

MEMORANDUM

TO: Chris Fellows, Velocity Metropolitan District No. 1

FROM: Philip J. Dunham, PE

DATE: February 25, 2020

SUBJECT: **Porteos ISP Traffic Analysis (Jackson Gap)**
(FHU No. 119297-01)



The purpose of this memorandum is to summarize future traffic projections for the intersections along Jackson Gap Street and Jackson Gap Way in the Porteos development of Aurora, Colorado, and to update lane geometry recommendations compared to the previous Porteos traffic studies. Information from new development plans and recent transportation studies were used to develop a “blended” forecast of traffic volumes and operations at these intersections. Intersection operational analyses were conducted using the methodologies outlined in the 6th Edition of the *Highway Capacity Manual* (HCM, 2017). Levels of Service (LOS) and 95th percentile queue lengths were referenced to provide lane geometry recommendations.

The 2040 planning horizon year was analyzed to determine the ultimate turn lane needs at buildout. However, City of Aurora staff has expressed concern about possible deficiency in turn lane length in an interim condition prior to the construction of Harvest Road when Jackson Gap Street is the sole connection to DEN in the area. A 2025 analysis was performed to analyze the impacts to turn lane needs along Jackson Gap Street in absence of Harvest Road in an effort to identify locations where 2040 recommendations may not be sufficient.

2040 Traffic Projections

Several studies were researched to develop the forecasts in this memorandum. One of the foundational studies used in this analysis was the *Aurora Northeast Area Transportation Study (NEATS) Refresh* that presented results of travel demand modeling for the area. Traffic impact studies prepared to consider specific impacts of a maximum build-out scenario were also used to develop the “blended” traffic forecasts. These “blended” forecasts begin with the master study information and then refines the numbers by adjusting to trip generation for known land uses as they compare to those presented in the master studies. These traffic studies include:

- Porteos Master Traffic Impact Study Update
- Porteos PA-7 Groot Distribution Center
- Porteos PA-5 JAG Logistics Center
- Fulenwider FDP

NEATS results were not available at the time the master study was completed, so this approach produces very different projections than shown in the master Porteos Traffic Study. All subsequent Porteos traffic studies utilized the *NEATS Refresh* study to aid in determining background traffic volumes. The Groot and JAG studies refined traffic forecasts for specific planning areas within the larger Porteos development area and the Fulenwider study refined forecasts for property immediately west of the Porteos development.

These three studies were used primarily as the basis for determining traffic volumes on Jackson Gap Street and Jackson Gap Way.

Figure I presents the final set of 2040 traffic volume projections for the six intersections along Jackson Gap Street and Jackson Gap Way within the Porteos development. Daily and peak hour traffic volumes on each approach leg are lower than the previous Porteos studies, but they are generally higher than, or similar, to 2040 volumes presented in the *NEATS Refresh* study.

2040 Traffic Analysis

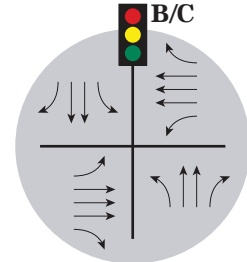
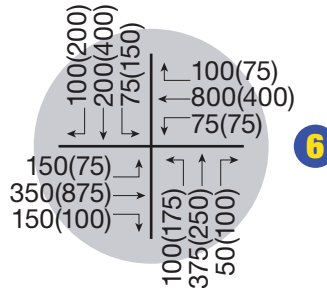
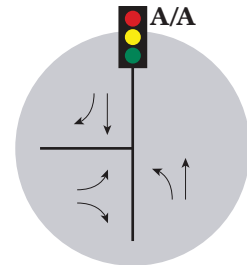
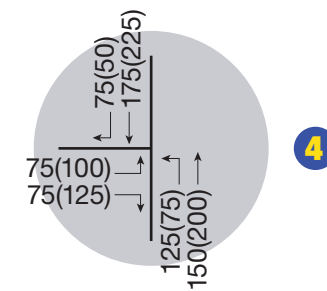
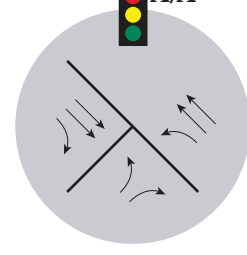
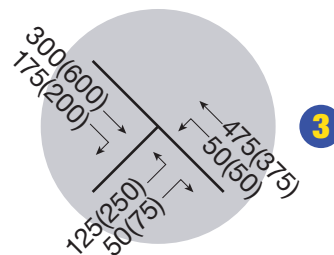
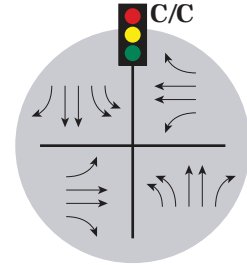
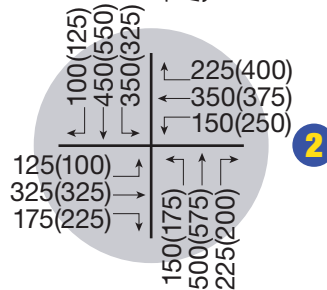
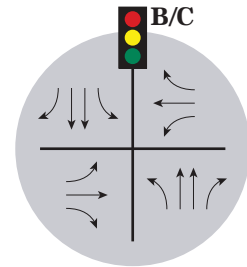
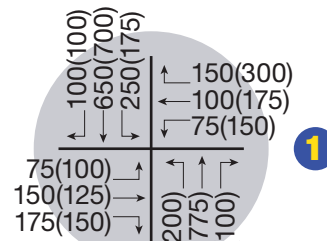
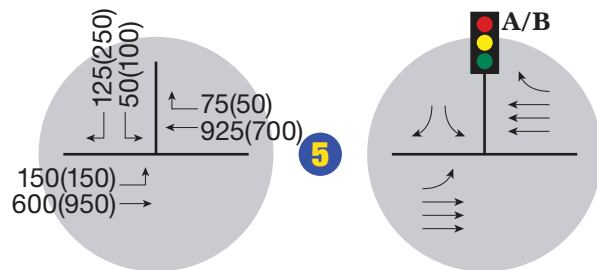
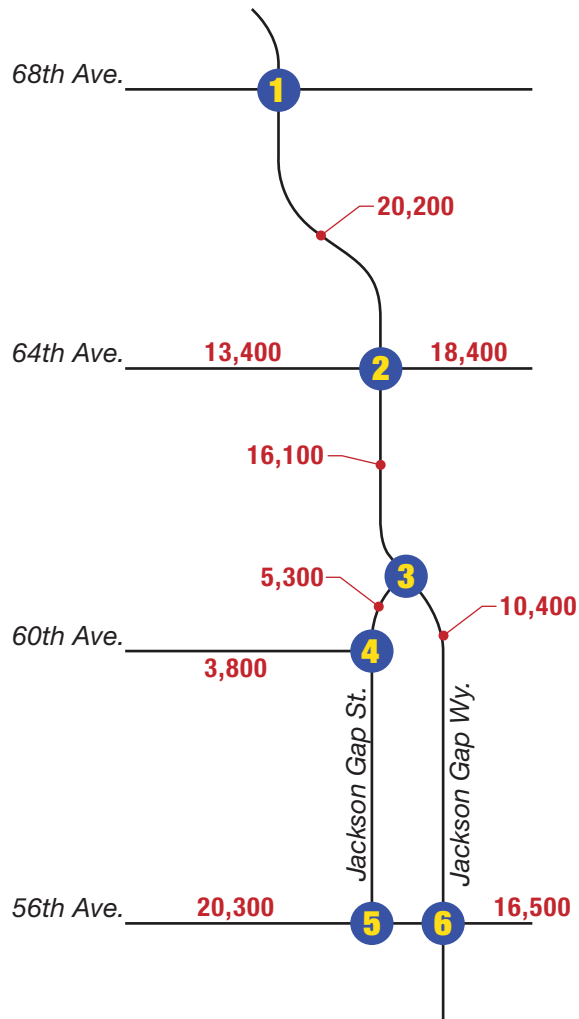
Using the peak hour projections from **Figure I**, intersection LOS were calculated to help identify appropriate lane geometry and the analyses are attached for reference. Additionally, the *Colorado State Highway Access Code (CDOT SHAC)* was referenced to determine the need for left-turn and right-turn auxiliary lanes. The 95th percentile queue lengths associated with peak hour operations were used to inform vehicle storage lane length recommendations.

Figure I also displays peak hour traffic operations and geometry recommendations for the following six intersections along Jackson Gap Street and Jackson Gap Way:

- Jackson Gap St/68th Avenue
- Jackson Gap St/64th Avenue
- Jackson Gap St/ Jackson Gap Way
- Jackson Gap St/60th Avenue
- Jackson Gap St/56th Avenue
- Jackson Gap Way/56th Avenue

Table I displays 2040 peak hour 95th percentile queue lengths and recommended storage lengths based on both the estimated vehicle queues and guidance contained in the *CDOT SHAC* using an NR-B classification. Heavy vehicle percentage is assumed at 15 percent for the purposes of determining queue length. The recommended storage lengths were developed to contain the maximum anticipated peak hour vehicle queues.

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Traffic Signal

NOTE: Drawing Not to Scale



NORTH

FIGURE I

2040 Traffic Conditions

2025 Traffic Analysis

Using the 2040 volumes presented in **Figure 1** for Jackson Gap Street in conjunction with 2040 daily volume projections presented in the Fulenwider Master TIS for Harvest Road, an estimate of 2025 traffic conditions has been made. From an evaluation of various *NEATS Refresh* volume projections it was estimated that a 2025 condition could represent approximately 30 percent of Harvest Road 2040 projections and 40 percent of 2040 Jackson Gap Street projections, all accommodated by Jackson Gap Street given the assumption that Harvest Road will not yet be established as a connection to DEN.

The 2040 Jackson Gap Street volumes presented on **Figure 1** were reduced to 40 percent, and then 30 percent of the 2040 through volumes and turning movement volumes associated with Harvest Road (per the Fulenwider traffic study) were added to develop 2025 volume projections on Jackson Gap Street, reflecting a condition without Harvest Road. The traffic volume projections for this interim 2025 scenario in which Jackson Gap Street remains as the sole connection to DEN are presented in presented on **Figure 2**.

The projected daily volumes along Jackson Gap Street fall in the LOS C or better for a four-lane minor arterial according to the *NEATS Refresh* study. More detailed analysis was performed on this 2025 condition with respect to each intersection, and it was determined that all intersections still operate at an acceptable level of service. The 95th percentile queuing was also evaluated for this 2025 condition and it was determined that there are five locations in which the 2025 queue length exceeds that of 2040, due to the lack of Harvest Road. These movement locations include:

- Jackson Gap Way/64th Avenue eastbound left-turn
- Jackson Gap Way/64th Avenue southbound right-turn
- Jackson Gap Way/56th Avenue eastbound left-turn
- Jackson Gap Way/56th Avenue eastbound right-turn
- Jackson Gap Way/56th Avenue southbound right-turn

These shortfalls are due to the increased traffic using both 64th Avenue and 56th Avenue to access Jackson Gap Street in the absence of Harvest Road.

Table 1. Queuing Analysis and Recommendations

Intersection	Approach	Movement	2025 95 th Percentile Queue Length (ft) ¹		2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SCHAC Recommended Storage Length ²
			AM	PM	AM	PM		
Jackson Gap Street/68 th Avenue	Eastbound	Left-Turn	20	55	33	58	75	150
		Through	30	28	80	90	Continuous	Continuous
		Right-Turn	25	23	85	90	100	250
	Westbound	Left-Turn	13	33	33	93	100	200
		Through	20	43	50	123	Continuous	Continuous
		Right-Turn	23	70	73	243	250	400
	Northbound	Left-Turn	15	23	53	103	125	275
		Through	150	188	120	260	Continuous	Continuous
		Right-Turn	13	8	70	48	75	250
	Southbound	Left-Turn	23	20	80	93	100	325
		Through	123	215	140	238	Continuous	Continuous
		Right-Turn	18	20	33	53	50	150
Jackson Gap Street/64 th Avenue	Eastbound	Left-Turn	175	185	63	68	200 ³	175
		Through	30	38	98	128	Continuous	Continuous
		Right-Turn	45	70	80	153	175	300
	Westbound	Left-Turn	35	68	75	158	175	325
		Through	45	55	103	130	Continuous	Continuous
		Right-Turn	35	100	13	313	325	525
	Northbound	Left-Turn*	45	60	53	85	100	125
		Through	175	183	145	235	Continuous	Continuous
		Right-Turn	25	23	108	130	150	300
	Southbound	Left-Turn*	48	55	115	155	175	275
		Through	133	223	108	205	Continuous	Continuous
		Right-Turn	153	218	35	70	225 ³	175
Jackson Gap Street/ Jackson Gap Way	Eastbound	Left-Turn	18	78	13	40	Continuous	Continuous
		Right-Turn	3	0	10	10	Continuous	Continuous
	Northbound	Left-Turn	5	3	3	5	50	75
		Through	3	20	3	10	Continuous	Continuous
	Southbound	Through	0	78	3	18	Continuous	Continuous
		Right-Turn	23	25	23	43	50	275

Intersection	Approach	Movement	2025 95 th Percentile Queue Length (ft) ¹		2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SCHAC Recommended Storage Length ²
			AM	PM	AM	PM		
Jackson Gap Street/ 60 th Avenue	Eastbound	Left-Turn	8	25	5	5	25	150
		Right-Turn	5	5	5	10	Continuous	Continuous
	Northbound	Left-Turn+	0	3	3	3	Continuous	Continuous
		Through	0	3	3	3	Continuous	Continuous
	Southbound	Through	0	13	3	3	Continuous	Continuous
		Right-Turn+	3	8	3	3	Continuous	Continuous
Jackson Gap Street/ 56 th Avenue	Eastbound	Left-Turn	48	35	73	78	100	200
		Through	0	13	8	43	Continuous	Continuous
	Westbound	Through	30	43	70	70	Continuous	Continuous
		Right-Turn	5	3	23	25	50	100
	Southbound	Left-Turn	5	10	18	33	50	150
		Right-Turn	8	150	13	253	Continuous	Continuous
Jackson Gap Way/ 56 th Avenue	Eastbound	Left-Turn	225	208	95	63	225 ³	200
		Through	20	73	40	168	Continuous	Continuous
		Right-Turn	55	110	55	50	125 ³	200
	Westbound	Left-Turn	28	30	60	70	75	100
		Through	70	43	123	63	Continuous	Continuous
		Right-Turn	43	43	35	33	50	150
	Northbound	Left-Turn	73	78	60	103	125	250
		Through	60	105	93	60	Continuous	Continuous
		Right-Turn	10	18	25	58	75	150
	Southbound	Left-Turn	23	40	35	75	75	200
		Through	40	78	53	128	Continuous	Continuous
		Right-Turn	165	285	58	138	300 ³	275

*Dual Left-Turn queues and storage are per lane.

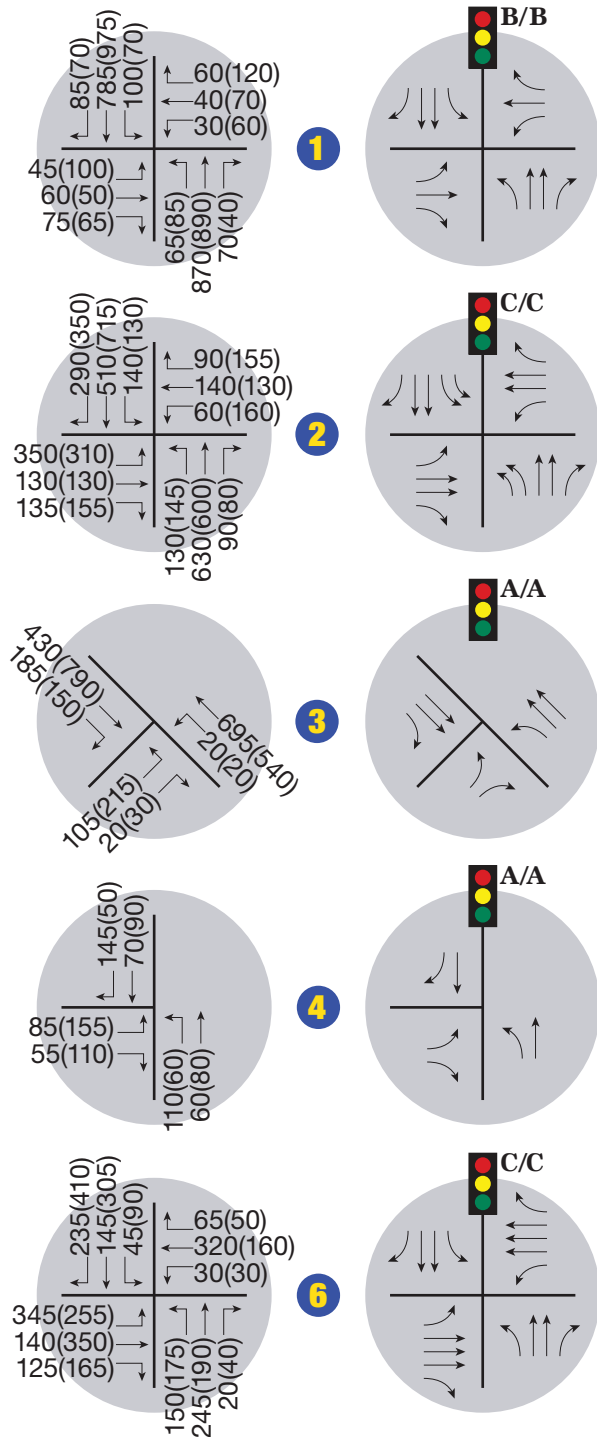
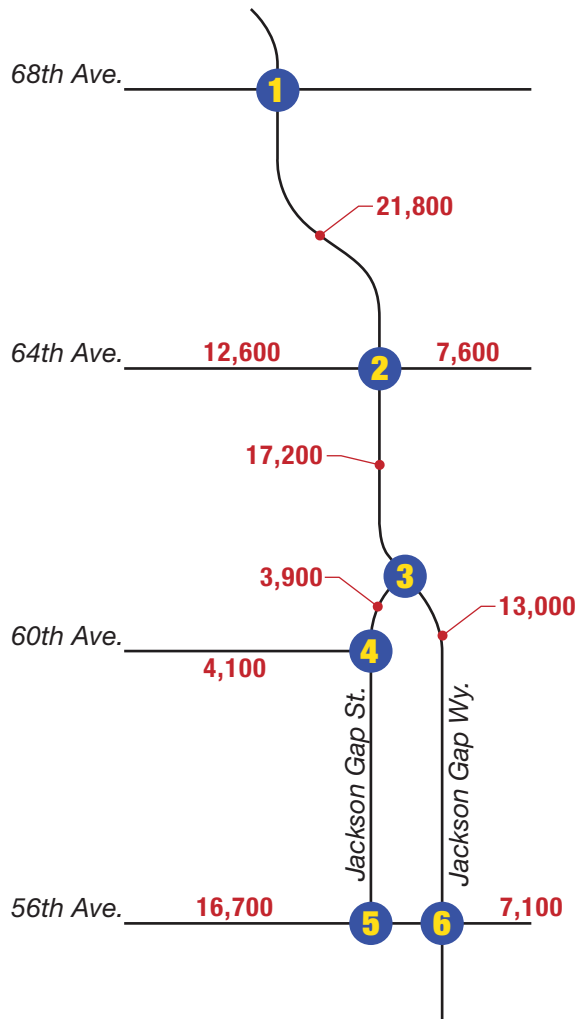
+Shared through and turn lane

¹ Calculations based on HCM methodology using a heavy vehicle percentage of 15 percent.

² Number shown is based on volume adjustments of 3 PCE per heavy vehicle

³ 2025 queuing indicates potential storage length shortfall

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes

X/X = AM/PM Peak Hour Signalized Intersection Level of Service

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Traffic Signal

NOTE: Drawing Not to Scale



NORTH

FIGURE 2

2025 Traffic Conditions

Recommendation

City of Aurora *Traffic Impact Study Guidelines* indicate that the *CDOT SHAC* be used to determine storage and taper lengths. These values yield overly conservative results and provide storage well in excess 95th percentile queues (which already incorporate a heavy vehicle percentage), often by a factor of two to three. The *SHAC* procedures do not account for other conditions in the intersection such as low opposing through movements if a left-turn movement is in question. Rather, our recommendation is that the values in **Table I** corresponding to the 95th percentile lengths be used for storage lengths, plus tapers along Jackson Gap Street, Jackson Gap Way, 68th Avenue, 64th Avenue, and 60th Avenue should be 144 feet (to provide the required 12:1 taper ratio for 12-foot lanes on streets with a posted speed 40 MPH and an NR-B classification as identified in the *CDOT SHAC*). Northbound and southbound left-turns along Jackson Gap Street should be doubled to 288 feet to account for dual left-turn lanes. Tapers along 56th Avenue should be 162 feet (to provide the required 13.5:1 taper for 12-foot lanes on a 45 MPH roadway with an NR-B classification identified in the *CDOT SHAC*).

























Analysis of an interim 2025 condition, in which Harvest Road was not in place, determined that the queue for five turning movements will exceed that estimated for 2040. The following recommendations could help alleviate these queuing issues for this short-term scenario:

- Jackson Gap Way/64th Avenue eastbound left-turn: Increase storage length to 200 feet
- Jackson Gap Way/64th Avenue southbound right-turn: Explore possibility of providing channelized right turn or increase storage length to 225 feet
- Jackson Gap Way/56th Avenue eastbound left-turn: Increase storage length to 225 feet
- Jackson Gap Way/56th Avenue eastbound right-turn: Increase storage length to 125 feet
- Jackson Gap Way/56th Avenue southbound right-turn: Explore possibility of providing channelized right turn or increase storage length to 300 feet

Attachments

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	150	175	75	100	150	150	525	175	250	650	100
Future Volume (vph)	75	150	175	75	100	150	150	525	175	250	650	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	30.0	30.0	15.0	30.0	30.0	21.0	45.0	45.0	30.0	54.0	54.0
Total Split (%)	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%	17.5%	37.5%	37.5%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	20.4	13.7	13.7	19.8	13.4	13.4	32.7	21.7	21.7	38.0	24.5	24.5
Actuated g/C Ratio	0.28	0.19	0.19	0.27	0.18	0.18	0.44	0.29	0.29	0.51	0.33	0.33
v/c Ratio	0.23	0.53	0.46	0.25	0.36	0.42	0.44	0.62	0.35	0.61	0.68	0.20
Control Delay	21.5	38.3	9.3	21.8	34.7	9.6	14.8	27.8	6.1	17.0	26.3	5.6
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	21.5	38.3	9.3	21.8	34.7	9.6	14.8	27.8	6.1	17.0	26.3	5.6
LOS	C	D	A	C	C	A	B	C	A	B	C	A
Approach Delay		22.5			20.1			21.0			21.9	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 73.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 21.5

Intersection LOS: C

Intersection Capacity Utilization 55.4%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 1: Jackson Gap St & 68th Ave



HCM 6th Signalized Intersection Summary

























1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	150	175	75	100	150	150	525	175	250	650	100
Future Volume (veh/h)	75	150	175	75	100	150	150	525	175	250	650	100
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	163	162	82	109	146	163	571	172	272	707	98
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	350	276	234	313	276	234	382	854	381	462	1036	462
Arrive On Green	0.07	0.16	0.16	0.07	0.16	0.16	0.10	0.27	0.27	0.16	0.32	0.32
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	82	163	162	82	109	146	163	571	172	272	707	98
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	2.2	4.7	5.7	2.2	3.1	5.0	3.8	8.4	5.3	6.1	10.2	2.6
Cycle Q Clear(g_c), s	2.2	4.7	5.7	2.2	3.1	5.0	3.8	8.4	5.3	6.1	10.2	2.6
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	350	276	234	313	276	234	382	854	381	462	1036	462
V/C Ratio(X)	0.23	0.59	0.69	0.26	0.40	0.62	0.43	0.67	0.45	0.59	0.68	0.21
Avail Cap(c_a), veh/h	562	811	687	525	811	687	717	2447	1091	978	2991	1334
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	16.6	20.4	20.8	16.7	19.7	20.5	12.3	17.2	16.1	11.4	15.4	12.9
Incr Delay (d2), s/veh	0.3	2.0	3.7	0.4	0.9	2.7	0.8	0.9	0.8	1.2	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	3.2	3.4	1.3	2.0	2.9	2.1	4.8	2.8	3.2	5.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	22.4	24.4	17.1	20.6	23.2	13.0	18.1	16.9	12.5	16.3	13.1
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	B	B
Approach Vol, veh/h		407			337			906			1077	
Approach Delay, s/veh		22.1			20.9			17.0			15.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	18.6	8.0	13.2	9.9	21.6	8.0	13.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	40.5	10.5	25.5	16.5	49.5	10.5	25.5				
Max Q Clear Time (g_c+I1), s	8.1	10.4	4.2	7.7	5.8	12.2	4.2	7.0				
Green Ext Time (p_c), s	0.5	3.7	0.1	1.0	0.2	4.5	0.1	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			17.5									
HCM 6th LOS			B									

Timings 2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	325	175	150	350	225	150	500	225	350	450	100
Future Volume (vph)	125	325	175	150	350	225	150	500	225	350	450	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.0	30.0	30.0	18.0	30.0	30.0	18.0	42.0	42.0	30.0	54.0	54.0
Total Split (%)	15.0%	25.0%	25.0%	15.0%	25.0%	25.0%	15.0%	35.0%	35.0%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	28.0	17.0	17.0	28.2	17.1	17.1	10.3	22.4	22.4	16.7	28.8	28.8
Actuated g/C Ratio	0.32	0.20	0.20	0.33	0.20	0.20	0.12	0.26	0.26	0.19	0.33	0.33
v/c Ratio	0.41	0.57	0.44	0.48	0.61	0.52	0.45	0.67	0.45	0.64	0.47	0.20
Control Delay	24.7	37.2	9.0	25.9	38.0	9.1	43.8	34.2	6.9	39.7	24.7	5.6
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	24.7	37.2	9.0	25.9	38.0	9.1	43.8	34.2	6.9	39.7	24.7	5.6
LOS	C	D	A	C	D	A	D	C	A	D	C	A
Approach Delay		26.8			26.5			28.8			28.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 86.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 27.7


Intersection LOS: C

Intersection Capacity Utilization 56.1%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave

 Ø1	 Ø2	 Ø3	 Ø4
30 s	42 s	18 s	30 s
 Ø5	 Ø6	 Ø7	 Ø8
18 s	54 s	18 s	30 s

HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	325	175	150	350	225	150	500	225	350	450	100
Future Volume (veh/h)	125	325	175	150	350	225	150	500	225	350	450	100
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	136	353	143	163	380	203	163	543	205	380	489	87
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	335	592	264	360	645	287	254	783	349	510	1047	467
Arrive On Green	0.09	0.19	0.19	0.11	0.20	0.20	0.08	0.25	0.25	0.16	0.33	0.33
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	136	353	143	163	380	203	163	543	205	380	489	87
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	4.1	6.2	5.5	4.9	6.6	8.1	3.1	9.4	7.7	7.1	7.4	2.7
Cycle Q Clear(g_c), s	4.1	6.2	5.5	4.9	6.6	8.1	3.1	9.4	7.7	7.1	7.4	2.7
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	335	592	264	360	645	287	254	783	349	510	1047	467
V/C Ratio(X)	0.41	0.60	0.54	0.45	0.59	0.71	0.64	0.69	0.59	0.74	0.47	0.19
Avail Cap(c_a), veh/h	542	1334	595	540	1334	595	687	1961	875	1297	2589	1155
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	17.7	22.7	22.5	17.3	22.0	22.6	27.1	20.9	20.3	24.2	16.2	14.6
Incr Delay (d2), s/veh	0.8	1.0	1.7	0.9	0.9	3.2	2.7	1.1	1.6	2.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.9	3.2	3.0	4.1	0.5	2.1	5.8	4.3	4.5	4.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	23.7	24.2	18.2	22.9	25.8	29.8	22.0	21.8	26.4	16.6	14.8
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	B	B
Approach Vol, veh/h	632			746			911			956		
Approach Delay, s/veh	22.7			22.7			23.4			20.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	19.5	11.1	15.8	9.5	24.5	10.1	16.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	37.5	13.5	25.5	13.5	49.5	13.5	25.5				
Max Q Clear Time (g_c+I1), s	9.1	11.4	6.9	8.2	5.1	9.4	6.1	10.1				
Green Ext Time (p_c), s	0.9	3.5	0.2	2.0	0.2	3.0	0.1	2.2				
Intersection Summary												
HCM 6th Ctrl Delay	22.2											
HCM 6th LOS	C											

Timings 3: Jackson Gap Way & Jackson Gap St

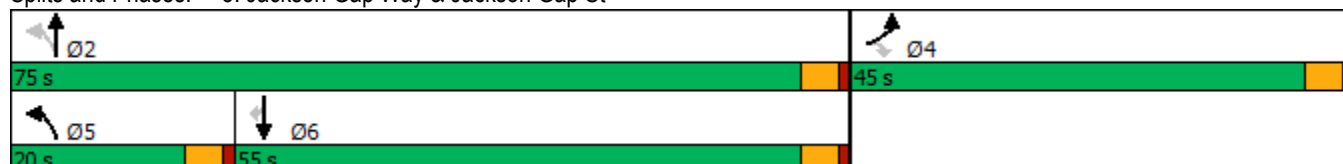
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	50	50	475	300	175
Future Volume (vph)	125	50	50	475	300	175
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	45.0	45.0	20.0	75.0	55.0	55.0
Total Split (%)	37.5%	37.5%	16.7%	62.5%	45.8%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.4	9.4	20.5	21.7	17.7	17.7
Actuated g/C Ratio	0.26	0.26	0.56	0.60	0.49	0.49
v/c Ratio	0.34	0.13	0.09	0.28	0.21	0.24
Control Delay	15.5	6.2	5.3	5.7	10.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	6.2	5.3	5.7	10.4	3.8
LOS	B	A	A	A	B	A
Approach Delay	12.9			5.6	8.0	
Approach LOS	B			A	A	

Intersection Summary















Cycle Length: 120
Actuated Cycle Length: 36.4
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 7.7
Intersection LOS: A
Intersection Capacity Utilization 30.6%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Jackson Gap Way & Jackson Gap St















HCM 6th Signalized Intersection Summary 3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	125	50	50	475	300	175
Future Volume (veh/h)	125	50	50	475	300	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	136	54	54	516	326	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	229	204	529	1627	878	391
Arrive On Green	0.14	0.14	0.06	0.51	0.28	0.28
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	136	54	54	516	326	190
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	2.1	0.9	0.5	2.5	2.1	2.9
Cycle Q Clear(g_c), s	2.1	0.9	0.5	2.5	2.1	2.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	229	204	529	1627	878	391
V/C Ratio(X)	0.59	0.26	0.10	0.32	0.37	0.49
Avail Cap(c_a), veh/h	2488	2214	1382	8640	6189	2760
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	10.4	9.9	5.0	3.7	7.6	7.9
Incr Delay (d2), s/veh	2.4	0.7	0.1	0.1	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.1	0.1	0.1	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	10.6	5.1	3.8	7.9	8.8
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	190			570	516	
Approach Delay, s/veh	12.2			3.9	8.2	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.8			8.2	6.1	11.7
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	70.5			40.5	15.5	50.5
Max Q Clear Time (g_c+I1), s	4.5			4.1	2.5	4.9
Green Ext Time (p_c), s	3.0			0.4	0.1	2.3
Intersection Summary						
HCM 6th Ctrl Delay			6.9			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	75	125	150	175	75
Future Volume (vph)	75	75	125	150	175	75
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	25.0	85.0	60.0	60.0
Total Split (%)	29.2%	29.2%	20.8%	70.8%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	7.9	7.9	25.8	27.1	16.2	16.2
Actuated g/C Ratio	0.20	0.20	0.64	0.68	0.40	0.40
v/c Ratio	0.26	0.24	0.19	0.15	0.28	0.13
Control Delay	18.4	7.2	4.6	4.3	15.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	7.2	4.6	4.3	15.3	5.0
LOS	B	A	A	A	B	A
Approach Delay	12.8			4.4	12.2	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 40
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.28
 Intersection Signal Delay: 9.2
 Intersection LOS: A
 Intersection Capacity Utilization 31.6%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	75	125	150	175	75
Future Volume (veh/h)	75	75	125	150	175	75
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	82	136	163	190	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	214	191	592	865	368	312
Arrive On Green	0.13	0.13	0.12	0.52	0.22	0.22
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	82	82	136	163	190	82
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.2	1.4	1.4	1.3	2.6	1.2
Cycle Q Clear(g_c), s	1.2	1.4	1.4	1.3	2.6	1.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	214	191	592	865	368	312
V/C Ratio(X)	0.38	0.43	0.23	0.19	0.52	0.26
Avail Cap(c_a), veh/h	1897	1688	1674	5257	3625	3072
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	10.1	10.2	5.2	3.3	8.8	8.3
Incr Delay (d2), s/veh	1.1	1.5	0.2	0.1	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	2.1	0.3	0.1	1.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	11.7	5.4	3.4	9.9	8.8
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	164			299	272	
Approach Delay, s/veh	11.5			4.3	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.7			7.9	7.6	10.1
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	80.5			30.5	20.5	55.5
Max Q Clear Time (g_c+I1), s	3.3			3.4	3.4	4.6
Green Ext Time (p_c), s	0.8			0.3	0.2	1.1
Intersection Summary						
HCM 6th Ctrl Delay			7.9			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

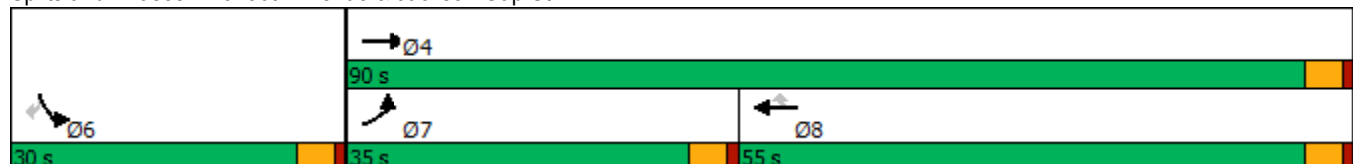


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	150	600	925	75	50	125
Future Volume (vph)	150	600	925	75	50	125
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	90.0	55.0	55.0	30.0	30.0
Total Split (%)	29.2%	75.0%	45.8%	45.8%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	12.2	39.5	22.7	22.7	7.9	7.9
Actuated g/C Ratio	0.22	0.70	0.40	0.40	0.14	0.14
v/c Ratio	0.49	0.21	0.56	0.13	0.25	0.44
Control Delay	26.3	3.2	15.0	4.1	27.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	3.2	15.0	4.1	27.8	10.9
LOS	C	A	B	A	C	B
Approach Delay		7.8	14.2		15.7	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 56.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 11.8
 Intersection LOS: B
 Intersection Capacity Utilization 41.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St

























Porteos ISP Jackson Gap
08/27/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	150	600	925	75	50	125	
Future Volume (veh/h)	150	600	925	75	50	125	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	163	652	1005	82	54	136	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	209	2934	1816	564	213	190	
Arrive On Green	0.13	0.64	0.40	0.40	0.13	0.13	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	163	652	1005	82	54	136	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	3.9	2.4	6.8	1.5	1.2	3.6	
Cycle Q Clear(g_c), s	3.9	2.4	6.8	1.5	1.2	3.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	209	2934	1816	564	213	190	
V/C Ratio(X)	0.78	0.22	0.55	0.15	0.25	0.72	
Avail Cap(c_a), veh/h	1224	9837	5810	1804	1024	911	
HCM Platoon Ratio	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	
Uniform Delay (d), s/veh	16.7	3.0	9.3	7.7	15.5	16.5	
Incr Delay (d2), s/veh	6.2	0.0	0.3	0.1	0.6	5.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	2.7	0.3	2.7	0.6	0.7	0.5	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	22.9	3.0	9.6	7.8	16.1	21.6	
LnGrp LOS	C	A	A	A	B	C	
Approach Vol, veh/h		815	1087	190			
Approach Delay, s/veh		7.0	9.4	20.0			
Approach LOS		A	A	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				30.0	9.8	9.7	20.3
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				85.5	25.5	30.5	50.5
Max Q Clear Time (g_c+I1), s				4.4	5.6	5.9	8.8
Green Ext Time (p_c), s				4.0	0.4	0.3	7.0
Intersection Summary							
HCM 6th Ctrl Delay			9.4				
HCM 6th LOS			A				

Timings
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	350	150	75	800	100	100	375	50	75	200	100
Future Volume (vph)	150	350	150	75	800	100	100	375	50	75	200	100
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	24.0	52.0	52.0	18.0	46.0	46.0	15.0	35.0	35.0	15.0	35.0	35.0
Total Split (%)	20.0%	43.3%	43.3%	15.0%	38.3%	38.3%	12.5%	29.2%	29.2%	12.5%	29.2%	29.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	14.2	32.6	32.6	10.1	24.6	24.6	24.3	17.1	17.1	23.2	16.5	16.5
Actuated g/C Ratio	0.18	0.40	0.40	0.13	0.30	0.30	0.30	0.21	0.21	0.29	0.20	0.20
v/c Ratio	0.59	0.21	0.25	0.42	0.63	0.21	0.30	0.61	0.13	0.29	0.34	0.28
Control Delay	44.7	19.5	4.8	45.8	28.0	3.7	22.9	35.8	0.7	23.1	32.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	19.5	4.8	45.8	28.0	3.7	22.9	35.8	0.7	23.1	32.2	5.4
LOS	D	B	A	D	C	A	C	D	A	C	C	A
Approach Delay		21.9			26.9			30.0			23.2	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 25.7









Intersection LOS: C

Intersection Capacity Utilization 53.3%

ICU Level of Service A































Analysis Period (min) 15

Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

			
15 s	35 s	18 s	52 s
			
15 s	35 s	24 s	46 s

























HCM 6th Signalized Intersection Summary
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	150	350	150	75	800	100	100	375	50	75	200	100
Future Volume (veh/h)	150	350	150	75	800	100	100	375	50	75	200	100
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	163	380	163	82	870	109	109	408	54	82	217	109
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	204	1667	517	102	1373	426	361	613	273	290	578	258
Arrive On Green	0.13	0.36	0.36	0.06	0.30	0.30	0.07	0.19	0.19	0.06	0.18	0.18
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	163	380	163	82	870	109	109	408	54	82	217	109
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	5.6	3.3	4.7	2.9	9.3	3.3	3.1	6.8	1.8	2.3	3.4	3.9
Cycle Q Clear(g_c), s	5.6	3.3	4.7	2.9	9.3	3.3	3.1	6.8	1.8	2.3	3.4	3.9
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	204	1667	517	102	1373	426	361	613	273	290	578	258
V/C Ratio(X)	0.80	0.23	0.32	0.80	0.63	0.26	0.30	0.67	0.20	0.28	0.38	0.42
Avail Cap(c_a), veh/h	547	3821	1186	379	3338	1036	536	1707	762	483	1707	762
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	24.1	12.6	13.0	26.3	17.2	15.1	17.0	21.3	19.3	17.5	20.5	20.7
Incr Delay (d2), s/veh	7.0	0.1	0.3	13.6	0.5	0.3	0.5	1.3	0.3	0.5	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	1.7	2.3	2.5	5.1	1.7	1.8	4.1	1.0	1.4	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	12.6	13.4	39.9	17.7	15.4	17.5	22.5	19.7	18.0	20.9	21.8
LnGrp LOS	C	B	B	D	B	B	B	C	B	B	C	C
Approach Vol, veh/h		706			1061			571			408	
Approach Delay, s/veh		17.1			19.2			21.3			20.5	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	15.5	8.1	25.2	8.8	14.8	11.8	21.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	30.5	13.5	47.5	10.5	30.5	19.5	41.5				
Max Q Clear Time (g_c+I1), s	4.3	8.8	4.9	6.7	5.1	5.9	7.6	11.3				
Green Ext Time (p_c), s	0.1	2.2	0.1	2.6	0.1	1.3	0.2	5.7				
Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	125	150	150	175	300	200	775	100	175	700	100
Future Volume (vph)	100	125	150	150	175	300	200	775	100	175	700	100
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	24.0	50.0	50.0	21.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	12.5%	28.3%	28.3%	20.0%	41.7%	41.7%	17.5%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	25.3	15.8	15.8	27.4	19.6	19.6	44.4	30.9	30.9	40.3	28.8	28.8
Actuated g/C Ratio	0.29	0.18	0.18	0.31	0.22	0.22	0.51	0.35	0.35	0.46	0.33	0.33
v/c Ratio	0.31	0.45	0.42	0.45	0.51	0.57	0.61	0.76	0.19	0.61	0.73	0.20
Control Delay	25.1	39.5	9.4	27.8	39.8	8.6	19.7	30.6	5.5	21.2	31.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	39.5	9.4	27.8	39.8	8.6	19.7	30.6	5.5	21.2	31.3	5.9
LOS	C	D	A	C	D	A	B	C	A	C	C	A
Approach Delay		23.6			21.9			26.2			26.9	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 87.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 25.2









Intersection LOS: C

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Jackson Gap St & 68th Ave

























			
Ø1	Ø2	Ø3	Ø4
21 s	50 s	15 s	34 s
			
Ø5	Ø6	Ø7	Ø8
24 s	47 s	15 s	34 s

HCM 6th Signalized Intersection Summary

Porteos ISP Jackson Gap

























08/27/2019

1: Jackson Gap St & 68th Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	125	150	150	175	300	200	775	100	175	700	100
Future Volume (veh/h)	100	125	150	150	175	300	200	775	100	175	700	100
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	136	135	163	190	309	217	842	91	190	761	98
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	335	372	316	409	423	358	346	1067	476	314	1027	458
Arrive On Green	0.07	0.22	0.22	0.10	0.25	0.25	0.12	0.33	0.33	0.10	0.32	0.32
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	109	136	135	163	190	309	217	842	91	190	761	98
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.9	5.2	6.2	5.8	7.2	15.8	6.7	18.1	3.5	5.9	16.1	3.8
Cycle Q Clear(g_c), s	3.9	5.2	6.2	5.8	7.2	15.8	6.7	18.1	3.5	5.9	16.1	3.8
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	335	372	316	409	423	358	346	1067	476	314	1027	458
V/C Ratio(X)	0.33	0.37	0.43	0.40	0.45	0.86	0.63	0.79	0.19	0.60	0.74	0.21
Avail Cap(c_a), veh/h	442	652	553	469	652	553	569	1912	853	494	1786	797
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	20.5	25.0	25.4	19.6	23.9	27.1	16.5	22.8	17.9	17.1	22.9	18.7
Incr Delay (d2), s/veh	0.6	0.6	0.9	0.6	0.7	8.6	1.9	1.3	0.2	1.9	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.6	3.6	3.7	4.9	9.7	4.1	10.4	1.9	3.7	9.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	25.6	26.3	20.2	24.7	35.7	18.4	24.2	18.1	18.9	24.0	18.9
LnGrp LOS	C	C	C	C	C	D	B	C	B	B	C	B
Approach Vol, veh/h	380			662			1150			1049		
Approach Delay, s/veh	24.5			28.7			22.6			22.6		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	29.9	12.2	21.3	13.4	28.9	9.9	23.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	10.5	29.5	19.5	42.5	10.5	29.5				
Max Q Clear Time (g_c+I1), s	7.9	20.1	7.8	8.2	8.7	18.1	5.9	17.8				
Green Ext Time (p_c), s	0.2	5.3	0.1	0.9	0.3	4.7	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	24.1											
HCM 6th LOS	C											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	325	225	250	375	400	175	575	200	325	550	125
Future Volume (vph)	100	325	225	250	375	400	175	575	200	325	550	125
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	21.0	40.0	40.0	18.0	40.0	40.0	25.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	17.5%	33.3%	33.3%	15.0%	33.3%	33.3%	20.8%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	26.2	16.8	16.8	35.9	22.2	22.2	11.1	25.6	25.6	16.0	30.5	30.5
Actuated g/C Ratio	0.29	0.18	0.18	0.39	0.24	0.24	0.12	0.28	0.28	0.17	0.33	0.33
v/c Ratio	0.35	0.61	0.54	0.73	0.54	0.67	0.52	0.72	0.40	0.67	0.57	0.24
Control Delay	24.1	41.2	9.6	35.2	34.6	9.8	46.5	36.0	6.4	44.3	28.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	41.2	9.6	35.2	34.6	9.8	46.5	36.0	6.4	44.3	28.4	5.5
LOS	C	D	A	D	C	A	D	D	A	D	C	A
Approach Delay		27.6			25.1			31.7			30.7	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 91.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 28.8

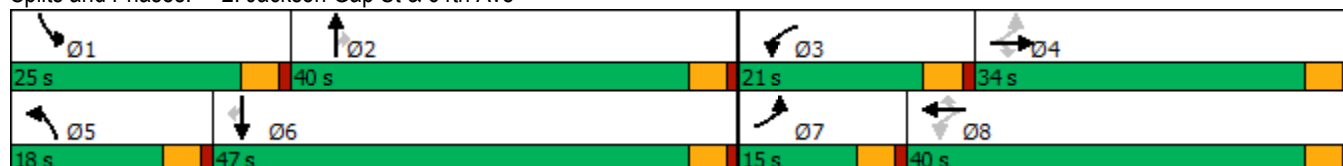
Intersection LOS: C

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave



HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	325	225	250	375	400	175	575	200	325	550	125
Future Volume (veh/h)	100	325	225	250	375	400	175	575	200	325	550	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	353	198	272	408	393	190	625	177	353	598	114
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	331	762	340	435	1012	451	266	802	358	443	984	439
Arrive On Green	0.07	0.24	0.24	0.15	0.32	0.32	0.09	0.25	0.25	0.14	0.31	0.31
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	109	353	198	272	408	393	190	625	177	353	598	114
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	4.2	7.8	10.1	9.9	8.2	21.5	4.9	15.0	8.8	9.1	13.1	5.0
Cycle Q Clear(g_c), s	4.2	7.8	10.1	9.9	8.2	21.5	4.9	15.0	8.8	9.1	13.1	5.0
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	331	762	340	435	1012	451	266	802	358	443	984	439
V/C Ratio(X)	0.33	0.46	0.58	0.63	0.40	0.87	0.71	0.78	0.49	0.80	0.61	0.26
Avail Cap(c_a), veh/h	424	1142	510	519	1375	613	508	1375	613	772	1646	734
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	21.2	26.8	27.7	18.1	22.0	26.5	36.6	28.7	26.3	34.1	24.2	21.4
Incr Delay (d2), s/veh	0.6	0.4	1.6	1.7	0.3	10.0	3.6	1.7	1.1	3.3	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	5.1	6.1	6.3	5.2	12.5	3.4	9.4	5.2	6.2	8.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	27.3	29.3	19.8	22.3	36.5	40.2	30.4	27.4	37.5	24.8	21.7
LnGrp LOS	C	C	C	B	C	D	D	C	C	D	C	C
Approach Vol, veh/h	660			1073			992			1065		
Approach Delay, s/veh	26.9			26.9			31.7			28.7		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	25.2	16.7	24.2	11.6	29.9	10.2	30.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	20.5	35.5	16.5	29.5	13.5	42.5	10.5	35.5				
Max Q Clear Time (g_c+I1), s	11.1	17.0	11.9	12.1	6.9	15.1	6.2	23.5				
Green Ext Time (p_c), s	0.7	3.7	0.3	2.2	0.2	3.7	0.1	2.7				
Intersection Summary												
HCM 6th Ctrl Delay	28.7											
HCM 6th LOS	C											

Timings 3: Jackson Gap Way & Jackson Gap St

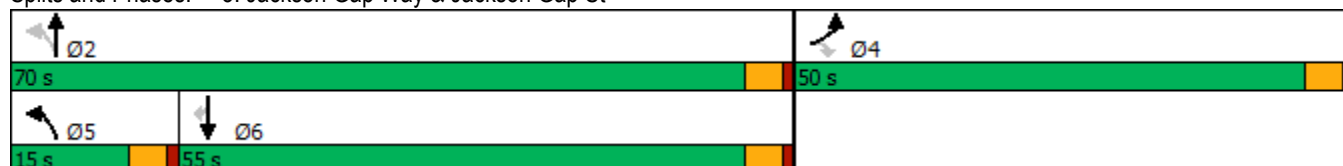
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	250	75	50	375	600	200
Future Volume (vph)	250	75	50	375	600	200
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	15.0	70.0	55.0	55.0
Total Split (%)	41.7%	41.7%	12.5%	58.3%	45.8%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	16.6	16.6	28.1	28.1	21.5	21.5
Actuated g/C Ratio	0.30	0.30	0.51	0.51	0.39	0.39
v/c Ratio	0.57	0.17	0.14	0.25	0.53	0.32
Control Delay	24.0	6.1	7.7	7.8	16.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	6.1	7.7	7.8	16.7	4.2
LOS	C	A	A	A	B	A
Approach Delay	19.9			7.8	13.6	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 54.7
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 13.3
 Intersection LOS: B
 Intersection Capacity Utilization 45.9%
 ICU Level of Service A
 Analysis Period (min) 15















Splits and Phases: 3: Jackson Gap Way & Jackson Gap St



HCM 6th Signalized Intersection Summary













3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	250	75	50	375	600	200
Future Volume (veh/h)	250	75	50	375	600	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	272	82	54	408	652	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	365	325	390	1678	1103	492
Arrive On Green	0.23	0.23	0.06	0.53	0.35	0.35
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	272	82	54	408	652	217
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	5.8	1.7	0.7	2.6	6.2	4.3
Cycle Q Clear(g_c), s	5.8	1.7	0.7	2.6	6.2	4.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	365	325	390	1678	1103	492
V/C Ratio(X)	0.75	0.25	0.14	0.24	0.59	0.44
Avail Cap(c_a), veh/h	1981	1763	755	5690	4387	1957
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	13.2	11.6	6.6	4.7	9.9	9.3
Incr Delay (d2), s/veh	3.0	0.4	0.2	0.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	2.7	0.2	0.7	2.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.2	12.0	6.7	4.8	10.4	9.9
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	354			462	869	
Approach Delay, s/veh	15.2			5.0	10.2	
Approach LOS	B			A	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	23.8			12.9	6.6	17.2
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	65.5			45.5	10.5	50.5
Max Q Clear Time (g_c+I1), s	4.6			7.8	2.7	8.2
Green Ext Time (p_c), s	2.3			0.8	0.0	4.5
Intersection Summary						
HCM 6th Ctrl Delay			9.9			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

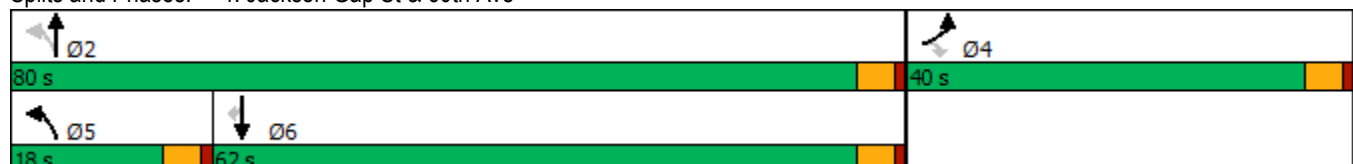
Porteos ISP Jackson Gap
08/27/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	125	75	200	225	50
Future Volume (vph)	100	125	75	200	225	50
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	40.0	40.0	18.0	80.0	62.0	62.0
Total Split (%)	33.3%	33.3%	15.0%	66.7%	51.7%	51.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	8.8	8.8	22.7	22.7	15.6	15.6
Actuated g/C Ratio	0.21	0.21	0.55	0.55	0.38	0.38
v/c Ratio	0.32	0.33	0.14	0.24	0.39	0.10
Control Delay	18.3	6.7	4.9	5.4	14.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	6.7	4.9	5.4	14.5	5.1
LOS	B	A	A	A	B	A
Approach Delay	11.8			5.3	12.8	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 41
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 9.9
 Intersection LOS: A
 Intersection Capacity Utilization 32.8%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
08/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	125	75	200	225	50
Future Volume (veh/h)	100	125	75	200	225	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	136	82	217	245	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	251	223	526	848	422	357
Arrive On Green	0.16	0.16	0.09	0.51	0.25	0.25
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	109	136	82	217	245	54
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.6	2.4	0.8	2.0	3.4	0.8
Cycle Q Clear(g_c), s	1.6	2.4	0.8	2.0	3.4	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	251	223	526	848	422	357
V/C Ratio(X)	0.43	0.61	0.16	0.26	0.58	0.15
Avail Cap(c_a), veh/h	2127	1893	1199	4751	3618	3066
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	10.2	10.5	5.5	3.7	8.7	7.8
Incr Delay (d2), s/veh	1.2	2.7	0.1	0.2	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	3.6	0.2	0.2	1.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	13.2	5.6	3.9	10.0	8.0
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	245			299	299	
Approach Delay, s/veh	12.4			4.4	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	18.0			8.7	6.8	11.2
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	75.5			35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s	4.0			4.4	2.8	5.4
Green Ext Time (p_c), s	1.0			0.6	0.1	1.3
Intersection Summary						
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
08/27/2019

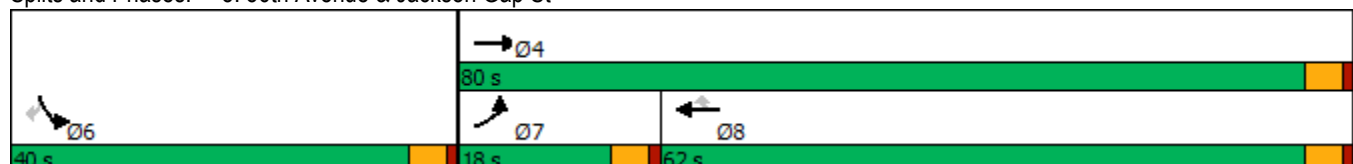


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	150	950	700	50	100	250
Future Volume (vph)	150	950	700	50	100	250
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	18.0	80.0	62.0	62.0	40.0	40.0
Total Split (%)	15.0%	66.7%	51.7%	51.7%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	13.0	33.7	16.1	16.1	9.3	9.3
Actuated g/C Ratio	0.25	0.65	0.31	0.31	0.18	0.18
v/c Ratio	0.42	0.35	0.55	0.11	0.39	0.58
Control Delay	22.2	4.8	16.8	5.3	24.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	4.8	16.8	5.3	24.6	8.8
LOS	C	A	B	A	C	A
Approach Delay		7.1	16.0		13.3	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 52.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 11.1
 Intersection LOS: B
 Intersection Capacity Utilization 38.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St

























Porteos ISP Jackson Gap
08/27/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	150	950	700	50	100	250	
Future Volume (veh/h)	150	950	700	50	100	250	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	163	1033	761	54	109	272	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	205	2473	1394	433	392	349	
Arrive On Green	0.13	0.54	0.30	0.30	0.25	0.25	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	163	1033	761	54	109	272	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	4.2	5.6	5.8	1.2	2.3	7.5	
Cycle Q Clear(g_c), s	4.2	5.6	5.8	1.2	2.3	7.5	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	205	2473	1394	433	392	349	
V/C Ratio(X)	0.79	0.42	0.55	0.12	0.28	0.78	
Avail Cap(c_a), veh/h	514	8247	6281	1950	1353	1204	
HCM Platoon Ratio	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	
Uniform Delay (d), s/veh	17.7	5.7	12.2	10.5	12.8	14.8	
Incr Delay (d2), s/veh	6.8	0.1	0.3	0.1	0.4	3.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	2.9	1.6	2.7	0.5	1.2	0.7	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	24.6	5.8	12.5	10.7	13.2	18.6	
LnGrp LOS	C	A	B	B	B	B	
Approach Vol, veh/h		1196	815		381		
Approach Delay, s/veh		8.4	12.4		17.0		
Approach LOS		A	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				27.1	14.8	9.9	17.3
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				75.5	35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s				7.6	9.5	6.2	7.8
Green Ext Time (p_c), s				7.2	0.9	0.2	5.0
Intersection Summary							
HCM 6th Ctrl Delay			11.1				
HCM 6th LOS			B				

Timings
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	875	100	75	400	75	175	250	100	150	400	200
Future Volume (vph)	75	875	100	75	400	75	175	250	100	150	400	200
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.0	44.0	44.0	18.0	44.0	44.0	21.0	40.0	40.0	18.0	37.0	37.0
Total Split (%)	15.0%	36.7%	36.7%	15.0%	36.7%	36.7%	17.5%	33.3%	33.3%	15.0%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	10.2	27.5	27.5	10.2	27.5	27.5	35.4	21.7	21.7	30.7	19.3	19.3
Actuated g/C Ratio	0.12	0.32	0.32	0.12	0.32	0.32	0.41	0.25	0.25	0.35	0.22	0.22
v/c Ratio	0.44	0.67	0.21	0.44	0.30	0.16	0.50	0.35	0.25	0.39	0.62	0.45
Control Delay	50.5	29.8	6.4	50.5	24.9	5.1	23.4	30.8	8.0	21.7	37.3	8.2
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	50.5	29.8	6.4	50.5	24.9	5.1	23.4	30.8	8.0	21.7	37.3	8.2
LOS	D	C	A	D	C	A	C	C	A	C	D	A
Approach Delay		29.1			25.7			24.0			26.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 86.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 26.8









Intersection LOS: C

Intersection Capacity Utilization 56.8%

ICU Level of Service B

Analysis Period (min) 15































Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

 Ø1	 Ø2	 Ø3	 Ø4
18 s	40 s	18 s	44 s
 Ø5	 Ø6	 Ø7	 Ø8
21 s	37 s	18 s	44 s

HCM 6th Signalized Intersection Summary

























6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
08/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	75	875	100	75	400	75	175	250	100	150	400	200
Future Volume (veh/h)	75	875	100	75	400	75	175	250	100	150	400	200
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	82	951	109	82	435	82	190	272	109	163	435	217
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	102	1424	442	102	1424	442	373	743	332	428	693	309
Arrive On Green	0.06	0.31	0.31	0.06	0.31	0.31	0.12	0.23	0.23	0.10	0.22	0.22
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	82	951	109	82	435	82	190	272	109	163	435	217
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.2	11.3	3.6	3.2	4.5	2.6	5.6	4.5	4.0	4.8	7.7	8.8
Cycle Q Clear(g_c), s	3.2	11.3	3.6	3.2	4.5	2.6	5.6	4.5	4.0	4.8	7.7	8.8
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	102	1424	442	102	1424	442	373	743	332	428	693	309
V/C Ratio(X)	0.81	0.67	0.25	0.81	0.31	0.19	0.51	0.37	0.33	0.38	0.63	0.70
Avail Cap(c_a), veh/h	344	2887	896	344	2887	896	601	1806	805	604	1653	737
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	29.0	18.8	16.1	29.0	16.4	15.8	16.2	20.1	20.0	16.1	22.2	22.6
Incr Delay (d2), s/veh	13.8	0.5	0.3	13.8	0.1	0.2	1.1	0.3	0.6	0.6	0.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	6.4	1.9	2.7	2.5	1.4	3.4	2.7	2.2	2.9	4.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	19.3	16.4	42.7	16.6	16.0	17.3	20.4	20.5	16.7	23.2	25.5
LnGrp LOS	D	B	B	D	B	B	B	C	C	B	C	C
Approach Vol, veh/h		1142			599			571			815	
Approach Delay, s/veh		20.7			20.1			19.4			22.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	19.1	8.5	24.0	12.1	18.1	8.5	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	35.5	13.5	39.5	16.5	32.5	13.5	39.5				
Max Q Clear Time (g_c+I1), s	6.8	6.5	5.2	13.3	7.6	10.8	5.2	6.5				
Green Ext Time (p_c), s	0.2	1.7	0.1	6.2	0.2	2.8	0.1	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	60	75	30	40	60	65	870	70	100	785	85
Future Volume (vph)	45	60	75	30	40	60	65	870	70	100	785	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	30.0	30.0	15.0	30.0	30.0	21.0	45.0	45.0	30.0	54.0	54.0
Total Split (%)	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%	17.5%	37.5%	37.5%	25.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	13.1	8.9	8.9	11.9	8.2	8.2	41.3	37.1	37.1	42.3	37.6	37.6
Actuated g/C Ratio	0.20	0.13	0.13	0.18	0.12	0.12	0.62	0.56	0.56	0.64	0.57	0.57
v/c Ratio	0.18	0.29	0.27	0.13	0.21	0.22	0.17	0.54	0.09	0.28	0.48	0.11
Control Delay	24.1	35.5	3.8	23.7	35.6	1.8	7.4	16.4	0.6	8.3	14.9	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	35.5	3.8	23.7	35.6	1.8	7.4	16.4	0.6	8.3	14.9	3.4
LOS	C	D	A	C	D	A	A	B	A	A	B	A
Approach Delay		19.4			17.2			14.7			13.2	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 66.3

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 14.6

Intersection LOS: B

Intersection Capacity Utilization 50.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Jackson Gap St & 68th Ave



























HCM 6th Signalized Intersection Summary

Porteos ISP Jackson Gap

























11/25/2019

1: Jackson Gap St & 68th Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	60	75	30	40	60	65	870	70	100	785	85
Future Volume (veh/h)	45	60	75	30	40	60	65	870	70	100	785	85
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	49	65	54	33	43	48	71	946	58	109	853	81
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	311	185	157	289	163	139	363	1310	584	353	1359	606
Arrive On Green	0.05	0.11	0.11	0.04	0.10	0.10	0.06	0.41	0.41	0.08	0.43	0.43
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	49	65	54	33	43	48	71	946	58	109	853	81
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	1.3	1.8	1.7	0.9	1.2	1.6	1.2	12.3	1.2	1.9	10.4	1.7
Cycle Q Clear(g_c), s	1.3	1.8	1.7	0.9	1.2	1.6	1.2	12.3	1.2	1.9	10.4	1.7
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	311	185	157	289	163	139	363	1310	584	353	1359	606
V/C Ratio(X)	0.16	0.35	0.34	0.11	0.26	0.35	0.20	0.72	0.10	0.31	0.63	0.13
Avail Cap(c_a), veh/h	571	864	733	569	864	733	795	2609	1163	1050	3188	1422
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	18.6	20.4	20.4	19.0	20.7	20.9	8.2	12.2	9.0	8.9	11.1	8.6
Incr Delay (d2), s/veh	0.2	1.1	1.3	0.2	0.8	1.5	0.3	0.8	0.1	0.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	1.2	1.0	0.5	0.8	0.9	0.6	6.0	0.5	0.9	4.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	21.5	21.7	19.1	21.5	22.3	8.5	13.0	9.0	9.4	11.6	8.7
LnGrp LOS	B	C	C	B	C	C	A	B	A	A	B	A
Approach Vol, veh/h	168			124			1075			1043		
Approach Delay, s/veh	20.8			21.2			12.5			11.1		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	24.8	6.3	10.0	7.6	25.6	7.0	9.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	40.5	10.5	25.5	16.5	49.5	10.5	25.5				
Max Q Clear Time (g_c+I1), s	3.9	14.3	2.9	3.8	3.2	12.4	3.3	3.6				
Green Ext Time (p_c), s	0.2	6.0	0.0	0.3	0.1	5.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	12.9											
HCM 6th LOS	B											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	130	135	60	140	90	130	630	90	140	510	290
Future Volume (vph)	350	130	135	60	140	90	130	630	90	140	510	290
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	15.0	45.0	45.0	15.0	45.0	45.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	12.5%	37.5%	37.5%	12.5%	37.5%	37.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	37.3	27.7	27.7	17.5	9.8	9.8	9.1	25.1	25.1	9.2	25.3	25.3
Actuated g/C Ratio	0.44	0.32	0.32	0.20	0.11	0.11	0.11	0.29	0.29	0.11	0.30	0.30
v/c Ratio	0.69	0.14	0.27	0.24	0.42	0.40	0.44	0.74	0.20	0.46	0.60	0.50
Control Delay	27.1	24.8	6.4	21.1	41.9	14.1	43.7	33.2	6.3	44.0	29.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	24.8	6.4	21.1	41.9	14.1	43.7	33.2	6.3	44.0	29.1	5.8
LOS	C	C	A	C	D	B	D	C	A	D	C	A
Approach Delay		22.1			28.9			32.0			24.1	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 85.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 26.7









Intersection LOS: C

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave

			
Ø1	Ø2	Ø3	Ø4
15 s	45 s	30 s	30 s
			
Ø5	Ø6	Ø7	Ø8
15 s	45 s	30 s	30 s

HCM 6th Signalized Intersection Summary















2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	130	135	60	140	90	130	630	90	140	510	290
Future Volume (veh/h)	350	130	135	60	140	90	130	630	90	140	510	290
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	380	141	100	65	152	56	141	685	58	152	554	293
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	553	888	396	300	291	130	232	936	418	238	943	420
Arrive On Green	0.24	0.28	0.28	0.05	0.09	0.09	0.07	0.29	0.29	0.08	0.30	0.30
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	380	141	100	65	152	56	141	685	58	152	554	293
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	12.0	2.0	3.3	2.2	2.8	2.3	2.7	11.7	1.8	2.9	9.0	11.1
Cycle Q Clear(g_c), s	12.0	2.0	3.3	2.2	2.8	2.3	2.7	11.7	1.8	2.9	9.0	11.1
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	553	888	396	300	291	130	232	936	418	238	943	420
V/C Ratio(X)	0.69	0.16	0.25	0.22	0.52	0.43	0.61	0.73	0.14	0.64	0.59	0.70
Avail Cap(c_a), veh/h	838	1338	597	883	1338	597	536	2125	948	536	2125	948
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	16.3	16.5	17.0	23.1	26.3	26.1	27.2	19.3	15.8	27.2	18.2	19.0
Incr Delay (d2), s/veh	1.5	0.1	0.3	0.4	1.4	2.2	2.6	1.1	0.2	2.8	0.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	1.2	1.8	1.4	1.8	1.4	1.8	7.0	1.0	1.9	5.3	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	16.6	17.3	23.4	27.8	28.3	29.8	20.4	15.9	30.1	18.8	21.1
LnGrp LOS	B	B	B	C	C	C	C	C	B	C	B	C
Approach Vol, veh/h	621			273			884			999		
Approach Delay, s/veh	17.5			26.9			21.6			21.2		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	22.3	7.8	21.4	9.0	22.5	19.2	10.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	40.5	25.5	25.5	10.5	40.5	25.5	25.5				
Max Q Clear Time (g_c+I1), s	4.9	13.7	4.2	5.3	4.7	13.1	14.0	4.8				
Green Ext Time (p_c), s	0.2	4.1	0.1	0.8	0.1	3.9	0.7	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	21.1											
HCM 6th LOS	C											

Timings 3: Jackson Gap Way & Jackson Gap St

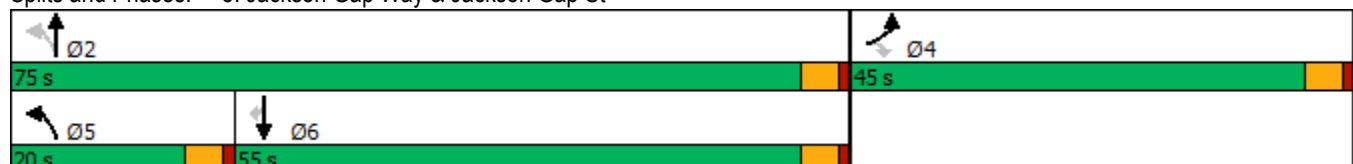
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (vph)	105	20	20	695	430	185
Future Volume (vph)	105	20	20	695	430	185
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	45.0	45.0	20.0	75.0	55.0	55.0
Total Split (%)	37.5%	37.5%	16.7%	62.5%	45.8%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.1	9.1	25.1	26.3	24.5	24.5
Actuated g/C Ratio	0.22	0.22	0.62	0.65	0.60	0.60
v/c Ratio	0.32	0.07	0.04	0.37	0.25	0.22
Control Delay	16.9	7.7	4.8	5.7	7.4	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	7.7	4.8	5.7	7.4	2.8
LOS	B	A	A	A	A	A
Approach Delay	15.4			5.7	6.0	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 40.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 6.6
 Intersection LOS: A
 Intersection Capacity Utilization 32.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: Jackson Gap Way & Jackson Gap St









HCM 6th Signalized Intersection Summary

3: Jackson Gap Way & Jackson Gap St













Porteos ISP Jackson Gap
11/25/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	20	20	695	430	185
Future Volume (veh/h)	105	20	20	695	430	185
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	114	22	22	755	467	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	194	173	468	1674	1020	455
Arrive On Green	0.12	0.12	0.03	0.53	0.32	0.32
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	114	22	22	755	467	201
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	1.7	0.4	0.2	3.8	3.0	2.8
Cycle Q Clear(g_c), s	1.7	0.4	0.2	3.8	3.0	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	194	173	468	1674	1020	455
V/C Ratio(X)	0.59	0.13	0.05	0.45	0.46	0.44
Avail Cap(c_a), veh/h	2542	2262	1396	8828	6324	2821
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	10.6	10.0	4.7	3.8	6.9	6.9
Incr Delay (d2), s/veh	2.8	0.3	0.0	0.2	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.6	0.0	0.1	0.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	10.3	4.8	4.0	7.2	7.5
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	136			777	668	
Approach Delay, s/veh	12.9			4.0	7.3	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	17.9			7.6	5.2	12.6
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	70.5			40.5	15.5	50.5
Max Q Clear Time (g_c+I1), s	5.8			3.7	2.2	5.0
Green Ext Time (p_c), s	4.8			0.3	0.0	3.2
Intersection Summary						
HCM 6th Ctrl Delay			6.2			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	85	55	110	60	70	145
Future Volume (vph)	85	55	110	60	70	145
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	25.0	85.0	60.0	60.0
Total Split (%)	29.2%	29.2%	20.8%	70.8%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	7.8	7.8	21.9	23.2	13.0	13.0
Actuated g/C Ratio	0.22	0.22	0.61	0.64	0.36	0.36
v/c Ratio	0.27	0.17	0.17	0.06	0.13	0.26
Control Delay	15.8	6.5	4.9	4.3	14.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	6.5	4.9	4.3	14.4	5.0
LOS	B	A	A	A	B	A
Approach Delay	12.1			4.7	8.1	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 36
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.27
 Intersection Signal Delay: 8.0
 Intersection LOS: A
 Intersection Capacity Utilization 25.0%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	55	110	60	70	145
Future Volume (veh/h)	85	55	110	60	70	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	92	60	120	65	76	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	209	186	649	847	351	298
Arrive On Green	0.13	0.13	0.11	0.50	0.21	0.21
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	92	60	120	65	76	158
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	1.3	0.9	1.2	0.5	0.9	2.4
Cycle Q Clear(g_c), s	1.3	0.9	1.2	0.5	0.9	2.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	209	186	649	847	351	298
V/C Ratio(X)	0.44	0.32	0.18	0.08	0.22	0.53
Avail Cap(c_a), veh/h	1971	1754	1793	5464	3767	3192
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	9.9	9.7	4.9	3.2	8.1	8.7
Incr Delay (d2), s/veh	1.4	1.0	0.1	0.0	0.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.1	0.2	0.0	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	10.7	5.1	3.2	8.4	10.2
LnGrp LOS	B	B	A	A	A	B
Approach Vol, veh/h	152			185	234	
Approach Delay, s/veh	11.1			4.4	9.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	17.0		7.7		7.3	9.7
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	80.5		30.5		20.5	55.5
Max Q Clear Time (g_c+I1), s	2.5		3.3		3.2	4.4
Green Ext Time (p_c), s	0.3		0.3		0.2	0.7
Intersection Summary						
HCM 6th Ctrl Delay			8.3			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

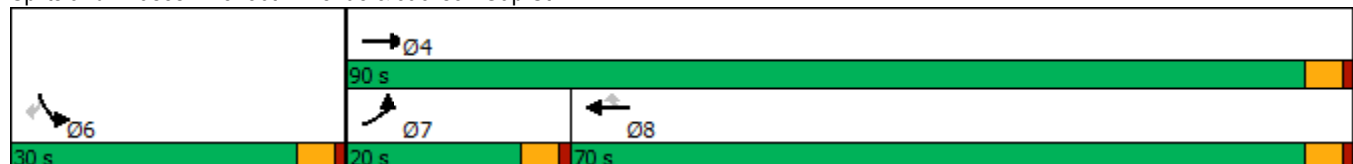


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	120	590	675	30	20	75
Future Volume (vph)	120	590	675	30	20	75
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	20.0	90.0	70.0	70.0	30.0	30.0
Total Split (%)	16.7%	75.0%	58.3%	58.3%	25.0%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	9.6	31.1	20.1	20.1	6.5	6.5
Actuated g/C Ratio	0.22	0.73	0.47	0.47	0.15	0.15
v/c Ratio	0.37	0.20	0.35	0.05	0.09	0.29
Control Delay	19.3	3.0	11.6	5.3	19.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	3.0	11.6	5.3	19.6	9.1
LOS	B	A	B	A	B	A
Approach Delay		5.7	11.3		11.3	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 42.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 8.7
 Intersection LOS: A
 Intersection Capacity Utilization 35.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St































Porteos ISP Jackson Gap
11/25/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	120	590	675	30	20	75	
Future Volume (veh/h)	120	590	675	30	20	75	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	130	641	734	33	22	82	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	176	2774	1588	493	154	137	
Arrive On Green	0.11	0.61	0.35	0.35	0.10	0.10	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	130	641	734	33	22	82	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	2.4	1.9	3.8	0.5	0.4	1.7	
Cycle Q Clear(g_c), s	2.4	1.9	3.8	0.5	0.4	1.7	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	176	2774	1588	493	154	137	
V/C Ratio(X)	0.74	0.23	0.46	0.07	0.14	0.60	
Avail Cap(c_a), veh/h	820	12966	9933	3084	1349	1200	
HCM Platoon Ratio	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	
Uniform Delay (d), s/veh	13.0	2.7	7.7	6.6	12.5	13.1	
Incr Delay (d2), s/veh	6.0	0.0	0.2	0.1	0.4	4.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.6	0.0	1.2	0.1	0.2	0.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	19.0	2.8	7.9	6.7	12.9	17.2	
LnGrp LOS	B	A	A	A	B	B	
Approach Vol, veh/h		771	767	104			
Approach Delay, s/veh		5.5	7.8	16.3			
Approach LOS		A	A	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				22.8	7.4	7.8	15.0
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				85.5	25.5	15.5	65.5
Max Q Clear Time (g_c+I1), s				3.9	3.7	4.4	5.8
Green Ext Time (p_c), s				3.9	0.2	0.2	4.7
Intersection Summary							
HCM 6th Ctrl Delay			7.3				
HCM 6th LOS			A				

Timings
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	345	140	125	30	320	65	150	245	20	45	145	235
Future Volume (vph)	345	140	125	30	320	65	150	245	20	45	145	235
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	35.0	50.0	50.0	15.0	30.0	30.0	18.0	40.0	40.0	15.0	37.0	37.0
Total Split (%)	29.2%	41.7%	41.7%	12.5%	25.0%	25.0%	15.0%	33.3%	33.3%	12.5%	30.8%	30.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	26.6	36.0	36.0	7.3	11.8	11.8	26.5	19.6	19.6	17.4	10.1	10.1
Actuated g/C Ratio	0.34	0.46	0.46	0.09	0.15	0.15	0.34	0.25	0.25	0.22	0.13	0.13
v/c Ratio	0.71	0.07	0.19	0.23	0.51	0.22	0.43	0.34	0.05	0.18	0.39	0.64
Control Delay	32.5	14.8	4.2	40.5	35.0	1.7	24.3	29.2	0.2	21.6	36.3	12.7
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	32.5	14.8	4.2	40.5	35.0	1.7	24.3	29.2	0.2	21.6	36.3	12.7
LOS	C	B	A	D	D	A	C	C	A	C	D	B
Approach Delay		22.6			30.2			26.0			21.7	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 78.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 24.9

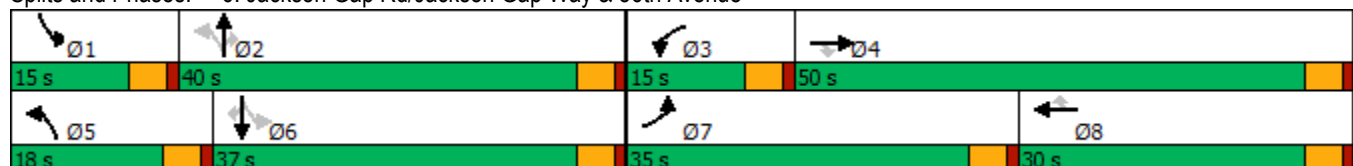
Intersection LOS: C

Intersection Capacity Utilization 52.8%

ICU Level of Service A































Analysis Period (min) 15

Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue



























HCM 6th Signalized Intersection Summary
6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	345	140	125	30	320	65	150	245	20	45	145	235
Future Volume (veh/h)	345	140	125	30	320	65	150	245	20	45	145	235
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	375	152	136	33	348	71	163	266	22	49	158	255
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	426	1666	517	55	602	187	433	889	397	392	707	315
Arrive On Green	0.27	0.36	0.36	0.03	0.13	0.13	0.10	0.28	0.28	0.05	0.22	0.22
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	375	152	136	33	348	71	163	266	22	49	158	255
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	14.6	1.4	4.4	1.3	4.6	3.0	4.8	4.3	0.7	1.5	2.6	11.0
Cycle Q Clear(g_c), s	14.6	1.4	4.4	1.3	4.6	3.0	4.8	4.3	0.7	1.5	2.6	11.0
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	426	1666	517	55	602	187	433	889	397	392	707	315
V/C Ratio(X)	0.88	0.09	0.26	0.60	0.58	0.38	0.38	0.30	0.06	0.12	0.22	0.81
Avail Cap(c_a), veh/h	752	3214	998	259	1801	559	602	1745	778	579	1598	713
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	22.8	13.6	14.5	30.9	26.5	25.7	15.7	18.4	17.1	18.0	20.7	23.9
Incr Delay (d2), s/veh	6.0	0.0	0.3	9.9	0.9	1.3	0.5	0.2	0.1	0.1	0.2	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.4	0.8	2.3	1.1	2.9	1.8	2.9	2.6	0.4	0.9	1.6	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	13.6	14.8	40.8	27.3	27.0	16.3	18.6	17.2	18.1	20.8	28.9
LnGrp LOS	C	B	B	D	C	C	B	B	B	B	C	C
Approach Vol, veh/h		663			452			451			462	
Approach Delay, s/veh		22.4			28.3			17.7			25.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	22.6	6.7	28.1	11.1	18.9	21.8	13.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	10.5	35.5	10.5	45.5	13.5	32.5	30.5	25.5				
Max Q Clear Time (g_c+I1), s	3.5	6.3	3.3	6.4	6.8	13.0	16.6	6.6				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.1	0.2	1.4	0.7	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			23.3									
HCM 6th LOS			C									

Timings
1: Jackson Gap St & 68th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	50	65	60	70	120	85	890	40	70	975	70
Future Volume (vph)	100	50	65	60	70	120	85	890	40	70	975	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	24.0	50.0	50.0	21.0	47.0	47.0
Total Split (%)	12.5%	28.3%	28.3%	12.5%	28.3%	28.3%	20.0%	41.7%	41.7%	17.5%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	21.5	13.9	13.9	17.5	9.4	9.4	45.4	38.8	38.8	43.5	37.8	37.8
Actuated g/C Ratio	0.27	0.17	0.17	0.22	0.12	0.12	0.56	0.48	0.48	0.54	0.47	0.47
v/c Ratio	0.34	0.19	0.22	0.22	0.40	0.47	0.33	0.64	0.06	0.26	0.72	0.11
Control Delay	27.9	37.0	6.4	26.2	42.9	13.3	10.6	19.3	0.1	9.8	22.1	2.6
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	27.9	37.0	6.4	26.2	42.9	13.3	10.6	19.3	0.1	9.8	22.1	2.6
LOS	C	D	A	C	D	B	B	B	A	A	C	A
Approach Delay		23.5			24.7			17.9			20.1	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 20.0





Intersection LOS: B

Intersection Capacity Utilization 55.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Jackson Gap St & 68th Ave

























			
Ø1	Ø2	Ø3	Ø4
21 s	50 s	15 s	34 s
			
Ø5	Ø6	Ø7	Ø8
24 s	47 s	15 s	34 s

HCM 6th Signalized Intersection Summary

Porteos ISP Jackson Gap

























11/25/2019

1: Jackson Gap St & 68th Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	50	65	60	70	120	85	890	40	70	975	70
Future Volume (veh/h)	100	50	65	60	70	120	85	890	40	70	975	70
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	109	54	43	65	76	113	92	967	25	76	1060	65
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	329	237	201	342	199	169	294	1395	622	317	1377	614
Arrive On Green	0.08	0.14	0.14	0.06	0.12	0.12	0.07	0.44	0.44	0.06	0.43	0.43
Sat Flow, veh/h	1598	1678	1422	1598	1678	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	109	54	43	65	76	113	92	967	25	76	1060	65
Grp Sat Flow(s),veh/h/ln	1598	1678	1422	1598	1678	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	3.5	1.7	1.6	2.1	2.5	4.5	1.8	14.5	0.6	1.5	16.7	1.6
Cycle Q Clear(g_c), s	3.5	1.7	1.6	2.1	2.5	4.5	1.8	14.5	0.6	1.5	16.7	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	237	201	342	199	169	294	1395	622	317	1377	614
V/C Ratio(X)	0.33	0.23	0.21	0.19	0.38	0.67	0.31	0.69	0.04	0.24	0.77	0.11
Avail Cap(c_a), veh/h	489	838	710	538	838	710	717	2457	1096	667	2295	1024
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	20.5	22.5	22.4	21.0	24.0	24.9	10.9	13.4	9.5	10.0	14.3	10.0
Incr Delay (d2), s/veh	0.6	0.5	0.5	0.3	1.2	4.5	0.6	0.6	0.0	0.4	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	1.1	0.9	1.3	1.7	2.8	0.9	7.5	0.3	0.8	8.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	23.0	23.0	21.2	25.2	29.4	11.5	14.0	9.5	10.4	15.2	10.1
LnGrp LOS	C	C	C	C	C	C	B	B	A	B	B	B
Approach Vol, veh/h	206			254			1084			1201		
Approach Delay, s/veh	22.0			26.1			13.7			14.6		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	30.3	7.8	12.9	8.4	30.0	9.1	11.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	45.5	10.5	29.5	19.5	42.5	10.5	29.5				
Max Q Clear Time (g_c+I1), s	3.5	16.5	4.1	3.7	3.8	18.7	5.5	6.5				
Green Ext Time (p_c), s	0.1	6.2	0.0	0.3	0.1	6.8	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	15.9											
HCM 6th LOS	B											

Timings
2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	130	155	100	150	160	145	600	80	130	715	350
Future Volume (vph)	310	130	155	100	150	160	145	600	80	130	715	350
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	25.0	40.0	40.0	15.0	30.0	30.0	18.0	47.0	47.0	18.0	47.0	47.0
Total Split (%)	20.8%	33.3%	33.3%	12.5%	25.0%	25.0%	15.0%	39.2%	39.2%	15.0%	39.2%	39.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	34.5	23.8	23.8	19.3	10.3	10.3	10.2	30.7	30.7	9.8	30.3	30.3
Actuated g/C Ratio	0.39	0.27	0.27	0.22	0.12	0.12	0.11	0.35	0.35	0.11	0.34	0.34
v/c Ratio	0.71	0.17	0.34	0.38	0.45	0.55	0.45	0.60	0.15	0.42	0.73	0.52
Control Delay	33.4	30.5	7.6	26.1	43.5	13.9	44.0	26.7	1.5	44.0	30.2	5.2
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	33.4	30.5	7.6	26.1	43.5	13.9	44.0	26.7	1.5	44.0	30.2	5.2
LOS	C	C	A	C	D	B	D	C	A	D	C	A
Approach Delay		26.0			27.7			27.3			24.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 88.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 26.0









Intersection LOS: C

Intersection Capacity Utilization 60.3%

ICU Level of Service B

Analysis Period (min) 15

























Splits and Phases: 2: Jackson Gap St & 64th Ave

			
Ø1	Ø2	Ø3	Ø4
18 s	47 s	15 s	40 s
			
Ø5	Ø6	Ø7	Ø8
18 s	47 s	25 s	30 s

HCM 6th Signalized Intersection Summary













2: Jackson Gap St & 64th Ave

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	130	155	100	150	160	145	600	80	130	715	350
Future Volume (veh/h)	310	130	155	100	150	160	145	600	80	130	715	350
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	337	141	121	109	163	132	158	652	47	141	777	358
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	510	824	368	356	418	187	240	1082	483	219	1061	473
Arrive On Green	0.20	0.26	0.26	0.08	0.13	0.13	0.08	0.34	0.34	0.07	0.33	0.33
Sat Flow, veh/h	1598	3188	1422	1598	3188	1422	3100	3188	1422	3100	3188	1422
Grp Volume(v), veh/h	337	141	121	109	163	132	158	652	47	141	777	358
Grp Sat Flow(s),veh/h/ln	1598	1594	1422	1598	1594	1422	1550	1594	1422	1550	1594	1422
Q Serve(g_s), s	12.0	2.4	4.9	4.1	3.3	6.3	3.5	12.0	1.6	3.1	15.2	15.9
Cycle Q Clear(g_c), s	12.0	2.4	4.9	4.1	3.3	6.3	3.5	12.0	1.6	3.1	15.2	15.9
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	510	824	368	356	418	187	240	1082	483	219	1061	473
V/C Ratio(X)	0.66	0.17	0.33	0.31	0.39	0.71	0.66	0.60	0.10	0.64	0.73	0.76
Avail Cap(c_a), veh/h	647	1600	713	470	1149	512	591	1915	854	591	1915	854
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(l)	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	18.4	20.3	21.3	23.8	28.1	29.4	31.7	19.4	16.0	32.0	20.8	21.1
Incr Delay (d2), s/veh	1.7	0.1	0.5	0.5	0.6	4.9	3.1	0.5	0.1	3.2	1.0	2.5
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	7.4	1.5	2.8	2.7	2.2	4.0	2.4	7.3	0.9	2.2	8.9	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	20.4	21.8	24.3	28.7	34.3	34.8	19.9	16.0	35.2	21.8	23.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	C	C
Approach Vol, veh/h		599			404			857			1276	
Approach Delay, s/veh		20.5			29.3			22.5			23.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	28.5	9.9	22.8	10.0	28.0	19.0	13.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	42.5	10.5	35.5	13.5	42.5	20.5	25.5				
Max Q Clear Time (g_c+I1), s	5.1	14.0	6.1	6.9	5.5	17.9	14.0	8.3				
Green Ext Time (p_c), s	0.2	3.9	0.1	1.0	0.2	5.7	0.4	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Timings 3: Jackson Gap Way & Jackson Gap St

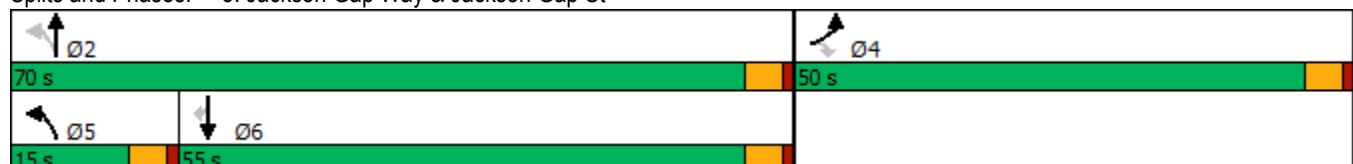
Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	215	30	20	540	790	150
Future Volume (vph)	215	30	20	540	790	150
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	15.0	70.0	55.0	55.0
Total Split (%)	41.7%	41.7%	12.5%	58.3%	45.8%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	15.8	15.8	30.2	30.2	26.7	26.7
Actuated g/C Ratio	0.28	0.28	0.54	0.54	0.48	0.48
v/c Ratio	0.53	0.08	0.06	0.35	0.57	0.22
Control Delay	23.9	8.6	7.0	8.0	14.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	8.6	7.0	8.0	14.3	3.4
LOS	C	A	A	A	B	A
Approach Delay	22.0			7.9	12.6	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 55.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 12.4
Intersection LOS: B
Intersection Capacity Utilization 41.2%
ICU Level of Service A
Analysis Period (min) 15













Splits and Phases: 3: Jackson Gap Way & Jackson Gap St



HCM 6th Signalized Intersection Summary













3: Jackson Gap Way & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	30	20	540	790	150
Future Volume (veh/h)	215	30	20	540	790	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	234	33	22	587	859	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	310	276	337	1815	1351	602
Arrive On Green	0.19	0.19	0.03	0.57	0.42	0.42
Sat Flow, veh/h	1598	1422	1598	3272	3272	1422
Grp Volume(v), veh/h	234	33	22	587	859	163
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1594	1594	1422
Q Serve(g_s), s	5.3	0.7	0.3	3.7	8.1	2.8
Cycle Q Clear(g_c), s	5.3	0.7	0.3	3.7	8.1	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	310	276	337	1815	1351	602
V/C Ratio(X)	0.75	0.12	0.07	0.32	0.64	0.27
Avail Cap(c_a), veh/h	1912	1701	735	5490	4233	1888
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.5	12.6	6.2	4.3	8.6	7.1
Incr Delay (d2), s/veh	3.7	0.2	0.1	0.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.1	0.8	3.1	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.2	12.8	6.2	4.4	9.1	7.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	267			609	1022	
Approach Delay, s/veh	17.5			4.5	8.9	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	26.2			11.9	5.5	20.6
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	65.5			45.5	10.5	50.5
Max Q Clear Time (g_c+l1), s	5.7			7.3	2.3	10.1
Green Ext Time (p_c), s	3.5			0.6	0.0	6.0
Intersection Summary						
HCM 6th Ctrl Delay			8.7			
HCM 6th LOS			A			

Timings
4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	110	60	80	90	50
Future Volume (vph)	155	110	60	80	90	50
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	40.0	40.0	18.0	80.0	62.0	62.0
Total Split (%)	33.3%	33.3%	15.0%	66.7%	51.7%	51.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	9.8	9.8	17.3	17.3	10.6	10.6
Actuated g/C Ratio	0.27	0.27	0.47	0.47	0.29	0.29
v/c Ratio	0.40	0.26	0.12	0.11	0.20	0.12
Control Delay	15.6	5.2	5.8	5.7	14.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	5.2	5.8	5.7	14.6	6.2
LOS	B	A	A	A	B	A
Approach Delay	11.3			5.7	11.6	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 36.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 10.0
 Intersection LOS: A
 Intersection Capacity Utilization 26.1%
 ICU Level of Service A
 Analysis Period (min) 15













Splits and Phases: 4: Jackson Gap St & 60th Ave



HCM 6th Signalized Intersection Summary

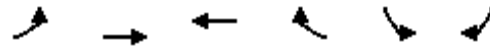
4: Jackson Gap St & 60th Ave

Porteos ISP Jackson Gap
11/25/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	155	110	60	80	90	50
Future Volume (veh/h)	155	110	60	80	90	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	168	120	65	87	98	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	15	15	15	15	15	15
Cap, veh/h	281	250	579	769	341	289
Arrive On Green	0.18	0.18	0.07	0.46	0.20	0.20
Sat Flow, veh/h	1598	1422	1598	1678	1678	1422
Grp Volume(v), veh/h	168	120	65	87	98	54
Grp Sat Flow(s),veh/h/ln	1598	1422	1598	1678	1678	1422
Q Serve(g_s), s	2.4	1.9	0.7	0.7	1.2	0.8
Cycle Q Clear(g_c), s	2.4	1.9	0.7	0.7	1.2	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	281	250	579	769	341	289
V/C Ratio(X)	0.60	0.48	0.11	0.11	0.29	0.19
Avail Cap(c_a), veh/h	2303	2049	1338	5143	3917	3320
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	9.3	9.1	5.5	3.8	8.3	8.1
Incr Delay (d2), s/veh	2.0	1.4	0.1	0.1	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.2	0.1	0.1	0.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	10.6	5.6	3.9	8.8	8.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	288			152	152	
Approach Delay, s/veh	11.0			4.6	8.7	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	15.8			8.8	6.3	9.5
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	75.5			35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s	2.7			4.4	2.7	3.2
Green Ext Time (p_c), s	0.4			0.7	0.1	0.6
Intersection Summary						
HCM 6th Ctrl Delay			8.8			
HCM 6th LOS			A			

Timings
5: 56th Avenue & Jackson Gap St

Porteos ISP Jackson Gap
11/25/2019

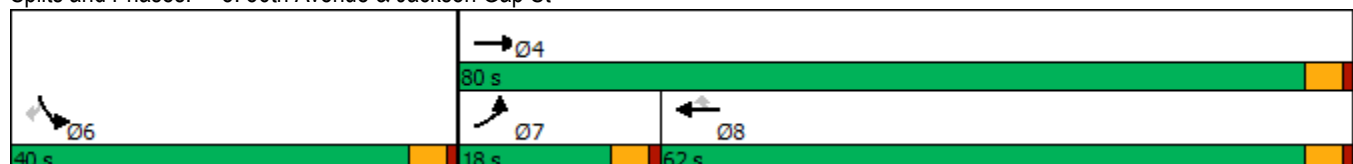


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑	↰	↰	↰
Traffic Volume (vph)	90	730	740	20	40	160
Future Volume (vph)	90	730	740	20	40	160
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	18.0	80.0	62.0	62.0	40.0	40.0
Total Split (%)	15.0%	66.7%	51.7%	51.7%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effect Green (s)	8.7	29.8	19.0	19.0	7.2	7.2
Actuated g/C Ratio	0.19	0.65	0.41	0.41	0.16	0.16
v/c Ratio	0.33	0.27	0.43	0.04	0.18	0.48
Control Delay	20.8	3.8	12.2	5.8	20.5	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	3.8	12.2	5.8	20.5	9.1
LOS	C	A	B	A	C	A
Approach Delay		5.7	12.0		11.4	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 46.2
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 9.0
 Intersection LOS: A
 Intersection Capacity Utilization 34.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: 56th Avenue & Jackson Gap St









HCM 6th Signalized Intersection Summary

5: 56th Avenue & Jackson Gap St

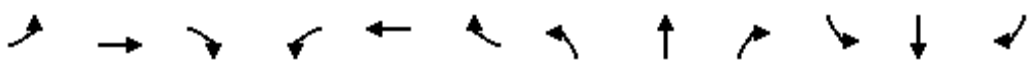
Porteos ISP Jackson Gap
11/25/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	90	730	740	20	40	160	
Future Volume (veh/h)	90	730	740	20	40	160	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1678	1678	1678	1678	1678	1678	
Adj Flow Rate, veh/h	98	793	804	22	43	174	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	15	15	15	15	15	15	
Cap, veh/h	142	2612	1602	497	265	236	
Arrive On Green	0.09	0.57	0.35	0.35	0.17	0.17	
Sat Flow, veh/h	1598	4731	4731	1422	1598	1422	
Grp Volume(v), veh/h	98	793	804	22	43	174	
Grp Sat Flow(s),veh/h/ln	1598	1527	1527	1422	1598	1422	
Q Serve(g_s), s	2.0	3.1	4.7	0.3	0.8	4.0	
Cycle Q Clear(g_c), s	2.0	3.1	4.7	0.3	0.8	4.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	142	2612	1602	497	265	236	
V/C Ratio(X)	0.69	0.30	0.50	0.04	0.16	0.74	
Avail Cap(c_a), veh/h	633	10141	7723	2397	1663	1480	
HCM Platoon Ratio	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	
Uniform Delay (d), s/veh	15.1	3.8	8.7	7.3	12.2	13.5	
Incr Delay (d2), s/veh	5.9	0.1	0.2	0.0	0.3	4.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.4	0.5	1.7	0.1	0.4	6.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	21.0	3.9	9.0	7.4	12.5	18.0	
LnGrp LOS	C	A	A	A	B	B	
Approach Vol, veh/h		891	826	217			
Approach Delay, s/veh		5.8	8.9	16.9			
Approach LOS		A	A	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				23.9	10.2	7.5	16.4
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				75.5	35.5	13.5	57.5
Max Q Clear Time (g_c+I1), s				5.1	6.0	4.0	6.7
Green Ext Time (p_c), s				5.1	0.5	0.1	5.2
Intersection Summary							
HCM 6th Ctrl Delay			8.4				
HCM 6th LOS			A				

Timings 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	350	165	30	160	50	190	435	40	90	305	410
Future Volume (vph)	255	350	165	30	160	50	190	435	40	90	305	410
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	32.0	47.0	47.0	15.0	30.0	30.0	15.0	46.0	46.0	12.0	43.0	43.0
Total Split (%)	26.7%	39.2%	39.2%	12.5%	25.0%	25.0%	12.5%	38.3%	38.3%	10.0%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effect Green (s)	18.8	27.3	27.3	7.3	8.5	8.5	29.1	21.1	21.1	22.5	15.2	15.2
Actuated g/C Ratio	0.26	0.38	0.38	0.10	0.12	0.12	0.41	0.30	0.30	0.32	0.21	0.21
v/c Ratio	0.67	0.22	0.28	0.21	0.32	0.19	0.52	0.51	0.08	0.30	0.50	0.69
Control Delay	33.3	17.4	5.0	36.6	33.0	1.5	20.4	25.4	0.3	17.2	28.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	17.4	5.0	36.6	33.0	1.5	20.4	25.4	0.3	17.2	28.4	9.1
LOS	C	B	A	D	C	A	C	C	A	B	C	A
Approach Delay		20.0			27.0			22.5			17.3	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 71.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 20.5

Intersection LOS: C

Intersection Capacity Utilization 52.3%

ICU Level of Service A

Analysis Period (min) 15































Splits and Phases: 6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

12 s	46 s	15 s	47 s
15 s	43 s	32 s	30 s

HCM 6th Signalized Intersection Summary

6: Jackson Gap Rd/Jackson Gap Way & 56th Avenue

Porteos ISP Jackson Gap
11/25/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (veh/h)	255	350	165	30	160	50	190	435	40	90	305	410
Future Volume (veh/h)	255	350	165	30	160	50	190	435	40	90	305	410
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	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678	1678
Adj Flow Rate, veh/h	277	380	179	33	174	54	207	473	43	98	332	446
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, %	15	15	15	15	15	15	15	15	15	15	15	15
Cap, veh/h	323	1127	350	54	357	111	449	1292	576	438	1146	511
Arrive On Green	0.20	0.25	0.25	0.03	0.08	0.08	0.11	0.41	0.41	0.06	0.36	0.36
Sat Flow, veh/h	1598	4580	1422	1598	4580	1422	1598	3188	1422	1598	3188	1422
Grp Volume(v), veh/h	277	380	179	33	174	54	207	473	43	98	332	446
Grp Sat Flow(s),veh/h/ln	1598	1527	1422	1598	1527	1422	1598	1594	1422	1598	1594	1422
Q Serve(g_s), s	11.8	4.8	7.7	1.4	2.6	2.6	5.5	7.3	1.3	2.7	5.3	20.7
Cycle Q Clear(g_c), s	11.8	4.8	7.7	1.4	2.6	2.6	5.5	7.3	1.3	2.7	5.3	20.7
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	323	1127	350	54	357	111	449	1292	576	438	1146	511
V/C Ratio(X)	0.86	0.34	0.51	0.61	0.49	0.49	0.46	0.37	0.07	0.22	0.29	0.87
Avail Cap(c_a), veh/h	621	2751	854	237	1651	512	516	1870	834	511	1735	774
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(l)	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	21.9	23.0	33.7	31.3	31.3	11.5	14.7	12.9	12.8	16.2	21.1
Incr Delay (d2), s/veh	6.6	0.2	1.2	10.7	1.0	3.3	0.7	0.2	0.1	0.3	0.1	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.3	2.9	4.4	1.2	1.7	1.7	3.1	4.2	0.7	1.6	3.1	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	22.1	24.2	44.5	32.3	34.5	12.3	14.9	13.0	13.1	16.3	28.3
LnGrp LOS	C	C	C	D	C	C	B	B	B	B	B	C
Approach Vol, veh/h		836			261			723			876	
Approach Delay, s/veh		26.4			34.3			14.0			22.1	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	33.2	6.9	21.9	12.0	29.9	18.8	10.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	41.5	10.5	42.5	10.5	38.5	27.5	25.5				
Max Q Clear Time (g_c+I1), s	4.7	9.3	3.4	9.7	7.5	22.7	13.8	4.6				
Green Ext Time (p_c), s	0.0	2.7	0.0	2.6	0.1	2.7	0.5	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									