

MOVEMENT SUMMARY

 **Site: 5 [Sunset Strip & NW 64th Avenue (Site Folder: General)]**

Future without Project PM
Site Category: Future without Project 2022
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total HV] [Total veh/h %]		DEMAND FLOWS [Total HV] [Total veh/h %]		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh ft		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: NW 64th Avenue														
NW	L1	28	0.0	30	0.0	0.093	8.2	LOS A	0.4	9.3	0.57	0.52	0.57	16.6
N	T1	27	4.0	29	4.0	0.093	8.4	LOS A	0.4	9.3	0.57	0.52	0.57	15.6
NBR	R3	7	0.0	8	0.0	0.093	7.8	LOS A	0.4	9.3	0.57	0.52	0.57	15.6
Approach		62	1.7	67	1.7	0.093	8.3	LOS A	0.4	9.3	0.57	0.52	0.57	16.1
SouthEast: Sunset Strip														
WBL	L3	10	4.0	11	4.0	0.583	10.4	LOS B	4.5	114.8	0.52	0.34	0.52	17.3
WB	T1	356	3.0	383	3.0	0.583	10.4	LOS B	4.5	114.8	0.52	0.34	0.52	14.5
WBR	R1	254	5.0	273	5.0	0.583	10.4	LOS B	4.5	114.8	0.52	0.34	0.52	14.1
Approach		620	3.8	667	3.8	0.583	10.4	LOS B	4.5	114.8	0.52	0.34	0.52	14.4
North: NW 64th Avenue														
SBL	L1	175	1.0	188	1.0	0.390	11.2	LOS B	2.0	50.9	0.63	0.58	0.63	17.3
SB	T1	74	0.0	80	0.0	0.390	11.2	LOS B	2.0	50.9	0.63	0.58	0.63	15.2
SBR	R3	71	0.0	76	0.0	0.390	11.1	LOS B	2.0	50.9	0.63	0.58	0.63	15.1
Approach		320	0.5	344	0.5	0.390	11.2	LOS B	2.0	50.9	0.63	0.58	0.63	16.1
NorthWest: Sunset Strip														
EBL	L3	80	0.0	86	0.0	0.473	9.0	LOS A	2.9	72.7	0.59	0.48	0.59	19.6
EB	T1	326	2.0	351	2.0	0.473	9.0	LOS A	2.9	72.7	0.59	0.48	0.59	17.4
EBR	R1	42	2.0	45	2.0	0.473	9.0	LOS A	2.9	72.7	0.59	0.48	0.59	17.4
Approach		448	1.6	482	1.6	0.473	9.0	LOS A	2.9	72.7	0.59	0.48	0.59	17.8
All Vehicles		1450	2.3	1559	2.3	0.583	10.0	LOS B	4.5	114.8	0.57	0.44	0.57	15.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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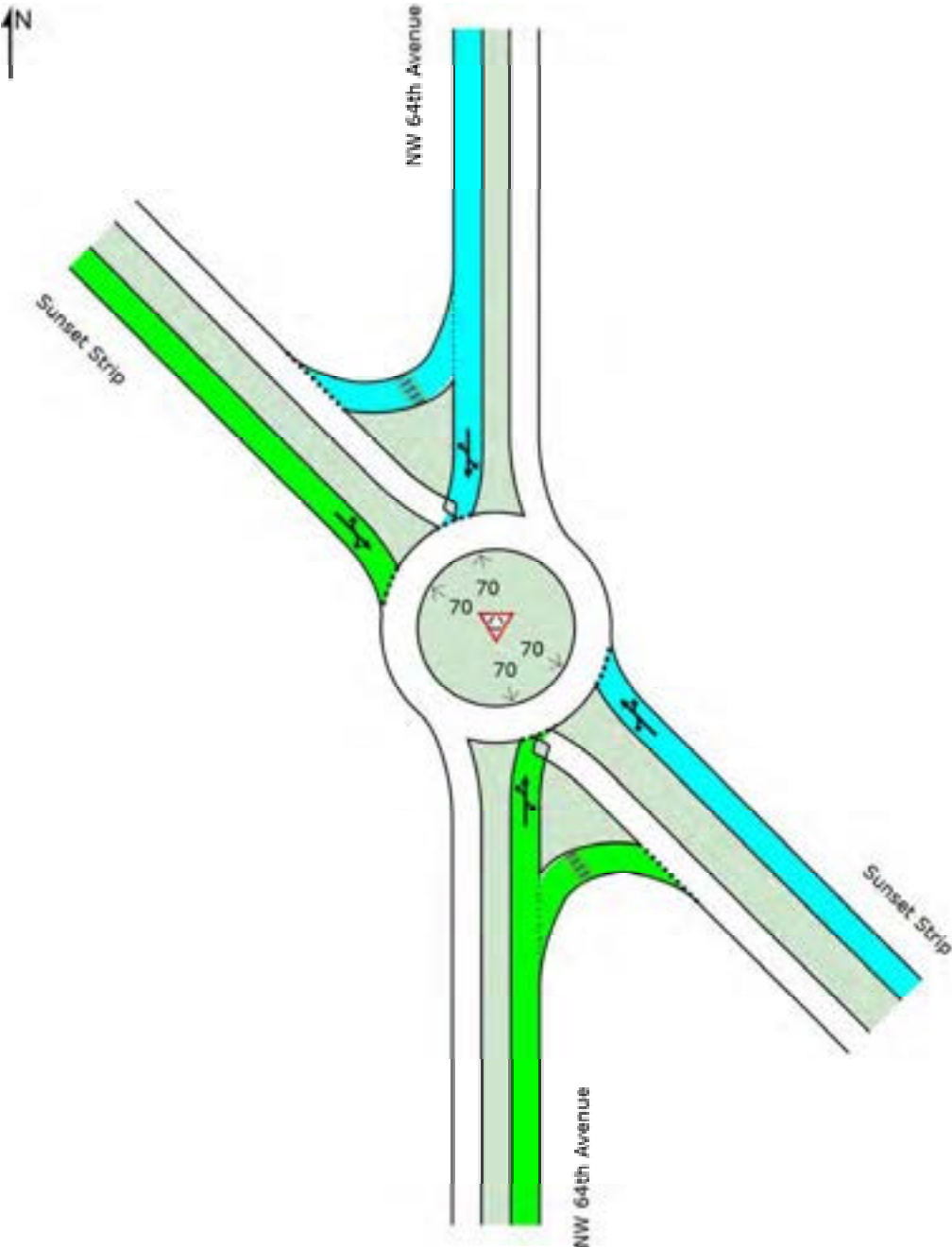
LEVEL OF SERVICE

Lane Level of Service

 **Site: 5 [Sunset Strip & NW 64th Avenue (Site Folder: General)]**

Future without Project PM
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Roundabout

	Approaches				Intersection
	South	Southeast	North	Northwest	
LOS	A	B	B	A	B



LEVEL OF SERVICE

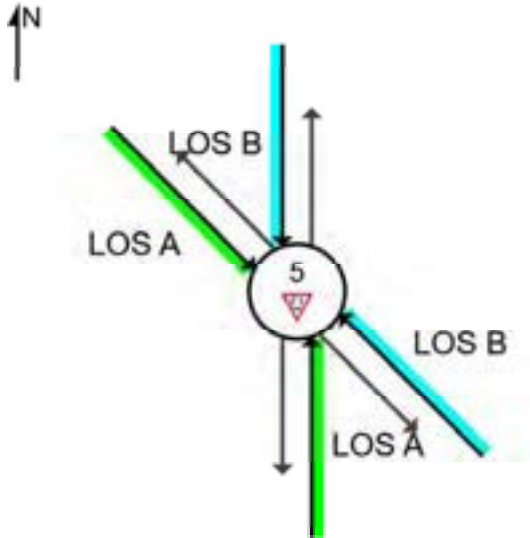
Approach Level of Service

 **Site: 5 [Sunset Strip & NW 64th Avenue (Site Folder: General)]**

Future without Project PM

Site Category: Future without Project 2022

Roundabout



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

Delay Model: HCM Delay Formula (Geometric Delay is not included).

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 5 [Sunset Strip & NW 64th Avenue (Site Folder: General)]**

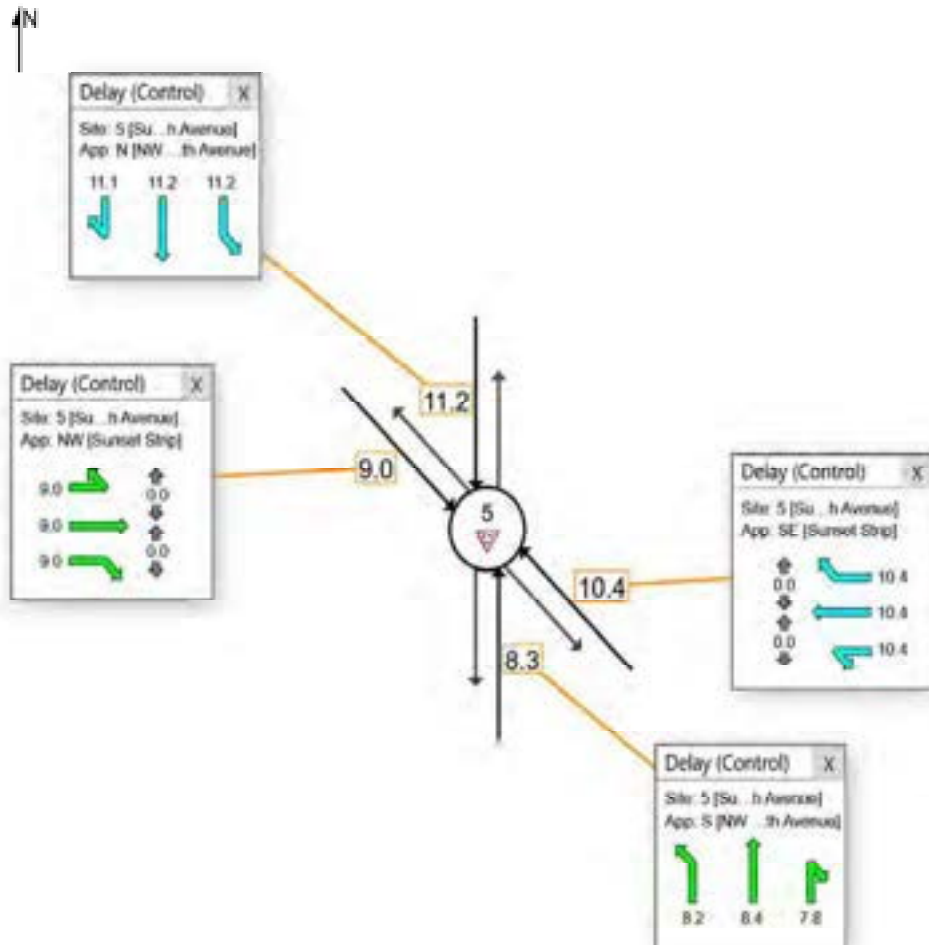
Future without Project PM

Site Category: Future without Project 2022

Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (AVERAGE)

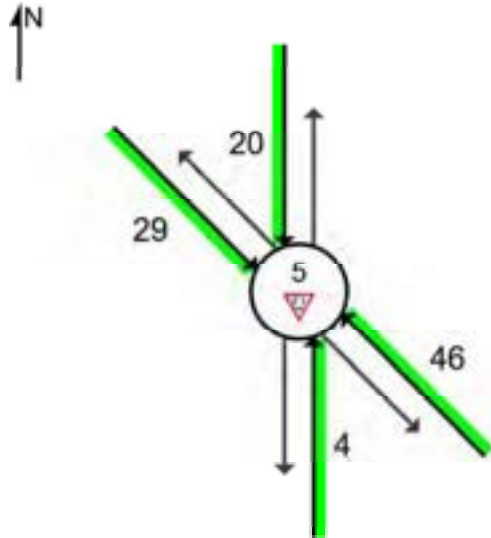
Largest Average Back of Queue Distance for any lane on the approach (feet)

 **Site: 5 [Sunset Strip & NW 64th Avenue (Site Folder: General)]**

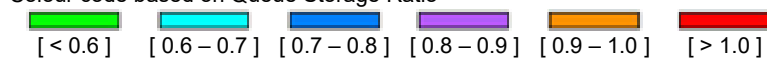
Future without Project PM

Site Category: Future without Project 2022

Roundabout



Colour code based on Queue Storage Ratio



Queue Model: HCM Queue Formula.

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HCM Signalized Intersection Capacity Analysis

6: University Drive & Sunset Strip

16202 Future without Project AM Peak

10/13/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	92	200	124	11	346	278	97	10	51	1603	190	54
Future Volume (vph)	92	200	124	11	346	278	97	10	51	1603	190	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0	6.0		7.0	7.0		7.0
Lane Util. Factor	1.00	0.95			1.00	0.95	1.00		0.97	0.91		0.97
Frpb, ped/bikes	1.00	0.99			1.00	1.00	0.99		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.94			1.00	1.00	0.85		1.00	0.98		1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00		0.95	1.00		0.95
Satd. Flow (prot)	1805	3308			1787	3574	1561		3388	4986		3367
Flt Permitted	0.58	1.00			0.18	1.00	1.00		0.95	1.00		0.95
Satd. Flow (perm)	1094	3308			342	3574	1561		3388	4986		3367
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	95	206	128	11	357	287	100	10	53	1653	196	56
RTOR Reduction (vph)	0	71	0	0	0	0	81	0	0	7	0	0
Lane Group Flow (vph)	95	263	0	0	368	287	19	0	63	1842	0	56
Confl. Peds. (#/hr)			6	1	6				1		2	2
Confl. Bikes (#/hr)			3				2				1	
Heavy Vehicles (%)	0%	3%	0%	0%	1%	1%	2%	0%	4%	2%	4%	4%
Turn Type	pm+pt	NA		pm+pt	pm+pt	NA	Perm	Prot	Prot	NA		Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases	4			8	8		8					
Actuated Green, G (s)	26.1	17.1			44.9	29.9	29.9		6.0	89.4		5.7
Effective Green, g (s)	26.1	17.1			44.9	29.9	29.9		6.0	89.4		5.7
Actuated g/C Ratio	0.16	0.11			0.28	0.19	0.19		0.04	0.56		0.04
Clearance Time (s)	6.0	6.0			6.0	6.0	6.0		7.0	7.0		7.0
Vehicle Extension (s)	1.5	2.0			2.5	2.0	2.0		1.5	3.0		1.5
Lane Grp Cap (vph)	218	353			292	667	291		127	2785		119
v/s Ratio Prot	0.02	0.08			c0.17	0.08			c0.02	0.37		0.02
v/s Ratio Perm	0.05				c0.18		0.01					
v/c Ratio	0.44	0.75			1.26	0.43	0.06		0.50	0.66		0.47
Uniform Delay, d1	59.1	69.3			51.0	57.5	53.5		75.5	24.7		75.7
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.29
Incremental Delay, d2	0.5	7.3			141.8	0.2	0.0		1.1	1.3		0.9
Delay (s)	59.7	76.7			192.8	57.7	53.6		76.6	26.0		98.6
Level of Service	E	E			F	E	D		E	C		F
Approach Delay (s)		72.9				123.0				27.6		
Approach LOS		E				F				C		
Intersection Summary												
HCM 2000 Control Delay			39.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				26.0		
Intersection Capacity Utilization			86.7%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis 6: University Drive & Sunset Strip

16202 Future without Project AM Peak

10/13/2022



Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Traffic Volume (vph)	1881	47
Future Volume (vph)	1881	47
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.0	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5114	
Flt Permitted	1.00	
Satd. Flow (perm)	5114	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1939	48
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	1986	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	1%	2%
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	89.1	
Effective Green, g (s)	89.1	
Actuated g/C Ratio	0.56	
Clearance Time (s)	7.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2847	
v/s Ratio Prot	c0.39	
v/s Ratio Perm		
v/c Ratio	0.70	
Uniform Delay, d1	25.7	
Progression Factor	0.35	
Incremental Delay, d2	1.2	
Delay (s)	10.3	
Level of Service	B	
Approach Delay (s)	12.7	
Approach LOS	B	
Intersection Summary		

Timings

16202 Future without Project AM Peak

6: University Drive & Sunset Strip

10/13/2022



Lane Group	EBL	EBT	WBU	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	92	200	11	346	278	97	51	1603	54	1881
Future Volume (vph)	92	200	11	346	278	97	51	1603	54	1881
Lane Group Flow (vph)	95	334	0	368	287	100	63	1849	56	1987
Turn Type	pm+pt	NA	pm+pt	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	3	8		5	2	1	6
Permitted Phases	4		8	8		8				
Detector Phase	7	4	3	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	6.0	4.0	4.0	6.0	6.0	5.0	10.0	5.0	10.0
Minimum Split (s)	16.0	44.0	24.0	24.0	50.0	50.0	12.0	40.0	12.0	40.0
Total Split (s)	16.0	44.0	24.0	24.0	52.0	52.0	17.0	75.0	17.0	75.0
Total Split (%)	10.0%	27.5%	15.0%	15.0%	32.5%	32.5%	10.6%	46.9%	10.6%	46.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.44	0.79		1.26	0.43	0.26	0.43	0.65	0.40	0.69
Control Delay	51.4	66.3		182.3	60.1	7.5	83.1	25.6	102.9	10.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	66.3		182.3	60.1	7.5	83.1	25.6	102.9	10.2
Queue Length 50th (ft)	77	140		~450	145	0	34	471	31	152
Queue Length 95th (ft)	126	191		#664	190	39	60	569	m56	118
Internal Link Dist (ft)		1123			804			609		1629
Turn Bay Length (ft)	105			175		85	265		325	
Base Capacity (vph)	230	847		292	1027	531	211	2836	210	2894
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.39		1.26	0.28	0.19	0.30	0.65	0.27	0.69

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 28 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

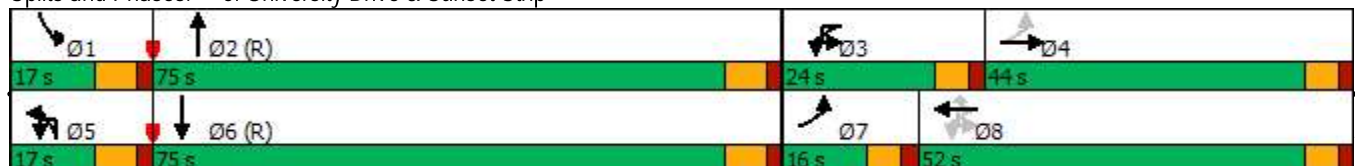
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 6: University Drive & Sunset Strip



HCM Signalized Intersection Capacity Analysis

6: University Drive & Sunset Strip

16202 Future without Project PM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	125	237	68	238	260	116	24	88	2035	352	12	104
Future Volume (vph)	125	237	68	238	260	116	24	88	2035	352	12	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0		7.0	7.0			7.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.97	0.91			0.97
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98		1.00	0.99			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3358		1767	3610	1587		3421	4987			3502
Flt Permitted	0.58	1.00		0.22	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1086	3358		408	3610	1587		3421	4987			3502
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	132	249	72	251	274	122	25	93	2142	371	13	109
RTOR Reduction (vph)	0	17	0	0	0	96	0	0	14	0	0	0
Lane Group Flow (vph)	132	304	0	251	274	26	0	118	2499	0	0	122
Confl. Peds. (#/hr)			8	8			6	4		17		17
Confl. Bikes (#/hr)			4			4				3		
Heavy Vehicles (%)	2%	3%	3%	2%	0%	0%	0%	3%	1%	2%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases	4			8		8						
Actuated Green, G (s)	28.7	18.2		44.5	28.0	28.0		8.8	86.7			8.8
Effective Green, g (s)	28.7	18.2		44.5	28.0	28.0		8.8	86.7			8.8
Actuated g/C Ratio	0.18	0.11		0.28	0.18	0.18		0.06	0.54			0.06
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0		7.0	7.0			7.0
Vehicle Extension (s)	1.5	2.0		2.5	2.0	2.0		1.5	3.0			1.5
Lane Grp Cap (vph)	239	381		285	631	277		188	2702			192
v/s Ratio Prot	0.04	0.09		c0.11	0.08			0.03	c0.50			c0.03
v/s Ratio Perm	0.06			c0.13		0.02						
v/c Ratio	0.55	0.80		0.88	0.43	0.09		0.63	0.92			0.64
Uniform Delay, d1	58.2	69.1		49.5	58.9	55.4		74.0	33.7			74.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.15
Incremental Delay, d2	1.6	10.4		25.4	0.2	0.1		4.6	6.8			4.2
Delay (s)	59.8	79.5		74.9	59.1	55.4		78.6	40.5			89.3
Level of Service	E	E		E	E	E		E	D			F
Approach Delay (s)		73.8			64.5				42.2			
Approach LOS		E			E				D			
Intersection Summary												
HCM 2000 Control Delay			44.3				HCM 2000 Level of Service		D			
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)		26.0			
Intersection Capacity Utilization			89.6%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: University Drive & Sunset Strip

16202 Future without Project PM Peak

10/14/2022



Movement	SBT	SBR
Lane Configurations	↑↑↑	↑↑
Traffic Volume (vph)	1691	75
Future Volume (vph)	1691	75
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.0	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5051	
Flt Permitted	1.00	
Satd. Flow (perm)	5051	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	1780	79
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	1856	0
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	2%	1%
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	86.7	
Effective Green, g (s)	86.7	
Actuated g/C Ratio	0.54	
Clearance Time (s)	7.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2737	
v/s Ratio Prot	0.37	
v/s Ratio Perm		
v/c Ratio	0.68	
Uniform Delay, d1	26.5	
Progression Factor	1.09	
Incremental Delay, d2	1.1	
Delay (s)	30.0	
Level of Service	C	
Approach Delay (s)	33.7	
Approach LOS	C	
Intersection Summary		

Timings

16202 Future without Project PM Peak

6: University Drive & Sunset Strip

10/14/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	125	237	238	260	116	88	2035	104	1691
Future Volume (vph)	125	237	238	260	116	88	2035	104	1691
Lane Group Flow (vph)	132	321	251	274	122	118	2513	122	1859
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	6.0	4.0	6.0	6.0	5.0	10.0	5.0	10.0
Minimum Split (s)	16.0	27.0	24.0	37.0	37.0	12.0	40.0	12.0	40.0
Total Split (s)	17.0	27.0	27.0	37.0	37.0	17.0	89.0	17.0	89.0
Total Split (%)	10.6%	16.9%	16.9%	23.1%	23.1%	10.6%	55.6%	10.6%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.55	0.81	0.88	0.43	0.33	0.63	0.93	0.63	0.68
Control Delay	55.4	80.7	78.1	60.7	12.4	88.7	40.8	97.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	80.7	78.1	60.7	12.4	88.7	40.8	97.3	30.9
Queue Length 50th (ft)	107	164	220	135	5	63	880	60	714
Queue Length 95th (ft)	166	219	#331	181	64	99	#1048	98	762
Internal Link Dist (ft)		1123		804			609		1629
Turn Bay Length (ft)	100		175		105	250		325	
Base Capacity (vph)	245	457	291	699	401	213	2715	219	2739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.70	0.86	0.39	0.30	0.55	0.93	0.56	0.68

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 30 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green

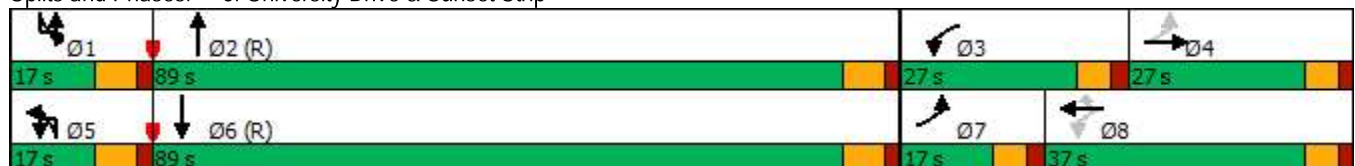
Natural Cycle: 135

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: University Drive & Sunset Strip



Intersection							
Int Delay, s/veh	0.5						
Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations		   				   	
Traffic Vol, veh/h	0	83	1808	57	19	49	1968
Future Vol, veh/h	0	83	1808	57	19	49	1968
Conflicting Peds, #/hr	1	0	0	3	0	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	4	3	4	0	6	2
Mvmt Flow	0	85	1845	58	19	50	2008
Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	-	955	0	0	1389	1906	0
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	7.18	-	-	5.6	5.42	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.94	-	-	2.3	3.16	-
Pot Cap-1 Maneuver	0	*506	-	-	*867	*631	-
Stage 1	0	-	-	-	-	-	-
Stage 2	0	-	-	-	-	-	-
Platoon blocked, %		1	-	-	1	1	-
Mov Cap-1 Maneuver	-	*504	-	-	*653	*653	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Approach	WB		NB		SB		
HCM Control Delay, s	13.6		0		0.4		
HCM LOS	B						
Minor Lane/Major Mvmt		NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)		-	-	504	* 653	-	
HCM Lane V/C Ratio		-	-	0.168	0.106	-	
HCM Control Delay (s)		-	-	13.6	11.2	-	
HCM Lane LOS		-	-	B	B	-	
HCM 95th %tile Q(veh)		-	-	0.6	0.4	-	
Notes							
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined		*: All major volume in platoon

Intersection							
Int Delay, s/veh	0.7						
Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↗ ↑↑↑				↘ ↑↑↑	
Traffic Vol, veh/h	0	74	2103	166	32	97	1911
Future Vol, veh/h	0	74	2103	166	32	97	1911
Conflicting Peds, #/hr	0	0	0	3	0	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	0	-	-	-	290	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	1	1	0	0	1
Mvmt Flow	0	79	2237	177	34	103	2033

Major/Minor	Minor1	Major1	Major2				
Conflicting Flow All	-	1210	0	0	1762	2417	0
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	7.2	-	-	5.6	5.3	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.95	-	-	2.3	3.1	-
Pot Cap-1 Maneuver	0	*440	-	-	*756	458	-
Stage 1	0	-	-	-	-	-	-
Stage 2	0	-	-	-	-	-	-
Platoon blocked, %		1	-	-	1	1	-
Mov Cap-1 Maneuver	-	*439	-	-	*490	490	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	439	490
HCM Lane V/C Ratio	-	-	0.179	0.28
HCM Control Delay (s)	-	-	15	15.2
HCM Lane LOS	-	-	C	C
HCM 95th %tile Q(veh)	-	-	0.6	1.1

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

HCM Signalized Intersection Capacity Analysis

8: University Drive & Sunrise Lakes Boulevard

16202 Future without Project AM Peak

10/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	88	14	30	31	7	4	29	1724	7	11	21	1963
Future Volume (vph)	88	14	30	31	7	4	29	1724	7	11	21	1963
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		7.0	7.0			7.0	7.0
Lane Util. Factor	1.00	1.00			0.95		1.00	0.91			1.00	0.91
Frpb, ped/bikes	1.00	0.99			1.00		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.90			0.99		1.00	1.00			1.00	1.00
Flt Protected	0.95	1.00			0.96		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1787	1539			3103		1736	5077			1749	5071
Flt Permitted	0.37	1.00			0.82		0.95	1.00			0.95	1.00
Satd. Flow (perm)	700	1539			2640		1736	5077			1749	5071
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	15	32	33	7	4	31	1815	7	12	22	2066
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	93	47	0	0	44	0	31	1822	0	0	34	2096
Confl. Peds. (#/hr)			4	4			4		2		2	
Confl. Bikes (#/hr)			3			4						
Heavy Vehicles (%)	1%	14%	7%	7%	29%	0%	4%	2%	29%	9%	0%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases	4			8								
Actuated Green, G (s)	22.5	22.5			6.3		6.1	111.2			6.3	111.4
Effective Green, g (s)	22.5	22.5			6.3		6.1	111.2			6.3	111.4
Actuated g/C Ratio	0.14	0.14			0.04		0.04	0.70			0.04	0.70
Clearance Time (s)	6.0	6.0			6.0		7.0	7.0			7.0	7.0
Vehicle Extension (s)	1.5	2.0			2.0		1.5	3.0			1.5	3.0
Lane Grp Cap (vph)	167	216			103		66	3528			68	3530
v/s Ratio Prot	c0.04	0.03					0.02	0.36			c0.02	c0.41
v/s Ratio Perm	c0.04				0.02							
v/c Ratio	0.56	0.22			0.43		0.47	0.52			0.50	0.59
Uniform Delay, d1	62.4	60.9			75.1		75.4	11.6			75.3	12.6
Progression Factor	1.00	1.00			1.00		1.11	1.43			1.06	0.42
Incremental Delay, d2	2.3	0.2			1.0		1.6	0.5			1.2	0.4
Delay (s)	64.7	61.1			76.1		85.4	17.1			80.7	5.7
Level of Service	E	E			E		F	B			F	A
Approach Delay (s)		63.5			76.1			18.2				6.9
Approach LOS		E			E			B				A
Intersection Summary												
HCM 2000 Control Delay			14.6									
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			63.5%									
Analysis Period (min)			15									
c Critical Lane Group												

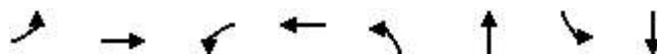
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	31
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	4
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	4%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

16202 Future without Project AM Peak

8: University Drive & Sunrise Lakes Boulevard

10/13/2022



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱		↰↱	↰	↰↱↲	↰	↰↱↲
Traffic Volume (vph)	88	14	31	7	29	1724	21	1963
Future Volume (vph)	88	14	31	7	29	1724	21	1963
Lane Group Flow (vph)	93	47	0	44	31	1822	34	2097
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	6.0	5.0	12.0	5.0	12.0
Minimum Split (s)	11.0	44.0	11.0	45.0	12.0	36.0	12.0	36.0
Total Split (s)	15.0	47.0	15.0	47.0	19.0	79.0	19.0	79.0
Total Split (%)	9.4%	29.4%	9.4%	29.4%	11.9%	49.4%	11.9%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.57	0.23		0.36	0.41	0.50	0.43	0.58
Control Delay	76.2	62.3		81.5	95.1	17.5	87.2	5.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	76.2	62.3		81.5	95.1	17.5	87.2	5.9
Queue Length 50th (ft)	88	43		24	30	569	37	127
Queue Length 95th (ft)	148	86		46	m47	692	m48	83
Internal Link Dist (ft)		1140		233		1533		1742
Turn Bay Length (ft)					190		195	
Base Capacity (vph)	166	394		677	130	3612	131	3617
Starvation Cap Reductn	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0
Reduced v/c Ratio	0.56	0.12		0.06	0.24	0.50	0.26	0.58

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

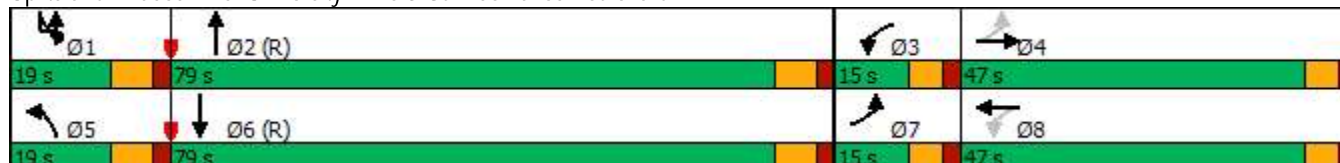
Offset: 128 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: University Drive & Sunrise Lakes Boulevard



HCM Signalized Intersection Capacity Analysis

8: University Drive & Sunrise Lakes Boulevard

16202 Future without Project PM Peak

10/14/2022

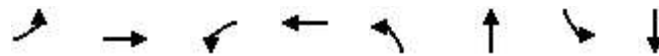
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	11	40	56	12	7	57	1938	17	46	1884	52
Future Volume (vph)	93	11	40	56	12	7	57	1938	17	46	1884	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		7.0	7.0		7.0	7.0	
Lane Util. Factor	1.00	1.00			0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88			0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1584			3183		1703	5123		1719	5114	
Flt Permitted	0.43	1.00			0.76		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	808	1584			2503		1703	5123		1719	5114	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	99	12	43	60	13	7	61	2062	18	49	2004	55
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	99	55	0	0	80	0	61	2080	0	49	2058	0
Confl. Peds. (#/hr)							4		1	1		4
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	2%	9%	3%	5%	8%	29%	6%	1%	12%	5%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	26.4	26.4			9.7		8.6	106.0		7.6	105.0	
Effective Green, g (s)	26.4	26.4			9.7		8.6	106.0		7.6	105.0	
Actuated g/C Ratio	0.16	0.16			0.06		0.05	0.66		0.05	0.66	
Clearance Time (s)	6.0	6.0			6.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	1.5	2.0			2.0		1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	197	261			151		91	3393		81	3356	
v/s Ratio Prot	c0.03	0.03					c0.04	c0.41		0.03	0.40	
v/s Ratio Perm	c0.05				0.03							
v/c Ratio	0.50	0.21			0.53		0.67	0.61		0.60	0.61	
Uniform Delay, d1	59.2	57.8			72.9		74.3	15.3		74.7	15.8	
Progression Factor	1.00	1.00			1.00		1.35	0.31		1.01	0.62	
Incremental Delay, d2	0.7	0.1			1.5		7.7	0.4		6.1	0.6	
Delay (s)	59.9	57.9			74.5		108.0	5.1		81.8	10.4	
Level of Service	E	E			E		F	A		F	B	
Approach Delay (s)		59.2			74.5			8.1			12.1	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			70.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

16202 Future without Project PM Peak

8: University Drive & Sunrise Lakes Boulevard

10/14/2022



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	93	11	56	12	57	1938	46	1884
Future Volume (vph)	93	11	56	12	57	1938	46	1884
Lane Group Flow (vph)	99	55	0	80	61	2080	49	2059
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	6.0	4.0	6.0	5.0	12.0	5.0	12.0
Minimum Split (s)	11.0	44.0	11.0	45.0	12.0	36.0	12.0	36.0
Total Split (s)	15.0	47.0	15.0	47.0	19.0	79.0	19.0	79.0
Total Split (%)	9.4%	29.4%	9.4%	29.4%	11.9%	49.4%	11.9%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Min	None	C-Min
v/c Ratio	0.50	0.21		0.53	0.60	0.60	0.53	0.61
Control Delay	67.6	58.6		84.8	110.5	5.3	89.0	10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	58.6		84.8	110.5	5.3	89.0	10.8
Queue Length 50th (ft)	91	50		43	68	45	54	230
Queue Length 95th (ft)	152	95		73	m73	483	m77	178
Internal Link Dist (ft)		1140		233		1533		1742
Turn Bay Length (ft)					190		195	
Base Capacity (vph)	199	406		642	131	3441	129	3401
Starvation Cap Reductn	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0
Reduced v/c Ratio	0.50	0.14		0.12	0.47	0.60	0.38	0.61

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

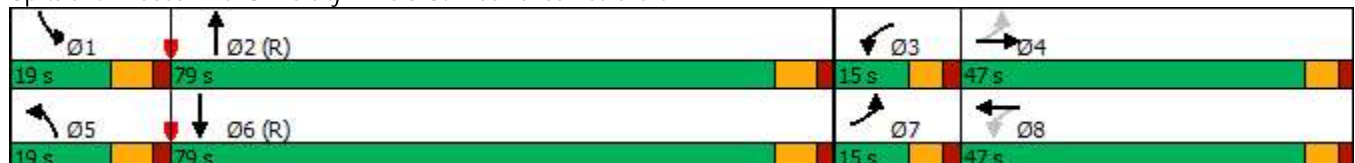
Offset: 122 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

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

Splits and Phases: 8: University Drive & Sunrise Lakes Boulevard



Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	94	3	0	18	15	57
Future Vol, veh/h	94	3	0	18	15	57
Conflicting Peds, #/hr	1	0	0	1	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	112	4	0	21	18	68
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	22	0	-	0	242	13
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.12	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1593	-	-	-	751	1073
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1591	-	-	-	696	1071
Mov Cap-2 Maneuver	-	-	-	-	696	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	812	-
Approach	EB	WB		SB		
HCM Control Delay, s	7.2	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1591	-	-	-	-	963
HCM Lane V/C Ratio	0.07	-	-	-	-	0.089
HCM Control Delay (s)	7.4	0	-	-	-	9.1
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.3

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	97	1	2	14	19	99
Future Vol, veh/h	97	1	2	14	19	99
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	0	0	1
Mvmt Flow	105	1	2	15	21	108
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	17	0	-	0	222	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	4.12	-	-	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.309
Pot Cap-1 Maneuver	1600	-	-	-	771	1074
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1600	-	-	-	720	1074
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	828	-
Approach	EB	WB		SB		
HCM Control Delay, s	7.3	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1600	-	-	-	-	995
HCM Lane V/C Ratio	0.066	-	-	-	-	0.129
HCM Control Delay (s)	7.4	0	-	-	-	9.2
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.4

HCM 6th TWSC
10: Inverrary Boulevard W & Sunrise Lakes Drive

16202 Future without Project AM Peak

10/13/2022

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	0	3	0	54	0	106	4	82	69	0
Future Vol, veh/h	2	1	0	3	0	54	0	106	4	82	69	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	2	0	2	0	6	0	0
Mvmt Flow	2	1	0	4	0	64	0	125	5	96	81	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	435	406	82	404	404	131	82	0	0	132	0	0
Stage 1	274	274	-	130	130	-	-	-	-	-	-	-
Stage 2	161	132	-	274	274	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.16	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.254	-	-
Pot Cap-1 Maneuver	535	537	983	561	539	919	1528	-	-	1429	-	-
Stage 1	736	687	-	878	792	-	-	-	-	-	-	-
Stage 2	846	791	-	736	687	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	470	497	982	528	499	916	1527	-	-	1426	-	-
Mov Cap-2 Maneuver	470	497	-	528	499	-	-	-	-	-	-	-
Stage 1	735	638	-	876	790	-	-	-	-	-	-	-
Stage 2	787	789	-	682	638	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.6		9.4		0		4.2					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1527	-	-	479	882	1426	-	-				
HCM Lane V/C Ratio	-	-	-	0.007	0.076	0.068	-	-				
HCM Control Delay (s)	0	-	-	12.6	9.4	7.7	0	-				
HCM Lane LOS	A	-	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.2	-	-				

HCM 6th TWSC
10: Inverrary Boulevard W & Sunrise Lakes Drive

16202 Future without Project PM Peak

10/14/2022

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	5	1	42	0	99	3	64	101	0
Future Vol, veh/h	0	0	0	5	1	42	0	99	3	64	101	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	2	0	2	33	8	1	0
Mvmt Flow	0	0	0	6	1	50	0	118	4	76	120	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	418	395	120	393	393	121	120	0	0	123	0	0
Stage 1	272	272	-	121	121	-	-	-	-	-	-	-
Stage 2	146	123	-	272	272	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	549	545	937	570	546	930	1480	-	-	1428	-	-
Stage 1	738	688	-	888	800	-	-	-	-	-	-	-
Stage 2	861	798	-	738	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	496	513	937	545	514	929	1480	-	-	1427	-	-
Mov Cap-2 Maneuver	496	513	-	545	514	-	-	-	-	-	-	-
Stage 1	738	649	-	887	799	-	-	-	-	-	-	-
Stage 2	813	797	-	696	649	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		9.5			0			3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1480	-	-	-	852	1427	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.067	0.053	-	-				
HCM Control Delay (s)	0	-	-	0	9.5	7.7	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2	-	-				

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	25	15	21	30	0	19	0	59	0	1	1
Future Vol, veh/h	0	25	15	21	30	0	19	0	59	0	1	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	0	0	20	0	3	0	16	0	2	0	0	0
Mvmt Flow	0	30	18	25	36	0	23	0	71	0	1	1
Number of Lanes	0	1	0	0	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	7.2	7.6	7.4	7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	41%	0%
Vol Thru, %	0%	0%	62%	59%	50%
Vol Right, %	0%	100%	38%	0%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	59	40	51	2
LT Vol	19	0	0	21	0
Through Vol	0	0	25	30	1
RT Vol	0	59	15	0	1
Lane Flow Rate	23	71	48	61	2
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.035	0.079	0.052	0.071	0.003
Departure Headway (Hd)	5.466	4.025	3.884	4.182	3.962
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	653	885	910	848	892
Service Time	3.215	1.774	1.958	2.249	2.037
HCM Lane V/C Ratio	0.035	0.08	0.053	0.072	0.002
HCM Control Delay	8.4	7.1	7.2	7.6	7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.2	0

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	32	17	62	24	0	15	0	53	0	1	1
Future Vol, veh/h	0	32	17	62	24	0	15	0	53	0	1	1
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
Heavy Vehicles, %	0	3	18	2	0	0	7	0	0	0	0	100
Mvmt Flow	0	35	18	67	26	0	16	0	58	0	1	1
Number of Lanes	0	1	0	0	1	0	1	0	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	7.3	7.8	7.4	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	0%	0%	72%	0%
Vol Thru, %	0%	0%	65%	28%	50%
Vol Right, %	0%	100%	35%	0%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	53	49	86	2
LT Vol	15	0	0	62	0
Through Vol	0	0	32	24	1
RT Vol	0	53	17	0	1
Lane Flow Rate	16	58	53	93	2
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.024	0.065	0.058	0.11	0.002
Departure Headway (Hd)	5.375	4.053	3.942	4.247	4.01
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	661	873	898	838	877
Service Time	3.149	1.826	2.012	2.302	2.105
HCM Lane V/C Ratio	0.024	0.066	0.059	0.111	0.002
HCM Control Delay	8.3	7.1	7.3	7.8	7.1
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.4	0

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	31	60	2	0	117
Future Vol, veh/h	56	31	60	2	0	117
Conflicting Peds, #/hr	3	3	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	9	7	2	50	0	3
Mvmt Flow	67	37	72	2	0	141
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	150	4	142	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.49	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	826	1065	1441	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	783	1061	1440	-	-	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	7.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1440	-	864	-	-	
HCM Lane V/C Ratio	0.05	-	0.121	-	-	
HCM Control Delay (s)	7.6	-	9.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-	

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	117	56	38	7	5	91
Future Vol, veh/h	117	56	38	7	5	91
Conflicting Peds, #/hr	2	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	4	0	3	0	0	2
Mvmt Flow	134	64	44	8	6	105

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	104	7	111	0	-	0
Stage 1	6	-	-	-	-	-
Stage 2	98	-	-	-	-	-
Critical Hdwy	6.44	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	889	1081	1473	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	862	1080	1473	-	-	-
Mov Cap-2 Maneuver	862	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	6.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1473	-	922	-	-
HCM Lane V/C Ratio	0.03	-	0.216	-	-
HCM Control Delay (s)	7.5	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Future with Project

HCM Signalized Intersection Capacity Analysis

1: W Oakland Park Boulevard & University Drive

16202 Future with Project AM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	323	992	234	16	369	994	177	16	216	1247	346	225
Future Volume (vph)	323	992	234	16	369	994	177	16	216	1247	346	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0		7.0	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	0.97
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.98		1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)	3400	5036	1505		3436	5036	1541		3376	5085	1563	3467
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00	0.95
Satd. Flow (perm)	3400	5036	1505		3436	5036	1541		3376	5085	1563	3467
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	347	1067	252	17	397	1069	190	17	232	1341	372	242
RTOR Reduction (vph)	0	0	144	0	0	0	140	0	0	0	90	0
Lane Group Flow (vph)	347	1067	108	0	414	1069	50	0	249	1341	282	242
Confl. Peds. (#/hr)	3		7	5	7		3	4	13		9	9
Confl. Bikes (#/hr)			2				2					
Heavy Vehicles (%)	3%	3%	5%	0%	2%	3%	3%	0%	4%	2%	1%	1%
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases			4				8				2	
Actuated Green, G (s)	18.3	41.0	41.0		19.0	41.7	41.7		15.7	56.9	56.9	15.1
Effective Green, g (s)	18.3	41.0	41.0		19.0	41.7	41.7		15.7	56.9	56.9	15.1
Actuated g/C Ratio	0.11	0.26	0.26		0.12	0.26	0.26		0.10	0.36	0.36	0.09
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0		7.0	7.0	7.0	7.0
Vehicle Extension (s)	1.5	3.0	3.0		1.5	3.0	3.0		1.5	3.0	3.0	1.5
Lane Grp Cap (vph)	388	1290	385		408	1312	401		331	1808	555	327
v/s Ratio Prot	0.10	0.21			c0.12	c0.21			c0.07	0.26		0.07
v/s Ratio Perm			0.07				0.03				0.18	
v/c Ratio	0.89	0.83	0.28		1.01	0.81	0.12		0.75	0.74	0.51	0.74
Uniform Delay, d1	69.9	56.2	47.7		70.5	55.5	45.2		70.3	45.1	40.5	70.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.17	0.89	0.98	1.00
Incremental Delay, d2	21.6	4.5	0.4		48.3	4.0	0.1		7.4	2.5	2.9	7.6
Delay (s)	91.5	60.6	48.1		118.8	59.5	45.3		89.6	42.5	42.7	78.2
Level of Service	F	E	D		F	E	D		F	D	D	E
Approach Delay (s)		65.2				72.6				48.5		
Approach LOS		E				E				D		
Intersection Summary												
HCM 2000 Control Delay			60.0									
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			160.0							28.0		
Intersection Capacity Utilization			96.6%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: W Oakland Park Boulevard & University Drive

16202 Future with Project AM Peak

10/14/2022



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1516	321
Future Volume (vph)	1516	321
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.0	7.0
Lane Util. Factor	0.91	1.00
Frpb, ped/bikes	1.00	0.97
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5136	1540
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5136	1540
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	1630	345
RTOR Reduction (vph)	0	146
Lane Group Flow (vph)	1630	199
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	1%	2%
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	56.3	56.3
Effective Green, g (s)	56.3	56.3
Actuated g/C Ratio	0.35	0.35
Clearance Time (s)	7.0	7.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	1807	541
v/s Ratio Prot	c0.32	
v/s Ratio Perm		0.13
v/c Ratio	0.90	0.37
Uniform Delay, d1	49.2	38.6
Progression Factor	1.00	1.00
Incremental Delay, d2	7.8	1.9
Delay (s)	57.0	40.5
Level of Service	E	D
Approach Delay (s)	56.8	
Approach LOS	E	
Intersection Summary		

Timings

1: W Oakland Park Boulevard & University Drive

16202 Future with Project AM Peak

10/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	992	234	369	994	177	216	1247	346	225	1516	321
Future Volume (vph)	323	992	234	369	994	177	216	1247	346	225	1516	321
Lane Group Flow (vph)	347	1067	252	414	1069	190	249	1341	372	242	1630	345
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	48.0	48.0	12.0	47.0	47.0	12.0	47.0	47.0	12.0	47.0	47.0
Total Split (s)	26.0	50.0	50.0	26.0	50.0	50.0	30.0	54.0	54.0	30.0	54.0	54.0
Total Split (%)	16.3%	31.3%	31.3%	16.3%	31.3%	31.3%	18.8%	33.8%	33.8%	18.8%	33.8%	33.8%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.90	0.83	0.48	1.01	0.81	0.35	0.75	0.74	0.58	0.74	0.90	0.50
Control Delay	95.2	62.3	15.3	116.2	61.2	7.4	94.8	43.4	29.3	84.3	57.2	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.2	62.3	15.3	116.2	61.2	7.4	94.8	43.4	29.3	84.3	57.2	17.1
Queue Length 50th (ft)	186	382	47	~234	383	0	142	252	114	129	605	95
Queue Length 95th (ft)	#269	440	133	#348	441	63	187	373	243	174	#755	206
Internal Link Dist (ft)		950			3832			1742			882	
Turn Bay Length (ft)	260		220	260		370	245		120	260		280
Base Capacity (vph)	403	1353	546	408	1353	553	485	1810	646	498	1808	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.79	0.46	1.01	0.79	0.34	0.51	0.74	0.58	0.49	0.90	0.50

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 102 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

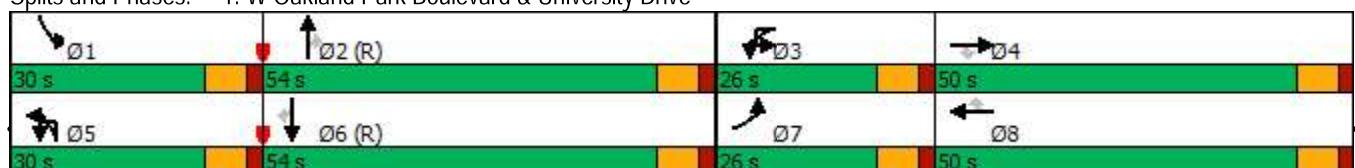
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: W Oakland Park Boulevard & University Drive



HCM Signalized Intersection Capacity Analysis

1: W Oakland Park Boulevard & University Drive

16202 Future with Project PM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	401	975	312	19	427	1064	237	23	251	1436	293	17
Future Volume (vph)	401	975	312	19	427	1064	237	23	251	1436	293	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0		7.0	7.0	7.0	
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00		0.97	0.91	1.00	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	0.97		1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3467	5085	1575		3502	5136	1536		3470	5136	1553	
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3467	5085	1575		3502	5136	1536		3470	5136	1553	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	401	975	312	19	427	1064	237	23	251	1436	293	17
RTOR Reduction (vph)	0	0	131	0	0	0	141	0	0	0	80	0
Lane Group Flow (vph)	401	975	181	0	446	1064	96	0	274	1436	213	0
Confl. Peds. (#/hr)	12		9	2	9		12	8	7		6	6
Confl. Bikes (#/hr)			3				4					
Heavy Vehicles (%)	1%	2%	0%	0%	0%	1%	2%	0%	1%	1%	2%	0%
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases			4				8				2	
Actuated Green, G (s)	21.8	38.4	38.4		23.1	39.7	39.7		16.3	56.0	56.0	
Effective Green, g (s)	21.8	38.4	38.4		23.1	39.7	39.7		16.3	56.0	56.0	
Actuated g/C Ratio	0.14	0.24	0.24		0.14	0.25	0.25		0.10	0.35	0.35	
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0		7.0	7.0	7.0	
Vehicle Extension (s)	1.5	3.0	3.0		1.5	3.0	3.0		1.5	3.0	3.0	
Lane Grp Cap (vph)	472	1220	378		505	1274	381		353	1797	543	
v/s Ratio Prot	0.12	0.19			c0.13	c0.21			c0.08	c0.28		
v/s Ratio Perm			0.11				0.06				0.14	
v/c Ratio	0.85	0.80	0.48		0.88	0.84	0.25		0.78	0.80	0.39	
Uniform Delay, d1	67.5	57.2	52.2		67.1	57.0	48.2		70.1	46.9	39.2	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.15	1.06	1.31	
Incremental Delay, d2	12.9	3.8	1.0		16.2	4.9	0.3		7.6	3.1	1.7	
Delay (s)	80.4	60.9	53.1		83.3	61.9	48.6		88.3	52.7	53.0	
Level of Service	F	E	D		F	E	D		F	D	D	
Approach Delay (s)		64.1				65.6				57.6		
Approach LOS		E				E				E		
Intersection Summary												
HCM 2000 Control Delay			59.7									
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			160.0							28.0		
Intersection Capacity Utilization			101.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

1: W Oakland Park Boulevard & University Drive

16202 Future with Project PM Peak

10/14/2022



Movement	SBL	SBT	SBR
Lane Configurations	 	  	
Traffic Volume (vph)	214	1312	261
Future Volume (vph)	214	1312	261
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00
Frt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3470	5085	1551
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3470	5085	1551
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	214	1312	261
RTOR Reduction (vph)	0	0	138
Lane Group Flow (vph)	231	1312	123
Confl. Peds. (#/hr)	6		7
Confl. Bikes (#/hr)			
Heavy Vehicles (%)	1%	2%	2%
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Actuated Green, G (s)	14.5	54.2	54.2
Effective Green, g (s)	14.5	54.2	54.2
Actuated g/C Ratio	0.09	0.34	0.34
Clearance Time (s)	7.0	7.0	7.0
Vehicle Extension (s)	1.5	3.0	3.0
Lane Grp Cap (vph)	314	1722	525
v/s Ratio Prot	0.07	0.26	
v/s Ratio Perm			0.08
v/c Ratio	0.74	0.76	0.23
Uniform Delay, d1	70.9	47.1	38.0
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	7.5	3.2	1.0
Delay (s)	78.4	50.4	39.0
Level of Service	E	D	D
Approach Delay (s)		52.3	
Approach LOS		D	
Intersection Summary			

Timings

16202 Future with Project PM Peak

1: W Oakland Park Boulevard & University Drive

10/14/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	401	975	312	427	1064	237	251	1436	293	214	1312	261
Future Volume (vph)	401	975	312	427	1064	237	251	1436	293	214	1312	261
Lane Group Flow (vph)	401	975	312	446	1064	237	274	1436	293	231	1312	261
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	12.0	48.0	48.0	12.0	47.0	47.0	12.0	47.0	47.0	12.0	47.0	47.0
Total Split (s)	32.0	48.0	48.0	32.0	48.0	48.0	27.0	53.0	53.0	27.0	53.0	53.0
Total Split (%)	20.0%	30.0%	30.0%	20.0%	30.0%	30.0%	16.9%	33.1%	33.1%	16.9%	33.1%	33.1%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
v/c Ratio	0.85	0.80	0.61	0.88	0.84	0.45	0.78	0.80	0.47	0.74	0.76	0.39
Control Delay	84.6	62.5	28.4	86.6	63.6	14.5	92.9	53.9	34.2	84.6	51.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.6	62.5	28.4	86.6	63.6	14.5	92.9	53.9	34.2	84.6	51.7	11.8
Queue Length 50th (ft)	213	348	128	237	380	39	156	335	107	123	465	39
Queue Length 95th (ft)	270	402	235	#303	443	122	206	#620	233	168	549	123
Internal Link Dist (ft)		950			3832			1742			882	
Turn Bay Length (ft)	260		220	260		370	245		120	260		280
Base Capacity (vph)	541	1303	532	547	1329	537	433	1797	623	433	1723	663
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.75	0.59	0.82	0.80	0.44	0.63	0.80	0.47	0.53	0.76	0.39

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 99 (62%), Referenced to phase 2:NBT and 6:SBT, Start of Green

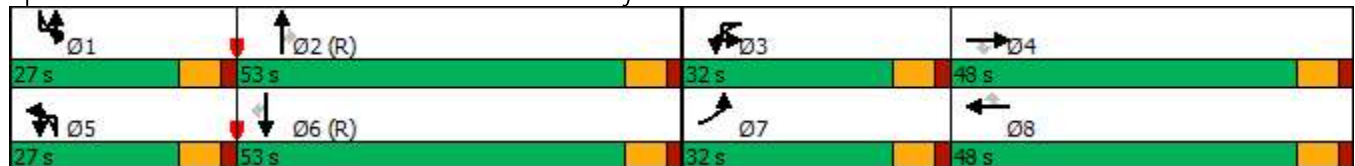
Natural Cycle: 130

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: W Oakland Park Boulevard & University Drive



HCM Signalized Intersection Capacity Analysis

2: W Oakland Park Boulevard & Inverrary Boulevard W

16202 Future with Project AM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	50	1278	55	47	90	1302	253	175	99	197	252	50
Future Volume (vph)	50	1278	55	47	90	1302	253	175	99	197	252	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			7.0	7.0	7.0		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91			1.00	0.91	1.00		1.00	1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00			1.00	1.00	0.98		1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00		0.97	1.00	0.95	0.97
Satd. Flow (prot)	1736	5053			1805	5036	1532		1821	1587	1633	1663
Flt Permitted	0.95	1.00			0.09	1.00	1.00		0.97	1.00	0.95	0.97
Satd. Flow (perm)	1736	5053			165	5036	1532		1821	1587	1633	1663
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	1436	62	53	101	1463	284	197	111	221	283	56
RTOR Reduction (vph)	0	2	0	0	0	0	50	0	0	83	0	0
Lane Group Flow (vph)	56	1496	0	0	154	1463	234	0	308	138	167	172
Confl. Peds. (#/hr)	1		1	1	1		1	2		4	4	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	4%	2%	0%	0%	0%	3%	3%	0%	3%	0%	5%	5%
Turn Type	Prot	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	6		5	5	2		4	4		3	3
Permitted Phases				2	2		2			4		
Actuated Green, G (s)	8.7	82.1			99.6	86.5	86.5		35.1	35.1	23.7	23.7
Effective Green, g (s)	8.7	82.1			99.6	86.5	86.5		35.1	35.1	23.7	23.7
Actuated g/C Ratio	0.05	0.46			0.55	0.48	0.48		0.20	0.20	0.13	0.13
Clearance Time (s)	7.0	7.0			7.0	7.0	7.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.0			1.5	3.0	3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	83	2304			210	2420	736		355	309	215	218
v/s Ratio Prot	0.03	0.30			c0.05	0.29			c0.17		0.10	c0.10
v/s Ratio Perm					c0.35		0.15			0.09		
v/c Ratio	0.67	0.65			0.73	0.60	0.32		0.87	0.45	0.78	0.79
Uniform Delay, d1	84.3	37.8			28.6	34.2	28.7		70.2	63.9	75.6	75.7
Progression Factor	1.00	1.00			1.91	0.75	0.57		1.00	1.00	1.00	1.00
Incremental Delay, d2	15.7	1.4			10.2	1.1	1.1		18.9	0.4	14.7	15.9
Delay (s)	99.9	39.3			64.8	26.8	17.3		89.1	64.3	90.3	91.6
Level of Service	F	D			E	C	B		F	E	F	F
Approach Delay (s)		41.4				28.5			78.7			81.7
Approach LOS		D				C			E			F
Intersection Summary												
HCM 2000 Control Delay			45.6									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			180.0									Sum of lost time (s) 26.0
Intersection Capacity Utilization			80.0%									ICU Level of Service D
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: W Oakland Park Boulevard & Inverrary Boulevard W

16202 Future with Project AM Peak

10/14/2022

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	227
Future Volume (vph)	227
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1570
Flt Permitted	1.00
Satd. Flow (perm)	1570
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	255
RTOR Reduction (vph)	221
Lane Group Flow (vph)	34
Confl. Peds. (#/hr)	2
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	23.7
Effective Green, g (s)	23.7
Actuated g/C Ratio	0.13
Clearance Time (s)	6.0
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	206
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.16
Uniform Delay, d1	69.3
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	69.5
Level of Service	E
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

16202 Future with Project AM Peak

2: W Oakland Park Boulevard & Inverrary Boulevard W

10/14/2022



Lane Group	EBL	EBT	WBU	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	50	1278	47	90	1302	253	99	197	252	50	227
Future Volume (vph)	50	1278	47	90	1302	253	99	197	252	50	227
Lane Group Flow (vph)	56	1498	0	154	1463	284	308	221	167	172	255
Turn Type	Prot	NA	pm+pt	pm+pt	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	1	6	5	5	2		4		3	3	
Permitted Phases			2	2		2		4			3
Detector Phase	1	6	5	5	2	2	4	4	3	3	3
Switch Phase											
Minimum Initial (s)	5.0	10.0	4.0	4.0	10.0	10.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	43.0	12.0	12.0	46.0	46.0	45.0	45.0	42.0	42.0	42.0
Total Split (s)	25.0	61.0	25.0	25.0	61.0	61.0	49.0	49.0	45.0	45.0	45.0
Total Split (%)	13.9%	33.9%	13.9%	13.9%	33.9%	33.9%	27.2%	27.2%	25.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.60	0.65		0.73	0.59	0.36	0.87	0.56	0.78	0.79	0.60
Control Delay	107.9	41.9		70.7	28.8	13.7	93.4	38.7	98.2	98.9	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.9	41.9		70.7	28.8	13.7	93.4	38.7	98.2	98.9	12.6
Queue Length 50th (ft)	66	493		93	509	65	358	127	204	210	0
Queue Length 95th (ft)	117	#727		207	607	115	443	205	280	288	81
Internal Link Dist (ft)		3832			1714		275			517	
Turn Bay Length (ft)	280			150		130		50	250		350
Base Capacity (vph)	173	2305		263	2459	797	439	460	353	360	540
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.65		0.59	0.59	0.36	0.70	0.48	0.47	0.48	0.47

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 144 (80%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

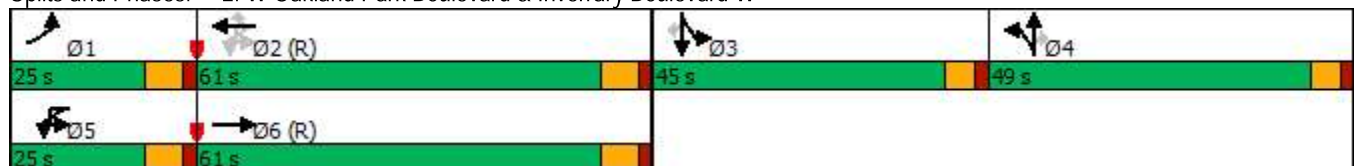
Natural Cycle: 145

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: W Oakland Park Boulevard & Inverrary Boulevard W



HCM Signalized Intersection Capacity Analysis

2: W Oakland Park Boulevard & Inverrary Boulevard W

16202 Future with Project PM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	125	1400	150	38	214	1353	293	139	89	133	268	93
Future Volume (vph)	125	1400	150	38	214	1353	293	139	89	133	268	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			7.0	7.0	7.0		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91			1.00	0.91	1.00		1.00	1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00			1.00	1.00	0.98		1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt	1.00	0.99			1.00	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00			0.95	1.00	1.00		0.97	1.00	0.95	0.98
Satd. Flow (prot)	1770	5008			1805	5136	1566		1844	1501	1681	1728
Flt Permitted	0.95	1.00			0.05	1.00	1.00		0.97	1.00	0.95	0.98
Satd. Flow (perm)	1770	5008			99	5136	1566		1844	1501	1681	1728
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	126	1414	152	38	216	1367	296	140	90	134	271	94
RTOR Reduction (vph)	0	7	0	0	0	0	57	0	0	88	0	0
Lane Group Flow (vph)	126	1559	0	0	254	1367	239	0	230	46	182	183
Confl. Peds. (#/hr)			2		2							
Confl. Bikes (#/hr)			1				1			2		
Heavy Vehicles (%)	2%	2%	0%	0%	0%	1%	1%	0%	0%	6%	2%	2%
Turn Type	Prot	NA		pm+pt	pm+pt	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	6		5	5	2		4	4		3	3
Permitted Phases				2	2		2			4		
Actuated Green, G (s)	17.4	69.9			109.9	85.5	85.5		26.9	26.9	24.2	24.2
Effective Green, g (s)	17.4	69.9			109.9	85.5	85.5		26.9	26.9	24.2	24.2
Actuated g/C Ratio	0.10	0.39			0.61	0.48	0.48		0.15	0.15	0.13	0.13
Clearance Time (s)	7.0	7.0			7.0	7.0	7.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.0			1.5	3.0	3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	171	1944			373	2439	743		275	224	226	232
v/s Ratio Prot	0.07	c0.31			c0.12	0.27			c0.12		c0.11	0.11
v/s Ratio Perm					0.29		0.15			0.03		
v/c Ratio	0.74	0.80			0.68	0.56	0.32		0.84	0.21	0.81	0.79
Uniform Delay, d1	79.1	48.9			52.5	33.8	29.3		74.4	67.2	75.6	75.4
Progression Factor	1.00	1.00			1.17	0.96	1.04		1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	3.6			3.7	0.9	1.0		18.5	0.2	17.6	15.0
Delay (s)	92.3	52.5			65.2	33.4	31.5		93.0	67.4	93.2	90.4
Level of Service	F	D			E	C	C		F	E	F	F
Approach Delay (s)		55.5				37.3			83.5			84.4
Approach LOS		E				D			F			F
Intersection Summary												
HCM 2000 Control Delay			53.5									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			180.0									Sum of lost time (s) 26.0
Intersection Capacity Utilization			84.1%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: W Oakland Park Boulevard & Inverrary Boulevard W

16202 Future with Project PM Peak

10/14/2022

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	169
Future Volume (vph)	169
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frpb, ped/bikes	0.99
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1577
Flt Permitted	1.00
Satd. Flow (perm)	1577
Peak-hour factor, PHF	0.99
Adj. Flow (vph)	171
RTOR Reduction (vph)	148
Lane Group Flow (vph)	23
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	24.2
Effective Green, g (s)	24.2
Actuated g/C Ratio	0.13
Clearance Time (s)	6.0
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	212
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.11
Uniform Delay, d1	68.4
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	68.5
Level of Service	E
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

16202 Future with Project PM Peak

2: W Oakland Park Boulevard & Inverrary Boulevard W

10/14/2022



Lane Group	EBL	EBT	WBU	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	125	1400	38	214	1353	293	89	133	268	93	169
Future Volume (vph)	125	1400	38	214	1353	293	89	133	268	93	169
Lane Group Flow (vph)	126	1566	0	254	1367	296	230	134	182	183	171
Turn Type	Prot	NA	pm+pt	pm+pt	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	1	6	5	5	2		4		3	3	
Permitted Phases			2	2		2		4			3
Detector Phase	1	6	5	5	2	2	4	4	3	3	3
Switch Phase											
Minimum Initial (s)	5.0	10.0	4.0	4.0	10.0	10.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	43.0	12.0	12.0	46.0	46.0	45.0	45.0	42.0	42.0	42.0
Total Split (s)	23.0	66.0	23.0	23.0	66.0	66.0	47.0	47.0	44.0	44.0	44.0
Total Split (%)	12.8%	36.7%	12.8%	12.8%	36.7%	36.7%	26.1%	26.1%	24.4%	24.4%	24.4%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.74	0.80		0.68	0.56	0.37	0.84	0.43	0.81	0.79	0.47
Control Delay	103.1	52.9		66.9	36.1	23.5	98.5	22.4	100.2	97.7	12.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.1	52.9		66.9	36.1	23.5	98.5	22.4	100.2	97.7	12.4
Queue Length 50th (ft)	147	584		262	338	133	268	32	224	224	0
Queue Length 95th (ft)	221	#755		#411	428	213	356	99	307	308	71
Internal Link Dist (ft)		3832			1714		275			517	
Turn Bay Length (ft)	280			150		130		50	250		350
Base Capacity (vph)	182	1949		372	2438	800	419	421	354	364	468
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.80		0.68	0.56	0.37	0.55	0.32	0.51	0.50	0.37

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 126 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

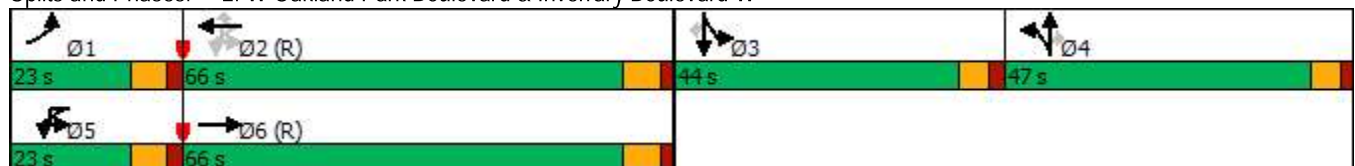
Natural Cycle: 145

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: W Oakland Park Boulevard & Inverrary Boulevard W



HCM Signalized Intersection Capacity Analysis

3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project AM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	28	1627	131	12	99	1485	22	114	4	129	44	13
Future Volume (vph)	28	1627	131	12	99	1485	22	114	4	129	44	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.97		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00		0.99	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85		1.00	0.85	1.00	0.88
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1735	5085	1559		1758	5036	1568		1744	1615	1805	1630
Flt Permitted	0.13	1.00	1.00		0.10	1.00	1.00		0.63	1.00	0.50	1.00
Satd. Flow (perm)	242	5085	1559		187	5036	1568		1159	1615	959	1630
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	30	1749	141	13	106	1597	24	123	4	139	47	14
RTOR Reduction (vph)	0	0	29	0	0	0	6	0	0	95	0	58
Lane Group Flow (vph)	30	1749	112	0	119	1597	18	0	127	44	47	23
Confl. Peds. (#/hr)	3		2		2		3	8				
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	4%	2%	2%	8%	2%	3%	0%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	5	2			4			8
Permitted Phases	6		6	2	2		2	4		4	8	
Actuated Green, G (s)	133.0	129.1	129.1		140.4	132.8	132.8		23.3	23.3	23.3	23.3
Effective Green, g (s)	133.0	129.1	129.1		140.4	132.8	132.8		23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.74	0.72	0.72		0.78	0.74	0.74		0.13	0.13	0.13	0.13
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.0	3.0		1.5	3.0	3.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	211	3647	1118		212	3715	1156		150	209	124	210
v/s Ratio Prot	0.00	0.34			c0.02	0.32						0.01
v/s Ratio Perm	0.10		0.07		c0.41		0.01		c0.11	0.03	0.05	
v/c Ratio	0.14	0.48	0.10		0.56	0.43	0.02		0.85	0.21	0.38	0.11
Uniform Delay, d1	6.7	11.0	7.8		8.2	9.1	6.3		76.6	70.1	71.7	69.2
Progression Factor	0.73	0.63	0.50		3.08	0.61	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.1		1.9	0.3	0.0		32.2	0.2	0.7	0.1
Delay (s)	5.0	7.3	4.0		27.2	5.9	6.3		108.8	70.3	72.4	69.3
Level of Service	A	A	A		C	A	A		F	E	E	E
Approach Delay (s)		7.0				7.3			88.7			70.4
Approach LOS		A				A			F			E
Intersection Summary												
HCM 2000 Control Delay			14.5			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			78.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	62
Future Volume (vph)	62
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	67
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	8
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project AM Peak

10/14/2022

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  				  						
Traffic Volume (vph)	28	1627	131	12	99	1485	22	114	4	129	44	13
Future Volume (vph)	28	1627	131	12	99	1485	22	114	4	129	44	13
Lane Group Flow (vph)	30	1749	141	0	119	1597	24	0	127	139	47	81
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	5	2			4			8
Permitted Phases	6		6	2	2		2	4		4	8	
Detector Phase	1	6	6	5	5	2	2	4	4	4	8	8
Switch Phase												
Minimum Initial (s)	4.0	10.0	10.0	4.0	4.0	10.0	10.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	36.0	36.0	12.0	12.0	36.0	36.0	46.0	46.0	46.0	43.0	43.0
Total Split (s)	12.0	110.0	110.0	21.0	21.0	119.0	119.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	6.7%	61.1%	61.1%	11.7%	11.7%	66.1%	66.1%	27.2%	27.2%	27.2%	27.2%	27.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.14	0.48	0.12		0.56	0.43	0.02		0.85	0.46	0.38	0.30
Control Delay	4.9	7.9	1.8		24.3	6.2	0.0		117.8	22.8	78.2	21.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	4.9	7.9	1.8		24.3	6.2	0.0		117.8	22.8	78.2	21.2
Queue Length 50th (ft)	6	204	9		18	150	0		149	32	52	15
Queue Length 95th (ft)	m9	171	11		72	175	m0		221	100	94	66
Internal Link Dist (ft)		1714				1242			649			220
Turn Bay Length (ft)	225		180		315		100			135		
Base Capacity (vph)	223	3647	1147		271	3755	1184		276	468	229	440
Starvation Cap Reductn	0	0	0		0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0		0	0	0	0
Reduced v/c Ratio	0.13	0.48	0.12		0.44	0.43	0.02		0.46	0.30	0.21	0.18

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

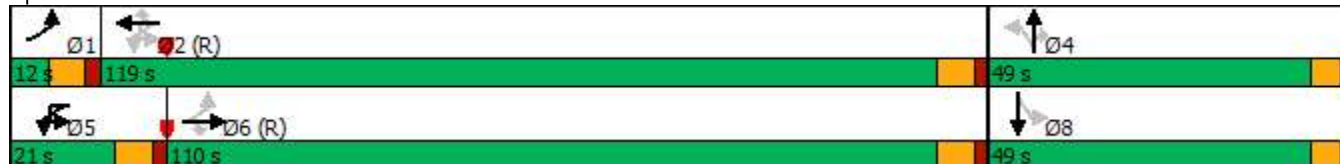
Offset: 167 (93%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

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

Splits and Phases: 3: NW 68th Avenue & W Oakland Park Boulevard



HCM Signalized Intersection Capacity Analysis

3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	11	32	1643	151	10	133	1651	39	143	14	139	30
Future Volume (vph)	11	32	1643	151	10	133	1651	39	143	14	139	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0
Lane Util. Factor		1.00	0.91	1.00		1.00	0.91	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.99		1.00	1.00	0.98		1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85		1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00		0.96	1.00	0.95
Satd. Flow (prot)		1805	5085	1577		1805	5136	1532		1810	1542	1805
Flt Permitted		0.12	1.00	1.00		0.10	1.00	1.00		0.71	1.00	0.43
Satd. Flow (perm)		220	5085	1577		197	5136	1532		1348	1542	808
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	11	33	1694	156	10	137	1702	40	147	14	143	31
RTOR Reduction (vph)	0	0	0	32	0	0	0	11	0	0	122	0
Lane Group Flow (vph)	0	44	1694	124	0	147	1702	29	0	161	21	31
Confl. Peds. (#/hr)	2	1		1		1		1	3			
Confl. Bikes (#/hr)											3	
Heavy Vehicles (%)	0%	0%	2%	1%	0%	0%	1%	3%	0%	0%	3%	0%
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	6	6		6	2	2		2	4		4	8
Actuated Green, G (s)		128.5	124.3	124.3		139.5	129.8	129.8		26.0	26.0	26.0
Effective Green, g (s)		128.5	124.3	124.3		139.5	129.8	129.8		26.0	26.0	26.0
Actuated g/C Ratio		0.71	0.69	0.69		0.78	0.72	0.72		0.14	0.14	0.14
Clearance Time (s)		7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0
Vehicle Extension (s)		1.5	3.0	3.0		1.5	3.0	3.0		2.0	2.0	2.0
Lane Grp Cap (vph)		194	3511	1089		239	3703	1104		194	222	116
v/s Ratio Prot		0.01	0.33			c0.03	c0.33					
v/s Ratio Perm		0.16		0.08		c0.44		0.02		c0.12	0.01	0.04
v/c Ratio		0.23	0.48	0.11		0.62	0.46	0.03		0.83	0.09	0.27
Uniform Delay, d1		8.2	12.9	9.4		10.2	10.5	7.1		74.9	66.8	68.5
Progression Factor		0.47	0.39	0.15		2.37	0.83	0.47		1.00	1.00	1.00
Incremental Delay, d2		0.2	0.3	0.1		3.0	0.4	0.0		23.4	0.1	0.5
Delay (s)		4.0	5.4	1.5		27.1	9.1	3.4		98.3	66.8	69.0
Level of Service		A	A	A		C	A	A		F	E	E
Approach Delay (s)			5.0				10.4			83.5		
Approach LOS			A				B			F		
Intersection Summary												
HCM 2000 Control Delay			14.3				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			180.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			77.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	6	38
Future Volume (vph)	6	38
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.87	
Flt Protected	1.00	
Satd. Flow (prot)	1630	
Flt Permitted	1.00	
Satd. Flow (perm)	1630	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	6	39
RTOR Reduction (vph)	33	0
Lane Group Flow (vph)	12	0
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	26.0	
Effective Green, g (s)	26.0	
Actuated g/C Ratio	0.14	
Clearance Time (s)	6.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	235	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.05	
Uniform Delay, d1	66.4	
Progression Factor	1.00	
Incremental Delay, d2	0.0	
Delay (s)	66.4	
Level of Service	E	
Approach Delay (s)	67.4	
Approach LOS	E	
Intersection Summary		

Timings 3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	11	32	1643	151	10	133	1651	39	143	14	139	30
Future Volume (vph)	11	32	1643	151	10	133	1651	39	143	14	139	30
Lane Group Flow (vph)	0	44	1694	156	0	147	1702	40	0	161	143	31
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	6	6		6	2	2		2	4		4	8
Detector Phase	1	1	6	6	5	5	2	2	4	4	4	8
Switch Phase												
Minimum Initial (s)	4.0	4.0	10.0	10.0	4.0	4.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	12.0	36.0	36.0	12.0	12.0	36.0	36.0	46.0	46.0	46.0	43.0
Total Split (s)	14.0	14.0	101.0	101.0	30.0	30.0	117.0	117.0	49.0	49.0	49.0	49.0
Total Split (%)	7.8%	7.8%	56.1%	56.1%	16.7%	16.7%	65.0%	65.0%	27.2%	27.2%	27.2%	27.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0	7.0		6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None
v/c Ratio		0.22	0.48	0.14		0.62	0.45	0.04		0.83	0.41	0.27
Control Delay		4.6	5.9	0.8		27.7	9.6	0.4		105.7	12.0	71.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		4.6	5.9	0.8		27.7	9.6	0.4		105.7	12.0	71.3
Queue Length 50th (ft)		8	117	7		44	244	0		188	0	33
Queue Length 95th (ft)		m4	61	m1		129	326	m3		265	65	68
Internal Link Dist (ft)			1714				1242			649		
Turn Bay Length (ft)		225		180		315		100			135	
Base Capacity (vph)		222	3513	1121		360	3743	1133		322	477	193
Starvation Cap Reductn		0	0	0		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0		0	0	0
Reduced v/c Ratio		0.20	0.48	0.14		0.41	0.45	0.04		0.50	0.30	0.16

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

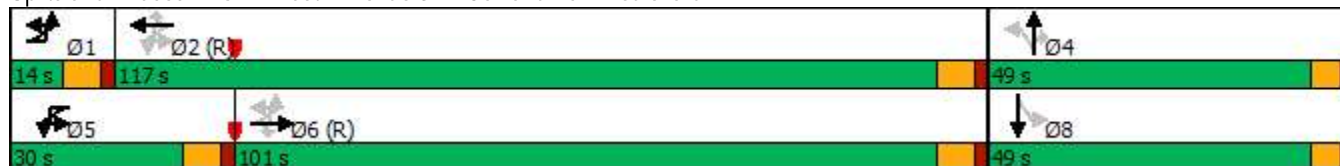
Offset: 178 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

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

Splits and Phases: 3: NW 68th Avenue & W Oakland Park Boulevard



Timings
3: NW 68th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022



Lane Group	SBT
Lane Configurations	P
Traffic Volume (vph)	6
Future Volume (vph)	6
Lane Group Flow (vph)	45
Turn Type	NA
Protected Phases	8
Permitted Phases	
Detector Phase	8
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	43.0
Total Split (s)	49.0
Total Split (%)	27.2%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	0.17
Control Delay	20.9
Queue Delay	0.0
Total Delay	20.9
Queue Length 50th (ft)	6
Queue Length 95th (ft)	45
Internal Link Dist (ft)	220
Turn Bay Length (ft)	
Base Capacity (vph)	419
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.11
Intersection Summary	

HCM 6th Signalized Intersection Summary

4: NW 64th Avenue & W Oakland Park Boulevard

16202 Future with Project AM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	9	1568	238	139	1371	0	176	7	96	0	1	4
Future Volume (veh/h)	9	1568	238	139	1371	0	176	7	96	0	1	4
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	0.99		0.98	1.00		0.98
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	1900	1870	1870	1870	1856	1900	1870	1693	1856	1900	1900	1900
Adj Flow Rate, veh/h	10	1686	256	149	1474	0	189	8	103	0	1	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	3	0	2	14	3	0	0	0
Cap, veh/h	283	3515	1088	261	3865	1229	267	17	217	40	54	215
Arrive On Green	1.00	1.00	1.00	0.04	0.76	0.00	0.16	0.16	0.16	0.00	0.16	0.16
Sat Flow, veh/h	364	5106	1581	1781	5066	1610	1398	102	1318	1302	326	1304
Grp Volume(v), veh/h	10	1686	256	149	1474	0	189	0	111	0	0	5
Grp Sat Flow(s),veh/h/ln	364	1702	1581	1781	1689	1610	1398	0	1420	1302	0	1630
Q Serve(g_s), s	0.2	0.0	0.0	4.4	17.5	0.0	23.6	0.0	12.7	0.0	0.0	0.5
Cycle Q Clear(g_c), s	4.2	0.0	0.0	4.4	17.5	0.0	24.0	0.0	12.7	0.0	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.80
Lane Grp Cap(c), veh/h	283	3515	1088	261	3865	1229	267	0	234	40	0	269
V/C Ratio(X)	0.04	0.48	0.24	0.57	0.38	0.00	0.71	0.00	0.47	0.00	0.00	0.02
Avail Cap(c_a), veh/h	283	3515	1088	415	3865	1229	370	0	339	136	0	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	6.9	7.1	0.0	73.0	0.0	68.1	0.0	0.0	63.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.7	0.3	0.0	1.6	0.0	0.6	0.0	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(95%),veh/ln	0.0	0.2	0.2	2.9	9.8	0.0	13.5	0.0	8.3	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.3	0.4	0.4	7.7	7.4	0.0	74.6	0.0	68.7	0.0	0.0	63.0
LnGrp LOS	A	A	A	A	A	A	E	A	E	A	A	E
Approach Vol, veh/h		1952			1623			300			5	
Approach Delay, s/veh		0.4			7.4			72.4			63.0	
Approach LOS		A			A			E			E	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		144.3		35.7	13.4	130.9		35.7				
Change Period (Y+Rc), s		7.0		6.0	7.0	7.0		6.0				
Max Green Setting (Gmax), s		124.0		43.0	22.0	95.0		43.0				
Max Q Clear Time (g_c+I1), s		19.5		26.0	6.4	6.2		2.5				
Green Ext Time (p_c), s		15.1		0.6	0.1	22.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Timings 4: NW 64th Avenue & W Oakland Park Boulevard

16202 Future with Project AM Peak

10/14/2022

								
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Configurations								
Traffic Volume (vph)	9	1568	238	139	1371	176	7	1
Future Volume (vph)	9	1568	238	139	1371	176	7	1
Lane Group Flow (vph)	10	1686	256	149	1474	189	111	5
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	NA
Protected Phases		6		5	2		4	8
Permitted Phases	6		6	2		4		
Detector Phase	6	6	6	5	2	4	4	8
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	4.0	10.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0	33.0	12.0	33.0	46.0	46.0	46.0
Total Split (s)	102.0	102.0	102.0	29.0	131.0	49.0	49.0	49.0
Total Split (%)	56.7%	56.7%	56.7%	16.1%	72.8%	27.2%	27.2%	27.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	None	None	None
v/c Ratio	0.05	0.49	0.23	0.65	0.38	0.85	0.33	0.02
Control Delay	9.4	8.3	1.2	22.1	7.7	103.3	14.3	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	8.3	1.2	22.1	7.7	103.3	14.3	36.6
Queue Length 50th (ft)	2	116	0	41	190	220	8	1
Queue Length 95th (ft)	m5	151	9	102	269	301	66	14
Internal Link Dist (ft)		1242			1372		3893	198
Turn Bay Length (ft)	270		260	430		90		
Base Capacity (vph)	213	3423	1105	337	3864	333	449	396
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.49	0.23	0.44	0.38	0.57	0.25	0.01

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

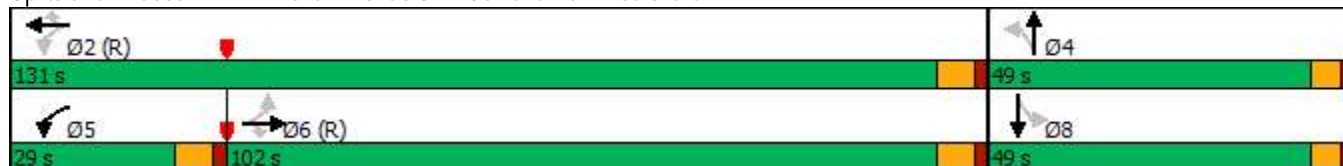
Offset: 162 (90%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

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

Splits and Phases: 4: NW 64th Avenue & W Oakland Park Boulevard



HCM Signalized Intersection Capacity Analysis

4: NW 64th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		  				  						
Traffic Volume (vph)	24	1511	245	18	195	1570	5	207	8	134	5	6
Future Volume (vph)	24	1511	245	18	195	1570	5	207	8	134	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.91	1.00		1.00	0.91	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.96	1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.99	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.89
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1732	5085	1542		1780	5136	1555	1765	1516		1794	1666
Flt Permitted	0.15	1.00	1.00		0.12	1.00	1.00	0.74	1.00		0.52	1.00
Satd. Flow (perm)	265	5085	1542		218	5136	1555	1378	1516		981	1666
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	24	1542	250	18	199	1602	5	211	8	137	5	6
RTOR Reduction (vph)	0	0	77	0	0	0	1	0	113	0	0	15
Lane Group Flow (vph)	24	1542	173	0	217	1602	4	211	32	0	5	9
Confl. Peds. (#/hr)	5		2	3	2		5	2		6	6	
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	4%	2%	3%	6%	1%	1%	0%	2%	13%	5%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases		6		5	5	2			4			8
Permitted Phases	6		6	2	2		2	4			8	
Actuated Green, G (s)	114.0	114.0	114.0		135.1	135.1	135.1	31.9	31.9		31.9	31.9
Effective Green, g (s)	114.0	114.0	114.0		135.1	135.1	135.1	31.9	31.9		31.9	31.9
Actuated g/C Ratio	0.63	0.63	0.63		0.75	0.75	0.75	0.18	0.18		0.18	0.18
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		1.5	3.0	3.0	2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	167	3220	976		285	3854	1167	244	268		173	295
v/s Ratio Prot		0.30			c0.06	0.31			0.02			0.01
v/s Ratio Perm	0.09		0.11		c0.51		0.00	c0.15			0.01	
v/c Ratio	0.14	0.48	0.18		0.76	0.42	0.00	0.86	0.12		0.03	0.03
Uniform Delay, d1	13.3	17.4	13.6		16.4	8.1	5.6	72.0	62.3		61.2	61.3
Progression Factor	0.83	0.97	1.48		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	0.5	0.4		10.3	0.3	0.0	25.0	0.1		0.0	0.0
Delay (s)	12.6	17.2	20.6		26.7	8.5	5.6	97.0	62.3		61.3	61.3
Level of Service	B	B	C		C	A	A	F	E		E	E
Approach Delay (s)		17.6				10.6			82.9			61.3
Approach LOS		B				B			F			E
Intersection Summary												
HCM 2000 Control Delay			20.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			78.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: NW 64th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	18
Future Volume (vph)	18
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	18
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Timings

4: NW 64th Avenue & W Oakland Park Boulevard

16202 Future with Project PM Peak

10/14/2022

											
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  				  					
Traffic Volume (vph)	24	1511	245	18	195	1570	5	207	8	5	6
Future Volume (vph)	24	1511	245	18	195	1570	5	207	8	5	6
Lane Group Flow (vph)	24	1542	250	0	217	1602	5	211	145	5	24
Turn Type	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		6		5	5	2			4		8
Permitted Phases	6		6	2	2		2	4		8	
Detector Phase	6	6	6	5	5	2	2	4	4	8	8
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	4.0	4.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0	33.0	12.0	12.0	33.0	33.0	46.0	46.0	46.0	46.0
Total Split (s)	101.0	101.0	101.0	30.0	30.0	131.0	131.0	49.0	49.0	49.0	49.0
Total Split (%)	56.1%	56.1%	56.1%	16.7%	16.7%	72.8%	72.8%	27.2%	27.2%	27.2%	27.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	C-Min	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None
v/c Ratio	0.14	0.48	0.24		0.76	0.42	0.00	0.86	0.38	0.03	0.08
Control Delay	17.7	19.1	6.1		32.1	9.1	0.0	102.1	12.4	56.2	26.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	19.1	6.1		32.1	9.1	0.0	102.1	12.4	56.2	26.5
Queue Length 50th (ft)	8	516	17		67	231	0	246	8	5	6
Queue Length 95th (ft)	m50	695	231		184	320	0	330	72	18	34
Internal Link Dist (ft)		1242				1372			3893		198
Turn Bay Length (ft)	270		260		430		265	90			
Base Capacity (vph)	167	3220	1054		364	3853	1171	329	466	234	411
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.48	0.24		0.60	0.42	0.00	0.64	0.31	0.02	0.06

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 56 (31%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

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

Splits and Phases: 4: NW 64th Avenue & W Oakland Park Boulevard

