7.5	53.5
Minimum Green (s)	4.0	12.0	4.0	4.0	4.0	12.0	4.0	4.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	5.8	24.4	17.5	22.6	5.4	24.7	6.8	42.9
g/C Ratio	-0.01	NA	-0.01	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	73	0	2	0	83	0	85	0
Cycles @ Minimum (%)	2	0	0	0	3	0	0	0
Cycles Maxed Out (%)	2	100	9	23	0	100	0	19
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

HCM 6th Signalized Intersection Summary
 23: Archibald Yell Blvd & MLK Blvd.

08/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	364	443	206	48	342	51	150	352	32	106	506	402
Future Volume (veh/h)	364	443	206	48	342	51	150	352	32	106	506	402
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	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	396	482	224	52	372	55	163	383	35	115	550	437
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	575	487	183	446	65	239	1197	109	463	658	558
Arrive On Green	0.21	0.33	0.33	0.04	0.16	0.16	0.07	0.39	0.39	0.06	0.38	0.38
Sat Flow, veh/h	1641	1723	1460	1641	2864	420	1641	3034	276	1641	1723	1460
Grp Volume(v), veh/h	396	482	224	52	211	216	163	206	212	115	550	437
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1641	1637	1647	1641	1637	1673	1641	1723	1460
Q Serve(g_s), s	20.4	27.1	12.6	2.8	13.1	13.3	6.3	9.1	9.2	4.4	30.3	27.6
Cycle Q Clear(g_c), s	20.4	27.1	12.6	2.8	13.1	13.3	6.3	9.1	9.2	4.4	30.3	27.6
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	447	575	487	183	255	256	239	646	660	463	658	558
V/C Ratio(X)	0.89	0.84	0.46	0.28	0.83	0.84	0.68	0.32	0.32	0.25	0.84	0.78
Avail Cap(c_a), veh/h	449	601	509	242	336	338	239	646	660	483	658	558
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	1.00
Uniform Delay (d), s/veh	27.3	32.2	27.4	35.7	42.8	42.9	23.4	21.9	22.0	17.9	29.3	28.5
Incr Delay (d2), s/veh	18.2	9.2	0.3	0.3	9.7	10.8	6.4	1.3	1.3	0.1	11.9	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.3	18.5	7.9	2.0	10.0	10.3	4.9	6.6	6.8	2.9	20.4	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	41.4	27.7	36.0	52.5	53.7	29.8	23.2	23.2	18.0	41.3	39.0
LnGrp LOS	D	D	C	D	D	D	C	C	C	B	D	D
Approach Vol, veh/h		1102			479			581			1102	
Approach Delay, s/veh		40.1			51.3			25.1			38.0	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	45.0	26.9	20.8	10.7	46.3	8.2	39.4				
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5				
Max Green Setting (Gmax), s	7.5	40.0	22.5	21.5	7.5	40.0	7.5	36.5				
Max Q Clear Time (g_c+I1), s	8.3	32.3	22.4	15.3	6.4	11.2	4.8	29.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	1.0	0.0	2.0	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay											38.3	
HCM 6th LOS											D	

Intersection						
Int Delay, s/veh	3.3					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	5	137	136	697	982	8
Future Vol, veh/h	5	137	136	697	982	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	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	149	148	758	1067	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2126	1072	1076	0	-	0
Stage 1	1072	-	-	-	-	-
Stage 2	1054	-	-	-	-	-
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	55	268	648	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	42	268	648	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	254	-	-	-	-	-
Stage 2	335	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	34.1	2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	648	-	117	268	-	-
HCM Lane V/C Ratio	0.228	-	0.046	0.556	-	-
HCM Control Delay (s)	12.2	-	37.3	34	-	-
HCM Lane LOS	B	-	E	D	-	-
HCM 95th %tile Q(veh)	0.9	-	0.1	3.1	-	-

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:25	7:25	7:25	7:25	7:25	7:25
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	3920	4111	4051	4013	4021	4022
Vehs Exited	3939	4122	4028	3985	4021	4017
Starting Vehs	100	104	102	103	94	96
Ending Vehs	81	93	125	131	94	103
Denied Entry Before	0	3	5	1	0	2
Denied Entry After	1	0	1	3	0	1
Travel Distance (mi)	1795	1880	1814	1793	1830	1822
Travel Time (hr)	97.6	109.7	105.7	103.6	105.8	104.5
Total Delay (hr)	37.5	47.0	45.2	43.7	44.7	43.6
Total Stops	3907	4291	4351	4305	4175	4202
Fuel Used (gal)	74.4	80.7	77.3	76.6	77.4	77.3

Interval #0 Information Seeding

Start Time	7:25
End Time	7:30
Total Time (min)	5
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	920	1001	984	926	924	947
Vehs Exited	940	991	974	926	926	951
Starting Vehs	100	104	102	103	94	96
Ending Vehs	80	114	112	103	92	94
Denied Entry Before	0	3	5	1	0	2
Denied Entry After	0	1	1	0	0	0
Travel Distance (mi)	428	453	443	412	424	432
Travel Time (hr)	22.4	25.0	24.4	22.1	22.3	23.3
Total Delay (hr)	8.1	9.8	9.6	8.3	8.2	8.8
Total Stops	861	999	1006	911	861	928
Fuel Used (gal)	17.3	19.1	18.4	17.1	17.2	17.8

Interval #2 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1071	1094	1097	1102	1126	1093
Vehs Exited	1050	1076	1099	1090	1089	1077
Starting Vehs	80	114	112	103	92	94
Ending Vehs	101	132	110	115	129	116
Denied Entry Before	0	1	1	0	0	0
Denied Entry After	0	1	0	3	0	1
Travel Distance (mi)	457	498	482	489	496	485
Travel Time (hr)	25.1	31.4	30.1	29.5	32.4	29.7
Total Delay (hr)	9.8	14.9	14.0	13.1	15.8	13.5
Total Stops	1063	1193	1235	1209	1326	1203
Fuel Used (gal)	19.2	22.0	21.3	21.3	22.0	21.2

Interval #3 Information Recording

Start Time	8:00
End Time	8:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	971	993	980	941	991	976
Vehs Exited	955	1027	1005	945	1010	988
Starting Vehs	101	132	110	115	129	116
Ending Vehs	117	98	85	111	110	99
Denied Entry Before	0	1	0	3	0	1
Denied Entry After	2	0	1	1	2	1
Travel Distance (mi)	445	469	444	425	457	448
Travel Time (hr)	24.1	27.6	26.0	23.2	26.0	25.4
Total Delay (hr)	9.1	12.0	11.2	9.0	10.7	10.4
Total Stops	955	1063	1110	943	1015	1017
Fuel Used (gal)	18.5	20.2	18.9	17.7	19.5	18.9

Interval #4 Information Recording

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	958	1023	990	1044	980	996
Vehs Exited	994	1028	950	1024	996	997
Starting Vehs	117	98	85	111	110	99
Ending Vehs	81	93	125	131	94	103
Denied Entry Before	2	0	1	1	2	1
Denied Entry After	1	0	1	3	0	1
Travel Distance (mi)	464	460	445	467	452	458
Travel Time (hr)	26.0	25.7	25.1	28.8	25.1	26.1
Total Delay (hr)	10.6	10.3	10.4	13.3	10.0	10.9
Total Stops	1028	1036	1000	1242	973	1051
Fuel Used (gal)	19.4	19.5	18.8	20.6	18.7	19.4

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.3	1.5	0.8	0.0	0.0	0.0	3.2	0.3	0.3	0.0	0.0	0.0
Total Delay (hr)	3.5	4.3	0.3	0.3	3.8	0.3	1.3	2.1	0.2	0.8	4.1	0.9
Total Del/Veh (s)	36.5	33.5	5.0	27.7	40.9	20.5	30.9	21.3	20.5	26.9	28.5	7.9
Stop Delay (hr)	3.0	3.6	0.2	0.3	3.5	0.3	1.1	1.6	0.2	0.7	3.2	0.7
Stop Del/Veh (s)	31.8	27.7	4.0	25.5	37.5	19.2	27.9	16.3	17.5	22.4	22.4	6.2
Total Stops	327	364	121	39	301	47	131	198	24	96	316	251
Stop/Veh	0.95	0.78	0.60	0.93	0.89	0.81	0.90	0.55	0.71	0.91	0.61	0.61
Travel Dist (mi)	34.7	46.6	20.3	2.9	22.9	3.9	20.6	51.1	4.9	6.2	30.4	24.3
Travel Time (hr)	5.3	6.4	1.3	0.4	4.8	0.5	2.1	3.6	0.4	1.0	5.0	2.0
Avg Speed (mph)	7	8	17	6	5	8	11	14	13	6	6	12
Vehicles Entered	343	459	200	42	336	58	142	352	34	103	510	408
Vehicles Exited	339	456	200	42	334	57	144	352	34	104	510	409
Hourly Exit Rate	339	456	200	42	334	57	144	352	34	104	510	409
Input Volume	364	443	206	48	342	51	150	352	32	106	508	402
% of Volume	93	103	97	87	98	111	96	100	106	98	100	102
Denied Entry Before	0	1	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	1	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	5	6	1	0	5	1	2	4	0	1	5	2

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	All
Denied Delay (hr)	0.7
Denied Del/Veh (s)	0.9
Total Delay (hr)	21.9
Total Del/Veh (s)	26.2
Stop Delay (hr)	18.4
Stop Del/Veh (s)	22.0
Total Stops	2215
Stop/Veh	0.73
Travel Dist (mi)	268.8
Travel Time (hr)	32.7
Avg Speed (mph)	8
Vehicles Entered	2987
Vehicles Exited	2981
Hourly Exit Rate	2981
Input Volume	3004
% of Volume	99
Denied Entry Before	1
Denied Entry After	1
Density (ft/veh)	181
Occupancy (veh)	32

27: Archibald Yell Blvd & School Ave Performance by movement

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.7	0.1	0.5	0.0	1.6
Total Del/Veh (s)	167.9	1.2	19.1	0.7	1.8	0.5	2.9
Stop Delay (hr)	0.2	0.0	0.6	0.0	0.1	0.0	0.9
Stop Del/Veh (s)	166.4	0.1	17.0	0.1	0.3	0.1	1.6
Total Stops	4	25	110	0	9	0	148
Stop/Veh	1.00	0.18	0.85	0.00	0.01	0.00	0.08
Travel Dist (mi)	0.1	4.1	7.6	40.7	56.3	0.5	109.3
Travel Time (hr)	0.2	0.3	1.0	1.4	2.3	0.0	5.2
Avg Speed (mph)	1	16	8	30	24	20	21
Vehicles Entered	4	139	129	685	986	8	1951
Vehicles Exited	4	138	129	685	986	8	1950
Hourly Exit Rate	4	138	129	685	986	8	1950
Input Volume	5	137	136	698	983	8	1967
% of Volume	80	101	95	98	100	97	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							237
Occupancy (veh)	0	0	1	1	2	0	5

Total Zone Performance

Denied Delay (hr)	0.7
Denied Del/Veh (s)	1.7
Total Delay (hr)	23.5
Total Del/Veh (s)	2011.7
Stop Delay (hr)	19.3
Stop Del/Veh (s)	1656.6
Total Stops	2363
Stop/Veh	56.26
Travel Dist (mi)	378.1
Travel Time (hr)	37.9
Avg Speed (mph)	10
Vehicles Entered	1532
Vehicles Exited	3
Hourly Exit Rate	3
Input Volume	4971
% of Volume	0
Denied Entry Before	1
Denied Entry After	1
Density (ft/veh)	189
Occupancy (veh)	37

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	TR	L	T	TR	L	T	R
Maximum Queue (ft)	374	478	184	87	244	204	151	186	210	200	276	207
Average Queue (ft)	194	245	54	31	149	118	70	53	116	88	224	89
95th Queue (ft)	324	405	128	69	214	185	126	132	195	202	311	154
Link Distance (ft)		534	534		306	306		758	758		259	259
Upstream Blk Time (%)		1	0		0						8	0
Queuing Penalty (veh)		0	0		0						40	0
Storage Bay Dist (ft)	300			115			300			100		
Storage Blk Time (%)	2	5		0	26					1	38	
Queuing Penalty (veh)	7	19		0	13					7	41	

Intersection: 27: Archibald Yell Blvd & School Ave

Movement	SE	SE	NE	SW
Directions Served	L	R	L	TR
Maximum Queue (ft)	49	67	131	99
Average Queue (ft)	8	16	57	7
95th Queue (ft)	31	59	107	61
Link Distance (ft)	119		258	246
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	3	0		
Queuing Penalty (veh)	4	0		

Zone Summary

Zone wide Queuing Penalty: 132

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Maximum Green (s)	7.5	40.0	22.5	21.5	7.5	40.0	7.5	36.5
Minimum Green (s)	4.0	12.0	4.0	4.0	4.0	12.0	4.0	4.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	7.0	41.0	19.8	20.5	6.9	42.9	6.2	39.1
g/C Ratio	-0.01	NA	NA	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	6	0	0	0	19	0	47	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0	0
Cycles Maxed Out (%)	66	100	52	50	53	100	16	78
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

HCM 6th Signalized Intersection Summary
 23: Archibald Yell Blvd & MLK Blvd.

08/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	516	369	162	19	751	94	125	555	17	33	301	411
Future Volume (veh/h)	516	369	162	19	751	94	125	555	17	33	301	411
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	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	600	429	188	22	873	109	145	645	20	38	350	478
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	554	1005	851	169	867	108	150	753	23	129	345	292
Arrive On Green	0.30	0.58	0.58	0.02	0.30	0.30	0.06	0.23	0.23	0.03	0.20	0.20
Sat Flow, veh/h	1641	1723	1460	1641	2928	366	1641	3241	100	1641	1723	1460
Grp Volume(v), veh/h	600	429	188	22	488	494	145	326	339	38	350	478
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1641	1637	1657	1641	1637	1705	1641	1723	1460
Q Serve(g_s), s	39.5	18.0	8.0	1.3	38.5	38.5	7.5	24.8	24.8	2.4	26.0	13.8
Cycle Q Clear(g_c), s	39.5	18.0	8.0	1.3	38.5	38.5	7.5	24.8	24.8	2.4	26.0	13.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	554	1005	851	169	485	491	150	380	396	129	345	292
V/C Ratio(X)	1.08	0.43	0.22	0.13	1.01	1.01	0.97	0.86	0.86	0.29	1.02	1.64
Avail Cap(c_a), veh/h	554	1005	851	248	485	491	150	380	396	182	345	292
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	1.00
Uniform Delay (d), s/veh	43.3	15.0	13.0	36.0	45.8	45.8	44.5	47.8	47.8	41.7	52.0	14.5
Incr Delay (d2), s/veh	62.7	0.1	0.0	0.1	42.6	42.3	62.8	21.2	20.6	0.5	52.6	301.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	36.7	11.5	4.8	1.0	29.1	29.4	7.2	18.0	18.5	1.8	22.9	46.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.0	15.1	13.0	36.2	88.3	88.1	107.3	69.0	68.4	42.1	104.6	316.3
LnGrp LOS	F	B	B	D	F	F	F	E	E	D	F	F
Approach Vol, veh/h		1217			1004			810			866	
Approach Delay, s/veh		59.6			87.1			75.6			218.7	
Approach LOS		E			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	31.0	44.0	43.0	7.8	35.2	6.7	80.3				
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5				
Max Green Setting (Gmax), s	7.5	26.0	39.5	38.5	7.5	26.0	8.5	69.5				
Max Q Clear Time (g_c+I1), s	9.5	28.0	41.5	40.5	4.4	26.8	3.3	20.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3				

Intersection Summary

HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	2.3					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	0	87	272	1058	684	8
Future Vol, veh/h	0	87	272	1058	684	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	101	316	1230	795	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	2662	800	804	0	0
Stage 1	800	-	-	-	-
Stage 2	1862	-	-	-	-
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	25	385	820	-	-
Stage 1	442	-	-	-	-
Stage 2	135	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	15	385	820	-	-
Mov Cap-2 Maneuver ~ -741				-	-
Stage 1	272	-	-	-	-
Stage 2	135	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	17.7	2.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	820	-	-	385	-	-
HCM Lane V/C Ratio	0.386	-	-	0.263	-	-
HCM Control Delay (s)	12.1	-	0	17.7	-	-
HCM Lane LOS	B	-	A	C	-	-
HCM 95th %tile Q(veh)	1.8	-	-	1	-	-

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

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:25	7:25	7:25	7:25	7:25	7:25
End Time	8:30	8:30	8:30	8:30	8:30	8:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	4618	4789	4623	4611	4717	4672
Vehs Exited	4581	4759	4602	4544	4665	4630
Starting Vehs	111	125	134	117	116	116
Ending Vehs	148	155	155	184	168	153
Denied Entry Before	0	2	2	2	0	0
Denied Entry After	1	0	3	1	9	3
Travel Distance (mi)	2045	2117	2051	2078	2096	2077
Travel Time (hr)	140.8	186.5	153.1	193.3	204.2	175.6
Total Delay (hr)	72.7	115.8	84.9	124.2	134.4	106.4
Total Stops	5022	5753	5413	5817	5890	5580
Fuel Used (gal)	92.2	106.1	95.9	106.1	108.9	101.9

Interval #0 Information Seeding

Start Time	7:25
End Time	7:30
Total Time (min)	5
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1068	1161	1092	1069	1070	1088
Vehs Exited	1053	1153	1097	1053	1058	1081
Starting Vehs	111	125	134	117	116	116
Ending Vehs	126	133	129	133	128	124
Denied Entry Before	0	2	2	2	0	0
Denied Entry After	0	3	1	0	1	1
Travel Distance (mi)	487	511	509	470	483	492
Travel Time (hr)	29.7	34.1	32.9	27.9	27.5	30.4
Total Delay (hr)	13.6	17.1	16.1	12.2	11.4	14.1
Total Stops	1032	1267	1214	1084	1049	1125
Fuel Used (gal)	20.8	22.7	22.6	20.0	19.9	21.2

Interval #2 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15
Volumes adjusted by PHF, Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1376	1325	1316	1247	1334	1317
Vehs Exited	1281	1223	1217	1186	1209	1220
Starting Vehs	126	133	129	133	128	124
Ending Vehs	221	235	228	194	253	223
Denied Entry Before	0	3	1	0	1	1
Denied Entry After	7	53	13	65	88	45
Travel Distance (mi)	564	555	542	539	548	549
Travel Time (hr)	43.4	54.3	42.0	52.5	64.6	51.4
Total Delay (hr)	24.6	35.9	23.9	34.4	46.4	33.0
Total Stops	1602	1714	1577	1620	1756	1651
Fuel Used (gal)	26.7	29.2	25.8	28.2	31.4	28.2

Interval #3 Information Recording

Start Time	8:00
End Time	8:15
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1046	1140	1079	1101	1162	1105
Vehs Exited	1162	1208	1175	1133	1216	1177
Starting Vehs	221	235	228	194	253	223
Ending Vehs	105	167	132	162	199	148
Denied Entry Before	7	53	13	65	88	45
Denied Entry After	0	38	2	79	50	34
Travel Distance (mi)	491	529	512	524	556	523
Travel Time (hr)	35.3	58.0	43.6	59.3	64.3	52.1
Total Delay (hr)	18.8	40.2	26.6	42.0	45.9	34.7
Total Stops	1172	1494	1399	1584	1645	1459
Fuel Used (gal)	22.7	29.4	25.5	29.4	31.4	27.7

Interval #4 Information Recording

Start Time	8:15
End Time	8:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1128	1163	1136	1194	1151	1152
Vehs Exited	1085	1175	1113	1172	1182	1143
Starting Vehs	105	167	132	162	199	148
Ending Vehs	148	155	155	184	168	153
Denied Entry Before	0	38	2	79	50	34
Denied Entry After	1	0	3	1	9	3
Travel Distance (mi)	503	522	487	545	509	513
Travel Time (hr)	32.4	40.0	34.6	53.6	47.8	41.7
Total Delay (hr)	15.7	22.6	18.2	35.5	30.8	24.6
Total Stops	1216	1278	1223	1529	1440	1335
Fuel Used (gal)	22.1	24.7	22.0	28.5	26.3	24.7

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	5.3	3.6	1.6	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	36.5	34.5	35.8	0.0	0.0	0.0	3.0	0.4	0.4	0.0	0.0	0.0
Total Delay (hr)	10.3	2.9	0.2	0.3	12.1	1.3	1.6	9.9	0.3	0.4	5.2	1.8
Total Del/Veh (s)	71.2	27.7	5.5	53.2	56.9	48.3	43.1	62.6	65.0	48.4	63.6	16.0
Stop Delay (hr)	9.0	2.3	0.2	0.2	10.7	1.1	1.4	8.4	0.3	0.3	4.7	1.7
Stop Del/Veh (s)	62.6	22.2	4.2	49.3	50.7	43.7	38.5	52.9	58.5	44.2	56.6	14.5
Total Stops	543	307	82	19	638	75	130	561	16	31	261	324
Stop/Veh	1.04	0.82	0.51	1.12	0.84	0.80	1.00	0.98	0.94	1.15	0.88	0.79
Travel Dist (mi)	52.1	37.7	16.3	1.1	51.4	6.3	18.3	80.9	2.5	1.6	17.3	24.2
Travel Time (hr)	17.8	8.0	2.6	0.3	14.1	1.6	2.3	12.3	0.4	0.4	5.7	2.9
Avg Speed (mph)	4	9	17	4	4	4	8	7	6	4	3	8
Vehicles Entered	517	372	160	16	756	93	127	557	17	27	289	407
Vehicles Exited	510	368	161	16	749	93	129	560	17	26	291	408
Hourly Exit Rate	510	368	161	16	749	93	129	560	17	26	291	408
Input Volume	516	369	162	19	751	94	125	555	17	33	303	411
% of Volume	99	100	100	84	100	99	103	101	100	79	96	99
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	2	1	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	12	4	1	0	14	2	2	12	0	0	6	3

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	All
Denied Delay (hr)	10.6
Denied Del/Veh (s)	11.4
Total Delay (hr)	46.2
Total Del/Veh (s)	49.2
Stop Delay (hr)	40.3
Stop Del/Veh (s)	43.0
Total Stops	2987
Stop/Veh	0.88
Travel Dist (mi)	309.8
Travel Time (hr)	68.4
Avg Speed (mph)	5
Vehicles Entered	3338
Vehicles Exited	3328
Hourly Exit Rate	3328
Input Volume	3354
% of Volume	99
Denied Entry Before	0
Denied Entry After	3
Density (ft/veh)	100
Occupancy (veh)	58

27: Archibald Yell Blvd & School Ave Performance by movement

Movement	SER	NEL	NET	SWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.9	0.3	0.3	0.0	1.6
Total Del/Veh (s)	0.9	12.2	1.2	1.5	0.6	2.7
Stop Delay (hr)	0.0	0.7	0.0	0.0	0.0	0.8
Stop Del/Veh (s)	0.0	9.5	0.1	0.2	0.3	1.3
Total Stops	4	173	0	6	1	184
Stop/Veh	0.05	0.64	0.00	0.01	0.11	0.09
Travel Dist (mi)	2.4	16.0	62.7	38.3	0.5	119.9
Travel Time (hr)	0.1	1.6	2.3	1.4	0.0	5.5
Avg Speed (mph)	16	10	27	27	20	22
Vehicles Entered	80	269	1055	667	9	2080
Vehicles Exited	80	271	1055	667	9	2082
Hourly Exit Rate	80	271	1055	667	9	2082
Input Volume	87	272	1058	685	8	2110
% of Volume	92	100	100	97	109	99
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						225
Occupancy (veh)	0	2	2	1	0	5

Total Zone Performance

Denied Delay (hr)	10.6
Denied Del/Veh (s)	21.8
Total Delay (hr)	47.7
Total Del/Veh (s)	2863.4
Stop Delay (hr)	41.1
Stop Del/Veh (s)	2467.2
Total Stops	3171
Stop/Veh	52.85
Travel Dist (mi)	429.7
Travel Time (hr)	73.8
Avg Speed (mph)	7
Vehicles Entered	1752
Vehicles Exited	3
Hourly Exit Rate	3
Input Volume	5464
% of Volume	0
Denied Entry Before	0
Denied Entry After	3
Density (ft/veh)	111
Occupancy (veh)	63

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	EB	EB	EB	WB	WB	WB	B28	B28	NB	NB	NB	SB
Directions Served	L	T	R	L	T	TR	T	T	L	T	TR	L
Maximum Queue (ft)	400	574	451	264	394	370	219	206	257	410	453	199
Average Queue (ft)	355	388	130	45	317	283	67	47	99	224	270	41
95th Queue (ft)	469	720	450	187	425	405	241	200	228	394	427	139
Link Distance (ft)		534	534		306	306	260	260		758	758	
Upstream Blk Time (%)		24	2		23	15	5	3				
Queuing Penalty (veh)		0	0		0	0	0	0				
Storage Bay Dist (ft)	300			115					300			100
Storage Blk Time (%)	37	1			57					4		0
Queuing Penalty (veh)	137	7			11					6		0

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	271	257
Average Queue (ft)	212	127
95th Queue (ft)	315	220
Link Distance (ft)	259	259
Upstream Blk Time (%)	15	0
Queuing Penalty (veh)	57	2
Storage Bay Dist (ft)		
Storage Blk Time (%)	50	
Queuing Penalty (veh)	17	

Intersection: 27: Archibald Yell Blvd & School Ave

Movement	SE	NE	SW
Directions Served	R	L	TR
Maximum Queue (ft)	35	204	95
Average Queue (ft)	1	77	5
95th Queue (ft)	15	154	48
Link Distance (ft)		258	246
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Zone Summary

Zone wide Queuing Penalty: 236

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Maximum Green (s)	7.5	26.0	39.5	38.5	7.5	26.0	8.5	69.5
Minimum Green (s)	4.0	12.0	4.0	4.0	4.0	12.0	4.0	4.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	7.2	26.8	36.6	37.2	5.7	32.9	6.7	74.0
g/C Ratio	-0.01	NA	NA	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	4	0	0	0	46	0	68	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0	0
Cycles Maxed Out (%)	71	100	70	78	8	100	4	81
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0

HCM 6th Signalized Intersection Summary
 23: Archibald Yell Blvd & MLK Blvd.

08/18/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	500	609	283	66	470	70	206	484	44	146	695	552
Future Volume (veh/h)	500	609	283	66	470	70	206	484	44	146	695	552
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	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	543	662	308	72	511	76	224	526	48	159	755	600
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	428	607	515	133	495	73	175	1165	106	390	663	562
Arrive On Green	0.23	0.35	0.35	0.05	0.17	0.17	0.07	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	1641	1723	1460	1641	2859	424	1641	3033	276	1641	1723	1460
Grp Volume(v), veh/h	543	662	308	72	292	295	224	283	291	159	755	600
Grp Sat Flow(s),veh/h/ln	1641	1723	1460	1641	1637	1646	1641	1637	1673	1641	1723	1460
Q Serve(g_s), s	29.5	45.8	22.5	4.7	22.5	22.5	9.5	16.8	16.9	7.6	50.0	50.0
Cycle Q Clear(g_c), s	29.5	45.8	22.5	4.7	22.5	22.5	9.5	16.8	16.9	7.6	50.0	50.0
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	428	607	515	133	283	285	175	629	643	390	663	562
V/C Ratio(X)	1.27	1.09	0.60	0.54	1.03	1.04	1.28	0.45	0.45	0.41	1.14	1.07
Avail Cap(c_a), veh/h	428	607	515	150	283	285	175	629	643	413	663	562
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	1.00
Uniform Delay (d), s/veh	38.5	42.1	34.5	43.3	53.7	53.8	36.4	29.8	29.8	22.5	40.0	40.0
Incr Delay (d2), s/veh	138.7	63.4	1.4	1.3	61.3	63.2	161.6	2.3	2.3	0.3	80.2	57.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	42.0	41.5	13.0	3.5	20.6	21.0	18.6	11.3	11.5	5.3	49.3	37.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.2	105.4	35.9	44.5	115.0	116.9	198.1	32.1	32.1	22.8	120.2	97.6
LnGrp LOS	F	F	D	D	F	F	F	C	C	C	F	F
Approach Vol, veh/h		1513			659			798			1514	
Approach Delay, s/veh		117.0			108.2			78.7			101.0	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	55.0	34.0	27.0	14.1	54.9	10.7	50.3				
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5				
Max Green Setting (Gmax), s	9.5	50.0	29.5	22.5	11.4	48.1	7.5	44.5				
Max Q Clear Time (g_c+I1), s	11.5	52.0	31.5	24.5	9.6	18.9	6.7	47.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	103.5
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	18.8					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	7	188	187	957	1349	11
Future Vol, veh/h	7	188	187	957	1349	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	50	-	-	-	-
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	8	204	203	1040	1466	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2918	1472	1478	0	-	0
Stage 1	1472	-	-	-	-	-
Stage 2	1446	-	-	-	-	-
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	17 ~ 156	456		-	-	-
Stage 1	210	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9 ~ 156	456		-	-	-
Mov Cap-2 Maneuver	13	-	-	-	-	-
Stage 1	117	-	-	-	-	-
Stage 2	217	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	242.3	3.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SELn2	SWT	SWR
Capacity (veh/h)	456	-	13	156	-	-
HCM Lane V/C Ratio	0.446	-	0.585	1.31	-	-
HCM Control Delay (s)	19.1	\$ 474.3	233.7		-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	2.3	-	1.4	12.3	-	-

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

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:25	4:25	4:25	4:25	4:25	4:25
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	5032	4965	4933	4980	4875	4962
Vehs Exited	4889	4908	4835	4858	4723	4843
Starting Vehs	147	197	161	178	145	160
Ending Vehs	290	254	259	300	297	283
Denied Entry Before	0	9	1	2	0	2
Denied Entry After	588	479	709	540	667	596
Travel Distance (mi)	2253	2257	2205	2230	2179	2225
Travel Time (hr)	506.4	507.5	591.4	512.3	551.8	533.9
Total Delay (hr)	431.8	432.6	518.2	438.2	479.6	460.1
Total Stops	7590	7625	7813	8076	7560	7737
Fuel Used (gal)	184.6	184.2	202.3	184.4	192.2	189.6

Interval #0 Information Seeding

Start Time	4:25
End Time	4:30
Total Time (min)	5
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors, Anti PHF.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1278	1253	1285	1304	1282	1276
Vehs Exited	1203	1254	1223	1236	1186	1219
Starting Vehs	147	197	161	178	145	160
Ending Vehs	222	196	223	246	241	215
Denied Entry Before	0	9	1	2	0	2
Denied Entry After	69	78	126	54	38	73
Travel Distance (mi)	557	563	552	558	546	555
Travel Time (hr)	55.5	64.8	69.3	55.6	50.3	59.1
Total Delay (hr)	37.0	46.1	50.9	36.9	32.1	40.6
Total Stops	1803	1862	1975	1894	1792	1863
Fuel Used (gal)	29.5	32.1	32.6	29.6	27.9	30.4

Interval #2 Information Recording

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1281	1292	1248	1243	1314	1275
Vehs Exited	1236	1228	1252	1188	1230	1226
Starting Vehs	222	196	223	246	241	215
Ending Vehs	267	260	219	301	325	270
Denied Entry Before	69	78	126	54	38	73
Denied Entry After	268	312	357	284	268	298
Travel Distance (mi)	575	576	549	559	567	565
Travel Time (hr)	102.6	106.5	120.9	110.9	109.0	110.0
Total Delay (hr)	83.5	87.4	102.5	92.5	90.3	91.3
Total Stops	1907	1868	1857	2316	2181	2021
Fuel Used (gal)	40.8	41.7	44.8	42.0	42.1	42.3

Interval #3 Information Recording

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1250	1234	1190	1225	1089	1199
Vehs Exited	1249	1216	1171	1249	1134	1203
Starting Vehs	267	260	219	301	325	270
Ending Vehs	268	278	238	277	280	263
Denied Entry Before	268	312	357	284	268	298
Denied Entry After	410	402	558	374	504	448
Travel Distance (mi)	561	569	548	569	522	554
Travel Time (hr)	150.8	155.2	174.5	158.5	169.4	161.7
Total Delay (hr)	132.2	136.4	156.4	139.7	152.1	143.4
Total Stops	1955	1924	1806	2010	1892	1919
Fuel Used (gal)	52.1	52.7	56.4	53.8	54.4	53.9

Interval #4 Information Recording

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors, Anti PHF.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1223	1186	1210	1208	1190	1203
Vehs Exited	1201	1210	1189	1185	1173	1191
Starting Vehs	268	278	238	277	280	263
Ending Vehs	290	254	259	300	297	283
Denied Entry Before	410	402	558	374	504	448
Denied Entry After	588	479	709	540	667	596
Travel Distance (mi)	559	550	557	543	544	550
Travel Time (hr)	197.4	180.9	226.8	187.2	223.2	203.1
Total Delay (hr)	179.1	162.7	208.3	169.0	205.1	184.8
Total Stops	1925	1971	2175	1856	1695	1927
Fuel Used (gal)	62.2	57.8	68.5	59.1	67.7	63.1

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	52.6	62.3	27.7	0.0	0.0	0.0	1.2	2.5	0.3	0.0	0.0	0.0
Denied Del/Veh (s)	367.5	367.3	352.5	0.0	0.0	0.0	21.0	18.6	21.3	0.1	0.0	0.0
Total Delay (hr)	14.3	9.2	0.9	1.5	18.1	2.4	17.9	5.3	0.4	1.4	6.5	2.0
Total Del/Veh (s)	119.1	65.5	13.4	80.6	139.9	127.6	310.2	39.9	34.2	43.6	39.7	15.5
Stop Delay (hr)	13.2	8.0	0.7	1.5	17.3	2.3	17.9	4.1	0.3	1.2	5.4	1.6
Stop Del/Veh (s)	109.9	57.3	11.6	75.8	133.9	123.4	310.1	30.9	28.1	38.2	32.6	13.0
Total Stops	638	546	198	84	488	61	198	369	33	120	312	338
Stop/Veh	1.47	1.08	0.86	1.22	1.05	0.91	0.95	0.77	0.79	1.05	0.53	0.74
Travel Dist (mi)	42.1	49.9	22.9	4.6	30.8	4.5	27.6	68.3	6.0	6.7	35.1	27.0
Travel Time (hr)	68.7	73.5	29.6	1.7	19.3	2.6	20.0	9.7	0.9	1.6	7.6	3.2
Avg Speed (mph)	3	4	12	3	2	2	1	9	10	4	5	8
Vehicles Entered	418	490	226	68	457	67	202	473	42	112	589	455
Vehicles Exited	414	495	227	67	443	65	181	466	41	113	582	450
Hourly Exit Rate	414	495	227	67	443	65	181	466	41	113	582	450
Input Volume	500	609	283	66	470	70	206	484	44	146	697	552
% of Volume	83	81	80	102	94	93	88	96	93	77	84	82
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	97	121	57	0	0	0	5	7	2	0	0	0
Density (ft/veh)												
Occupancy (veh)	16	11	2	2	19	3	19	7	1	2	8	3

23: Archibald Yell Blvd & MLK Blvd. Performance by movement

Movement	All
Denied Delay (hr)	146.6
Denied Del/Veh (s)	135.7
Total Delay (hr)	79.8
Total Del/Veh (s)	78.6
Stop Delay (hr)	73.6
Stop Del/Veh (s)	72.5
Total Stops	3385
Stop/Veh	0.93
Travel Dist (mi)	325.5
Travel Time (hr)	238.5
Avg Speed (mph)	4
Vehicles Entered	3599
Vehicles Exited	3544
Hourly Exit Rate	3544
Input Volume	4127
% of Volume	86
Denied Entry Before	0
Denied Entry After	289
Density (ft/veh)	63
Occupancy (veh)	92

27: Archibald Yell Blvd & School Ave Performance by movement

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.5	0.3	3.2	0.3	3.6	0.0	7.9
Total Del/Veh (s)	327.4	4.7	68.3	1.1	11.9	8.7	12.2
Stop Delay (hr)	0.5	0.2	3.2	0.0	1.7	0.0	5.7
Stop Del/Veh (s)	326.2	3.5	67.2	0.1	5.8	4.9	8.7
Total Stops	6	60	151	1	232	2	452
Stop/Veh	1.00	0.31	0.89	0.00	0.21	0.22	0.19
Travel Dist (mi)	0.2	5.8	9.7	51.2	62.5	0.5	129.9
Travel Time (hr)	0.6	0.6	3.6	1.8	5.5	0.0	12.1
Avg Speed (mph)	0	10	3	28	11	11	11
Vehicles Entered	6	194	165	863	1091	9	2328
Vehicles Exited	6	193	164	863	1087	9	2322
Hourly Exit Rate	6	193	164	863	1087	9	2322
Input Volume	7	188	187	958	1349	11	2702
% of Volume	83	103	88	90	81	80	86
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							101
Occupancy (veh)	1	1	4	2	6	0	12

Total Zone Performance

Denied Delay (hr)	146.6
Denied Del/Veh (s)	246.4
Total Delay (hr)	87.8
Total Del/Veh (s)	2468.1
Stop Delay (hr)	79.3
Stop Del/Veh (s)	2229.4
Total Stops	3837
Stop/Veh	29.98
Travel Dist (mi)	455.5
Travel Time (hr)	250.6
Avg Speed (mph)	4
Vehicles Entered	1853
Vehicles Exited	3
Hourly Exit Rate	3
Input Volume	6829
% of Volume	0
Denied Entry Before	0
Denied Entry After	289
Density (ft/veh)	67
Occupancy (veh)	104

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	EB	EB	EB	WB	WB	WB	B28	B28	NB	NB	NB	SB
Directions Served	L	T	R	L	T	TR	T	T	L	T	TR	L
Maximum Queue (ft)	400	585	560	265	413	389	290	250	400	744	722	200
Average Queue (ft)	396	551	349	147	341	312	124	89	343	433	369	118
95th Queue (ft)	433	587	714	328	447	431	320	280	498	864	774	236
Link Distance (ft)		534	534		306	306	260	260		758	758	
Upstream Blk Time (%)		56	8		49	37	15	12		14	1	
Queuing Penalty (veh)		0	0		0	0	0	0		0	0	
Storage Bay Dist (ft)	300			115					300			100
Storage Blk Time (%)	59	22		5	80				69	0		4
Queuing Penalty (veh)	360	108		11	53				169	0		29

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	274	262
Average Queue (ft)	264	149
95th Queue (ft)	285	245
Link Distance (ft)	259	259
Upstream Blk Time (%)	33	1
Queuing Penalty (veh)	226	4
Storage Bay Dist (ft)		
Storage Blk Time (%)	54	
Queuing Penalty (veh)	79	

Intersection: 27: Archibald Yell Blvd & School Ave

Movement	SE	SE	B25	NE	NE	SW
Directions Served	L	R	T	L	T	TR
Maximum Queue (ft)	136	74	41	269	99	260
Average Queue (ft)	24	34	6	136	5	168
95th Queue (ft)	93	84	60	248	66	337
Link Distance (ft)	119		192	257	257	246
Upstream Blk Time (%)	3		2	7	0	8
Queuing Penalty (veh)	0		0	39	2	112
Storage Bay Dist (ft)		50				
Storage Blk Time (%)	15	1				
Queuing Penalty (veh)	29	0				

Zone Summary

Zone wide Queuing Penalty: 1221

Intersection: 23: Archibald Yell Blvd & MLK Blvd.

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Maximum Green (s)	9.5	50.0	29.5	22.5	11.4	48.1	7.5	44.5
Minimum Green (s)	4.0	12.0	4.0	4.0	4.0	12.0	4.0	4.0
Recall	None	Max	None	None	None	Max	None	None
Avg. Green (s)	9.8	50.0	29.2	22.7	10.2	51.6	7.3	46.2
g/C Ratio	NA	NA	NA	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	0	0	0	0	12	0	11	0
Cycles @ Minimum (%)	0	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	96	96	42	100	70	100
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA
Number of Complete Cycles : 0