

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2025 No-Build AM

06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	40	1380	40	290	870	430	40	200	480	480	380	30
Future Volume (veh/h)	40	1380	40	290	870	430	40	200	480	480	380	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1500	43	315	946	467	43	217	522	522	413	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	1293	577	234	2242	696	273	1015	315	352	962	429
Arrive On Green	0.02	0.40	0.40	0.11	0.49	0.49	0.03	0.22	0.22	0.11	0.30	0.30
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1500	43	315	946	467	43	217	522	522	413	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	1.9	48.5	2.2	13.0	15.9	29.9	2.5	4.6	26.5	13.0	12.4	2.0
Cycle Q Clear(g_c), s	1.9	48.5	2.2	13.0	15.9	29.9	2.5	4.6	26.5	13.0	12.4	2.0
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	221	1293	577	234	2242	696	273	1015	315	352	962	429
V/C Ratio(X)	0.19	1.16	0.07	1.35	0.42	0.67	0.16	0.21	1.66	1.48	0.43	0.08
Avail Cap(c_a), veh/h	248	1293	577	234	2242	696	308	1015	315	352	962	429
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	0.52	0.52	0.52	0.17	0.17	0.17
Uniform Delay (d), s/veh	20.3	35.7	22.0	37.3	19.8	23.4	34.8	38.2	46.8	39.0	33.7	30.0
Incr Delay (d2), s/veh	0.2	81.1	0.3	182.2	0.6	5.1	0.1	0.0	303.0	220.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	32.5	0.8	18.7	5.6	10.5	1.0	1.7	35.7	26.3	4.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	116.9	22.2	219.6	20.4	28.5	34.8	38.3	349.7	259.6	33.7	30.0
LnGrp LOS	C	F	C	F	C	C	C	D	F	F	C	C
Approach Vol, veh/h		1586			1728			782			968	
Approach Delay, s/veh		111.7			58.9			246.0			155.4	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	64.0	17.0	32.0	17.0	54.0	7.4	41.6				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.0	56.5	13.0	26.5	13.0	48.5	6.0	33.5				
Max Q Clear Time (g_c+I1), s	3.9	31.9	15.0	28.5	15.0	50.5	4.5	14.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay	122.8
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2025 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑↑		↖	↑↑↑		↖	↑↑	
Traffic Volume (veh/h)	10	970	10	350	450	220	50	310	240	470	120	10
Future Volume (veh/h)	10	970	10	350	450	220	50	310	240	470	120	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	1054	11	380	489	239	54	337	261	511	130	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1464	653	298	1644	765	345	620	289	225	770	65
Arrive On Green	0.01	0.46	0.46	0.09	0.54	0.54	0.04	0.20	0.20	0.09	0.26	0.26
Sat Flow, veh/h	1603	3198	1427	1603	3064	1427	1603	3064	1427	1603	2987	250
Grp Volume(v), veh/h	11	1054	11	380	489	239	54	337	261	511	69	72
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1638
Q Serve(g_s), s	0.4	32.0	0.5	11.0	10.6	11.2	3.2	11.8	21.4	11.0	4.0	4.1
Cycle Q Clear(g_c), s	0.4	32.0	0.5	11.0	10.6	11.2	3.2	11.8	21.4	11.0	4.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	370	1464	653	298	1644	765	345	620	289	225	412	422
V/C Ratio(X)	0.03	0.72	0.02	1.28	0.30	0.31	0.16	0.54	0.90	2.28	0.17	0.17
Avail Cap(c_a), veh/h	630	1464	653	298	1644	765	434	756	352	225	412	422
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	0.28	0.28	0.28	0.50	0.50	0.50
Uniform Delay (d), s/veh	17.0	26.3	17.8	25.7	15.3	15.5	36.0	42.9	46.7	39.1	34.5	34.6
Incr Delay (d2), s/veh	0.0	3.1	0.0	147.3	0.5	1.1	0.0	0.1	7.4	581.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	12.2	0.2	16.3	3.6	3.7	1.2	4.4	8.0	38.1	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	29.4	17.8	173.0	15.8	16.6	36.0	43.0	54.1	620.3	34.6	34.6
LnGrp LOS	B	C	B	F	B	B	D	D	D	F	C	C
Approach Vol, veh/h		1076			1108			652			652	
Approach Delay, s/veh		29.2			69.9			46.8			493.6	
Approach LOS		C			E			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	69.8	15.0	29.7	15.0	60.3	8.3	36.3				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	21.0	* 40	11.0	* 30	11.0	* 50	11.0	* 30				
Max Q Clear Time (g_c+I1), s	2.4	13.2	13.0	23.4	13.0	34.0	5.2	6.1				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.9	0.0	2.5	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	132.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2025 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	30	1070	70	290	310	190	20	520	340	290	560	10
Future Volume (veh/h)	30	1070	70	290	310	190	20	520	340	290	560	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1163	76	315	337	207	22	565	370	315	609	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	1163	76	274	1493	695	201	654	304	247	991	18
Arrive On Green	0.03	0.38	0.38	0.13	0.49	0.49	0.02	0.21	0.21	0.12	0.31	0.31
Sat Flow, veh/h	1603	3048	199	1603	3064	1427	1603	3064	1427	1603	3214	58
Grp Volume(v), veh/h	33	610	629	315	337	207	22	565	370	315	303	317
Grp Sat Flow(s),veh/h/ln	1603	1599	1648	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	1.5	45.7	45.8	16.0	7.6	10.4	1.3	21.3	25.6	14.0	19.4	19.4
Cycle Q Clear(g_c), s	1.5	45.7	45.8	16.0	7.6	10.4	1.3	21.3	25.6	14.0	19.4	19.4
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	401	610	629	274	1493	695	201	654	304	247	493	516
V/C Ratio(X)	0.08	1.00	1.00	1.15	0.23	0.30	0.11	0.86	1.22	1.28	0.61	0.61
Avail Cap(c_a), veh/h	570	610	629	274	1493	695	353	654	304	247	493	516
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	0.59	0.59	0.59
Uniform Delay (d), s/veh	21.4	37.1	37.1	37.9	17.7	18.5	35.9	45.5	47.2	33.8	35.4	35.4
Incr Delay (d2), s/veh	0.0	36.2	36.1	101.4	0.4	1.1	0.1	11.1	123.3	141.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	23.2	23.8	15.7	2.7	3.5	0.5	8.9	19.3	15.1	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	73.3	73.2	139.3	18.1	19.6	36.0	56.7	170.5	175.1	36.4	36.4
LnGrp LOS	C	E	F	F	B	B	D	E	F	F	D	D
Approach Vol, veh/h		1272			859			957			935	
Approach Delay, s/veh		71.9			62.9			100.2			83.1	
Approach LOS		E			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	63.7	18.0	31.0	20.0	51.0	6.6	42.4				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	16.0	* 46	14.0	* 26	16.0	* 46	14.0	* 26				
Max Q Clear Time (g_c+I1), s	3.5	12.4	16.0	27.6	18.0	47.8	3.3	21.4				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	79.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2025 No-Build AM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	190	820	100	100	610	300	80	450	120	200	680	100
Future Volume (veh/h)	190	820	100	100	610	300	80	450	120	200	680	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	207	891	109	109	663	326	87	489	130	217	739	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1452	178	285	1457	679	152	649	168	267	641	94
Arrive On Green	0.08	0.51	0.51	0.05	0.48	0.48	0.06	0.18	0.18	0.11	0.23	0.23
Sat Flow, veh/h	1603	2868	351	1603	3064	1427	1603	3638	940	1603	2796	412
Grp Volume(v), veh/h	207	497	503	109	663	326	87	410	209	217	423	425
Grp Sat Flow(s),veh/h/ln	1603	1599	1620	1603	1532	1427	1603	1532	1514	1603	1599	1609
Q Serve(g_s), s	7.6	26.7	26.7	4.1	17.4	18.6	5.3	15.2	15.8	13.0	27.5	27.5
Cycle Q Clear(g_c), s	7.6	26.7	26.7	4.1	17.4	18.6	5.3	15.2	15.8	13.0	27.5	27.5
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.62	1.00		0.26
Lane Grp Cap(c), veh/h	354	810	820	285	1457	679	152	546	270	267	366	369
V/C Ratio(X)	0.58	0.61	0.61	0.38	0.45	0.48	0.57	0.75	0.78	0.81	1.15	1.15
Avail Cap(c_a), veh/h	398	810	820	378	1457	679	234	702	347	267	366	369
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	21.2	21.2	17.3	21.1	21.4	39.0	46.8	47.0	35.6	46.2	46.3
Incr Delay (d2), s/veh	0.8	3.5	3.4	0.3	1.0	2.4	1.2	2.1	5.4	16.0	95.5	95.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.2	10.4	1.5	6.2	6.4	2.1	5.8	6.3	6.2	20.3	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	24.7	24.6	17.6	22.1	23.8	40.1	48.8	52.5	51.6	141.8	141.9
LnGrp LOS	B	C	C	B	C	C	D	D	D	D	F	F
Approach Vol, veh/h		1207			1098			706			1065	
Approach Delay, s/veh		23.2			22.1			48.8			123.5	
Approach LOS		C			C			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	62.4	17.0	26.9	10.0	66.1	10.9	33.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	13.0	* 48	13.0	27.5	13.0	* 48	13.0	27.5				
Max Q Clear Time (g_c+I1), s	9.6	20.6	15.0	17.8	6.1	28.7	7.3	29.5				
Green Ext Time (p_c), s	0.1	2.4	0.0	1.1	0.1	1.9	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	53.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2025 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	40	1380	40	290	870	430	40	200	480	480	380	30
Future Volume (veh/h)	40	1380	40	290	870	430	40	200	480	480	380	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1500	43	315	946	467	43	217	522	522	413	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	1186	529	234	1988	617	305	1206	374	367	1071	478
Arrive On Green	0.03	0.37	0.37	0.11	0.43	0.43	0.03	0.26	0.26	0.10	0.33	0.33
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1500	43	315	946	467	43	217	522	522	413	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	0.0	44.5	2.3	13.0	17.7	22.7	2.3	4.4	31.5	12.0	11.8	1.5
Cycle Q Clear(g_c), s	0.0	44.5	2.3	13.0	17.7	22.7	2.3	4.4	31.5	12.0	11.8	1.5
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	207	1186	529	234	1988	617	305	1206	374	367	1071	478
V/C Ratio(X)	0.21	1.26	0.08	1.35	0.48	0.76	0.14	0.18	1.39	1.42	0.39	0.07
Avail Cap(c_a), veh/h	227	1186	529	234	1988	617	336	1206	374	367	1071	478
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	0.81	0.81	0.81	0.61	0.61	0.61
Uniform Delay (d), s/veh	33.3	37.7	24.5	33.8	24.3	13.5	31.1	34.3	44.3	37.3	30.5	17.9
Incr Delay (d2), s/veh	0.2	126.0	0.3	182.2	0.8	8.4	0.1	0.3	190.1	200.3	0.6	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(50%),veh/ln	1.0	37.4	0.8	16.2	6.3	8.1	0.9	1.6	30.6	26.1	4.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	163.7	24.8	216.1	25.2	21.9	31.2	34.5	234.4	237.6	31.1	18.0
LnGrp LOS	C	F	C	F	C	C	C	C	F	F	C	B
Approach Vol, veh/h		1586			1728			782			968	
Approach Delay, s/veh		156.4			59.1			167.7			142.0	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	57.4	16.0	37.0	17.0	50.0	7.3	45.7				
Change Period (Y+Rc), s	5.5	* 5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.6	* 52	12.0	31.5	13.0	44.5	5.6	37.9				
Max Q Clear Time (g_c+I1), s	2.0	24.7	14.0	33.5	15.0	46.5	4.3	13.8				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay	122.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2025 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↖	↗	↑↑↑		↗	↑↑↑		↗	↑↑	
Traffic Volume (veh/h)	10	970	10	350	450	220	50	310	240	470	120	10
Future Volume (veh/h)	10	970	10	350	450	220	50	310	240	470	120	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	1054	11	380	489	239	54	337	261	511	130	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	922	411	300	1215	566	366	679	316	389	1104	92
Arrive On Green	0.03	0.29	0.29	0.15	0.40	0.40	0.04	0.22	0.22	0.18	0.37	0.37
Sat Flow, veh/h	1603	3198	1427	1603	3064	1427	1603	3064	1427	1603	2987	250
Grp Volume(v), veh/h	11	1054	11	380	489	239	54	337	261	511	69	72
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1638
Q Serve(g_s), s	0.0	34.6	0.7	18.0	13.8	14.6	3.1	11.5	20.9	22.0	3.4	3.5
Cycle Q Clear(g_c), s	0.0	34.6	0.7	18.0	13.8	14.6	3.1	11.5	20.9	22.0	3.4	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	237	922	411	300	1215	566	366	679	316	389	591	605
V/C Ratio(X)	0.05	1.14	0.03	1.26	0.40	0.42	0.15	0.50	0.83	1.31	0.12	0.12
Avail Cap(c_a), veh/h	255	922	411	300	1215	566	376	679	316	389	591	605
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	0.39	0.39	0.39	0.54	0.54	0.54
Uniform Delay (d), s/veh	36.5	42.7	30.6	34.3	26.0	26.2	34.3	40.8	44.5	29.8	24.9	25.0
Incr Delay (d2), s/veh	0.0	77.3	0.1	142.9	1.0	2.3	0.0	1.0	9.4	151.1	0.2	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(50%),veh/ln	0.3	23.1	0.2	18.7	5.0	5.2	1.2	4.4	8.0	24.5	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	120.0	30.7	177.3	27.0	28.5	34.3	41.9	53.9	180.9	25.1	25.2
LnGrp LOS	D	F	C	F	C	C	C	D	D	F	C	C
Approach Vol, veh/h		1076			1108			652			652	
Approach Delay, s/veh		118.2			78.9			46.0			147.2	
Approach LOS		F			E			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	53.0	26.0	32.0	22.0	40.0	8.3	49.7				
Change Period (Y+Rc), s	* 5.4	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	* 5	* 48	22.0	* 27	18.0	* 35	5.0	* 44				
Max Q Clear Time (g_c+I1), s	2.0	16.6	24.0	22.9	20.0	36.6	5.1	5.5				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.6	0.0	0.0	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	97.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2025 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	30	1070	70	290	310	190	20	520	340	290	560	10
Future Volume (veh/h)	30	1070	70	290	310	190	20	520	340	290	560	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1163	76	315	337	207	22	565	370	315	609	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1036	68	287	1333	621	206	679	316	287	1020	18
Arrive On Green	0.05	0.34	0.34	0.14	0.44	0.44	0.03	0.22	0.22	0.14	0.32	0.32
Sat Flow, veh/h	1603	3048	199	1603	3064	1427	1603	3064	1427	1603	3214	58
Grp Volume(v), veh/h	33	610	629	315	337	207	22	565	370	315	303	317
Grp Sat Flow(s),veh/h/ln	1603	1599	1648	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	0.0	40.8	40.8	17.0	8.4	11.5	0.0	21.1	26.6	17.0	19.1	19.2
Cycle Q Clear(g_c), s	0.0	40.8	40.8	17.0	8.4	11.5	0.0	21.1	26.6	17.0	19.1	19.2
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	324	544	560	287	1333	621	206	679	316	287	508	531
V/C Ratio(X)	0.10	1.12	1.12	1.10	0.25	0.33	0.11	0.83	1.17	1.10	0.60	0.60
Avail Cap(c_a), veh/h	324	544	560	287	1333	621	224	679	316	287	508	531
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	0.21	0.21	0.21
Uniform Delay (d), s/veh	31.5	39.6	39.6	49.7	21.5	22.4	43.7	44.6	46.7	38.2	34.5	34.5
Incr Delay (d2), s/veh	0.1	76.5	76.7	81.6	0.5	1.4	0.1	11.4	105.1	55.4	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	26.9	27.8	14.5	3.0	4.0	0.6	8.9	18.4	11.4	7.4	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	116.1	116.3	131.3	22.0	23.8	43.7	56.0	151.8	93.6	35.6	35.5
LnGrp LOS	C	F	F	F	C	C	D	E	F	F	D	D
Approach Vol, veh/h		1272			859			957			935	
Approach Delay, s/veh		114.0			62.5			92.7			55.1	
Approach LOS		F			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	57.4	21.0	32.0	21.0	46.0	9.5	43.5				
Change Period (Y+Rc), s	* 4	5.2	4.0	* 5.4	* 4	5.2	* 5.4	* 5.4				
Max Green Setting (Gmax), s	* 5.6	52.2	17.0	* 27	* 17	40.8	* 5.5	* 38				
Max Q Clear Time (g_c+I1), s	2.0	13.5	19.0	28.6	19.0	42.8	2.0	21.2				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	84.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2025 Optimized Build AM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	190	820	100	100	610	300	80	450	120	200	680	100
Future Volume (veh/h)	190	820	100	100	610	300	80	450	120	200	680	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	207	891	109	109	663	326	87	489	130	217	739	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	1068	131	134	898	418	231	1215	314	390	1106	163
Arrive On Green	0.11	0.37	0.37	0.02	0.29	0.29	0.04	0.33	0.33	0.10	0.40	0.40
Sat Flow, veh/h	1603	2868	351	1603	3064	1427	1603	3638	940	1603	2796	412
Grp Volume(v), veh/h	207	497	503	109	663	326	87	410	209	217	423	425
Grp Sat Flow(s),veh/h/ln	1603	1599	1620	1603	1532	1427	1603	1532	1514	1603	1599	1609
Q Serve(g_s), s	11.5	33.9	33.9	0.8	23.4	25.1	4.3	12.3	12.8	10.3	26.1	26.1
Cycle Q Clear(g_c), s	11.5	33.9	33.9	0.8	23.4	25.1	4.3	12.3	12.8	10.3	26.1	26.1
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.62	1.00		0.26
Lane Grp Cap(c), veh/h	250	596	604	134	898	418	231	1023	506	390	632	636
V/C Ratio(X)	0.83	0.83	0.83	0.82	0.74	0.78	0.38	0.40	0.41	0.56	0.67	0.67
Avail Cap(c_a), veh/h	322	596	604	217	898	418	231	1023	506	452	632	636
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	34.3	34.3	55.8	38.3	38.9	26.4	30.7	30.9	22.0	29.8	29.8
Incr Delay (d2), s/veh	10.5	12.9	12.8	4.7	5.4	13.4	0.3	1.1	2.3	0.5	5.5	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	14.8	15.0	3.4	9.2	10.1	1.6	4.6	4.9	3.8	10.6	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	47.2	47.1	60.5	43.7	52.3	26.8	31.8	33.2	22.5	35.3	35.3
LnGrp LOS	D	D	D	E	D	D	C	C	C	C	D	D
Approach Vol, veh/h		1207			1098			706			1065	
Approach Delay, s/veh		46.3			47.9			31.6			32.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	40.5	16.4	45.6	8.0	50.0	9.0	53.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	* 5.3	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	19.0	* 35	17.0	30.5	* 9	* 45	5.0	42.5				
Max Q Clear Time (g_c+I1), s	13.5	27.1	12.3	14.8	2.8	35.9	6.3	28.1				
Green Ext Time (p_c), s	0.1	1.7	0.1	1.3	0.1	1.6	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 2: 35th Ave & Indian School

2025 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	850	100	530	2240	780	120	890	300	410	440	80
Future Volume (veh/h)	80	850	100	530	2240	780	120	890	300	410	440	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	924	109	576	2435	848	130	967	326	446	478	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	853	380	394	1972	612	310	957	297	314	921	411
Arrive On Green	0.05	0.27	0.27	0.21	0.43	0.43	0.08	0.21	0.21	0.16	0.29	0.29
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	924	109	576	2435	848	130	967	326	446	478	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	4.7	32.0	7.3	25.0	51.5	51.5	7.6	25.0	25.0	19.0	15.0	5.5
Cycle Q Clear(g_c), s	4.7	32.0	7.3	25.0	51.5	51.5	7.6	25.0	25.0	19.0	15.0	5.5
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	133	853	380	394	1972	612	310	957	297	314	921	411
V/C Ratio(X)	0.65	1.08	0.29	1.46	1.23	1.39	0.42	1.01	1.10	1.42	0.52	0.21
Avail Cap(c_a), veh/h	133	853	380	394	1972	612	326	957	297	314	921	411
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	0.38	0.38	0.38	0.42	0.42	0.42
Uniform Delay (d), s/veh	34.3	44.0	34.9	36.3	34.3	34.3	33.3	47.5	47.5	34.5	35.8	32.4
Incr Delay (d2), s/veh	8.6	55.9	1.9	221.5	110.2	183.3	0.1	20.4	62.0	197.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	18.9	2.7	31.3	38.2	48.0	2.9	11.1	13.8	24.3	5.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	99.9	36.8	257.8	144.4	217.5	33.5	67.9	109.5	231.9	35.9	32.4
LnGrp LOS	D	F	D	F	F	F	C	F	F	F	D	C
Approach Vol, veh/h		1120			3859			1423			1011	
Approach Delay, s/veh		89.3			177.4			74.3			122.0	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	57.0	23.0	30.5	29.0	37.5	13.4	40.1				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	51.5	19.0	25.0	25.0	32.0	10.6	33.4				
Max Q Clear Time (g_c+I1), s	6.7	53.5	21.0	27.0	27.0	34.0	9.6	17.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0				

Intersection Summary												
HCM 6th Ctrl Delay	136.8											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2025 No-Build PM

06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↘	↗	↑↑↑		↗	↑↑↑		↘	↑↑	
Traffic Volume (veh/h)	20	360	10	510	1450	370	90	790	120	400	350	20
Future Volume (veh/h)	20	360	10	510	1450	370	90	790	120	400	350	20
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	391	11	554	1576	402	98	859	130	435	380	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1278	570	527	1809	457	301	949	143	221	819	47
Arrive On Green	0.02	0.40	0.40	0.12	0.49	0.49	0.06	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	1603	3198	1427	1603	3658	923	1603	4031	607	1603	3073	177
Grp Volume(v), veh/h	22	391	11	554	1317	661	98	652	337	435	197	205
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1517	1603	1532	1574	1603	1599	1651
Q Serve(g_s), s	1.0	10.0	0.6	14.0	45.7	46.8	5.5	24.8	25.0	11.0	12.4	12.5
Cycle Q Clear(g_c), s	1.0	10.0	0.6	14.0	45.7	46.8	5.5	24.8	25.0	11.0	12.4	12.5
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.39	1.00		0.11
Lane Grp Cap(c), veh/h	115	1278	570	527	1515	750	301	721	370	221	426	440
V/C Ratio(X)	0.19	0.31	0.02	1.05	0.87	0.88	0.33	0.90	0.91	1.97	0.46	0.47
Avail Cap(c_a), veh/h	228	1278	570	527	1515	750	391	807	415	221	426	440
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	0.09	0.09	0.09	0.17	0.17	0.17
Uniform Delay (d), s/veh	26.2	24.6	21.8	29.7	26.9	27.1	32.0	44.6	44.6	36.3	36.8	36.9
Incr Delay (d2), s/veh	0.3	0.6	0.1	53.6	7.1	14.0	0.0	1.3	2.7	439.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.8	0.2	17.4	17.1	18.7	2.1	9.3	9.8	31.7	4.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	25.3	21.9	83.3	33.9	41.1	32.1	45.9	47.4	475.8	36.9	36.9
LnGrp LOS	C	C	C	F	C	D	C	D	D	F	D	D
Approach Vol, veh/h		424			2532			1087			837	
Approach Delay, s/veh		25.2			46.6			45.1			265.0	
Approach LOS		C			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	64.8	15.0	33.6	18.0	53.4	11.3	37.4				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	11.0	* 45	11.0	* 32	14.0	* 39	14.0	* 32				
Max Q Clear Time (g_c+I1), s	3.0	48.8	13.0	27.0	16.0	12.0	7.5	14.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.0	0.9	0.1	0.6				

Intersection Summary

HCM 6th Ctrl Delay	81.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 8: 35th Ave & McDowell

2025 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	40	510	60	560	1570	420	90	920	360	260	600	40
Future Volume (veh/h)	40	510	60	560	1570	420	90	920	360	260	600	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	554	65	609	1707	457	98	1000	391	283	652	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	884	104	416	1571	412	246	883	345	234	979	65
Arrive On Green	0.03	0.31	0.31	0.16	0.43	0.43	0.06	0.27	0.27	0.11	0.32	0.32
Sat Flow, veh/h	1603	2884	338	1603	3625	951	1603	3249	1270	1603	3046	201
Grp Volume(v), veh/h	43	307	312	609	1437	727	98	943	448	283	342	353
Grp Sat Flow(s),veh/h/ln	1603	1599	1623	1603	1532	1512	1603	1532	1455	1603	1599	1647
Q Serve(g_s), s	2.2	19.7	19.8	19.0	52.0	52.0	5.2	32.6	32.6	13.0	22.2	22.2
Cycle Q Clear(g_c), s	2.2	19.7	19.8	19.0	52.0	52.0	5.2	32.6	32.6	13.0	22.2	22.2
Prop In Lane	1.00		0.21	1.00		0.63	1.00		0.87	1.00		0.12
Lane Grp Cap(c), veh/h	111	490	498	416	1327	655	246	832	395	234	514	530
V/C Ratio(X)	0.39	0.63	0.63	1.46	1.08	1.11	0.40	1.13	1.13	1.21	0.67	0.67
Avail Cap(c_a), veh/h	220	490	498	416	1327	655	366	832	395	234	514	530
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	0.50	0.50	0.50
Uniform Delay (d), s/veh	32.6	35.7	35.7	28.5	34.0	34.0	30.0	43.7	43.7	33.2	35.1	35.2
Incr Delay (d2), s/veh	0.8	5.9	5.9	221.4	50.4	69.0	0.4	74.7	86.8	113.5	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.3	8.5	33.4	27.5	30.6	2.0	20.6	20.9	12.2	8.6	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	41.6	41.6	249.9	84.4	103.0	30.3	118.4	130.5	146.7	36.5	36.5
LnGrp LOS	C	D	D	F	F	F	C	F	F	F	D	D
Approach Vol, veh/h		662			2773			1489			978	
Approach Delay, s/veh		41.1			125.6			116.2			68.4	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	57.2	17.0	38.0	23.0	42.0	11.0	44.0				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	12.0	* 44	13.0	* 33	19.0	* 37	16.0	* 30				
Max Q Clear Time (g_c+I1), s	4.2	54.0	15.0	34.6	21.0	21.8	7.2	24.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.1	0.8				

Intersection Summary												
HCM 6th Ctrl Delay	104.3											
HCM 6th LOS	F											

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2025 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	230	700	190	180	1410	400	220	1320	130	230	570	190
Future Volume (veh/h)	230	700	190	180	1410	400	220	1320	130	230	570	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	250	761	207	196	1533	435	239	1435	141	250	620	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	805	219	231	1120	314	273	1329	131	234	736	245
Arrive On Green	0.11	0.32	0.32	0.10	0.31	0.31	0.11	0.31	0.31	0.11	0.31	0.31
Sat Flow, veh/h	1603	2485	676	1603	3566	1001	1603	4254	418	1603	2356	785
Grp Volume(v), veh/h	250	490	478	196	1315	653	239	1033	543	250	421	406
Grp Sat Flow(s),veh/h/ln	1603	1599	1562	1603	1532	1503	1603	1532	1608	1603	1599	1542
Q Serve(g_s), s	13.0	35.8	35.8	9.8	37.7	37.7	12.2	37.5	37.5	13.0	29.4	29.5
Cycle Q Clear(g_c), s	13.0	35.8	35.8	9.8	37.7	37.7	12.2	37.5	37.5	13.0	29.4	29.5
Prop In Lane	1.00		0.43	1.00		0.67	1.00		0.26	1.00		0.51
Lane Grp Cap(c), veh/h	234	518	506	231	962	472	273	957	503	234	500	482
V/C Ratio(X)	1.07	0.95	0.95	0.85	1.37	1.38	0.87	1.08	1.08	1.07	0.84	0.84
Avail Cap(c_a), veh/h	234	518	506	247	962	472	273	957	503	234	500	482
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	39.5	39.5	29.4	41.1	41.2	28.8	41.3	41.3	34.0	38.5	38.5
Incr Delay (d2), s/veh	78.6	28.1	28.5	20.6	171.3	185.5	3.0	37.9	39.8	78.6	11.7	12.2
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(50%),veh/ln	9.4	17.6	17.2	4.9	36.6	37.8	4.7	18.7	19.9	9.5	12.8	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.6	67.6	68.1	50.0	212.4	226.6	31.9	79.2	81.1	112.6	50.1	50.7
LnGrp LOS	F	E	E	D	F	F	C	F	F	F	D	D
Approach Vol, veh/h		1218			2164			1815			1077	
Approach Delay, s/veh		77.0			202.0			73.5			64.9	
Approach LOS		E			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.0	17.0	43.0	15.8	44.2	17.0	43.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	13.0	* 38	13.0	37.5	13.0	* 38	13.0	37.5				
Max Q Clear Time (g_c+I1), s	15.0	39.7	15.0	39.5	11.8	37.8	14.2	31.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	117.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2025 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	850	100	530	2240	780	120	890	300	410	440	80
Future Volume (veh/h)	80	850	100	530	2240	780	120	890	300	410	440	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	924	109	576	2435	848	130	967	326	446	478	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	808	360	433	2053	637	514	2319	720	466	1998	891
Arrive On Green	0.04	0.25	0.25	0.24	0.45	0.45	0.05	0.50	0.50	0.17	0.62	0.62
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	924	109	576	2435	848	130	967	326	446	478	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	3.5	37.9	9.3	36.0	67.0	67.0	5.9	19.8	22.0	23.4	9.9	5.5
Cycle Q Clear(g_c), s	3.5	37.9	9.3	36.0	67.0	67.0	5.9	19.8	22.0	23.4	9.9	5.5
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	106	808	360	433	2053	637	514	2319	720	466	1998	891
V/C Ratio(X)	0.82	1.14	0.30	1.33	1.19	1.33	0.25	0.42	0.45	0.96	0.24	0.10
Avail Cap(c_a), veh/h	107	808	360	433	2053	637	555	2319	720	477	1998	891
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	0.13	0.13	0.13	0.41	0.41	0.41
Uniform Delay (d), s/veh	70.4	56.0	45.4	45.6	41.5	60.8	16.0	23.3	23.9	27.8	12.4	25.3
Incr Delay (d2), s/veh	35.9	79.0	2.2	164.1	89.1	159.5	0.0	0.1	0.3	16.6	0.1	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(50%),veh/ln	4.3	23.9	3.5	35.8	41.3	28.2	2.1	7.1	7.4	18.4	3.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.4	135.1	47.5	209.7	130.6	220.3	16.0	23.4	24.1	44.4	12.5	25.4
LnGrp LOS	F	F	D	F	F	F	B	C	C	D	B	C
Approach Vol, veh/h		1120			3859			1423			1011	
Approach Delay, s/veh		124.3			162.1			22.9			27.7	
Approach LOS		F			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	72.5	29.8	81.3	40.0	43.4	11.9	99.2				
Change Period (Y+Rc), s	5.5	* 5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	* 67	27.0	31.5	36.0	36.5	11.8	46.7				
Max Q Clear Time (g_c+I1), s	5.5	69.0	25.4	24.0	38.0	39.9	7.9	11.9				
Green Ext Time (p_c), s	0.0	0.0	0.2	1.9	0.0	0.0	0.1	1.1				

Intersection Summary

HCM 6th Ctrl Delay	111.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2025 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↘	↗	↑↑↑		↗	↑↑↑		↘	↑↑	
Traffic Volume (veh/h)	20	360	10	510	1450	370	90	790	120	400	350	20
Future Volume (veh/h)	20	360	10	510	1450	370	90	790	120	400	350	20
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	391	11	554	1576	402	98	859	130	435	380	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	567	253	509	1478	373	315	876	132	403	1201	69
Arrive On Green	0.03	0.18	0.18	0.26	0.40	0.40	0.05	0.22	0.22	0.22	0.39	0.39
Sat Flow, veh/h	1603	3198	1427	1603	3658	923	1603	4031	607	1603	3073	177
Grp Volume(v), veh/h	22	391	11	554	1317	661	98	652	337	435	197	205
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1517	1603	1532	1574	1603	1599	1651
Q Serve(g_s), s	0.0	17.2	0.8	39.0	60.6	60.6	7.0	31.7	32.0	33.0	12.8	12.9
Cycle Q Clear(g_c), s	0.0	17.2	0.8	39.0	60.6	60.6	7.0	31.7	32.0	33.0	12.8	12.9
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.39	1.00		0.11
Lane Grp Cap(c), veh/h	101	567	253	509	1238	613	315	666	342	403	625	645
V/C Ratio(X)	0.22	0.69	0.04	1.09	1.06	1.08	0.31	0.98	0.99	1.08	0.32	0.32
Avail Cap(c_a), veh/h	101	567	253	509	1238	613	315	666	342	403	625	645
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	0.09	0.09	0.09	0.35	0.35	0.35
Uniform Delay (d), s/veh	70.1	57.8	38.5	51.7	44.7	44.7	43.3	58.4	58.5	46.2	31.8	31.8
Incr Delay (d2), s/veh	0.4	6.7	0.3	66.4	44.6	59.1	0.0	6.7	11.6	51.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.4	0.4	27.1	30.0	32.1	2.9	12.7	13.7	20.7	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.5	64.5	38.8	118.0	89.3	103.8	43.3	65.0	70.1	97.2	32.2	32.2
LnGrp LOS	E	E	D	F	F	F	D	E	E	F	C	C
Approach Vol, veh/h		424			2532			1087			837	
Approach Delay, s/veh		64.2			99.4			64.6			66.0	
Approach LOS		E			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	66.0	37.0	38.0	43.0	32.0	11.0	64.0				
Change Period (Y+Rc), s	* 4	5.4	4.0	* 5.4	* 4	5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	* 5	60.6	33.0	* 33	* 39	26.6	7.0	* 59				
Max Q Clear Time (g_c+I1), s	2.0	62.6	35.0	34.0	41.0	19.2	9.0	14.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	82.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2025 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	510	60	560	1570	420	90	920	360	260	600	40
Future Volume (veh/h)	40	510	60	560	1570	420	90	920	360	260	600	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	554	65	609	1707	457	98	1000	391	283	652	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	496	58	518	1580	415	258	923	361	251	1082	71
Arrive On Green	0.03	0.17	0.17	0.29	0.44	0.44	0.06	0.28	0.28	0.13	0.36	0.36
Sat Flow, veh/h	1603	2884	338	1603	3625	951	1603	3249	1270	1603	3046	201
Grp Volume(v), veh/h	43	307	312	609	1437	727	98	943	448	283	342	353
Grp Sat Flow(s),veh/h/ln	1603	1599	1623	1603	1532	1512	1603	1532	1455	1603	1599	1647
Q Serve(g_s), s	3.3	25.8	25.8	44.0	65.4	65.4	6.5	42.6	42.6	19.0	26.3	26.4
Cycle Q Clear(g_c), s	3.3	25.8	25.8	44.0	65.4	65.4	6.5	42.6	42.6	19.0	26.3	26.4
Prop In Lane	1.00		0.21	1.00		0.63	1.00		0.87	1.00		0.12
Lane Grp Cap(c), veh/h	95	275	279	518	1335	659	258	870	413	251	568	585
V/C Ratio(X)	0.45	1.11	1.12	1.18	1.08	1.10	0.38	1.08	1.08	1.13	0.60	0.60
Avail Cap(c_a), veh/h	107	275	279	518	1335	659	277	870	413	251	568	585
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	0.62	0.62	0.62
Uniform Delay (d), s/veh	51.4	62.1	62.1	43.7	42.3	42.3	35.8	53.7	53.7	47.2	39.7	39.7
Incr Delay (d2), s/veh	1.2	88.5	90.0	97.6	48.0	66.5	0.3	55.8	68.8	84.1	2.9	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(50%),veh/ln	1.4	17.1	17.5	33.1	32.8	35.8	2.5	22.8	23.2	15.3	10.7	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	150.6	152.1	141.3	90.3	108.8	36.2	109.5	122.5	131.2	42.6	42.5
LnGrp LOS	D	F	F	F	F	F	D	F	F	F	D	D
Approach Vol, veh/h		662			2773			1489			978	
Approach Delay, s/veh		144.9			106.3			108.6			68.2	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	70.6	23.0	48.0	48.0	31.0	12.3	58.7				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	5.5	* 64	19.0	* 43	44.0	* 26	10.1	* 52				
Max Q Clear Time (g_c+I1), s	5.3	67.4	21.0	44.6	46.0	27.8	8.5	28.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	104.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2025 Optimized Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	230	700	190	180	1410	400	220	1320	130	230	570	190
Future Volume (veh/h)	230	700	190	180	1410	400	220	1320	130	230	570	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	250	761	207	196	1533	435	239	1435	141	250	620	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	818	223	149	1127	316	1259	4382	430	238	864	288
Arrive On Green	0.04	0.33	0.33	0.03	0.32	0.32	0.68	1.00	1.00	0.04	0.37	0.37
Sat Flow, veh/h	1603	2485	676	1603	3566	1001	1603	4254	418	1603	2356	785
Grp Volume(v), veh/h	250	490	478	196	1315	653	239	1033	543	250	421	406
Grp Sat Flow(s),veh/h/ln	1603	1599	1562	1603	1532	1503	1603	1532	1608	1603	1599	1542
Q Serve(g_s), s	3.0	22.2	22.2	2.0	23.7	23.7	0.0	0.0	0.0	3.0	17.0	17.0
Cycle Q Clear(g_c), s	3.0	22.2	22.2	2.0	23.7	23.7	0.0	0.0	0.0	3.0	17.0	17.0
Prop In Lane	1.00		0.43	1.00		0.67	1.00		0.26	1.00		0.51
Lane Grp Cap(c), veh/h	160	527	514	149	968	475	1259	3156	1656	238	586	565
V/C Ratio(X)	1.56	0.93	0.93	1.31	1.36	1.38	0.19	0.33	0.33	1.05	0.72	0.72
Avail Cap(c_a), veh/h	160	527	514	149	968	475	1259	3156	1656	238	586	565
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	24.3	24.3	35.7	25.6	25.7	2.6	0.0	0.0	27.8	20.4	20.4
Incr Delay (d2), s/veh	280.7	25.2	25.6	180.7	167.8	182.0	0.0	0.0	0.0	72.3	7.4	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	11.2	11.0	10.0	30.3	31.6	0.4	0.0	0.0	7.6	6.8	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	315.8	49.5	49.9	216.5	193.4	207.6	2.6	0.0	0.0	100.1	27.8	28.1
LnGrp LOS	F	D	D	F	F	F	A	A	A	F	C	C
Approach Vol, veh/h		1218			2164			1815			1077	
Approach Delay, s/veh		104.3			199.8			0.4			44.7	
Approach LOS		F			F			A			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	29.0	7.0	84.2	6.0	30.0	58.2	33.0				
Change Period (Y+Rc), s	* 4	5.3	4.0	5.5	* 4	5.3	5.5	* 5.5				
Max Green Setting (Gmax), s	* 3	23.7	3.0	26.5	* 2	24.7	2.0	* 28				
Max Q Clear Time (g_c+I1), s	5.0	25.7	5.0	2.0	4.0	24.2	2.0	19.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.0	0.0	0.2	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	96.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	40	1460	40	310	910	450	40	200	500	500	390	30
Future Volume (veh/h)	40	1460	40	310	910	450	40	200	500	500	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1587	43	337	989	489	43	217	543	543	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	1247	556	251	2303	715	231	1149	357	1063	2535	1131
Arrive On Green	0.03	0.39	0.39	0.13	0.50	0.50	0.03	0.25	0.25	0.56	0.79	0.79
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1587	43	337	989	489	43	217	543	543	424	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	2.6	58.5	4.6	19.0	20.5	26.5	3.2	5.6	37.5	10.6	4.8	0.7
Cycle Q Clear(g_c), s	2.6	58.5	4.6	19.0	20.5	26.5	3.2	5.6	37.5	10.6	4.8	0.7
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	153	1247	556	251	2303	715	231	1149	357	1063	2535	1131
V/C Ratio(X)	0.28	1.27	0.08	1.34	0.43	0.68	0.19	0.19	1.52	0.51	0.17	0.03
Avail Cap(c_a), veh/h	175	1247	556	251	2303	715	247	1149	357	1063	2535	1131
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	0.65	0.65	0.65	0.59	0.59	0.59
Uniform Delay (d), s/veh	31.9	45.7	76.2	63.7	23.8	13.1	45.1	44.3	56.3	12.3	3.7	3.3
Incr Delay (d2), s/veh	0.4	128.9	0.3	178.3	0.6	5.3	0.1	0.2	244.4	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	44.9	1.0	21.9	7.5	9.1	1.3	2.1	37.5	8.8	1.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	174.7	76.4	242.0	24.4	18.3	45.2	44.5	300.6	12.4	3.8	3.3
LnGrp LOS	C	F	E	F	C	B	D	D	F	B	A	A
Approach Vol, veh/h		1673			1815			803			1000	
Approach Delay, s/veh		168.5			63.2			217.7			8.5	
Approach LOS		F			E			F			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	80.7	89.7	43.0	24.5	64.0	8.3	124.4				
Change Period (Y+Rc), s	4.0	5.5	5.5	* 5.5	5.5	* 5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.8	71.7	16.0	* 38	19.0	* 59	5.8	47.7				
Max Q Clear Time (g_c+I1), s	4.6	28.5	12.6	39.5	21.0	60.5	5.2	6.8				
Green Ext Time (p_c), s	0.0	2.8	0.4	0.0	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	109.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑↑		↖	↑↑↑		↖	↑↑	
Traffic Volume (veh/h)	10	900	10	340	420	200	60	350	220	460	150	10
Future Volume (veh/h)	10	900	10	340	420	200	60	350	220	460	150	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	978	11	370	457	217	65	380	239	500	163	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	930	415	337	1417	644	216	564	262	793	1871	125
Arrive On Green	0.01	0.29	0.29	0.18	0.46	0.46	0.04	0.18	0.18	0.46	0.62	0.62
Sat Flow, veh/h	1603	3198	1427	1603	3090	1404	1603	3064	1427	1603	3042	204
Grp Volume(v), veh/h	11	978	11	370	453	221	65	380	239	500	85	89
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1431	1603	1532	1427	1603	1599	1647
Q Serve(g_s), s	0.7	43.6	0.8	27.0	14.1	14.9	5.3	17.3	24.6	29.4	3.2	3.3
Cycle Q Clear(g_c), s	0.7	43.6	0.8	27.0	14.1	14.9	5.3	17.3	24.6	29.4	3.2	3.3
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	268	930	415	337	1404	656	216	564	262	793	984	1013
V/C Ratio(X)	0.04	1.05	0.03	1.10	0.32	0.34	0.30	0.67	0.91	0.63	0.09	0.09
Avail Cap(c_a), veh/h	301	930	415	337	1404	656	216	564	262	793	984	1013
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	0.26	0.26	0.26	0.52	0.52	0.52
Uniform Delay (d), s/veh	36.7	53.2	38.0	48.5	25.8	26.0	53.9	57.0	60.0	28.1	11.7	11.7
Incr Delay (d2), s/veh	0.0	44.2	0.1	78.4	0.6	1.4	0.1	1.7	13.6	0.6	0.1	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(50%),veh/ln	0.3	22.9	0.3	19.9	5.2	5.3	2.1	6.8	9.8	13.0	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	97.4	38.1	127.0	26.4	27.4	53.9	58.7	73.6	28.7	11.8	11.8
LnGrp LOS	D	F	D	F	C	C	D	E	E	C	B	B
Approach Vol, veh/h		1000			1044			684			674	
Approach Delay, s/veh		96.0			62.3			63.4			24.4	
Approach LOS		F			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	74.2	74.7	33.0	31.0	49.0	10.0	97.7				
Change Period (Y+Rc), s	4.0	* 5.4	* 5.4	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	5.0	* 66	* 33	* 28	27.0	* 44	6.0	* 55				
Max Q Clear Time (g_c+I1), s	2.7	16.9	31.4	26.6	29.0	45.6	7.3	5.3				
Green Ext Time (p_c), s	0.0	1.5	0.2	0.2	0.0	0.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	30	1110	70	300	310	190	20	540	350	300	580	10
Future Volume (veh/h)	30	1110	70	300	310	190	20	540	350	300	580	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1207	76	326	337	207	22	587	380	326	630	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	1076	68	294	1434	668	192	666	310	294	1072	19
Arrive On Green	0.04	0.35	0.35	0.15	0.47	0.47	0.03	0.22	0.22	0.15	0.33	0.33
Sat Flow, veh/h	1603	3056	192	1603	3064	1427	1603	3064	1427	1603	3216	56
Grp Volume(v), veh/h	33	631	652	326	337	207	22	587	380	326	313	328
Grp Sat Flow(s),veh/h/ln	1603	1599	1649	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	0.0	52.8	52.8	23.0	9.9	13.5	0.0	27.8	32.6	23.0	24.3	24.4
Cycle Q Clear(g_c), s	0.0	52.8	52.8	23.0	9.9	13.5	0.0	27.8	32.6	23.0	24.3	24.4
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	311	563	580	294	1434	668	192	666	310	294	533	558
V/C Ratio(X)	0.11	1.12	1.12	1.11	0.24	0.31	0.11	0.88	1.23	1.11	0.59	0.59
Avail Cap(c_a), veh/h	311	563	580	294	1434	668	207	666	310	294	533	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.51	0.51	0.51
Uniform Delay (d), s/veh	38.5	48.6	48.6	61.6	23.9	24.8	53.6	56.8	58.7	45.0	41.4	41.5
Incr Delay (d2), s/veh	0.1	75.8	76.1	85.2	0.4	1.2	0.1	15.6	126.8	71.2	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	32.4	33.5	17.5	3.6	4.8	0.7	12.1	22.5	14.8	9.9	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	124.4	124.7	146.8	24.2	26.0	53.7	72.4	185.5	116.2	43.9	43.8
LnGrp LOS	D	F	F	F	C	C	D	E	F	F	D	D
Approach Vol, veh/h		1316			870			989			967	
Approach Delay, s/veh		122.4			70.6			115.4			68.2	
Approach LOS		F			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	75.4	27.0	38.0	27.0	58.0	9.6	55.4				
Change Period (Y+Rc), s	* 4	5.2	4.0	* 5.4	* 4	5.2	* 5.4	* 5.4				
Max Green Setting (Gmax), s	* 5.6	70.2	23.0	* 33	* 23	52.8	* 5.6	* 50				
Max Q Clear Time (g_c+I1), s	2.0	15.5	25.0	34.6	25.0	54.8	2.0	26.4				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	97.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2040 Optimized Build AM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	200	800	100	100	580	310	80	470	120	200	700	100
Future Volume (veh/h)	200	800	100	100	580	310	80	470	120	200	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	217	870	109	109	630	337	87	511	130	217	761	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	919	115	173	944	439	221	1278	317	330	977	140
Arrive On Green	0.05	0.32	0.32	0.04	0.31	0.31	0.04	0.35	0.35	0.04	0.35	0.35
Sat Flow, veh/h	1603	2860	358	1603	3064	1427	1603	3673	910	1603	2808	402
Grp Volume(v), veh/h	217	487	492	109	630	337	87	424	217	217	433	437
Grp Sat Flow(s),veh/h/ln	1603	1599	1619	1603	1532	1427	1603	1532	1519	1603	1599	1611
Q Serve(g_s), s	4.0	22.3	22.3	3.0	13.4	16.1	2.6	7.9	8.1	3.0	18.2	18.2
Cycle Q Clear(g_c), s	4.0	22.3	22.3	3.0	13.4	16.1	2.6	7.9	8.1	3.0	18.2	18.2
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.60	1.00		0.25
Lane Grp Cap(c), veh/h	231	514	520	173	944	439	221	1066	529	330	557	561
V/C Ratio(X)	0.94	0.95	0.95	0.63	0.67	0.77	0.39	0.40	0.41	0.66	0.78	0.78
Avail Cap(c_a), veh/h	231	514	520	173	944	439	221	1066	529	330	557	561
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	24.8	24.8	22.9	22.6	23.5	17.5	18.5	18.6	22.4	21.9	21.9
Incr Delay (d2), s/veh	42.6	28.5	28.2	5.5	3.7	12.1	0.4	1.0	2.2	3.8	10.3	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.6	11.7	1.5	4.9	6.4	0.9	2.7	2.9	2.3	7.7	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	53.3	53.1	28.4	26.3	35.6	17.8	19.5	20.8	26.2	32.2	32.1
LnGrp LOS	E	D	D	C	C	D	B	B	C	C	C	C
Approach Vol, veh/h		1196			1076			728			1087	
Approach Delay, s/veh		56.1			29.5			19.7			31.0	
Approach LOS		E			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	28.4	7.0	31.6	7.0	29.4	7.0	31.6				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	4.0	* 23	3.0	26.1	3.0	* 24	3.0	26.1				
Max Q Clear Time (g_c+I1), s	6.0	18.1	5.0	10.1	5.0	24.3	4.6	20.2				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.3	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	40	1460	40	310	910	450	40	200	500	500	390	30
Future Volume (veh/h)	40	1460	40	310	910	450	40	200	500	500	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1587	43	337	989	489	43	217	543	543	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	1247	556	251	2303	715	231	1149	357	1063	2535	1131
Arrive On Green	0.03	0.39	0.39	0.13	0.50	0.50	0.03	0.25	0.25	0.56	0.79	0.79
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1587	43	337	989	489	43	217	543	543	424	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	2.6	58.5	4.6	19.0	20.5	26.5	3.2	5.6	37.5	10.6	4.8	0.7
Cycle Q Clear(g_c), s	2.6	58.5	4.6	19.0	20.5	26.5	3.2	5.6	37.5	10.6	4.8	0.7
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	153	1247	556	251	2303	715	231	1149	357	1063	2535	1131
V/C Ratio(X)	0.28	1.27	0.08	1.34	0.43	0.68	0.19	0.19	1.52	0.51	0.17	0.03
Avail Cap(c_a), veh/h	175	1247	556	251	2303	715	247	1149	357	1063	2535	1131
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	0.65	0.65	0.65	0.59	0.59	0.59
Uniform Delay (d), s/veh	31.9	45.7	76.2	63.7	23.8	13.1	45.1	44.3	56.3	12.3	3.7	3.3
Incr Delay (d2), s/veh	0.4	128.9	0.3	178.3	0.6	5.3	0.1	0.2	244.4	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	44.9	1.0	21.9	7.5	9.1	1.3	2.1	37.5	8.8	1.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	174.7	76.4	242.0	24.4	18.3	45.2	44.5	300.6	12.4	3.8	3.3
LnGrp LOS	C	F	E	F	C	B	D	D	F	B	A	A
Approach Vol, veh/h		1673			1815			803			1000	
Approach Delay, s/veh		168.5			63.2			217.7			8.5	
Approach LOS		F			E			F			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	80.7	89.7	43.0	24.5	64.0	8.3	124.4				
Change Period (Y+Rc), s	4.0	5.5	5.5	* 5.5	5.5	* 5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.8	71.7	16.0	* 38	19.0	* 59	5.8	47.7				
Max Q Clear Time (g_c+I1), s	4.6	28.5	12.6	39.5	21.0	60.5	5.2	6.8				
Green Ext Time (p_c), s	0.0	2.8	0.4	0.0	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	109.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	10	900	10	340	420	200	60	350	220	460	150	10
Future Volume (veh/h)	10	900	10	340	420	200	60	350	220	460	150	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	978	11	370	457	217	65	380	239	500	163	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	930	415	337	1417	644	216	564	262	793	1871	125
Arrive On Green	0.01	0.29	0.29	0.18	0.46	0.46	0.04	0.18	0.18	0.46	0.62	0.62
Sat Flow, veh/h	1603	3198	1427	1603	3090	1404	1603	3064	1427	1603	3042	204
Grp Volume(v), veh/h	11	978	11	370	453	221	65	380	239	500	85	89
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1431	1603	1532	1427	1603	1599	1647
Q Serve(g_s), s	0.7	43.6	0.8	27.0	14.1	14.9	5.3	17.3	24.6	29.4	3.2	3.3
Cycle Q Clear(g_c), s	0.7	43.6	0.8	27.0	14.1	14.9	5.3	17.3	24.6	29.4	3.2	3.3
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	268	930	415	337	1404	656	216	564	262	793	984	1013
V/C Ratio(X)	0.04	1.05	0.03	1.10	0.32	0.34	0.30	0.67	0.91	0.63	0.09	0.09
Avail Cap(c_a), veh/h	301	930	415	337	1404	656	216	564	262	793	984	1013
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	0.26	0.26	0.26	0.52	0.52	0.52
Uniform Delay (d), s/veh	36.7	53.2	38.0	48.5	25.8	26.0	53.9	57.0	60.0	28.1	11.7	11.7
Incr Delay (d2), s/veh	0.0	44.2	0.1	78.4	0.6	1.4	0.1	1.7	13.6	0.6	0.1	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(50%),veh/ln	0.3	22.9	0.3	19.9	5.2	5.3	2.1	6.8	9.8	13.0	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	97.4	38.1	127.0	26.4	27.4	53.9	58.7	73.6	28.7	11.8	11.8
LnGrp LOS	D	F	D	F	C	C	D	E	E	C	B	B
Approach Vol, veh/h		1000			1044			684			674	
Approach Delay, s/veh		96.0			62.3			63.4			24.4	
Approach LOS		F			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	74.2	74.7	33.0	31.0	49.0	10.0	97.7				
Change Period (Y+Rc), s	4.0	* 5.4	* 5.4	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	5.0	* 66	* 33	* 28	27.0	* 44	6.0	* 55				
Max Q Clear Time (g_c+I1), s	2.7	16.9	31.4	26.6	29.0	45.6	7.3	5.3				
Green Ext Time (p_c), s	0.0	1.5	0.2	0.2	0.0	0.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2040 Optimized Build AM

06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	30	1110	70	300	310	190	20	540	350	300	580	10
Future Volume (veh/h)	30	1110	70	300	310	190	20	540	350	300	580	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1207	76	326	337	207	22	587	380	326	630	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	1076	68	294	1434	668	192	666	310	294	1072	19
Arrive On Green	0.04	0.35	0.35	0.15	0.47	0.47	0.03	0.22	0.22	0.15	0.33	0.33
Sat Flow, veh/h	1603	3056	192	1603	3064	1427	1603	3064	1427	1603	3216	56
Grp Volume(v), veh/h	33	631	652	326	337	207	22	587	380	326	313	328
Grp Sat Flow(s),veh/h/ln	1603	1599	1649	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	0.0	52.8	52.8	23.0	9.9	13.5	0.0	27.8	32.6	23.0	24.3	24.4
Cycle Q Clear(g_c), s	0.0	52.8	52.8	23.0	9.9	13.5	0.0	27.8	32.6	23.0	24.3	24.4
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	311	563	580	294	1434	668	192	666	310	294	533	558
V/C Ratio(X)	0.11	1.12	1.12	1.11	0.24	0.31	0.11	0.88	1.23	1.11	0.59	0.59
Avail Cap(c_a), veh/h	311	563	580	294	1434	668	207	666	310	294	533	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.51	0.51	0.51
Uniform Delay (d), s/veh	38.5	48.6	48.6	61.6	23.9	24.8	53.6	56.8	58.7	45.0	41.4	41.5
Incr Delay (d2), s/veh	0.1	75.8	76.1	85.2	0.4	1.2	0.1	15.6	126.8	71.2	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	32.4	33.5	17.5	3.6	4.8	0.7	12.1	22.5	14.8	9.9	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	124.4	124.7	146.8	24.2	26.0	53.7	72.4	185.5	116.2	43.9	43.8
LnGrp LOS	D	F	F	F	C	C	D	E	F	F	D	D
Approach Vol, veh/h		1316			870			989			967	
Approach Delay, s/veh		122.4			70.6			115.4			68.2	
Approach LOS		F			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	75.4	27.0	38.0	27.0	58.0	9.6	55.4				
Change Period (Y+Rc), s	* 4	5.2	4.0	* 5.4	* 4	5.2	* 5.4	* 5.4				
Max Green Setting (Gmax), s	* 5.6	70.2	23.0	* 33	* 23	52.8	* 5.6	* 50				
Max Q Clear Time (g_c+I1), s	2.0	15.5	25.0	34.6	25.0	54.8	2.0	26.4				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	97.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
9: 35th Ave & Camelback

2040 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	200	800	100	100	580	310	80	470	120	200	700	100
Future Volume (veh/h)	200	800	100	100	580	310	80	470	120	200	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	217	870	109	109	630	337	87	511	130	217	761	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	919	115	173	944	439	221	1278	317	330	977	140
Arrive On Green	0.05	0.32	0.32	0.04	0.31	0.31	0.04	0.35	0.35	0.04	0.35	0.35
Sat Flow, veh/h	1603	2860	358	1603	3064	1427	1603	3673	910	1603	2808	402
Grp Volume(v), veh/h	217	487	492	109	630	337	87	424	217	217	433	437
Grp Sat Flow(s),veh/h/ln	1603	1599	1619	1603	1532	1427	1603	1532	1519	1603	1599	1611
Q Serve(g_s), s	4.0	22.3	22.3	3.0	13.4	16.1	2.6	7.9	8.1	3.0	18.2	18.2
Cycle Q Clear(g_c), s	4.0	22.3	22.3	3.0	13.4	16.1	2.6	7.9	8.1	3.0	18.2	18.2
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.60	1.00		0.25
Lane Grp Cap(c), veh/h	231	514	520	173	944	439	221	1066	529	330	557	561
V/C Ratio(X)	0.94	0.95	0.95	0.63	0.67	0.77	0.39	0.40	0.41	0.66	0.78	0.78
Avail Cap(c_a), veh/h	231	514	520	173	944	439	221	1066	529	330	557	561
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	24.8	24.8	22.9	22.6	23.5	17.5	18.5	18.6	22.4	21.9	21.9
Incr Delay (d2), s/veh	42.6	28.5	28.2	5.5	3.7	12.1	0.4	1.0	2.2	3.8	10.3	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.6	11.7	1.5	4.9	6.4	0.9	2.7	2.9	2.3	7.7	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	53.3	53.1	28.4	26.3	35.6	17.8	19.5	20.8	26.2	32.2	32.1
LnGrp LOS	E	D	D	C	C	D	B	B	C	C	C	C
Approach Vol, veh/h		1196			1076			728			1087	
Approach Delay, s/veh		56.1			29.5			19.7			31.0	
Approach LOS		E			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	28.4	7.0	31.6	7.0	29.4	7.0	31.6				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	4.0	* 23	3.0	26.1	3.0	* 24	3.0	26.1				
Max Q Clear Time (g_c+I1), s	6.0	18.1	5.0	10.1	5.0	24.3	4.6	20.2				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.3	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2040 No-Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	880	100	550	2360	810	130	920	320	430	450	80
Future Volume (veh/h)	80	880	100	550	2360	810	130	920	320	430	450	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	957	109	598	2565	880	141	1000	348	467	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	853	380	394	1972	612	310	957	297	314	903	403
Arrive On Green	0.05	0.27	0.27	0.21	0.43	0.43	0.08	0.21	0.21	0.16	0.28	0.28
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	957	109	598	2565	880	141	1000	348	467	489	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	4.7	32.0	7.3	25.0	51.5	51.5	8.2	25.0	25.0	19.0	15.5	5.6
Cycle Q Clear(g_c), s	4.7	32.0	7.3	25.0	51.5	51.5	8.2	25.0	25.0	19.0	15.5	5.6
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	133	853	380	394	1972	612	310	957	297	314	903	403
V/C Ratio(X)	0.65	1.12	0.29	1.52	1.30	1.44	0.45	1.04	1.17	1.49	0.54	0.22
Avail Cap(c_a), veh/h	133	853	380	394	1972	612	317	957	297	314	903	403
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	0.36	0.36	0.36	0.37	0.37	0.37
Uniform Delay (d), s/veh	34.3	44.0	34.9	36.3	34.3	34.3	33.2	47.5	47.5	34.5	36.5	32.9
Incr Delay (d2), s/veh	8.6	70.1	1.9	245.7	139.1	206.1	0.1	30.5	89.7	225.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	20.6	2.7	34.0	43.4	51.9	3.1	12.0	16.1	26.8	6.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	114.1	36.8	282.0	173.3	240.3	33.3	78.0	137.2	260.4	36.6	32.9
LnGrp LOS	D	F	D	F	F	F	C	F	F	F	D	C
Approach Vol, veh/h		1153			4043			1489			1043	
Approach Delay, s/veh		101.4			204.0			87.6			136.5	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	57.0	23.0	30.5	29.0	37.5	14.1	39.4				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	51.5	19.0	25.0	25.0	32.0	10.6	33.4				
Max Q Clear Time (g_c+I1), s	6.7	53.5	21.0	27.0	27.0	34.0	10.2	17.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay					157.2							
HCM 6th LOS					F							

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2040 No-Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	20	340	10	500	1330	370	100	840	110	380	390	20
Future Volume (veh/h)	20	340	10	500	1330	370	100	840	110	380	390	20
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	370	11	543	1446	402	109	913	120	413	424	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	1254	560	529	1744	482	295	998	131	220	831	43
Arrive On Green	0.02	0.39	0.39	0.12	0.49	0.49	0.07	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	1603	3198	1427	1603	3580	989	1603	4112	538	1603	3094	160
Grp Volume(v), veh/h	22	370	11	543	1236	612	109	679	354	413	219	227
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1505	1603	1532	1586	1603	1599	1655
Q Serve(g_s), s	1.0	9.5	0.6	14.0	41.6	42.1	6.1	25.9	26.1	11.0	13.9	14.0
Cycle Q Clear(g_c), s	1.0	9.5	0.6	14.0	41.6	42.1	6.1	25.9	26.1	11.0	13.9	14.0
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.34	1.00		0.10
Lane Grp Cap(c), veh/h	125	1254	560	529	1493	733	295	744	385	220	430	445
V/C Ratio(X)	0.18	0.29	0.02	1.03	0.83	0.83	0.37	0.91	0.92	1.88	0.51	0.51
Avail Cap(c_a), veh/h	238	1254	560	529	1493	733	376	807	418	220	430	445
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	0.09	0.09	0.09	0.09	0.09	0.09
Uniform Delay (d), s/veh	25.3	25.1	22.3	30.2	26.4	26.6	31.3	44.2	44.3	36.0	37.2	37.2
Incr Delay (d2), s/veh	0.2	0.6	0.1	46.0	5.4	10.8	0.0	1.6	3.1	398.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.6	0.2	16.4	15.4	16.4	2.3	9.7	10.3	29.0	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	25.7	22.4	76.2	31.9	37.4	31.4	45.8	47.4	434.0	37.2	37.2
LnGrp LOS	C	C	C	F	C	D	C	D	D	F	D	D
Approach Vol, veh/h		403			2391			1142			859	
Approach Delay, s/veh		25.6			43.3			44.9			228.0	
Approach LOS		C			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	63.9	15.0	34.5	18.0	52.5	11.9	37.6				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	11.0	* 45	11.0	* 32	14.0	* 39	14.0	* 32				
Max Q Clear Time (g_c+I1), s	3.0	44.1	13.0	28.1	16.0	11.5	8.1	16.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.1	0.0	0.8	0.1	0.7				

Intersection Summary

HCM 6th Ctrl Delay	75.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2040 No-Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	40	520	70	580	1620	430	90	950	370	260	630	40
Future Volume (veh/h)	40	520	70	580	1620	430	90	950	370	260	630	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	565	76	630	1761	467	98	1033	402	283	685	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	869	117	408	1575	408	236	884	344	234	983	62
Arrive On Green	0.03	0.31	0.31	0.16	0.43	0.43	0.06	0.27	0.27	0.11	0.32	0.32
Sat Flow, veh/h	1603	2834	380	1603	3636	942	1603	3253	1266	1603	3056	192
Grp Volume(v), veh/h	43	318	323	630	1477	751	98	973	462	283	358	370
Grp Sat Flow(s),veh/h/ln	1603	1599	1615	1603	1532	1514	1603	1532	1455	1603	1599	1649
Q Serve(g_s), s	2.2	20.7	20.8	19.0	52.0	52.0	5.2	32.6	32.6	13.0	23.5	23.5
Cycle Q Clear(g_c), s	2.2	20.7	20.8	19.0	52.0	52.0	5.2	32.6	32.6	13.0	23.5	23.5
Prop In Lane	1.00		0.24	1.00		0.62	1.00		0.87	1.00		0.12
Lane Grp Cap(c), veh/h	111	490	495	408	1327	656	236	832	395	234	514	530
V/C Ratio(X)	0.39	0.65	0.65	1.54	1.11	1.14	0.42	1.17	1.17	1.21	0.70	0.70
Avail Cap(c_a), veh/h	220	490	495	408	1327	656	356	832	395	234	514	530
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	0.50	0.50	0.50
Uniform Delay (d), s/veh	32.6	36.0	36.0	28.1	34.0	34.0	30.2	43.7	43.7	33.2	35.6	35.6
Incr Delay (d2), s/veh	0.8	6.5	6.5	256.0	61.8	82.3	0.4	88.8	100.0	113.5	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	8.7	8.9	36.7	29.6	33.0	2.0	22.2	22.3	12.2	9.1	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	42.5	42.6	284.1	95.8	116.3	30.6	132.5	143.7	146.7	37.3	37.3
LnGrp LOS	C	D	D	F	F	F	C	F	F	F	D	D
Approach Vol, veh/h		684			2858			1533			1011	
Approach Delay, s/veh		42.0			142.7			129.3			68.0	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	57.2	17.0	38.0	23.0	42.0	11.0	44.0				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	12.0	* 44	13.0	* 33	19.0	* 37	16.0	* 30				
Max Q Clear Time (g_c+I1), s	4.2	54.0	15.0	34.6	21.0	22.8	7.2	25.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.1	0.1	0.7				

Intersection Summary

HCM 6th Ctrl Delay	115.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2040 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑		↖	↑↑↑		↗	↑↑↑		↖	↑↑	
Traffic Volume (veh/h)	240	690	200	190	1360	410	230	1370	130	230	590	190
Future Volume (veh/h)	240	690	200	190	1360	410	230	1370	130	230	590	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	261	750	217	207	1478	446	250	1489	141	250	641	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	782	226	235	1103	329	268	1334	126	234	743	240
Arrive On Green	0.11	0.32	0.32	0.10	0.31	0.31	0.11	0.31	0.31	0.11	0.31	0.31
Sat Flow, veh/h	1603	2447	708	1603	3510	1049	1603	4270	404	1603	2377	767
Grp Volume(v), veh/h	261	490	477	207	1288	636	250	1068	562	250	431	417
Grp Sat Flow(s),veh/h/ln	1603	1599	1556	1603	1532	1495	1603	1532	1611	1603	1599	1545
Q Serve(g_s), s	13.0	36.1	36.1	10.4	37.7	37.7	12.8	37.5	37.5	13.0	30.4	30.5
Cycle Q Clear(g_c), s	13.0	36.1	36.1	10.4	37.7	37.7	12.8	37.5	37.5	13.0	30.4	30.5
Prop In Lane	1.00		0.46	1.00		0.70	1.00		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	234	511	497	235	962	470	268	957	503	234	500	483
V/C Ratio(X)	1.12	0.96	0.96	0.88	1.34	1.35	0.93	1.12	1.12	1.07	0.86	0.86
Avail Cap(c_a), veh/h	234	511	497	243	962	470	268	957	503	234	500	483
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	40.1	40.1	29.3	41.1	41.2	29.2	41.3	41.3	34.0	38.8	38.8
Incr Delay (d2), s/veh	93.9	31.0	31.5	27.2	159.4	172.8	6.2	53.6	55.3	78.6	13.8	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	18.1	17.7	5.6	35.0	35.9	5.2	20.8	22.1	9.5	13.5	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.9	71.1	71.6	56.5	200.5	213.9	35.4	94.9	96.5	112.6	52.6	53.2
LnGrp LOS	F	E	E	E	F	F	D	F	F	F	D	D
Approach Vol, veh/h		1228			2131			1880			1098	
Approach Delay, s/veh		83.3			190.5			87.5			66.5	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.0	17.0	43.0	16.4	43.6	17.0	43.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	13.0	* 38	13.0	37.5	13.0	* 38	13.0	37.5				
Max Q Clear Time (g_c+I1), s	15.0	39.7	15.0	39.5	12.4	38.1	14.8	32.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	117.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2040 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	880	100	550	2360	810	130	920	320	430	450	80
Future Volume (veh/h)	80	880	100	550	2360	810	130	920	320	430	450	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	957	109	598	2565	880	141	1000	348	467	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	788	352	418	2002	622	320	1001	311	326	984	439
Arrive On Green	0.04	0.25	0.25	0.23	0.44	0.44	0.08	0.22	0.22	0.17	0.31	0.31
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	957	109	598	2565	880	141	1000	348	467	489	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	3.0	34.5	7.0	32.0	61.0	35.1	9.5	30.5	18.9	24.0	17.5	5.3
Cycle Q Clear(g_c), s	3.0	34.5	7.0	32.0	61.0	35.1	9.5	30.5	18.9	24.0	17.5	5.3
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	114	788	352	418	2002	622	320	1001	311	326	984	439
V/C Ratio(X)	0.76	1.21	0.31	1.43	1.28	1.42	0.44	1.00	1.12	1.43	0.50	0.20
Avail Cap(c_a), veh/h	114	788	352	418	2002	622	331	1001	311	326	984	439
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	0.21	0.21	0.21	0.30	0.30	0.30
Uniform Delay (d), s/veh	65.2	52.8	27.7	52.0	39.5	13.1	37.8	54.7	21.1	42.9	39.6	25.5
Incr Delay (d2), s/veh	23.0	108.0	2.3	207.4	130.4	196.5	0.1	12.8	63.5	199.2	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	25.4	0.2	37.7	46.2	44.2	3.7	12.7	11.7	26.2	6.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.2	160.7	29.9	259.4	169.9	209.6	37.8	67.5	84.6	242.2	40.1	25.8
LnGrp LOS	F	F	C	F	F	F	D	E	F	F	D	C
Approach Vol, veh/h		1153			4043			1489			1043	
Approach Delay, s/veh		142.9			191.8			68.7			129.4	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	66.5	28.0	36.0	36.0	40.0	15.4	48.6				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	61.0	24.0	30.5	32.0	34.5	12.4	42.1				
Max Q Clear Time (g_c+I1), s	5.0	63.0	26.0	32.5	34.0	36.5	11.5	19.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	152.4
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2040 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑↑		↖	↑↑↑		↖	↑↑	
Traffic Volume (veh/h)	20	340	10	500	1330	370	100	840	110	380	390	20
Future Volume (veh/h)	20	340	10	500	1330	370	100	840	110	380	390	20
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	370	11	543	1446	402	109	913	120	413	424	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	601	268	490	1479	408	477	966	127	613	1213	63
Arrive On Green	0.02	0.19	0.19	0.24	0.41	0.41	0.19	0.24	0.24	0.35	0.39	0.39
Sat Flow, veh/h	1603	3198	1427	1603	3580	989	1603	4112	538	1603	3094	160
Grp Volume(v), veh/h	22	370	11	543	1236	612	109	679	354	413	219	227
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1505	1603	1532	1586	1603	1599	1655
Q Serve(g_s), s	1.6	14.9	0.9	33.0	55.6	56.3	0.0	30.5	30.7	25.5	13.5	13.6
Cycle Q Clear(g_c), s	1.6	14.9	0.9	33.0	55.6	56.3	0.0	30.5	30.7	25.5	13.5	13.6
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.34	1.00		0.10
Lane Grp Cap(c), veh/h	84	601	268	490	1265	622	477	720	373	613	627	649
V/C Ratio(X)	0.26	0.62	0.04	1.11	0.98	0.98	0.23	0.94	0.95	0.67	0.35	0.35
Avail Cap(c_a), veh/h	109	601	268	490	1265	622	477	720	373	613	627	649
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	0.09	0.09	0.09	0.21	0.21	0.21
Uniform Delay (d), s/veh	50.1	52.2	46.5	49.1	40.4	40.6	36.0	52.6	52.7	36.3	30.0	30.0
Incr Delay (d2), s/veh	0.6	4.7	0.3	73.5	20.3	32.4	0.0	3.3	6.3	0.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.3	0.3	25.8	23.8	25.7	2.8	11.9	12.7	11.6	5.2	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	56.9	46.8	122.7	60.8	73.1	36.0	56.0	59.0	36.8	30.3	30.3
LnGrp LOS	D	E	D	F	E	E	D	E	E	D	C	C
Approach Vol, veh/h		403			2391			1142			859	
Approach Delay, s/veh		56.3			78.0			55.0			33.4	
Approach LOS		E			E			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	63.2	53.0	38.3	38.4	31.7	31.0	60.3				
Change Period (Y+Rc), s	4.0	* 5.4	* 4	5.4	* 5.4	* 5.4	* 4	5.4				
Max Green Setting (Gmax), s	5.0	* 54	* 29	32.9	* 33	* 26	* 7	54.9				
Max Q Clear Time (g_c+I1), s	3.6	58.3	27.5	32.7	35.0	16.9	2.0	15.6				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.1	0.0	0.6	0.0	0.8				

Intersection Summary

HCM 6th Ctrl Delay	62.7
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2040 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	40	520	70	580	1620	430	90	950	370	260	630	40
Future Volume (veh/h)	40	520	70	580	1620	430	90	950	370	260	630	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	565	76	630	1761	467	98	1033	402	283	685	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	502	67	509	1576	408	210	943	367	685	1940	122
Arrive On Green	0.03	0.18	0.18	0.29	0.43	0.43	0.06	0.29	0.29	0.39	0.63	0.63
Sat Flow, veh/h	1603	2834	380	1603	3636	942	1603	3253	1266	1603	3056	192
Grp Volume(v), veh/h	43	318	323	630	1477	751	98	973	462	283	358	370
Grp Sat Flow(s),veh/h/ln	1603	1599	1615	1603	1532	1514	1603	1532	1455	1603	1599	1649
Q Serve(g_s), s	3.1	24.8	24.8	40.0	60.7	60.7	6.6	40.6	40.6	12.7	14.8	14.8
Cycle Q Clear(g_c), s	3.1	24.8	24.8	40.0	60.7	60.7	6.6	40.6	40.6	12.7	14.8	14.8
Prop In Lane	1.00		0.24	1.00		0.62	1.00		0.87	1.00		0.12
Lane Grp Cap(c), veh/h	99	283	286	509	1328	656	210	888	422	685	1015	1047
V/C Ratio(X)	0.44	1.12	1.13	1.24	1.11	1.14	0.47	1.09	1.09	0.41	0.35	0.35
Avail Cap(c_a), veh/h	114	283	286	509	1328	656	220	888	422	685	1015	1047
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	0.63	0.63	0.63
Uniform Delay (d), s/veh	47.5	57.6	57.6	40.6	39.7	39.7	40.3	49.7	49.7	28.3	12.0	12.0
Incr Delay (d2), s/veh	1.1	90.8	92.4	122.5	61.5	82.1	0.6	59.5	72.0	0.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	17.0	17.3	34.7	33.3	36.6	2.6	22.5	22.9	6.5	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	148.4	150.0	163.1	101.2	121.8	40.9	109.2	121.7	28.4	12.6	12.6
LnGrp LOS	D	F	F	F	F	F	D	F	F	C	B	B
Approach Vol, veh/h		684			2858			1533			1011	
Approach Delay, s/veh		142.9			120.2			108.6			17.1	
Approach LOS		F			F			F			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	65.9	60.9	46.0	44.0	30.0	12.4	94.4				
Change Period (Y+Rc), s	4.0	* 5.2	* 5.4	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	5.5	* 59	* 16	* 41	40.0	* 25	9.3	* 47				
Max Q Clear Time (g_c+I1), s	5.1	62.7	14.7	42.6	42.0	26.8	8.6	16.8				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	102.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
9: 35th Ave & Camelback

2040 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	240	690	200	190	1360	410	230	1370	130	230	590	190
Future Volume (veh/h)	240	690	200	190	1360	410	230	1370	130	230	590	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	261	750	217	207	1478	446	250	1489	141	250	641	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	869	251	227	1248	373	726	2677	253	200	705	227
Arrive On Green	0.10	0.36	0.36	0.09	0.36	0.36	0.41	0.63	0.63	0.09	0.30	0.30
Sat Flow, veh/h	1603	2447	708	1603	3510	1049	1603	4270	404	1603	2377	767
Grp Volume(v), veh/h	261	490	477	207	1288	636	250	1068	562	250	431	417
Grp Sat Flow(s),veh/h/ln	1603	1599	1556	1603	1532	1495	1603	1532	1611	1603	1599	1545
Q Serve(g_s), s	14.0	39.9	39.9	10.8	49.8	49.8	8.5	28.0	28.0	13.0	36.3	36.4
Cycle Q Clear(g_c), s	14.0	39.9	39.9	10.8	49.8	49.8	8.5	28.0	28.0	13.0	36.3	36.4
Prop In Lane	1.00		0.46	1.00		0.70	1.00		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	212	568	552	227	1090	532	726	1921	1010	200	474	458
V/C Ratio(X)	1.23	0.86	0.86	0.91	1.18	1.20	0.34	0.56	0.56	1.25	0.91	0.91
Avail Cap(c_a), veh/h	212	568	552	229	1090	532	726	1921	1010	200	474	458
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	42.0	42.0	60.0	45.1	45.1	25.5	15.0	15.0	45.5	47.4	47.5
Incr Delay (d2), s/veh	138.7	15.9	16.3	35.5	91.7	105.5	0.0	0.1	0.2	146.2	24.0	24.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	17.9	17.5	9.4	32.3	33.5	5.3	9.2	9.7	13.8	17.3	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.9	57.9	58.3	95.6	136.8	150.6	25.5	15.1	15.2	191.7	71.4	72.2
LnGrp LOS	F	E	E	F	F	F	C	B	B	F	E	E
Approach Vol, veh/h		1228			2131			1880			1098	
Approach Delay, s/veh		83.5			136.9			16.5			99.1	
Approach LOS		F			F			B			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	55.1	17.0	94.4	18.1	55.0	64.4	47.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	* 5.3	* 5.3	5.5	* 5.5				
Max Green Setting (Gmax), s	14.0	* 49	13.0	45.5	* 13	* 50	17.0	* 42				
Max Q Clear Time (g_c+l1), s	16.0	51.8	15.0	30.0	12.8	41.9	10.5	38.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.9	0.0	1.5	0.2	0.7				

Intersection Summary

HCM 6th Ctrl Delay	84.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2045 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	40	1390	40	290	880	440	40	210	480	490	390	30
Future Volume (veh/h)	40	1390	40	290	880	440	40	210	480	490	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1511	43	315	957	478	43	228	522	533	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1293	577	234	2242	696	269	1015	315	349	962	429
Arrive On Green	0.02	0.40	0.40	0.11	0.49	0.49	0.03	0.22	0.22	0.11	0.30	0.30
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1511	43	315	957	478	43	228	522	533	424	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	1.9	48.5	2.2	13.0	16.2	31.0	2.5	4.9	26.5	13.0	12.8	2.0
Cycle Q Clear(g_c), s	1.9	48.5	2.2	13.0	16.2	31.0	2.5	4.9	26.5	13.0	12.8	2.0
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	218	1293	577	234	2242	696	269	1015	315	349	962	429
V/C Ratio(X)	0.20	1.17	0.07	1.35	0.43	0.69	0.16	0.22	1.66	1.53	0.44	0.08
Avail Cap(c_a), veh/h	245	1293	577	234	2242	696	303	1015	315	349	962	429
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	0.50	0.50	0.50	0.12	0.12	0.12
Uniform Delay (d), s/veh	20.3	35.7	22.0	37.3	19.9	23.7	34.8	38.3	46.8	39.0	33.8	30.0
Incr Delay (d2), s/veh	0.2	84.7	0.3	182.2	0.6	5.5	0.1	0.0	302.7	238.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	33.1	0.8	18.7	5.7	10.9	1.0	1.8	35.6	27.8	4.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	120.4	22.2	219.6	20.5	29.1	34.8	38.3	349.4	277.8	33.8	30.0
LnGrp LOS	C	F	C	F	C	C	C	D	F	F	C	C
Approach Vol, veh/h		1597			1750			793			990	
Approach Delay, s/veh		115.1			58.7			242.9			165.0	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	64.0	17.0	32.0	17.0	54.0	7.4	41.6				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.0	56.5	13.0	26.5	13.0	48.5	6.0	33.5				
Max Q Clear Time (g_c+I1), s	3.9	33.0	15.0	28.5	15.0	50.5	4.5	14.8				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay	125.2
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2045 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑↑		↖	↑↑↑		↖	↑↑	
Traffic Volume (veh/h)	10	860	10	320	400	190	60	350	210	440	160	10
Future Volume (veh/h)	10	860	10	320	400	190	60	350	210	440	160	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	935	11	348	435	207	65	380	228	478	174	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	1531	683	348	1724	782	326	555	258	226	700	44
Arrive On Green	0.01	0.48	0.48	0.09	0.56	0.56	0.04	0.18	0.18	0.09	0.23	0.23
Sat Flow, veh/h	1603	3198	1427	1603	3092	1403	1603	3064	1427	1603	3056	192
Grp Volume(v), veh/h	11	935	11	348	431	211	65	380	228	478	90	95
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1431	1603	1532	1427	1603	1599	1649
Q Serve(g_s), s	0.4	25.8	0.5	11.0	8.7	9.2	3.9	13.9	18.7	11.0	5.5	5.6
Cycle Q Clear(g_c), s	0.4	25.8	0.5	11.0	8.7	9.2	3.9	13.9	18.7	11.0	5.5	5.6
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	420	1531	683	348	1709	798	326	555	258	226	366	378
V/C Ratio(X)	0.03	0.61	0.02	1.00	0.25	0.26	0.20	0.68	0.88	2.12	0.25	0.25
Avail Cap(c_a), veh/h	680	1531	683	348	1709	798	402	756	352	226	394	407
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	0.26	0.26	0.26	0.50	0.50	0.50
Uniform Delay (d), s/veh	15.6	23.0	16.4	26.1	13.7	13.8	37.5	45.9	47.9	40.8	37.8	37.8
Incr Delay (d2), s/veh	0.0	1.8	0.0	48.6	0.4	0.8	0.0	0.2	4.4	511.0	0.1	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(50%),veh/ln	0.2	9.7	0.2	10.2	2.9	3.0	1.5	5.2	6.8	33.9	2.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	24.9	16.5	74.8	14.0	14.6	37.6	46.1	52.3	551.9	37.9	37.9
LnGrp LOS	B	C	B	F	B	B	D	D	D	F	D	D
Approach Vol, veh/h		957			990			673			663	
Approach Delay, s/veh		24.7			35.5			47.4			408.4	
Approach LOS		C			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	72.3	15.0	27.1	15.0	62.9	9.3	32.9				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	21.0	* 40	11.0	* 30	11.0	* 50	11.0	* 30				
Max Q Clear Time (g_c+I1), s	2.4	11.2	13.0	20.7	13.0	27.8	5.9	7.6				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.1	0.0	2.3	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	110.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2045 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↗		↖	↑↑↖		↖	↑↑↖		↖	↑↖	
Traffic Volume (veh/h)	30	1030	70	280	290	180	20	540	330	290	590	10
Future Volume (veh/h)	30	1030	70	280	290	180	20	540	330	290	590	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1120	76	304	315	196	22	587	359	315	641	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	1160	79	282	1493	695	190	654	304	247	992	17
Arrive On Green	0.03	0.38	0.38	0.13	0.49	0.49	0.02	0.21	0.21	0.12	0.31	0.31
Sat Flow, veh/h	1603	3039	206	1603	3064	1427	1603	3064	1427	1603	3217	55
Grp Volume(v), veh/h	33	589	607	304	315	196	22	587	359	315	319	333
Grp Sat Flow(s),veh/h/ln	1603	1599	1646	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	1.5	43.3	43.3	16.0	7.1	9.8	1.3	22.4	25.6	14.0	20.6	20.7
Cycle Q Clear(g_c), s	1.5	43.3	43.3	16.0	7.1	9.8	1.3	22.4	25.6	14.0	20.6	20.7
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	410	610	628	282	1493	695	190	654	304	247	493	516
V/C Ratio(X)	0.08	0.96	0.97	1.08	0.21	0.28	0.12	0.90	1.18	1.28	0.65	0.65
Avail Cap(c_a), veh/h	579	610	628	282	1493	695	343	654	304	247	493	516
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	0.73	0.73	0.73
Uniform Delay (d), s/veh	21.4	36.3	36.3	36.4	17.6	18.3	36.0	45.9	47.2	33.8	35.8	35.8
Incr Delay (d2), s/veh	0.0	28.8	28.5	75.4	0.3	1.0	0.1	14.9	109.5	144.9	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	21.0	21.6	14.2	2.5	3.3	0.5	9.7	18.1	15.3	8.1	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	65.1	64.8	111.8	17.9	19.3	36.1	60.8	156.7	178.7	37.5	37.5
LnGrp LOS	C	E	E	F	B	B	D	E	F	F	D	D
Approach Vol, veh/h		1229			815			968			967	
Approach Delay, s/veh		63.8			53.3			95.8			83.5	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	63.7	18.0	31.0	20.0	51.0	6.6	42.4				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	16.0	* 46	14.0	* 26	16.0	* 46	14.0	* 26				
Max Q Clear Time (g_c+I1), s	3.5	11.8	16.0	27.6	18.0	45.3	3.3	22.7				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	0.2	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	74.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
9: 35th Ave & Camelback

2045 No-Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	190	770	100	100	560	300	80	470	120	190	700	100
Future Volume (veh/h)	190	770	100	100	560	300	80	470	120	190	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	207	837	109	109	609	326	87	511	130	207	761	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	1441	188	301	1457	679	152	655	162	263	644	92
Arrive On Green	0.08	0.51	0.51	0.05	0.48	0.48	0.06	0.18	0.18	0.11	0.23	0.23
Sat Flow, veh/h	1603	2845	371	1603	3064	1427	1603	3673	910	1603	2808	402
Grp Volume(v), veh/h	207	470	476	109	609	326	87	424	217	207	433	437
Grp Sat Flow(s),veh/h/ln	1603	1599	1617	1603	1532	1427	1603	1532	1519	1603	1599	1611
Q Serve(g_s), s	7.6	24.7	24.7	4.1	15.6	18.6	5.3	15.8	16.4	12.4	27.5	27.5
Cycle Q Clear(g_c), s	7.6	24.7	24.7	4.1	15.6	18.6	5.3	15.8	16.4	12.4	27.5	27.5
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.60	1.00		0.25
Lane Grp Cap(c), veh/h	363	810	818	301	1457	679	152	546	271	263	366	369
V/C Ratio(X)	0.57	0.58	0.58	0.36	0.42	0.48	0.57	0.78	0.80	0.79	1.18	1.18
Avail Cap(c_a), veh/h	406	810	818	394	1457	679	234	702	348	263	366	369
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	20.7	20.7	16.8	20.6	21.4	39.0	47.0	47.3	35.4	46.2	46.3
Incr Delay (d2), s/veh	0.6	3.0	3.0	0.3	0.9	2.4	1.2	2.8	7.0	13.5	106.6	106.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	9.4	9.5	1.5	5.5	6.4	2.1	6.1	6.6	5.7	21.5	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	23.8	23.7	17.0	21.5	23.8	40.1	49.8	54.2	48.8	152.8	152.9
LnGrp LOS	B	C	C	B	C	C	D	D	D	D	F	F
Approach Vol, veh/h		1153			1044			728			1077	
Approach Delay, s/veh		22.4			21.7			50.0			132.9	
Approach LOS		C			C			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	62.4	17.0	26.9	10.0	66.1	10.9	33.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	13.0	* 48	13.0	27.5	13.0	* 48	13.0	27.5				
Max Q Clear Time (g_c+I1), s	9.6	20.6	14.4	18.4	6.1	26.7	7.3	29.5				
Green Ext Time (p_c), s	0.1	2.2	0.0	1.1	0.1	1.8	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	57.0
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 2: 35th Ave & Indian School

2045 Optimized Build AM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗	↘	↘	↗	↘
Traffic Volume (veh/h)	40	1390	40	290	880	440	40	210	480	490	390	30
Future Volume (veh/h)	40	1390	40	290	880	440	40	210	480	490	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	1511	43	315	957	478	43	228	522	533	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	1226	547	240	2141	665	209	1118	347	892	2179	972
Arrive On Green	0.03	0.38	0.38	0.12	0.47	0.47	0.03	0.24	0.24	0.46	0.68	0.68
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	43	1511	43	315	957	478	43	228	522	533	424	33
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	0.0	57.5	2.9	18.0	21.1	40.4	3.2	5.9	36.5	18.2	7.3	2.0
Cycle Q Clear(g_c), s	0.0	57.5	2.9	18.0	21.1	40.4	3.2	5.9	36.5	18.2	7.3	2.0
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	194	1226	547	240	2141	665	209	1118	347	892	2179	972
V/C Ratio(X)	0.22	1.23	0.08	1.31	0.45	0.72	0.21	0.20	1.50	0.60	0.19	0.03
Avail Cap(c_a), veh/h	210	1226	547	240	2141	665	222	1118	347	892	2179	972
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	0.60	0.60	0.60	0.61	0.61	0.61
Uniform Delay (d), s/veh	38.2	46.3	29.4	47.8	27.0	32.2	46.0	45.2	115.1	21.6	8.8	23.9
Incr Delay (d2), s/veh	0.2	111.9	0.3	166.3	0.7	6.6	0.1	0.2	235.6	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	41.3	1.0	16.6	7.8	14.8	1.3	2.3	22.7	11.2	2.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	158.1	29.7	214.1	27.7	38.8	46.1	45.4	350.7	22.1	8.9	24.0
LnGrp LOS	D	F	C	F	C	D	D	D	F	C	A	C
Approach Vol, veh/h		1597			1750			793			990	
Approach Delay, s/veh		151.4			64.3			246.4			16.5	
Approach LOS		F			E			F			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	75.4	75.5	42.0	22.0	63.0	8.3	109.2				
Change Period (Y+Rc), s	5.5	* 5.5	5.5	* 5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.6	* 70	19.0	* 37	18.0	57.5	5.6	49.9				
Max Q Clear Time (g_c+I1), s	2.0	42.4	20.2	38.5	20.0	59.5	5.2	9.3				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	110.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2045 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	10	860	10	320	400	190	60	350	210	440	160	10
Future Volume (veh/h)	10	860	10	320	400	190	60	350	210	440	160	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	11	935	11	348	435	207	65	380	228	478	174	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	930	415	326	1426	647	577	1363	635	573	1793	113
Arrive On Green	0.01	0.29	0.29	0.17	0.46	0.46	0.03	0.44	0.44	0.18	0.59	0.59
Sat Flow, veh/h	1603	3198	1427	1603	3092	1403	1603	3064	1427	1603	3056	192
Grp Volume(v), veh/h	11	935	11	348	431	211	65	380	228	478	90	95
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1431	1603	1532	1427	1603	1599	1649
Q Serve(g_s), s	0.7	43.6	1.0	26.0	13.2	14.0	3.3	11.8	15.8	23.4	3.7	3.8
Cycle Q Clear(g_c), s	0.7	43.6	1.0	26.0	13.2	14.0	3.3	11.8	15.8	23.4	3.7	3.8
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	180	930	415	326	1413	660	577	1363	635	573	938	968
V/C Ratio(X)	0.06	1.01	0.03	1.07	0.31	0.32	0.11	0.28	0.36	0.83	0.10	0.10
Avail Cap(c_a), veh/h	214	930	415	326	1413	660	588	1363	635	677	938	968
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	0.22	0.22	0.22	0.58	0.58	0.58
Uniform Delay (d), s/veh	40.3	53.2	52.3	60.1	25.3	25.6	21.3	26.4	27.5	17.7	13.6	13.6
Incr Delay (d2), s/veh	0.1	30.9	0.1	69.0	0.6	1.3	0.0	0.1	0.3	4.0	0.1	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(50%),veh/ln	0.3	21.2	0.3	18.0	4.9	5.0	1.2	4.3	5.4	8.7	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	84.1	52.5	129.1	25.9	26.8	21.3	26.5	27.8	21.7	13.7	13.7
LnGrp LOS	D	F	D	F	C	C	C	C	C	C	B	B
Approach Vol, veh/h		957			990			673			663	
Approach Delay, s/veh		83.3			62.4			26.4			19.5	
Approach LOS		F			E			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	74.6	30.1	72.7	31.4	49.0	9.0	93.8				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	* 5.4	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	5.0	* 65	36.0	* 26	* 26	* 44	6.0	* 56				
Max Q Clear Time (g_c+I1), s	2.7	16.0	25.4	17.8	28.0	45.6	5.3	5.8				
Green Ext Time (p_c), s	0.0	1.5	0.6	1.0	0.0	0.0	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2045 Optimized Build AM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	30	1030	70	280	290	180	20	540	330	290	590	10
Future Volume (veh/h)	30	1030	70	280	290	180	20	540	330	290	590	10
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	33	1120	76	304	315	196	22	587	359	315	641	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	1070	73	298	1442	671	210	637	297	305	1120	19
Arrive On Green	0.04	0.35	0.35	0.16	0.47	0.47	0.02	0.21	0.21	0.16	0.35	0.35
Sat Flow, veh/h	1603	3039	206	1603	3064	1427	1603	3064	1427	1603	3217	55
Grp Volume(v), veh/h	33	589	607	304	315	196	22	587	359	315	319	333
Grp Sat Flow(s),veh/h/ln	1603	1599	1646	1603	1532	1427	1603	1532	1427	1603	1599	1673
Q Serve(g_s), s	0.0	52.8	52.8	23.4	9.1	12.6	1.6	28.2	31.2	24.0	24.3	24.3
Cycle Q Clear(g_c), s	0.0	52.8	52.8	23.4	9.1	12.6	1.6	28.2	31.2	24.0	24.3	24.3
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	322	563	579	298	1442	671	210	637	297	305	556	582
V/C Ratio(X)	0.10	1.05	1.05	1.02	0.22	0.29	0.10	0.92	1.21	1.03	0.57	0.57
Avail Cap(c_a), veh/h	322	563	579	298	1442	671	238	637	297	305	556	582
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	0.60	0.60	0.60
Uniform Delay (d), s/veh	37.8	48.6	48.6	61.4	23.4	24.4	45.4	58.2	59.4	46.5	39.8	39.8
Incr Delay (d2), s/veh	0.1	50.6	50.4	57.3	0.3	1.1	0.1	20.8	121.6	49.1	2.6	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(50%),veh/ln	0.9	28.5	29.3	15.9	3.4	4.5	0.6	12.6	21.1	13.6	9.9	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	99.2	99.0	118.7	23.8	25.5	45.4	79.0	181.0	95.6	42.4	42.3
LnGrp LOS	D	F	F	F	C	C	D	E	F	F	D	D
Approach Vol, veh/h		1229			815			968			967	
Approach Delay, s/veh		97.5			59.6			116.1			59.7	
Approach LOS		F			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	75.8	28.0	36.6	27.4	58.0	7.0	57.6				
Change Period (Y+Rc), s	* 4	5.2	4.0	* 5.4	* 4	5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	* 5.6	70.6	24.0	* 31	* 23	52.8	5.6	* 50				
Max Q Clear Time (g_c+I1), s	2.0	14.6	26.0	33.2	25.4	54.8	3.6	26.3				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	85.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2045 Optimized Build AM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑		↗	↑↑↑		↗	↑↑↑		↗	↑↑	
Traffic Volume (veh/h)	190	770	100	100	560	300	80	470	120	190	700	100
Future Volume (veh/h)	190	770	100	100	560	300	80	470	120	190	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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	207	837	109	109	609	326	87	511	130	207	761	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	899	117	144	945	440	364	1974	489	481	1510	216
Arrive On Green	0.05	0.32	0.32	0.03	0.31	0.31	0.04	0.54	0.54	0.04	0.54	0.54
Sat Flow, veh/h	1603	2845	371	1603	3064	1427	1603	3673	910	1603	2808	402
Grp Volume(v), veh/h	207	470	476	109	609	326	87	424	217	207	433	437
Grp Sat Flow(s),veh/h/ln	1603	1599	1617	1603	1532	1427	1603	1532	1519	1603	1599	1611
Q Serve(g_s), s	4.0	21.4	21.4	0.4	12.9	15.4	1.8	5.6	5.8	3.0	12.9	12.9
Cycle Q Clear(g_c), s	4.0	21.4	21.4	0.4	12.9	15.4	1.8	5.6	5.8	3.0	12.9	12.9
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.60	1.00		0.25
Lane Grp Cap(c), veh/h	184	505	511	144	945	440	364	1647	817	481	860	866
V/C Ratio(X)	1.13	0.93	0.93	0.76	0.64	0.74	0.24	0.26	0.27	0.43	0.50	0.50
Avail Cap(c_a), veh/h	184	505	511	162	945	440	364	1647	817	481	860	866
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	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	24.9	24.9	35.4	22.4	23.2	8.5	9.3	9.4	9.7	11.0	11.0
Incr Delay (d2), s/veh	104.0	26.1	25.9	13.6	3.4	10.7	0.1	0.3	0.7	0.2	2.1	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(50%),veh/ln	6.8	10.9	11.0	2.4	4.6	6.0	0.5	1.6	1.8	1.3	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.4	51.0	50.8	49.0	25.8	33.9	8.7	9.7	10.1	9.9	13.1	13.1
LnGrp LOS	F	D	D	D	C	C	A	A	B	A	B	B
Approach Vol, veh/h		1153			1044			728			1077	
Approach Delay, s/veh		65.5			30.7			9.7			12.5	
Approach LOS		E			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	28.4	7.0	46.3	7.4	29.0	7.0	46.3				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	* 5.3	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	4.0	* 23	3.0	26.5	* 3	* 24	3.0	26.5				
Max Q Clear Time (g_c+I1), s	6.0	17.4	5.0	7.8	2.4	23.4	3.8	14.9				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.3	0.0	0.1	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2045 No-Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	850	100	540	2250	790	130	920	300	410	450	80
Future Volume (veh/h)	80	850	100	540	2250	790	130	920	300	410	450	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	924	109	587	2446	859	141	1000	326	446	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	853	380	394	1972	612	310	957	297	314	903	403
Arrive On Green	0.05	0.27	0.27	0.21	0.43	0.43	0.08	0.21	0.21	0.16	0.28	0.28
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	924	109	587	2446	859	141	1000	326	446	489	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	4.7	32.0	7.3	25.0	51.5	51.5	8.2	25.0	25.0	19.0	15.5	5.6
Cycle Q Clear(g_c), s	4.7	32.0	7.3	25.0	51.5	51.5	8.2	25.0	25.0	19.0	15.5	5.6
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	133	853	380	394	1972	612	310	957	297	314	903	403
V/C Ratio(X)	0.65	1.08	0.29	1.49	1.24	1.40	0.45	1.04	1.10	1.42	0.54	0.22
Avail Cap(c_a), veh/h	133	853	380	394	1972	612	317	957	297	314	903	403
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	0.38	0.38	0.38	0.40	0.40	0.40
Uniform Delay (d), s/veh	34.3	44.0	34.9	36.3	34.3	34.3	33.2	47.5	47.5	34.5	36.5	32.9
Incr Delay (d2), s/veh	8.6	55.9	1.9	233.6	112.6	191.1	0.1	30.9	62.0	197.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	18.9	2.7	32.6	38.6	49.3	3.1	12.0	13.8	24.3	6.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	99.9	36.8	269.9	146.9	225.3	33.3	78.4	109.5	231.5	36.6	32.9
LnGrp LOS	D	F	D	F	F	F	C	F	F	F	D	C
Approach Vol, veh/h		1120			3892			1467			1022	
Approach Delay, s/veh		89.3			182.7			81.0			121.3	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	57.0	23.0	30.5	29.0	37.5	14.1	39.4				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	51.5	19.0	25.0	25.0	32.0	10.6	33.4				
Max Q Clear Time (g_c+I1), s	6.7	53.5	21.0	27.0	27.0	34.0	10.2	17.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	140.5											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2045 No-Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑	↘	↗	↑↑↑		↗	↑↑↑		↘	↑↑	
Traffic Volume (veh/h)	20	320	10	480	1270	350	100	830	100	360	390	30
Future Volume (veh/h)	20	320	10	480	1270	350	100	830	100	360	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	348	11	522	1380	380	109	902	109	391	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	1268	566	544	1763	484	286	991	119	220	794	62
Arrive On Green	0.02	0.40	0.40	0.12	0.49	0.49	0.07	0.24	0.24	0.09	0.26	0.26
Sat Flow, veh/h	1603	3198	1427	1603	3586	984	1603	4156	500	1603	3007	233
Grp Volume(v), veh/h	22	348	11	522	1178	582	109	664	347	391	225	232
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1506	1603	1532	1593	1603	1599	1641
Q Serve(g_s), s	1.0	8.8	0.6	14.0	38.1	38.4	6.1	25.3	25.4	11.0	14.4	14.6
Cycle Q Clear(g_c), s	1.0	8.8	0.6	14.0	38.1	38.4	6.1	25.3	25.4	11.0	14.4	14.6
Prop In Lane	1.00		1.00	1.00		0.65	1.00		0.31	1.00		0.14
Lane Grp Cap(c), veh/h	137	1268	566	544	1506	740	286	731	380	220	422	434
V/C Ratio(X)	0.16	0.27	0.02	0.96	0.78	0.79	0.38	0.91	0.91	1.78	0.53	0.54
Avail Cap(c_a), veh/h	249	1268	566	544	1506	740	367	807	420	220	422	434
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	0.09	0.09	0.09	0.12	0.12	0.12
Uniform Delay (d), s/veh	23.9	24.5	22.0	28.7	25.2	25.3	31.8	44.4	44.5	36.4	37.8	37.8
Incr Delay (d2), s/veh	0.2	0.5	0.1	28.3	4.1	8.2	0.0	1.4	2.9	351.2	0.1	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(50%),veh/ln	0.4	3.4	0.2	13.1	13.9	14.6	2.3	9.5	10.1	26.3	5.6	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	25.1	22.1	57.1	29.3	33.5	31.8	45.9	47.3	387.6	37.9	37.9
LnGrp LOS	C	C	C	E	C	C	C	D	D	F	D	D
Approach Vol, veh/h		381			2282			1120			848	
Approach Delay, s/veh		24.9			36.7			44.9			199.1	
Approach LOS		C			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	64.4	15.0	34.0	18.0	53.0	11.9	37.1				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4	4.0	* 5.4				
Max Green Setting (Gmax), s	11.0	* 45	11.0	* 32	14.0	* 39	14.0	* 32				
Max Q Clear Time (g_c+I1), s	3.0	40.4	13.0	27.4	16.0	10.8	8.1	16.6				
Green Ext Time (p_c), s	0.0	2.2	0.0	1.2	0.0	0.8	0.1	0.7				

Intersection Summary

HCM 6th Ctrl Delay	67.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 8: 35th Ave & McDowell

2045 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	40	490	60	560	1510	410	90	960	360	250	630	40
Future Volume (veh/h)	40	490	60	560	1510	410	90	960	360	250	630	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	533	65	609	1641	446	98	1043	391	272	685	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	880	107	423	1563	418	236	894	335	234	983	62
Arrive On Green	0.03	0.31	0.31	0.16	0.43	0.43	0.06	0.27	0.27	0.11	0.32	0.32
Sat Flow, veh/h	1603	2871	349	1603	3608	965	1603	3291	1234	1603	3056	192
Grp Volume(v), veh/h	43	296	302	609	1389	698	98	971	463	272	358	370
Grp Sat Flow(s),veh/h/ln	1603	1599	1621	1603	1532	1510	1603	1532	1461	1603	1599	1649
Q Serve(g_s), s	2.2	18.9	19.0	19.0	52.0	52.0	5.2	32.6	32.6	13.0	23.5	23.5
Cycle Q Clear(g_c), s	2.2	18.9	19.0	19.0	52.0	52.0	5.2	32.6	32.6	13.0	23.5	23.5
Prop In Lane	1.00		0.22	1.00		0.64	1.00		0.84	1.00		0.12
Lane Grp Cap(c), veh/h	111	490	497	423	1327	654	236	832	397	234	514	530
V/C Ratio(X)	0.39	0.60	0.61	1.44	1.05	1.07	0.42	1.17	1.17	1.16	0.70	0.70
Avail Cap(c_a), veh/h	220	490	497	423	1327	654	356	832	397	234	514	530
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	0.56	0.56	0.56
Uniform Delay (d), s/veh	32.6	35.4	35.4	28.7	34.0	34.0	30.2	43.7	43.7	33.2	35.6	35.6
Incr Delay (d2), s/veh	0.8	5.4	5.4	210.8	37.8	54.4	0.4	87.9	99.0	97.1	2.0	1.9
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(50%),veh/ln	0.9	7.9	8.1	32.8	25.2	27.9	2.0	22.1	22.3	11.2	9.2	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	40.8	40.9	239.6	71.8	88.4	30.6	131.6	142.7	130.3	37.6	37.5
LnGrp LOS	C	D	D	F	F	F	C	F	F	F	D	D
Approach Vol, veh/h		641			2696			1532			1000	
Approach Delay, s/veh		40.4			114.0			128.5			62.8	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	57.2	17.0	38.0	23.0	42.0	11.0	44.0				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	4.0	* 5.4				
Max Green Setting (Gmax), s	12.0	* 44	13.0	* 33	19.0	* 37	16.0	* 30				
Max Q Clear Time (g_c+I1), s	4.2	54.0	15.0	34.6	21.0	21.0	7.2	25.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.1	0.7				

Intersection Summary

HCM 6th Ctrl Delay	101.0
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 9: 35th Ave & Camelback

2045 No-Build PM
 06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↗	↕		↖	↕	
Traffic Volume (veh/h)	230	660	190	180	1300	400	230	1360	130	230	580	190
Future Volume (veh/h)	230	660	190	180	1300	400	230	1360	130	230	580	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	250	717	207	196	1413	435	250	1478	141	250	630	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	793	229	242	1096	335	271	1333	127	234	739	243
Arrive On Green	0.11	0.32	0.32	0.10	0.31	0.31	0.11	0.31	0.31	0.11	0.31	0.31
Sat Flow, veh/h	1603	2448	707	1603	3489	1066	1603	4267	407	1603	2366	777
Grp Volume(v), veh/h	250	468	456	196	1240	608	250	1061	558	250	426	411
Grp Sat Flow(s),veh/h/ln	1603	1599	1556	1603	1532	1491	1603	1532	1610	1603	1599	1544
Q Serve(g_s), s	13.0	33.6	33.6	9.8	37.7	37.7	12.8	37.5	37.5	13.0	29.9	30.0
Cycle Q Clear(g_c), s	13.0	33.6	33.6	9.8	37.7	37.7	12.8	37.5	37.5	13.0	29.9	30.0
Prop In Lane	1.00		0.45	1.00		0.72	1.00		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	234	518	504	242	962	469	271	957	503	234	500	482
V/C Ratio(X)	1.07	0.90	0.90	0.81	1.29	1.30	0.92	1.11	1.11	1.07	0.85	0.85
Avail Cap(c_a), veh/h	234	518	504	258	962	469	271	957	503	234	500	482
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	38.8	38.8	29.2	41.1	41.2	29.1	41.3	41.3	34.0	38.6	38.7
Incr Delay (d2), s/veh	78.6	21.8	22.2	15.1	137.5	149.3	5.4	50.4	52.1	78.6	12.6	13.2
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(50%),veh/ln	9.4	15.8	15.5	4.6	32.1	32.8	5.1	20.3	21.6	9.5	13.1	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.6	60.6	61.0	44.3	178.6	190.5	34.5	91.7	93.3	112.6	51.3	51.8
LnGrp LOS	F	E	E	D	F	F	C	F	F	F	D	D
Approach Vol, veh/h		1174			2044			1869			1087	
Approach Delay, s/veh		71.8			169.3			84.5			65.6	
Approach LOS		E			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.0	17.0	43.0	15.8	44.2	17.0	43.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	4.0	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	13.0	* 38	13.0	37.5	13.0	* 38	13.0	37.5				
Max Q Clear Time (g_c+I1), s	15.0	39.7	15.0	39.5	11.8	35.6	14.8	32.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	106.8
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: 35th Ave & Indian School

2045 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑	↗	↘	↑↑↑	↗	↘	↑↑	↗
Traffic Volume (veh/h)	80	850	100	540	2250	790	130	920	300	410	450	80
Future Volume (veh/h)	80	850	100	540	2250	790	130	920	300	410	450	80
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	87	924	109	587	2446	859	141	1000	326	446	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	778	347	433	2053	637	213	996	309	844	2035	908
Arrive On Green	0.04	0.24	0.24	0.24	0.45	0.45	0.09	0.22	0.22	0.50	0.64	0.64
Sat Flow, veh/h	1603	3198	1427	1603	4595	1427	1603	4595	1427	1603	3198	1427
Grp Volume(v), veh/h	87	924	109	587	2446	859	141	1000	326	446	489	87
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1427	1603	1532	1427	1603	1599	1427
Q Serve(g_s), s	5.5	36.5	9.4	36.0	67.0	38.3	11.5	32.5	32.5	22.9	9.8	3.5
Cycle Q Clear(g_c), s	5.5	36.5	9.4	36.0	67.0	38.3	11.5	32.5	32.5	22.9	9.8	3.5
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	107	778	347	433	2053	637	213	996	309	844	2035	908
V/C Ratio(X)	0.81	1.19	0.31	1.36	1.19	1.35	0.66	1.00	1.05	0.53	0.24	0.10
Avail Cap(c_a), veh/h	107	778	347	433	2053	637	213	996	309	844	2035	908
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	0.32	0.32	0.32	0.43	0.43	0.43
Uniform Delay (d), s/veh	48.5	56.8	46.5	46.6	41.5	13.6	52.8	58.7	69.1	23.6	11.7	10.6
Incr Delay (d2), s/veh	34.5	97.0	2.4	174.9	91.4	166.9	1.9	17.2	44.5	0.1	0.1	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(50%),veh/ln	1.9	25.0	3.6	32.3	41.8	40.9	4.7	14.0	16.4	10.2	3.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.0	153.8	48.8	221.5	132.9	180.5	54.8	75.9	113.6	23.7	11.8	10.6
LnGrp LOS	F	F	D	F	F	F	D	F	F	C	B	B
Approach Vol, veh/h		1120			3892			1467			1022	
Approach Delay, s/veh		138.1			156.8			82.3			16.9	
Approach LOS		F			F			F			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	72.5	80.5	38.0	40.0	42.0	17.0	101.5				
Change Period (Y+Rc), s	4.0	5.5	5.5	* 5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	5.5	67.0	26.0	* 33	36.0	36.5	13.0	45.5				
Max Q Clear Time (g_c+I1), s	7.5	69.0	24.9	34.5	38.0	38.5	13.5	11.8				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	120.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: 35th Ave & Thomas

2045 Optimized Build PM

06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	20	320	10	480	1270	350	100	830	100	360	390	30
Future Volume (veh/h)	20	320	10	480	1270	350	100	830	100	360	390	30
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	22	348	11	522	1380	380	109	902	109	391	424	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	567	253	502	1482	407	731	2273	274	396	1195	93
Arrive On Green	0.02	0.18	0.18	0.25	0.41	0.41	0.35	0.55	0.55	0.21	0.40	0.40
Sat Flow, veh/h	1603	3198	1427	1603	3586	984	1603	4156	500	1603	3007	233
Grp Volume(v), veh/h	22	348	11	522	1178	582	109	664	347	391	225	232
Grp Sat Flow(s),veh/h/ln	1603	1599	1427	1603	1532	1506	1603	1532	1593	1603	1599	1641
Q Serve(g_s), s	1.7	15.1	1.0	37.0	55.0	55.4	0.0	18.8	18.9	30.4	14.8	14.9
Cycle Q Clear(g_c), s	1.7	15.1	1.0	37.0	55.0	55.4	0.0	18.8	18.9	30.4	14.8	14.9
Prop In Lane	1.00		1.00	1.00		0.65	1.00		0.31	1.00		0.14
Lane Grp Cap(c), veh/h	80	567	253	502	1266	623	731	1675	871	396	635	652
V/C Ratio(X)	0.27	0.61	0.04	1.04	0.93	0.93	0.15	0.40	0.40	0.99	0.35	0.36
Avail Cap(c_a), veh/h	101	567	253	502	1266	623	731	1675	871	396	635	652
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	0.09	0.09	0.09	0.30	0.30	0.30
Uniform Delay (d), s/veh	54.7	57.0	51.2	52.0	41.9	42.1	21.8	19.7	19.7	41.5	31.7	31.7
Incr Delay (d2), s/veh	0.7	4.9	0.3	50.9	13.3	23.1	0.0	0.1	0.1	21.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.4	0.4	25.6	22.6	24.0	2.2	6.6	6.9	14.2	5.8	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	61.9	51.5	103.0	55.3	65.2	21.8	19.7	19.8	63.3	32.2	32.2
LnGrp LOS	E	E	D	F	E	E	C	B	B	E	C	C
Approach Vol, veh/h		381			2282			1120			848	
Approach Delay, s/veh		61.2			68.7			20.0			46.5	
Approach LOS		E			E			B			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	67.4	35.0	88.8	42.4	32.0	58.8	65.0				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	* 5.4	* 5.4	* 5.4	* 5.4	* 5.4				
Max Green Setting (Gmax), s	5.0	* 59	31.0	* 37	* 37	* 27	* 8	* 60				
Max Q Clear Time (g_c+I1), s	3.7	57.4	32.4	20.9	39.0	17.1	2.0	16.9				
Green Ext Time (p_c), s	0.0	0.7	0.0	2.2	0.0	0.6	0.1	0.8				

Intersection Summary

HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
8: 35th Ave & McDowell

2045 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	40	490	60	560	1510	410	90	960	360	250	630	40
Future Volume (veh/h)	40	490	60	560	1510	410	90	960	360	250	630	40
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	43	533	65	609	1641	446	98	1043	391	272	685	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	475	58	518	1548	414	239	979	367	240	1066	67
Arrive On Green	0.03	0.17	0.17	0.29	0.43	0.43	0.06	0.30	0.30	0.12	0.35	0.35
Sat Flow, veh/h	1603	2871	349	1603	3608	965	1603	3291	1234	1603	3056	192
Grp Volume(v), veh/h	43	296	302	609	1389	698	98	971	463	272	358	370
Grp Sat Flow(s),veh/h/ln	1603	1599	1621	1603	1532	1510	1603	1532	1461	1603	1599	1649
Q Serve(g_s), s	3.3	24.8	24.8	44.0	64.4	64.4	0.0	44.6	44.6	18.0	28.2	28.2
Cycle Q Clear(g_c), s	3.3	24.8	24.8	44.0	64.4	64.4	0.0	44.6	44.6	18.0	28.2	28.2
Prop In Lane	1.00		0.22	1.00		0.64	1.00		0.84	1.00		0.12
Lane Grp Cap(c), veh/h	95	264	268	518	1314	648	239	911	434	240	558	575
V/C Ratio(X)	0.45	1.12	1.13	1.18	1.06	1.08	0.41	1.07	1.07	1.13	0.64	0.64
Avail Cap(c_a), veh/h	107	264	268	518	1314	648	254	911	434	240	558	575
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	0.68	0.68	0.68
Uniform Delay (d), s/veh	52.0	62.6	62.6	43.6	42.8	42.8	55.6	52.7	52.7	44.3	41.0	41.0
Incr Delay (d2), s/veh	1.2	91.6	93.4	97.6	41.3	58.0	0.4	49.0	61.8	88.5	3.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	16.7	17.0	33.1	31.1	33.6	3.5	23.0	23.5	13.0	11.6	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	154.2	156.0	141.2	84.1	100.8	56.0	101.7	114.5	132.8	44.9	44.8
LnGrp LOS	D	F	F	F	F	F	E	F	F	F	D	D
Approach Vol, veh/h		641			2696			1532			1000	
Approach Delay, s/veh		148.3			101.4			102.6			68.7	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	69.6	22.0	50.0	48.0	30.0	14.3	57.7				
Change Period (Y+Rc), s	4.0	* 5.2	4.0	* 5.4	4.0	* 5.2	* 5.4	* 5.4				
Max Green Setting (Gmax), s	5.5	* 63	18.0	* 45	44.0	* 25	* 10	* 52				
Max Q Clear Time (g_c+I1), s	5.3	66.4	20.0	46.6	46.0	26.8	2.0	30.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3				

Intersection Summary

HCM 6th Ctrl Delay	101.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
9: 35th Ave & Camelback

2045 Optimized Build PM
06/30/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘↙		↗	↗↘↙		↗	↗↘	
Traffic Volume (veh/h)	230	660	190	180	1300	400	230	1360	130	230	580	190
Future Volume (veh/h)	230	660	190	180	1300	400	230	1360	130	230	580	190
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	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683	1683
Adj Flow Rate, veh/h	250	717	207	196	1413	435	250	1478	141	250	630	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	811	234	238	1202	368	275	1408	134	208	733	241
Arrive On Green	0.10	0.33	0.33	0.10	0.34	0.34	0.12	0.33	0.33	0.10	0.31	0.31
Sat Flow, veh/h	1603	2448	707	1603	3489	1066	1603	4267	407	1603	2366	777
Grp Volume(v), veh/h	250	468	456	196	1240	608	250	1061	558	250	426	411
Grp Sat Flow(s),veh/h/ln	1603	1599	1556	1603	1532	1491	1603	1532	1610	1603	1599	1544
Q Serve(g_s), s	15.0	41.5	41.5	11.2	51.7	51.7	15.2	49.5	49.5	15.0	37.5	37.6
Cycle Q Clear(g_c), s	15.0	41.5	41.5	11.2	51.7	51.7	15.2	49.5	49.5	15.0	37.5	37.6
Prop In Lane	1.00		0.45	1.00		0.72	1.00		0.25	1.00		0.50
Lane Grp Cap(c), veh/h	208	530	516	238	1056	514	275	1011	531	208	496	478
V/C Ratio(X)	1.20	0.88	0.88	0.82	1.17	1.18	0.91	1.05	1.05	1.20	0.86	0.86
Avail Cap(c_a), veh/h	208	530	516	252	1056	514	275	1011	531	208	496	478
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	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	47.4	47.4	62.8	49.1	49.2	61.6	50.3	50.3	65.8	48.7	48.7
Incr Delay (d2), s/veh	126.8	19.0	19.4	17.1	88.5	101.0	4.4	25.3	27.7	126.8	17.3	18.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	19.0	18.6	8.0	32.3	33.2	9.6	22.1	23.6	15.2	17.1	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	170.9	66.4	66.8	79.9	137.6	150.2	66.0	75.5	78.0	192.6	66.0	66.6
LnGrp LOS	F	E	E	E	F	F	E	F	F	F	E	E
Approach Vol, veh/h		1174			2044			1869			1087	
Approach Delay, s/veh		88.8			135.8			75.0			95.4	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	57.0	19.0	55.0	21.0	55.0	22.0	52.0				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.5	* 5.3	* 5.3	4.0	5.5				
Max Green Setting (Gmax), s	15.0	* 52	15.0	49.5	* 17	* 50	18.0	46.5				
Max Q Clear Time (g_c+I1), s	17.0	53.7	17.0	51.5	13.2	43.5	17.2	39.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	1.3	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	101.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.