












# Queues

1: SW 12th Avenue & Hillsboro Blvd



























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	2168	321	1457	495	98	147	196	22	22	22
v/c Ratio	0.89	0.68	0.90	0.51	0.44	0.28	0.77	0.38	0.31	0.30	0.06
Control Delay	102.0	23.3	108.4	19.1	3.1	75.1	102.7	8.1	94.0	93.2	0.3
Queue Delay	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.0	23.3	108.4	19.3	3.3	75.1	102.7	8.1	94.0	93.2	0.3
Queue Length 50th (ft)	320	570	200	294	39	56	172	0	27	27	0
Queue Length 95th (ft)	#473	723	#290	443	102	85	247	67	63	63	0
Internal Link Dist (ft)		580		548			436			396	
Turn Bay Length (ft)	450		375		350	225		250	200		
Base Capacity (vph)	331	3187	356	2859	1254	610	331	514	252	259	387
Starvation Cap Reductn	0	0	0	665	202	0	0	0	0	0	0
Spillback Cap Reductn	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
Reduced v/c Ratio	0.84	0.68	0.90	0.66	0.47	0.16	0.44	0.38	0.09	0.08	0.06

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	255	1830	165	295	1340	455	90	135	180	30	10	20
Future Volume (vph)	255	1830	165	295	1340	455	90	135	180	30	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.0	6.0	6.0	6.5	6.0	6.0	6.5
Lane Util. Factor	1.00	0.91		0.97	0.91	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Flt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5022		3433	5085	1583	3433	1863	1583	1681	1726	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	5022		3433	5085	1583	3433	1863	1583	1681	1726	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1989	179	321	1457	495	98	147	196	33	11	22
RTOR Reduction (vph)	0	4	0	0	0	107	0	0	158	0	0	17
Lane Group Flow (vph)	277	2164	0	321	1457	388	98	147	38	22	22	5
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	1	6		5	2	3	4	4	5	3	3	1
Permitted Phases						2			4			3
Actuated Green, G (s)	29.5	112.0		16.7	99.2	106.9	18.6	18.6	35.3	7.7	7.7	37.2
Effective Green, g (s)	31.5	114.0		18.7	101.2	110.9	18.6	18.6	35.3	7.7	7.7	37.2
Actuated g/C Ratio	0.18	0.63		0.10	0.56	0.62	0.10	0.10	0.20	0.04	0.04	0.21
Clearance Time (s)	6.5	6.5		6.5	6.5	6.0	6.0	6.0	6.5	6.0	6.0	6.5
Vehicle Extension (s)	1.5	3.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5
Lane Grp Cap (vph)	309	3180		356	2858	975	354	192	310	71	73	327
v/s Ratio Prot	c0.16	c0.43		0.09	0.29	c0.02	0.03	c0.08	0.01	0.01	0.01	0.00
v/s Ratio Perm						0.22			0.01			0.00
v/c Ratio	0.90	0.68		0.90	0.51	0.40	0.28	0.77	0.12	0.31	0.30	0.01
Uniform Delay, d1	72.7	21.3		79.7	24.2	17.6	74.5	78.6	59.6	83.6	83.5	56.8
Progression Factor	1.00	1.00		1.05	0.73	0.28	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.0	1.2		22.1	0.6	0.1	0.2	15.0	0.1	0.9	0.8	0.0
Delay (s)	98.6	22.5		106.1	18.2	5.0	74.6	93.6	59.7	84.5	84.4	56.8
Level of Service	F	C		F	B	A	E	F	E	F	F	E
Approach Delay (s)		31.1			27.7			74.3			75.2	
Approach LOS		C			C			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			33.8	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			180.0	Sum of lost time (s)				23.0				
Intersection Capacity Utilization			73.3%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

# Queues













2: Hillsboro Blvd & I-95 SB RAMP

	→	↘	←	↙	↘
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	1413	779	1505	542	742
v/c Ratio	0.28	0.49	0.51	0.83	0.72
Control Delay	0.1	2.7	17.6	62.1	52.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	2.7	17.6	62.1	52.1
Queue Length 50th (ft)	0	38	389	581	427
Queue Length 95th (ft)	0	62	515	653	448
Internal Link Dist (ft)	548		319		
Turn Bay Length (ft)		150			
Base Capacity (vph)	5085	1583	2947	889	1401
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.49	0.51	0.61	0.53
<b>Intersection Summary</b>					

2020AM No-Build\_Hillsboro Blvd.syn

# HCM Signalized Intersection Capacity Analysis

2: Hillsboro Blvd & I-95 SB RAMP

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR	
Lane Configurations		↑↑↑	↑		↑↑↑		↑		↑↑			
Traffic Volume (vph)	0	1300	740	0	1385	0	515	0	705	0	0	
Future Volume (vph)	0	1300	740	0	1385	0	515	0	705	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0	2.0		4.5		4.5		4.5			
Lane Util. Factor		0.91	1.00		0.91		1.00		0.88			
Flt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		2787			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		2787			
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.92	
Adj. Flow (vph)	0	1413	779	0	1505	0	542	0	742	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1413	779	0	1505	0	542	0	742	0	0	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Turn Type		NA	Perm		NA		Prot		Prot			
Protected Phases		Free!			2		8!		3			
Permitted Phases			Free									
Actuated Green, G (s)		180.0	180.0		102.3		64.7		64.7			
Effective Green, g (s)		180.0	180.0		104.3		66.7		66.7			
Actuated g/C Ratio		1.00	1.00		0.58		0.37		0.37			
Clearance Time (s)					6.5		6.5		6.5			
Vehicle Extension (s)					3.0		2.5		2.5			
Lane Grp Cap (vph)		5085	1583		2946		655		1032			
v/s Ratio Prot		0.28			0.30		c0.31		0.27			
v/s Ratio Perm			c0.49									
v/c Ratio		0.28	0.49		0.51		0.83		0.72			
Uniform Delay, d1		0.0	0.0		22.6		51.4		48.6			
Progression Factor		1.00	1.00		0.71		1.00		1.00			
Incremental Delay, d2		0.1	0.8		0.6		8.3		2.3			
Delay (s)		0.1	0.8		16.7		59.7		50.9			
Level of Service		A	A		B		E		D			
Approach Delay (s)		0.4			16.7			54.6		0.0		
Approach LOS		A			B			D		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.3				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			180.0				Sum of lost time (s)		9.0			
Intersection Capacity Utilization			58.9%				ICU Level of Service		B			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

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# Queues

3: I-95 NB Ramp & Hillsboro Blvd

	→	←	↗
Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	1364	1549	758
v/c Ratio	0.61	0.30	0.58
Control Delay	18.2	0.1	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	18.2	0.1	19.4
Queue Length 50th (ft)	240	0	167
Queue Length 95th (ft)	280	m0	230
Internal Link Dist (ft)	286	256	
Turn Bay Length (ft)			
Base Capacity (vph)	2231	5085	1299
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.30	0.58

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis












3: I-95 NB Ramp & Hillsboro Blvd

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↗↗
Traffic Volume (vph)	1255	0	0	1425	0	720
Future Volume (vph)	1255	0	0	1425	0	720
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5		4.5
Lane Util. Factor	0.91			0.91		0.88
Flt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	1364	0	0	1549	0	758
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	1364	0	0	1549	0	743
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	NA			NA		Prot
Protected Phases	6			2		5
Permitted Phases						
Actuated Green, G (s)	37.5			90.0		39.5
Effective Green, g (s)	39.5			90.0		41.5
Actuated g/C Ratio	0.44			1.00		0.46
Clearance Time (s)	6.5			6.5		6.5
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	2231			5085		1285
v/s Ratio Prot	c0.27			0.30		c0.27
v/s Ratio Perm						
v/c Ratio	0.61			0.30		0.58
Uniform Delay, d1	19.4			0.0		17.8
Progression Factor	0.88			1.00		1.00
Incremental Delay, d2	1.2			0.1		0.6
Delay (s)	18.2			0.1		18.5
Level of Service	B			A		B
Approach Delay (s)	18.2			0.1	18.5	
Approach LOS	B			A	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			10.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			70.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

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# Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd




























											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	1717	114	76	1902	435	87	147	33	5	71
v/c Ratio	0.96	0.51	0.10	0.60	0.68	1.76	0.35	0.43	0.40	0.08	0.32
Control Delay	98.9	12.7	0.9	100.5	30.4	395.7	76.5	13.6	80.1	87.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.9	12.7	0.9	100.5	30.4	395.7	76.5	13.6	80.1	87.0	3.8
Queue Length 50th (ft)	391	297	4	88	578	~697	96	0	33	6	0
Queue Length 95th (ft)	#570	386	9	150	630	#924	160	72	70	22	0
Internal Link Dist (ft)		775			631		513			401	
Turn Bay Length (ft)	300		150	100		125					340
Base Capacity (vph)	331	3393	1099	149	2792	247	558	577	82	393	470
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.51	0.10	0.51	0.68	1.76	0.16	0.25	0.40	0.01	0.15

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis












4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	290	1580	105	70	1670	80	400	80	135	30	5	65
Future Volume (vph)	290	1580	105	70	1670	80	400	80	135	30	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		6.0	6.0	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	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5050		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.41	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5050		767	1863	1583	1305	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1717	114	76	1815	87	435	87	147	33	5	71
RTOR Reduction (vph)	0	0	39	0	2	0	0	0	127	0	0	68
Lane Group Flow (vph)	315	1717	75	76	1900	0	435	87	20	33	5	3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6				4		4	8		8
Actuated Green, G (s)	31.5	117.0	117.0	10.8	96.3		33.2	24.0	24.0	10.4	7.2	7.2
Effective Green, g (s)	33.5	119.0	119.0	12.8	98.3		33.2	24.0	24.0	10.4	7.2	7.2
Actuated g/C Ratio	0.19	0.66	0.66	0.07	0.55		0.18	0.13	0.13	0.06	0.04	0.04
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0	3.0	1.5	3.0		1.5	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	329	3361	1046	125	2757		252	248	211	83	74	63
v/s Ratio Prot	c0.18	0.34		0.04	c0.38		c0.19	0.05		0.01	0.00	
v/s Ratio Perm			0.05				c0.13		0.01	0.02		0.00
v/c Ratio	0.96	0.51	0.07	0.61	0.69		1.73	0.35	0.09	0.40	0.07	0.05
Uniform Delay, d1	72.5	15.6	10.9	81.2	29.7		71.1	70.9	68.4	81.4	83.2	83.1
Progression Factor	0.90	0.80	0.73	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.1	0.5	0.1	5.6	1.4		343.0	0.3	0.1	1.1	0.1	0.1
Delay (s)	98.1	12.9	8.0	86.8	31.2		414.1	71.2	68.5	82.6	83.3	83.2
Level of Service	F	B	A	F	C		F	E	E	F	F	F
Approach Delay (s)		25.2			33.3			293.5			83.0	
Approach LOS		C			C			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			66.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)			21.0			
Intersection Capacity Utilization			91.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												



# Queues

1: SW 12th Avenue & Hillsboro Blvd

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	2059	250	2234	54	223	11	332	268	276	337
v/c Ratio	0.42	0.86	1.25	0.93	0.05	0.64	0.06	0.89	0.83	0.84	0.67
Control Delay	67.2	33.8	195.0	27.9	0.1	60.0	47.6	59.8	68.4	69.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	33.8	195.0	27.9	0.1	60.0	47.6	59.8	68.4	69.0	17.9
Queue Length 50th (ft)	33	517	~128	579	0	87	8	192	208	215	69
Queue Length 95th (ft)	72	#701	m#213	#784	m0	124	26	#324	306	313	146
Internal Link Dist (ft)		580		548			436			396	
Turn Bay Length (ft)	450		375		350	225		250	200		
Base Capacity (vph)	103	2391	200	2410	1213	915	496	375	378	385	506
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.86	1.25	0.93	0.04	0.24	0.02	0.89	0.71	0.72	0.67

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

1: SW 12th Avenue & Hillsboro Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1765	130	230	2055	50	205	10	305	410	90	310
Future Volume (vph)	40	1765	130	230	2055	50	205	10	305	410	90	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.0	6.0	6.0	6.5	6.0	6.0	6.5
Lane Util. Factor	1.00	0.91		0.97	0.91	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Flt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1770	5033		3433	5085	1583	3433	1863	1583	1681	1714	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1770	5033		3433	5085	1583	3433	1863	1583	1681	1714	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1918	141	250	2234	54	223	11	332	446	98	337
RTOR Reduction (vph)	0	5	0	0	0	17	0	0	74	0	0	144
Lane Group Flow (vph)	43	2054	0	250	2234	37	223	11	258	268	276	193
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	1	6		5	2	3	4	4	5	3	3	1
Permitted Phases						2			4			3
Actuated Green, G (s)	5.0	54.9		5.0	54.9	77.8	12.2	12.2	17.2	22.9	22.9	27.9
Effective Green, g (s)	7.0	56.9		7.0	56.9	81.8	12.2	12.2	17.2	22.9	22.9	27.9
Actuated g/C Ratio	0.06	0.47		0.06	0.47	0.68	0.10	0.10	0.14	0.19	0.19	0.23
Clearance Time (s)	6.5	6.5		6.5	6.5	6.0	6.0	6.0	6.5	6.0	6.0	6.5
Vehicle Extension (s)	1.5	3.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5
Lane Grp Cap (vph)	103	2386		200	2411	1079	349	189	226	320	327	368
v/s Ratio Prot	0.02	0.41		c0.07	c0.44	0.01	0.06	0.01	c0.05	0.16	c0.16	0.02
v/s Ratio Perm						0.02			0.12			0.10
v/c Ratio	0.42	0.86		1.25	0.93	0.03	0.64	0.06	1.14	0.84	0.84	0.52
Uniform Delay, d1	54.5	28.0		56.5	29.6	6.2	51.8	48.7	51.4	46.8	46.8	40.2
Progression Factor	1.00	1.00		1.28	0.67	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	4.4		139.8	6.0	0.0	2.8	0.0	103.8	16.4	17.1	0.6
Delay (s)	55.5	32.4		212.0	25.8	0.0	54.6	48.8	155.2	63.2	63.9	40.9
Level of Service	E	C		F	C	A	D	D	F	E	E	D
Approach Delay (s)		32.9			43.6			113.5			54.9	
Approach LOS		C			D			F			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			48.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			83.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

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# Queues












	→	↘	←	↙	↵
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	1924	747	1978	574	542
v/c Ratio	0.38	0.47	0.72	0.85	0.51
Control Delay	0.1	0.7	17.2	45.9	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	0.7	17.2	45.9	29.5
Queue Length 50th (ft)	0	0	263	395	177
Queue Length 95th (ft)	0	m0	402	499	213
Internal Link Dist (ft)	548		319		
Turn Bay Length (ft)		150			
Base Capacity (vph)	5085	1583	2757	789	1242
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.47	0.72	0.73	0.44

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

2: Hillsboro Blvd & I-95 SB RAMP

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR	
Lane Configurations		↑↑↑	↑		↑↑↑		↑		↑↑			
Traffic Volume (vph)	0	1770	710	0	1820	0	545	0	515	0	0	
Future Volume (vph)	0	1770	710	0	1820	0	545	0	515	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		2.0	2.0		4.5		4.5		4.5			
Lane Util. Factor		0.91	1.00		0.91		1.00		0.88			
Flt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		2787			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		2787			
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.92	
Adj. Flow (vph)	0	1924	747	0	1978	0	574	0	542	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1924	747	0	1978	0	574	0	542	0	0	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Turn Type		NA	Perm		NA		Prot		Prot			
Protected Phases		Free!			2		8!		3			
Permitted Phases			Free									
Actuated Green, G (s)		120.0	120.0		63.1		43.9		43.9			
Effective Green, g (s)		120.0	120.0		65.1		45.9		45.9			
Actuated g/C Ratio		1.00	1.00		0.54		0.38		0.38			
Clearance Time (s)					6.5		6.5		6.5			
Vehicle Extension (s)					3.0		2.5		2.5			
Lane Grp Cap (vph)		5085	1583		2758		677		1066			
v/s Ratio Prot		0.38			c0.39		c0.32		0.19			
v/s Ratio Perm			0.47									
v/c Ratio		0.38	0.47		0.72		0.85		0.51			
Uniform Delay, d1		0.0	0.0		20.6		33.9		28.4			
Progression Factor		1.00	1.00		0.71		1.00		1.00			
Incremental Delay, d2		0.1	0.5		1.6		9.5		0.3			
Delay (s)		0.1	0.5		16.3		43.4		28.7			
Level of Service		A	A		B		D		C			
Approach Delay (s)		0.2			16.3			36.2		0.0		
Approach LOS		A			B			D		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			12.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			120.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			60.7%								ICU Level of Service	B
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

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# Queues

3: I-95 NB Ramp & Hillsboro Blvd

	→	←	↗
Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	1832	2152	716
v/c Ratio	0.76	0.42	0.68
Control Delay	16.1	0.2	19.6
Queue Delay	0.0	0.0	0.0
Total Delay	16.1	0.2	19.6
Queue Length 50th (ft)	224	0	118
Queue Length 95th (ft)	275	m0	177
Internal Link Dist (ft)	286	256	
Turn Bay Length (ft)			
Base Capacity (vph)	2415	5085	1050
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.76	0.42	0.68

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis












3: I-95 NB Ramp & Hillsboro Blvd

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑↑
Traffic Volume (vph)	1685	0	0	1980	0	680
Future Volume (vph)	1685	0	0	1980	0	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5		4.5
Lane Util. Factor	0.91			0.91		0.88
Flt	1.00			1.00		0.85
Flt Protected	1.00			1.00		1.00
Satd. Flow (prot)	5085			5085		2787
Flt Permitted	1.00			1.00		1.00
Satd. Flow (perm)	5085			5085		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	1832	0	0	2152	0	716
RTOR Reduction (vph)	0	0	0	0	0	6
Lane Group Flow (vph)	1832	0	0	2152	0	710
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	NA			NA		Prot
Protected Phases	6			2		5
Permitted Phases						
Actuated Green, G (s)	26.5			60.0		20.5
Effective Green, g (s)	28.5			60.0		22.5
Actuated g/C Ratio	0.48			1.00		0.38
Clearance Time (s)	6.5			6.5		6.5
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	2415			5085		1045
v/s Ratio Prot	c0.36			0.42		c0.25
v/s Ratio Perm						
v/c Ratio	0.76			0.42		0.68
Uniform Delay, d1	12.9			0.0		15.7
Progression Factor	1.08			1.00		1.00
Incremental Delay, d2	2.1			0.2		1.8
Delay (s)	16.0			0.2		17.5
Level of Service	B			A		B
Approach Delay (s)	16.0			0.2	17.5	
Approach LOS	B			A	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			9.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			83.9%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

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# Queues

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd




























											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	87	2207	277	130	2283	288	11	125	120	54	310
v/c Ratio	0.81	0.77	0.29	1.01	0.78	1.14	0.04	0.36	0.44	0.19	0.85
Control Delay	94.2	18.2	6.2	136.9	23.2	141.6	39.3	7.1	42.1	42.4	46.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.2	18.2	6.2	136.9	23.2	141.6	39.3	7.1	42.1	42.4	46.3
Queue Length 50th (ft)	67	376	24	~103	471	~238	7	0	77	37	129
Queue Length 95th (ft)	m#103	540	m120	#234	660	#294	23	36	116	68	215
Internal Link Dist (ft)		775			631		513			403	
Turn Bay Length (ft)	300		150	100		125					340
Base Capacity (vph)	107	2876	956	129	2934	253	574	588	275	589	600
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.77	0.29	1.01	0.78	1.14	0.02	0.21	0.44	0.09	0.52

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

4: SW Natura Boulevard/Fairway Drive & Hillsboro Blvd













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	80	2030	255	120	2070	30	265	10	115	110	50	285
Future Volume (vph)	80	2030	255	120	2070	30	265	10	115	110	50	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		6.0	6.0	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5074		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.72	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5074		1345	1863	1583	1321	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	2207	277	130	2250	33	288	11	125	120	54	310
RTOR Reduction (vph)	0	0	61	0	1	0	0	0	107	0	0	123
Lane Group Flow (vph)	87	2207	216	130	2282	0	288	11	18	120	54	187
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6				4		4	8		8
Actuated Green, G (s)	5.3	65.9	65.9	6.8	67.4		21.3	17.3	17.3	23.3	18.3	18.3
Effective Green, g (s)	7.3	67.9	67.9	8.8	69.4		21.3	17.3	17.3	23.3	18.3	18.3
Actuated g/C Ratio	0.06	0.57	0.57	0.07	0.58		0.18	0.14	0.14	0.19	0.15	0.15
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0	3.0	1.5	3.0		1.5	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	107	2877	895	129	2934		252	268	228	275	284	241
v/s Ratio Prot	0.05	0.43		c0.07	c0.45		c0.04	0.01		0.02	0.03	
v/s Ratio Perm			0.14				c0.16		0.01	0.07		0.12
v/c Ratio	0.81	0.77	0.24	1.01	0.78		1.14	0.04	0.08	0.44	0.19	0.78
Uniform Delay, d1	55.7	20.0	13.1	55.6	19.4		48.8	44.2	44.5	42.1	44.4	48.9
Progression Factor	1.07	0.77	0.75	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.8	1.4	0.4	81.3	2.1		100.7	0.0	0.1	0.4	0.1	13.3
Delay (s)	84.3	16.8	10.2	136.9	21.5		149.6	44.2	44.5	42.5	44.5	62.2
Level of Service	F	B	B	F	C		F	D	D	D	D	E
Approach Delay (s)		18.4			27.7			115.9			55.3	
Approach LOS		B			C			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			32.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			21.0			
Intersection Capacity Utilization			86.7%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

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# Queues

5: S Military Trail & SR 869/SW 10th Street

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	2413	109	332	1516	326	201	870	630	478	598	310
v/c Ratio	1.18	1.11	0.14	1.20	1.01	0.42	0.67	0.96	1.15	1.34	0.62	0.54
Control Delay	167.1	96.4	0.4	162.1	53.2	11.9	77.7	75.5	120.0	219.1	51.0	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.1	96.4	0.4	162.1	53.2	11.9	77.7	75.5	120.0	219.1	51.0	20.9
Queue Length 50th (ft)	~205	~984	0	~196	~279	34	99	444	~574	~313	272	96
Queue Length 95th (ft)	#310	#1069	0	#301	#934	138	144	#578	#819	#429	339	197
Internal Link Dist (ft)		880			1200			569			457	
Turn Bay Length (ft)	280		500	275			300		300	300		200
Base Capacity (vph)	290	2176	777	276	1500	778	311	910	549	357	968	572
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	1.18	1.11	0.14	1.20	1.01	0.42	0.65	0.96	1.15	1.34	0.62	0.54

























## Intersection Summary

- ~ 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.

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# HCM Signalized Intersection Capacity Analysis












5: S Military Trail & SR 869/SW 10th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	2220	100	305	1395	300	185	800	580	440	550	285
Future Volume (vph)	315	2220	100	305	1395	300	185	800	580	440	550	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	4.8	4.8	5.9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	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	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	2413	109	332	1516	326	201	870	630	478	598	310
RTOR Reduction (vph)	0	0	62	0	0	108	0	0	143	0	0	139
Lane Group Flow (vph)	342	2413	47	332	1516	218	201	870	487	478	598	171
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Actuated Green, G (s)	10.7	62.2	62.2	10.1	61.6	61.6	11.1	36.6	36.6	13.6	39.1	39.1
Effective Green, g (s)	12.7	64.2	64.2	12.1	63.6	63.6	13.1	38.6	38.6	15.6	41.1	41.1
Actuated g/C Ratio	0.08	0.43	0.43	0.08	0.42	0.42	0.09	0.26	0.26	0.10	0.27	0.27
Clearance Time (s)	8.3	6.8	6.8	7.9	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	290	2176	677	276	1500	671	299	910	407	357	969	433
v/s Ratio Prot	0.10	c0.47		0.10	c0.43		0.06	0.25		c0.14	0.17	
v/s Ratio Perm			0.03			0.14			c0.31			0.11
v/c Ratio	1.18	1.11	0.07	1.20	1.01	0.33	0.67	0.96	1.20	1.34	0.62	0.39
Uniform Delay, d1	68.7	42.9	25.3	69.0	43.2	28.9	66.4	54.9	55.7	67.2	47.6	44.3
Progression Factor	1.00	1.00	1.00	0.82	0.69	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	110.5	56.3	0.2	114.4	22.8	1.0	4.6	19.8	110.5	170.4	1.2	0.6
Delay (s)	179.1	99.2	25.5	171.3	52.7	26.1	71.0	74.7	166.2	237.6	48.8	44.9
Level of Service	F	F	C	F	D	C	E	E	F	F	D	D
Approach Delay (s)		106.0			66.8			108.1			113.0	
Approach LOS		F			E			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			97.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			102.7%				ICU Level of Service			G		
Analysis Period (min)			15									

c Critical Lane Group

# Queues

6: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	304	3217	391	2033	359	32	33	103	24	25	87
v/c Ratio	0.82	0.95	0.91	0.67	0.35	0.48	0.49	0.60	0.40	0.38	0.55
Control Delay	54.6	12.4	97.3	14.8	2.2	93.5	93.8	24.4	89.6	87.1	18.4
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	12.4	97.3	15.0	2.2	93.5	93.8	24.4	89.6	87.1	18.4
Queue Length 50th (ft)	242	328	384	535	7	32	33	0	24	25	0
Queue Length 95th (ft)	m195	m285	#548	635	21	#77	#78	54	60	62	31
Internal Link Dist (ft)		700		595			420			170	
Turn Bay Length (ft)	600		550		295	100					
Base Capacity (vph)	447	3398	443	3053	1029	67	68	171	61	66	158
Starvation Cap Reductn	0	0	0	255	0	0	0	0	0	0	0
Spillback Cap Reductn	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
Reduced v/c Ratio	0.68	0.95	0.88	0.73	0.35	0.48	0.49	0.60	0.39	0.38	0.55

## Intersection Summary



























# 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.

# HCM Signalized Intersection Capacity Analysis

6: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	280	2465	495	360	1870	330	50	10	95	35	10	80
Future Volume (vph)	280	2465	495	360	1870	330	50	10	95	35	10	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.4		4.4	4.4	4.4	6.0	6.0	6.0	5.7	5.7	5.7
Lane Util. Factor	1.00	0.86		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Flt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1736	6247		1770	5085	1524	1681	1713	1583	1453	1582	1154
Flt Permitted	0.06	1.00		0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.97	1.00
Satd. Flow (perm)	108	6247		1770	5085	1524	1681	1713	1583	1453	1582	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	2679	538	391	2033	359	54	11	103	38	11	87
RTOR Reduction (vph)	0	23	0	0	0	115	0	0	99	0	0	83
Lane Group Flow (vph)	304	3194	0	391	2033	244	32	33	4	24	25	4
Heavy Vehicles (%)	4%	2%	2%	2%	2%	6%	2%	2%	2%	18%	2%	40%
Turn Type	pm+pt	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	Prot
Protected Phases	1	6		5	2		3	3	3	4	4	4
Permitted Phases	6					2						
Actuated Green, G (s)	104.2	79.0		34.3	88.1	88.1	6.0	6.0	6.0	6.2	6.2	6.2
Effective Green, g (s)	108.2	81.0		36.3	90.1	90.1	6.0	6.0	6.0	6.2	6.2	6.2
Actuated g/C Ratio	0.72	0.54		0.24	0.60	0.60	0.04	0.04	0.04	0.04	0.04	0.04
Clearance Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0	6.0	5.7	5.7	5.7
Vehicle Extension (s)	1.5	3.0		2.5	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	373	3373		428	3054	915	67	68	63	60	65	47
v/s Ratio Prot	0.15	c0.51		c0.22	0.40		0.02	c0.02	0.00	c0.02	0.02	0.00
v/s Ratio Perm	0.44					0.16						
v/c Ratio	0.82	0.95		0.91	0.67	0.27	0.48	0.49	0.07	0.40	0.38	0.08
Uniform Delay, d1	43.5	32.5		55.3	19.9	14.2	70.5	70.5	69.3	70.1	70.0	69.1
Progression Factor	1.23	0.34		1.33	0.66	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.8		22.2	1.1	0.7	1.9	2.0	0.2	1.6	1.4	0.3
Delay (s)	54.9	11.8		95.7	14.2	6.2	72.4	72.5	69.5	71.7	71.4	69.4
Level of Service	D	B		F	B	A	E	E	E	E	E	E
Approach Delay (s)		15.5			24.6			70.6			70.2	
Approach LOS		B			C			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			21.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			20.5		
Intersection Capacity Utilization			84.6%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

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# Queues

	→	↘	↙	←
Lane Group	EBT	EBR	WBL	WBT
Lane Group Flow (vph)	2130	690	636	2783
v/c Ratio	0.76	0.44	1.00	0.43
Control Delay	9.6	0.3	55.7	0.2
Queue Delay	0.0	0.0	3.0	0.0
Total Delay	9.6	0.3	58.7	0.2
Queue Length 50th (ft)	301	0	~257	0
Queue Length 95th (ft)	m335	m0	#675	0
Internal Link Dist (ft)	595			250
Turn Bay Length (ft)				
Base Capacity (vph)	2813	1583	633	6408
Starvation Cap Reductn	0	0	7	0
Spillback Cap Reductn	0	0	0	169
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.44	1.02	0.45

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

7: I-95 SB On-Ramp & SR 869/SW 10th Street

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		
Traffic Volume (vph)	1960	635	585	2560	0	0
Future Volume (vph)	1960	635	585	2560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0	4.4	2.0		
Lane Util. Factor	0.91	1.00	1.00	0.86		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	5085	1583	1770	6408		
Flt Permitted	1.00	1.00	0.05	1.00		
Satd. Flow (perm)	5085	1583	95	6408		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2130	690	636	2783	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2130	690	636	2783	0	0
Turn Type	NA	Free	D.P+P	NA		
Protected Phases	1 2 4		3 5	Free		
Permitted Phases		Free	1 2 4			
Actuated Green, G (s)	79.1	150.0	124.7	150.0		
Effective Green, g (s)	83.1	150.0	128.2	150.0		
Actuated g/C Ratio	0.55	1.00	0.85	1.00		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2817	1583	635	6408		
v/s Ratio Prot	0.42		c0.33	0.43		
v/s Ratio Perm		0.44	c0.53			
v/c Ratio	0.76	0.44	1.00	0.43		
Uniform Delay, d1	25.7	0.0	45.3	0.0		
Progression Factor	0.59	1.00	0.61	1.00		
Incremental Delay, d2	0.4	0.3	33.0	0.2		
Delay (s)	15.5	0.3	60.5	0.2		
Level of Service	B	A	E	A		
Approach Delay (s)	11.8			11.4	0.0	
Approach LOS	B			B	A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			11.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			1.00			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			77.7%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

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# Queues







8: SR 869/SW 10th Street & I-95 SB Off-Ramp

	→	←	↘	↙
Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2130	2484	348	924
v/c Ratio	0.60	0.56	0.54	0.58
Control Delay	5.7	9.0	39.9	1.6
Queue Delay	0.6	0.1	0.0	0.0
Total Delay	6.3	9.1	39.9	1.6
Queue Length 50th (ft)	116	220	120	0
Queue Length 95th (ft)	179	289	159	0
Internal Link Dist (ft)	250	635	1117	
Turn Bay Length (ft)			500	500
Base Capacity (vph)	3525	4442	640	1583
Starvation Cap Reductn	894	636	0	0
Spillback Cap Reductn	71	77	0	45
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.81	0.65	0.54	0.60
<b>Intersection Summary</b>				

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# HCM Signalized Intersection Capacity Analysis

8: SR 869/SW 10th Street & I-95 SB Off-Ramp

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↑↑	↑
Traffic Volume (vph)	0	1960	2285	0	320	850
Future Volume (vph)	0	1960	2285	0	320	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	2.0
Lane Util. Factor		0.91	0.86		0.97	1.00
Frb, ped/bikes		1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		3433	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2130	2484	0	348	924
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2130	2484	0	348	924
Confl. Peds. (#/hr)					410	
Turn Type		NA	NA		Prot	Free
Protected Phases		2 3 4	2 3 4		1 5	
Permitted Phases						Free
Actuated Green, G (s)		100.1	100.1		24.5	150.0
Effective Green, g (s)		99.7	99.7		28.5	150.0
Actuated g/C Ratio		0.66	0.66		0.19	1.00
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		3379	4259		652	1583
v/s Ratio Prot		0.42	0.39		0.10	
v/s Ratio Perm						c0.58
v/c Ratio		0.63	0.58		0.53	0.58
Uniform Delay, d1		14.5	13.8		54.8	0.0
Progression Factor		0.84	1.47		1.00	1.00
Incremental Delay, d2		0.2	0.1		0.4	1.6
Delay (s)		12.4	20.3		55.2	1.6
Level of Service		B	C		E	A
Approach Delay (s)		12.4	20.3		16.2	
Approach LOS		B	C		B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			16.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			54.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

2020AM No-Build\_SW 10th Street.syn



## Queues

9: I-95 NB On/Off-Ramp & SR 869/SW 10th Street

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1185	1293	293	1777	803	361
v/c Ratio	0.87	0.82	0.66	0.63	0.85	0.90
Control Delay	34.8	18.1	48.6	18.7	61.2	78.9
Queue Delay	3.9	0.0	0.0	0.2	0.0	0.0
Total Delay	38.7	18.1	48.6	18.9	61.2	78.9
Queue Length 50th (ft)	492	1031	256	372	385	376
Queue Length 95th (ft)	686	1090	m377	410	468	#586
Internal Link Dist (ft)	635			630	537	
Turn Bay Length (ft)			275		200	200
Base Capacity (vph)	1356	1583	443	2830	942	399
Starvation Cap Reductn	110	0	0	337	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.82	0.66	0.71	0.85	0.90

### Intersection Summary

# 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.

2020AM No-Build\_SW 10th Street.syn

# HCM Signalized Intersection Capacity Analysis

9: I-95 NB On/Off-Ramp & SR 869/SW 10th Street












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑↑	↓↓	↓
Traffic Volume (vph)	1090	1190	270	1635	650	420
Future Volume (vph)	1090	1190	270	1635	650	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0	4.4	4.5	4.4	4.4
Lane Util. Factor	0.95	1.00	1.00	0.91	0.97	0.91
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	1770	5085	3399	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	1770	5085	3399	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1185	1293	293	1777	707	457
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1185	1293	293	1777	803	361
Turn Type	NA	Free	Prot	NA	Prot	Prot
Protected Phases	1 2 5		3	1 2 3	4	4
Permitted Phases		Free				
Actuated Green, G (s)	55.5	150.0	35.6	81.6	39.6	39.6
Effective Green, g (s)	53.5	150.0	37.6	83.6	41.6	41.6
Actuated g/C Ratio	0.36	1.00	0.25	0.56	0.28	0.28
Clearance Time (s)			6.4		6.4	6.4
Vehicle Extension (s)			2.0		3.5	3.5
Lane Grp Cap (vph)	1262	1583	443	2834	942	399
v/s Ratio Prot	c0.33		0.17	0.35	0.24	c0.25
v/s Ratio Perm		c0.82				
v/c Ratio	0.94	0.82	0.66	0.63	0.85	0.90
Uniform Delay, d1	46.7	0.0	50.5	22.6	51.3	52.3
Progression Factor	0.65	1.00	0.85	0.79	1.00	1.00
Incremental Delay, d2	11.0	3.9	1.8	0.2	7.7	23.7
Delay (s)	41.3	3.9	44.9	18.0	59.0	76.0
Level of Service	D	A	D	B	E	E
Approach Delay (s)	21.8			21.8	64.3	
Approach LOS	C			C	E	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			30.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			79.5%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

2020AM No-Build\_SW 10th Street.syn

# Queues

10: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	1435	103	1549	87	217	141	130	239	163	304
v/c Ratio	0.74	0.64	0.41	0.76	0.11	0.74	0.40	0.36	0.68	0.67	0.76
Control Delay	28.7	20.8	13.7	22.7	0.3	39.2	35.0	3.1	31.8	44.7	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	20.8	13.7	22.7	0.3	39.2	35.0	3.1	31.8	44.7	22.5
Queue Length 50th (ft)	86	390	21	226	0	78	32	0	87	72	34
Queue Length 95th (ft)	m98	440	44	285	0	#157	59	4	147	131	#136
Internal Link Dist (ft)		630		1233			420			420	
Turn Bay Length (ft)	140		200		200	185		185	170		
Base Capacity (vph)	278	2240	255	2039	763	293	391	375	365	280	429
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.64	0.40	0.76	0.11	0.74	0.36	0.35	0.65	0.58	0.71

## Intersection Summary




























# 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.

# HCM Signalized Intersection Capacity Analysis













10: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	190	1070	250	95	1425	80	200	130	120	220	150	280
Future Volume (vph)	190	1070	250	95	1425	80	200	130	120	220	150	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.4		4.4	4.4	4.4	5.7	5.7	5.7	5.7	5.7	5.7
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4941		1770	5085	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.13	1.00		0.13	1.00	1.00	0.65	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	234	4941		248	5085	1583	1218	3539	1583	935	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	1163	272	103	1549	87	217	141	130	239	163	304
RTOR Reduction (vph)	0	49	0	0	0	52	0	0	117	0	0	195
Lane Group Flow (vph)	207	1386	0	103	1549	35	217	141	13	239	163	109
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		2	4		4	8		8
Actuated Green, G (s)	35.5	29.9		31.7	28.0	28.0	14.8	7.5	7.5	19.6	9.9	9.9
Effective Green, g (s)	39.5	31.9		35.7	30.0	30.0	14.8	7.5	7.5	19.6	9.9	9.9
Actuated g/C Ratio	0.53	0.43		0.48	0.40	0.40	0.20	0.10	0.10	0.26	0.13	0.13
Clearance Time (s)	6.4	6.4		6.4	6.4	6.4	5.7	5.7	5.7	5.7	5.7	5.7
Vehicle Extension (s)	1.5	3.0		1.5	3.0	3.0	1.5	2.0	2.0	1.5	2.0	2.0
Lane Grp Cap (vph)	278	2101		233	2034	633	294	353	158	352	245	208
v/s Ratio Prot	c0.08	0.28		0.03	0.30		0.07	0.04		c0.09	0.09	
v/s Ratio Perm	c0.32			0.18		0.02	0.07		0.01	c0.09		0.07
v/c Ratio	0.74	0.66		0.44	0.76	0.05	0.74	0.40	0.08	0.68	0.67	0.52
Uniform Delay, d1	13.1	17.2		12.1	19.4	13.8	27.6	31.6	30.6	23.7	31.0	30.3
Progression Factor	1.72	1.26		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.7		0.5	2.8	0.2	8.1	0.3	0.1	4.1	5.2	1.1
Delay (s)	26.8	22.4		12.6	22.2	14.0	35.6	31.9	30.7	27.8	36.2	31.4
Level of Service	C	C		B	C	B	D	C	C	C	D	C
Approach Delay (s)		22.9			21.2			33.3			31.3	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			24.7	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			75.0	Sum of lost time (s)				20.2				
Intersection Capacity Utilization			73.9%	ICU Level of Service				D				
Analysis Period (min)			15									

c Critical Lane Group

# Queues

5: S Military Trail & SR 869/SW 10th Street

























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	375	1848	207	418	2397	500	152	658	332	245	897	495
v/c Ratio	1.22	0.81	0.25	0.79	1.32	0.54	0.76	1.02	0.66	1.08	1.34	1.03
Control Delay	172.3	34.5	3.7	55.7	173.3	14.0	83.8	93.9	18.9	138.3	204.0	78.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	172.3	34.5	3.7	55.7	173.3	14.0	83.8	93.9	18.9	138.3	204.0	78.4
Queue Length 50th (ft)	~198	478	2	167	~1362	143	66	~310	53	~118	~517	~285
Queue Length 95th (ft)	#302	542	47	m177	m#1421	m137	#119	#433	160	#206	#650	#505
Internal Link Dist (ft)		880			1200			569			457	
Turn Bay Length (ft)	280		500	275			300		300	300		200
Base Capacity (vph)	308	2315	830	529	1813	924	200	642	500	227	669	479
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	1.22	0.80	0.25	0.79	1.32	0.54	0.76	1.02	0.66	1.08	1.34	1.03

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

5: S Military Trail & SR 869/SW 10th Street












												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	1700	190	385	2205	460	140	605	305	225	825	455
Future Volume (vph)	345	1700	190	385	2205	460	140	605	305	225	825	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	4.8	4.8	5.9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	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	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	375	1848	207	418	2397	500	152	658	332	245	897	495
RTOR Reduction (vph)	0	0	111	0	0	114	0	0	213	0	0	180
Lane Group Flow (vph)	375	1848	96	418	2397	386	152	658	119	245	897	315
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Actuated Green, G (s)	9.7	56.3	56.3	18.0	64.6	64.6	5.6	21.6	21.6	6.6	22.6	22.6
Effective Green, g (s)	11.7	58.3	58.3	20.0	66.6	66.6	7.6	23.6	23.6	8.6	24.6	24.6
Actuated g/C Ratio	0.09	0.45	0.45	0.15	0.51	0.51	0.06	0.18	0.18	0.07	0.19	0.19
Clearance Time (s)	8.3	6.8	6.8	7.9	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	308	2280	709	528	1813	810	200	642	287	227	669	299
v/s Ratio Prot	c0.11	0.36		0.12	c0.68		0.04	c0.19		0.07	c0.25	
v/s Ratio Perm			0.06			0.24			0.08			0.20
v/c Ratio	1.22	0.81	0.13	0.79	1.32	0.48	0.76	1.02	0.42	1.08	1.34	1.05
Uniform Delay, d1	59.1	31.1	21.0	53.0	31.7	20.5	60.3	53.2	47.1	60.7	52.7	52.7
Progression Factor	1.00	1.00	1.00	0.97	0.88	1.24	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	123.8	3.3	0.4	2.5	146.2	0.6	14.1	42.0	1.0	82.4	163.3	66.8
Delay (s)	182.9	34.3	21.4	53.7	174.3	25.9	74.4	95.2	48.1	143.1	216.0	119.5
Level of Service	F	C	C	D	F	C	E	F	D	F	F	F
Approach Delay (s)		56.2			136.7			78.7			175.9	
Approach LOS		E			F			E			F	

Intersection Summary		
HCM 2000 Control Delay	113.5	HCM 2000 Level of Service F
HCM 2000 Volume to Capacity ratio	1.31	
Actuated Cycle Length (s)	130.0	Sum of lost time (s) 19.5
Intersection Capacity Utilization	114.0%	ICU Level of Service H
Analysis Period (min)	15	

c Critical Lane Group

# Queues

6: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	76	2348	109	2598	87	178	175	418	51	52	375
v/c Ratio	0.57	0.80	0.61	0.97	0.11	0.73	0.71	1.08	0.23	0.23	1.07
Control Delay	38.3	10.9	84.6	32.7	0.6	70.8	69.4	97.0	53.5	53.5	96.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	10.9	84.6	32.7	0.6	70.8	69.4	97.0	53.5	53.5	96.1
Queue Length 50th (ft)	23	149	95	761	1	152	149	~251	41	42	~205
Queue Length 95th (ft)	m38	m211	159	#919	1	#260	#253	#461	85	85	#408
Internal Link Dist (ft)		700		595			420			170	
Turn Bay Length (ft)	600		550		295	100					
Base Capacity (vph)	133	2943	198	2691	784	245	247	388	221	223	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	3	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.80	0.55	0.97	0.11	0.73	0.71	1.08	0.23	0.23	1.07
























## Intersection Summary

- ~ 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.

2020PM No-Build\_SW 10th Street.syn

# HCM Signalized Intersection Capacity Analysis

6: Newport Center Dr/SW 12th Avenue & SR 869/SW 10th Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	2095	65	100	2390	80	315	10	385	90	5	345
Future Volume (vph)	70	2095	65	100	2390	80	315	10	385	90	5	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.4		4.4	4.4	4.4	6.0	6.0	6.0	5.7	5.7	5.7
Lane Util. Factor	1.00	0.86		1.00	0.91	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Flt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1597	6379		1770	5085	1369	1681	1690	1583	1665	1678	1417
Flt Permitted	0.07	1.00		0.95	1.00	1.00	0.95	0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	112	6379		1770	5085	1369	1681	1690	1583	1665	1678	1417
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	2277	71	109	2598	87	342	11	418	98	5	375
RTOR Reduction (vph)	0	3	0	0	0	42	0	0	157	0	0	161
Lane Group Flow (vph)	76	2345	0	109	2598	45	178	175	261	51	52	214
Heavy Vehicles (%)	13%	2%	2%	2%	2%	18%	2%	2%	2%	3%	2%	14%
Turn Type	pm+pt	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	Prot
Protected Phases	1	6		5	2		3	3	3	4	4	4
Permitted Phases	6					2						
Actuated Green, G (s)	61.6	57.9		11.3	65.5	65.5	19.0	19.0	19.0	17.3	17.3	17.3
Effective Green, g (s)	65.6	59.9		13.3	67.5	67.5	19.0	19.0	19.0	17.3	17.3	17.3
Actuated g/C Ratio	0.50	0.46		0.10	0.52	0.52	0.15	0.15	0.15	0.13	0.13	0.13
Clearance Time (s)	6.4	6.4		6.4	6.4	6.4	6.0	6.0	6.0	5.7	5.7	5.7
Vehicle Extension (s)	1.5	3.0		2.5	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	121	2939		181	2640	710	245	247	231	221	223	188
v/s Ratio Prot	0.03	0.37		c0.06	c0.51		0.11	0.10	c0.16	0.03	0.03	c0.15
v/s Ratio Perm	0.29					0.03						
v/c Ratio	0.63	0.80		0.60	0.98	0.06	0.73	0.71	1.13	0.23	0.23	1.14
Uniform Delay, d1	29.3	29.9		55.8	30.7	15.5	53.0	52.9	55.5	50.4	50.4	56.4
Progression Factor	1.46	0.32		1.28	0.72	0.41	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	1.3		4.3	13.4	0.2	8.7	7.4	98.5	0.2	0.2	107.3
Delay (s)	46.8	10.8		75.7	35.6	6.6	61.8	60.2	154.0	50.6	50.6	163.6
Level of Service	D	B		E	D	A	E	E	F	D	D	F
Approach Delay (s)		11.9			36.3			111.4			139.3	
Approach LOS		B			D			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			43.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			20.5		
Intersection Capacity Utilization			89.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

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# Queues

	→	↘	↙	←
Lane Group	EBT	EBR	WBL	WBT
Lane Group Flow (vph)	2092	701	625	2793
v/c Ratio	0.71	0.44	1.10	0.44
Control Delay	8.1	1.1	89.6	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.1	1.1	89.6	0.2
Queue Length 50th (ft)	162	1	~381	0
Queue Length 95th (ft)	m181	m11	#615	0
Internal Link Dist (ft)	595			250
Turn Bay Length (ft)				
Base Capacity (vph)	2933	1583	567	6408
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	667
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.44	1.10	0.49

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

7: I-95 SB On-Ramp & SR 869/SW 10th Street

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		
Traffic Volume (vph)	1925	645	575	2570	0	0
Future Volume (vph)	1925	645	575	2570	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0	4.4	2.0		
Lane Util. Factor	0.91	1.00	1.00	0.86		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	5085	1583	1770	6408		
Flt Permitted	1.00	1.00	0.06	1.00		
Satd. Flow (perm)	5085	1583	106	6408		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2092	701	625	2793	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2092	701	625	2793	0	0
Turn Type	NA	Free	D.P+P	NA		
Protected Phases	1 2 4		3 5	Free		
Permitted Phases		Free	1 2 4			
Actuated Green, G (s)	71.1	130.0	104.7	130.0		
Effective Green, g (s)	75.1	130.0	108.2	130.0		
Actuated g/C Ratio	0.58	1.00	0.83	1.00		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2937	1583	569	6408		
v/s Ratio Prot	0.41		c0.32	0.44		
v/s Ratio Perm		0.44	c0.60			
v/c Ratio	0.71	0.44	1.10	0.44		
Uniform Delay, d1	19.7	0.0	40.4	0.0		
Progression Factor	0.68	1.00	0.83	1.00		
Incremental Delay, d2	0.4	0.5	63.9	0.2		
Delay (s)	13.8	0.5	97.6	0.2		
Level of Service	B	A	F	A		
Approach Delay (s)	10.5			18.0	0.0	
Approach LOS	B			B	A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			14.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			1.10			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			76.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

2020PM No-Build\_SW 10th Street.syn

## Queues

8: SR 869/SW 10th Street & I-95 SB Off-Ramp

	→	←	↘	↙
Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2092	2299	239	1120
v/c Ratio	0.63	0.55	0.34	0.71
Control Delay	4.7	12.8	29.4	2.7
Queue Delay	0.3	0.0	0.1	0.2
Total Delay	5.0	12.8	29.5	2.9
Queue Length 50th (ft)	76	339	66	0
Queue Length 95th (ft)	144	m374	96	0
Internal Link Dist (ft)	250	635	1117	
Turn Bay Length (ft)			500	500
Base Capacity (vph)	3324	4189	713	1583
Starvation Cap Reductn	563	0	0	0
Spillback Cap Reductn	82	122	33	60
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.57	0.35	0.74







### Intersection Summary

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

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# HCM Signalized Intersection Capacity Analysis

8: SR 869/SW 10th Street & I-95 SB Off-Ramp

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↑↑	↑
Traffic Volume (vph)	0	1925	2115	0	220	1030
Future Volume (vph)	0	1925	2115	0	220	1030
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5	2.0
Lane Util. Factor		0.91	0.86		0.97	1.00
Flt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5085	6408		3433	1583
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5085	6408		3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2092	2299	0	239	1120
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2092	2299	0	239	1120
Turn Type		NA	NA		Prot	Free
Protected Phases		2 3 4	2 3 4		1 5	
Permitted Phases						Free
Actuated Green, G (s)		81.1	81.1		23.5	130.0
Effective Green, g (s)		80.7	80.7		27.5	130.0
Actuated g/C Ratio		0.62	0.62		0.21	1.00
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		3156	3977		726	1583
v/s Ratio Prot		0.41	0.36		0.07	
v/s Ratio Perm						c0.71
v/c Ratio		0.66	0.58		0.33	0.71
Uniform Delay, d1		15.9	14.6		43.4	0.0
Progression Factor		0.58	2.02		1.00	1.00
Incremental Delay, d2		0.3	0.1		0.1	2.7
Delay (s)		9.4	29.5		43.5	2.7
Level of Service		A	C		D	A
Approach Delay (s)		9.4	29.5		9.9	
Approach LOS		A	C		A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			17.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			51.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

2020PM No-Build\_SW 10th Street.syn

# Queues

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1397	935	326	1560	968	445
v/c Ratio	1.00	0.59	0.94	0.61	0.95	1.02
Control Delay	48.8	4.5	71.7	14.6	62.3	91.9
Queue Delay	1.7	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	4.5	71.7	14.6	62.3	91.9
Queue Length 50th (ft)	649	136	285	134	411	~423
Queue Length 95th (ft)	#791	110	m#442	157	#542	#664
Internal Link Dist (ft)	635			630	537	
Turn Bay Length (ft)			275		200	200
Base Capacity (vph)	1401	1583	348	2562	1022	438
Starvation Cap Reductn	10	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.59	0.94	0.61	0.95	1.02

## Intersection Summary

- ~ 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.

# HCM Signalized Intersection Capacity Analysis

9: I-95 NB On/Off-Ramp & SR 869/SW 10th Street












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	1285	860	300	1435	680	620
Future Volume (vph)	1285	860	300	1435	680	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	2.0	4.4	4.5	4.4	4.4
Lane Util. Factor	0.95	1.00	1.00	0.91	0.97	0.91
Frt	1.00	0.85	1.00	1.00	0.96	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	1770	5085	3357	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	1770	5085	3357	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1397	935	326	1560	739	674
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1397	935	326	1560	968	445
Turn Type	NA	Free	Prot	NA	Prot	Prot
Protected Phases	1 2 5		3	1 2 3	4	4
Permitted Phases		Free				
Actuated Green, G (s)	49.5	130.0	23.6	63.6	37.6	37.6
Effective Green, g (s)	47.5	130.0	25.6	65.6	39.6	39.6
Actuated g/C Ratio	0.37	1.00	0.20	0.50	0.30	0.30
Clearance Time (s)			6.4		6.4	6.4
Vehicle Extension (s)			2.0		3.5	3.5
Lane Grp Cap (vph)	1293	1583	348	2565	1022	438
v/s Ratio Prot	c0.39		c0.18	0.31	0.29	c0.31
v/s Ratio Perm		0.59				
v/c Ratio	1.08	0.59	0.94	0.61	0.95	1.02
Uniform Delay, d1	41.2	0.0	51.4	23.0	44.2	45.2
Progression Factor	0.69	1.00	0.83	0.59	1.00	1.00
Incremental Delay, d2	47.6	1.3	25.8	0.2	16.9	47.1
Delay (s)	76.0	1.3	68.3	13.8	61.1	92.3
Level of Service	E	A	E	B	E	F
Approach Delay (s)	46.0			23.2	70.9	
Approach LOS	D			C	E	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			44.6		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.07			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			89.1%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

2020PM No-Build\_SW 10th Street.syn

# Queues

10: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	1793	207	1250	120	266	98	120	239	245	370
v/c Ratio	0.76	0.78	0.84	0.59	0.16	0.91	0.17	0.29	0.61	0.85	0.81
Control Delay	38.8	10.8	60.9	32.1	1.1	70.0	46.5	2.5	41.9	79.4	31.2
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	10.9	60.9	32.1	1.1	70.0	46.5	2.5	41.9	79.4	31.2
Queue Length 50th (ft)	144	280	121	309	0	173	36	0	153	199	95
Queue Length 95th (ft)	m145	m287	#249	375	9	#306	64	7	230	#319	#223
Internal Link Dist (ft)		630		1233			420			420	
Turn Bay Length (ft)	140		200		200	185		185	170		
Base Capacity (vph)	412	2296	269	2104	759	295	634	434	406	319	480
Starvation Cap Reductn	0	28	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	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
Reduced v/c Ratio	0.67	0.79	0.77	0.59	0.16	0.90	0.15	0.28	0.59	0.77	0.77

## Intersection Summary




























# 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.

# HCM Signalized Intersection Capacity Analysis

10: Research Park Boulevard/SW Natura Boulevard & SR 869/SW 10th Street

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 			 		
Traffic Volume (vph)	255	1430	220	190	1150	110	245	90	110	220	225	340	
Future Volume (vph)	255	1430	220	190	1150	110	245	90	110	220	225	340	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.4	4.4		4.4	4.4	4.4	5.7	5.7	5.7	5.7	5.7	5.7	
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	
Flt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	4984		1770	5085	1583	1770	3539	1583	1770	1863	1583	
Flt Permitted	0.12	1.00		0.07	1.00	1.00	0.24	1.00	1.00	0.69	1.00	1.00	
Satd. Flow (perm)	218	4984		138	5085	1583	440	3539	1583	1286	1863	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	277	1554	239	207	1250	120	266	98	120	239	245	370	
RTOR Reduction (vph)	0	15	0	0	0	70	0	0	100	0	0	213	
Lane Group Flow (vph)	277	1778	0	207	1250	50	266	98	20	239	245	157	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	
Protected Phases	1	6		5	2		7	4		3	8		
Permitted Phases	6			2		2	4		4	8		8	
Actuated Green, G (s)	75.2	57.5		63.8	51.8	51.8	38.0	21.8	21.8	34.6	20.1	20.1	
Effective Green, g (s)	77.9	59.5		67.8	53.8	53.8	38.0	21.8	21.8	34.6	20.1	20.1	
Actuated g/C Ratio	0.60	0.46		0.52	0.41	0.41	0.29	0.17	0.17	0.27	0.15	0.15	
Clearance Time (s)	6.4	6.4		6.4	6.4	6.4	5.7	5.7	5.7	5.7	5.7	5.7	
Vehicle Extension (s)	1.5	3.0		1.5	3.0	3.0	1.5	2.0	2.0	1.5	2.0	2.0	
Lane Grp Cap (vph)	365	2281		247	2104	655	294	593	265	396	288	244	
v/s Ratio Prot	c0.11	0.36		0.09	0.25		c0.11	0.03		0.07	0.13		
v/s Ratio Perm	0.34			c0.34		0.03	c0.15		0.01	0.09		0.10	
v/c Ratio	0.76	0.78		0.84	0.59	0.08	0.90	0.17	0.08	0.60	0.85	0.64	
Uniform Delay, d1	25.8	29.7		34.6	29.6	23.1	39.3	46.3	45.6	40.5	53.5	51.6	
Progression Factor	1.53	0.34		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.6		20.4	1.2	0.2	28.6	0.0	0.0	1.8	20.0	4.3	
Delay (s)	41.5	10.6		55.0	30.9	23.3	67.9	46.4	45.7	42.3	73.5	55.9	
Level of Service	D	B		D	C	C	E	D	D	D	E	E	
Approach Delay (s)		14.7			33.4			58.0			57.1		
Approach LOS		B			C			E			E		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			32.1									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86										
Actuated Cycle Length (s)			130.0									Sum of lost time (s)	20.2
Intersection Capacity Utilization			85.3%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group



# Queues

1: NW 5th Terr & SAMPLE ROAD

	→	↖	←	↙	↗
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2299	152	1821	147	190
v/c Ratio	0.54	0.64	0.48	0.68	0.53
Control Delay	17.1	61.8	1.6	65.1	11.8
Queue Delay	0.0	1.4	0.1	0.0	0.0
Total Delay	17.1	63.3	1.7	65.1	11.8
Queue Length 50th (ft)	257	84	27	111	0
Queue Length 95th (ft)	325	#155	27	170	64
Internal Link Dist (ft)	575		175	531	
Turn Bay Length (ft)					
Base Capacity (vph)	4265	236	3824	545	619
Starvation Cap Reductn	0	18	458	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.70	0.54	0.27	0.31

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

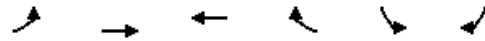
1: NW 5th Terr & SAMPLE ROAD

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	>		↘	>	↘	↗
Traffic Volume (vph)	2010	105	140	1675	135	175
Future Volume (vph)	2010	105	140	1675	135	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	9.0	9.0
Lane Util. Factor	0.81		1.00	0.91	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	7488		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	7488		1770	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2185	114	152	1821	147	190
RTOR Reduction (vph)	5	0	0	0	0	167
Lane Group Flow (vph)	2294	0	152	1821	147	23
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2 3		1	1 2 3	4	
Permitted Phases					4	4
Actuated Green, G (s)	66.2		14.0	88.2	14.8	14.8
Effective Green, g (s)	68.2		16.0	90.2	14.8	14.8
Actuated g/C Ratio	0.57		0.13	0.75	0.12	0.12
Clearance Time (s)			8.0		9.0	9.0
Vehicle Extension (s)			1.5		2.0	2.0
Lane Grp Cap (vph)	4255		236	3822	218	195
v/s Ratio Prot	c0.31		c0.09	0.36	c0.08	
v/s Ratio Perm						0.01
v/c Ratio	0.54		0.64	0.48	0.67	0.12
Uniform Delay, d1	16.1		49.3	5.8	50.3	46.8
Progression Factor	1.00		1.00	0.20	1.00	1.00
Incremental Delay, d2	0.1		4.1	0.0	6.3	0.1
Delay (s)	16.2		53.4	1.2	56.6	46.9
Level of Service	B		D	A	E	D
Approach Delay (s)	16.2			5.2	51.1	
Approach LOS	B			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			14.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			57.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

2020AM No-Build\_Sample Road.syn

# Queues

2: SAMPLE ROAD & NW 5th Ave















Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	92	2283	1810	82	250	163
v/c Ratio	0.70	0.47	0.45	0.08	0.59	0.49
Control Delay	63.6	2.4	10.0	1.7	55.0	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	2.4	10.0	1.7	55.0	13.2
Queue Length 50th (ft)	70	26	188	2	95	5
Queue Length 95th (ft)	#153	43	250	m6	130	64
Internal Link Dist (ft)		175	1004		271	
Turn Bay Length (ft)				450		
Base Capacity (vph)	132	4818	4017	1023	1058	595
Starvation Cap Reductn	0	529	0	0	0	0
Spillback Cap Reductn	0	0	14	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.53	0.45	0.08	0.24	0.27

## Intersection Summary

- # 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.

# HCM Signalized Intersection Capacity Analysis

2: SAMPLE ROAD & NW 5th Ave

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	2100	1665	75	230	150
Future Volume (vph)	85	2100	1665	75	230	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	9.0	9.0
Lane Util. Factor	1.00	0.86	0.86	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	6408	6408	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	6408	6408	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	2283	1810	82	250	163
RTOR Reduction (vph)	0	0	0	31	0	137
Lane Group Flow (vph)	92	2283	1810	51	250	26
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	3	1 2 3	1 2		4	
Permitted Phases				1 2		4
Actuated Green, G (s)	7.0	88.2	73.2	73.2	14.8	14.8
Effective Green, g (s)	9.0	90.2	75.2	75.2	14.8	14.8
Actuated g/C Ratio	0.08	0.75	0.63	0.63	0.12	0.12
Clearance Time (s)	8.0				9.0	9.0
Vehicle Extension (s)	1.5				2.0	2.0
Lane Grp Cap (vph)	132	4816	4015	992	423	195
v/s Ratio Prot	c0.05	c0.36	0.28		c0.07	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.70	0.47	0.45	0.05	0.59	0.13
Uniform Delay, d1	54.2	5.7	11.7	8.6	49.7	46.9
Progression Factor	0.72	0.34	0.79	0.67	1.00	1.00
Incremental Delay, d2	10.6	0.0	0.0	0.0	1.5	0.1
Delay (s)	49.6	2.0	9.3	5.8	51.2	47.0
Level of Service	D	A	A	A	D	D
Approach Delay (s)		3.8	9.1		49.6	
Approach LOS		A	A		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			10.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			52.9%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group














# Queues

	→	↘	←	↙	↘
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	1554	947	1391	442	484
v/c Ratio	0.43	0.60	0.48	0.52	0.70
Control Delay	5.3	7.8	7.7	21.9	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	7.8	7.7	21.9	26.7
Queue Length 50th (ft)	74	244	119	70	89
Queue Length 95th (ft)	124	360	156	108	138
Internal Link Dist (ft)	1004		259		
Turn Bay Length (ft)		250			
Base Capacity (vph)	3650	1583	2897	886	719
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.60	0.48	0.50	0.67
<b>Intersection Summary</b>					

2020AM No-Build\_Sample Road.syn

# HCM Signalized Intersection Capacity Analysis

3: SAMPLE ROAD & I-95 SB RAMP

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR		
Lane Configurations		↑↑↑	↗		↑↑↑		↘		↗				
Traffic Volume (vph)	0	1430	900	0	1280	0	420	0	460	0	0		
Future Volume (vph)	0	1430	900	0	1280	0	420	0	460	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		5.5	2.0		5.5		5.5		5.5				
Lane Util. Factor		0.86	1.00		0.91		0.97		0.88				
Fr <sub>t</sub>		1.00	0.85		1.00		1.00		0.85				
Fl <sub>t</sub> Protected		1.00	1.00		1.00		0.95		1.00				
Satd. Flow (prot)		6408	1583		5085		3433		2787				
Fl <sub>t</sub> Permitted		1.00	1.00		1.00		0.95		1.00				
Satd. Flow (perm)		6408	1583		5085		3433		2787				
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.92		
Adj. Flow (vph)	0	1554	947	0	1391	0	442	0	484	0	0		
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0		
Lane Group Flow (vph)	0	1554	947	0	1391	0	442	0	484	0	0		
Turn Type		NA	Free		NA		Prot		Prot				
Protected Phases		6			2		3		3				
Permitted Phases			Free										
Actuated Green, G (s)		32.2	60.0		32.2		12.8		12.8				
Effective Green, g (s)		34.2	60.0		34.2		14.8		14.8				
Actuated g/C Ratio		0.57	1.00		0.57		0.25		0.25				
Clearance Time (s)		7.5			7.5		7.5		7.5				
Vehicle Extension (s)		3.0			3.0		2.5		2.5				
Lane Grp Cap (vph)		3652	1583		2898		846		687				
v/s Ratio Prot		0.24			0.27		0.13		0.17				
v/s Ratio Perm			c0.60										
v/c Ratio		0.43	0.60		0.48		0.52		0.70				
Uniform Delay, d <sub>1</sub>		7.3	0.0		7.6		19.5		20.6				
Progression Factor		0.67	1.00		0.93		1.00		1.00				
Incremental Delay, d <sub>2</sub>		0.3	1.5		0.5		0.4		3.1				
Delay (s)		5.2	1.5		7.6		20.0		23.7				
Level of Service		A	A		A		B		C				
Approach Delay (s)		3.8			7.6			21.9		0.0			
Approach LOS		A			A			C		A			
<b>Intersection Summary</b>													
HCM 2000 Control Delay			8.4				HCM 2000 Level of Service		A				
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			60.0				Sum of lost time (s)		11.0				
Intersection Capacity Utilization			58.4%				ICU Level of Service		B				
Analysis Period (min)			15										

c Critical Lane Group

# Queues













	→	←	↖	↗	
Lane Group	EBT	WBT	WBR	NBL2	NBR
Lane Group Flow (vph)	1130	1848	463	495	358
v/c Ratio	0.38	0.62	0.29	0.63	0.56
Control Delay	5.2	4.9	0.2	24.7	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	4.9	0.2	24.7	24.0
Queue Length 50th (ft)	81	116	0	81	64
Queue Length 95th (ft)	56	141	m0	124	104
Internal Link Dist (ft)	270	1155			
Turn Bay Length (ft)			250		
Base Capacity (vph)	2984	2984	1583	829	673
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.62	0.29	0.60	0.53

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

4: I-95 NB RAMP & SAMPLE ROAD











												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	
Lane Configurations		↑↑↑			↑↑↑	↑	↑↑		↑↑			
Traffic Volume (vph)	0	1040	0	0	1700	440	470	0	340	0	0	
Future Volume (vph)	0	1040	0	0	1700	440	470	0	340	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5	2.0	5.5		5.5			
Lane Util. Factor		0.91			0.91	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085			5085	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085			5085	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.95	0.92	0.92	
Adj. Flow (vph)	0	1130	0	0	1848	463	495	0	358	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1130	0	0	1848	463	495	0	358	0	0	
Turn Type		NA			NA	Free	Prot		Prot			
Protected Phases		6			2		4		4			
Permitted Phases						Free						
Actuated Green, G (s)		33.2			33.2	60.0	11.8		11.8			
Effective Green, g (s)		35.2			35.2	60.0	13.8		13.8			
Actuated g/C Ratio		0.59			0.59	1.00	0.23		0.23			
Clearance Time (s)		7.5			7.5		7.5		7.5			
Vehicle Extension (s)		3.0			3.0		2.5		2.5			
Lane Grp Cap (vph)		2983			2983	1583	789		641			
v/s Ratio Prot		0.22			c0.36		c0.14		0.13			
v/s Ratio Perm						0.29						
v/c Ratio		0.38			0.62	0.29	0.63		0.56			
Uniform Delay, d1		6.6			8.1	0.0	20.8		20.4			
Progression Factor		0.72			0.54	1.00	1.00		1.00			
Incremental Delay, d2		0.3			0.5	0.2	1.4		0.8			
Delay (s)		5.1			4.8	0.2	22.1		21.3			
Level of Service		A			A	A	C		C			
Approach Delay (s)		5.1			3.9			21.8		0.0		
Approach LOS		A			A			C		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.8								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			53.5%								ICU Level of Service	A
Analysis Period (min)			15									

c Critical Lane Group



# Queues

5: NE 3rd Ave & SAMPLE ROAD


























										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	386	1114	49	1669	212	217	65	92	212	516
v/c Ratio	0.85	0.47	0.43	0.86	0.65	0.45	0.11	0.29	0.47	0.95
Control Delay	62.6	18.7	65.7	40.0	40.6	39.7	0.4	29.0	41.7	52.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	18.7	65.7	40.0	40.6	39.7	0.4	29.0	41.7	52.4
Queue Length 50th (ft)	144	208	37	454	114	135	0	46	134	235
Queue Length 95th (ft)	#229	279	79	#558	177	208	0	83	208	#438
Internal Link Dist (ft)		1155		834		912			742	
Turn Bay Length (ft)	550		490		250		225	200		
Base Capacity (vph)	457	2374	118	1952	324	543	616	312	512	593
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	0.84	0.47	0.42	0.86	0.65	0.40	0.11	0.29	0.41	0.87

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & SAMPLE ROAD

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 							
Traffic Volume (vph)	355	910	115	45	1470	65	195	200	60	85	195	475
Future Volume (vph)	355	910	115	45	1470	65	195	200	60	85	195	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5000		1770	5053		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.46	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	3433	5000		1770	5053		857	1863	1583	990	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	989	125	49	1598	71	212	217	65	92	212	516
RTOR Reduction (vph)	0	12	0	0	4	0	0	0	48	0	0	165
Lane Group Flow (vph)	386	1102	0	49	1665	0	212	217	17	92	212	351
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	13.8	53.3		4.8	44.3		37.9	30.9	30.9	33.9	28.9	28.9
Effective Green, g (s)	15.8	55.3		6.8	46.3		37.9	30.9	30.9	33.9	28.9	28.9
Actuated g/C Ratio	0.13	0.46		0.06	0.39		0.32	0.26	0.26	0.28	0.24	0.24
Clearance Time (s)	7.0	7.0		7.0	7.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Lane Grp Cap (vph)	452	2304		100	1949		323	479	407	312	448	381
v/s Ratio Prot	c0.11	0.22		0.03	c0.33		c0.04	0.12		0.01	0.11	
v/s Ratio Perm							0.17		0.01	0.07		c0.22
v/c Ratio	0.85	0.48		0.49	0.85		0.66	0.45	0.04	0.29	0.47	0.92
Uniform Delay, d1	51.0	22.4		54.9	33.8		35.1	37.4	33.4	32.7	39.0	44.4
Progression Factor	0.88	0.80		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.7		1.4	5.0		3.6	0.2	0.0	0.2	0.3	26.3
Delay (s)	58.0	18.6		56.3	38.8		38.8	37.7	33.4	32.9	39.3	70.7
Level of Service	E	B		E	D		D	D	C	C	D	E
Approach Delay (s)		28.7			39.3			37.6			58.4	
Approach LOS		C			D			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			39.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			84.2%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

# Queues

1: NW 5th Terr & SAMPLE ROAD

	→	↙	←	↘	↗
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2544	261	2288	114	120
v/c Ratio	0.60	0.87	0.57	0.65	0.45
Control Delay	19.3	77.5	1.8	72.8	14.3
Queue Delay	0.0	52.5	0.2	0.0	0.0
Total Delay	19.4	130.0	2.0	72.8	14.3
Queue Length 50th (ft)	328	169	38	94	0
Queue Length 95th (ft)	395	#360	27	152	57
Internal Link Dist (ft)	575		175	531	
Turn Bay Length (ft)					
Base Capacity (vph)	4248	299	3992	503	536
Starvation Cap Reductn	0	63	690	0	0
Spillback Cap Reductn	110	0	0	0	1
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	1.11	0.69	0.23	0.22

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

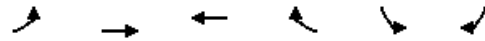
1: NW 5th Terr & SAMPLE ROAD

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↘	↑↑↑	↘	↗
Traffic Volume (vph)	2260	80	240	2105	105	110
Future Volume (vph)	2260	80	240	2105	105	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	9.0	9.0
Lane Util. Factor	0.81		1.00	0.91	1.00	1.00
Frbp, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	7450		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	7450		1770	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2457	87	261	2288	114	120
RTOR Reduction (vph)	3	0	0	0	0	108
Lane Group Flow (vph)	2541	0	261	2288	114	12
Confl. Peds. (#/hr)		80				
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2 3		1	1 2 3	4	
Permitted Phases					4	4
Actuated Green, G (s)	72.1		20.0	100.1	12.9	12.9
Effective Green, g (s)	74.1		22.0	102.1	12.9	12.9
Actuated g/C Ratio	0.57		0.17	0.79	0.10	0.10
Clearance Time (s)			8.0		9.0	9.0
Vehicle Extension (s)			1.5		2.0	2.0
Lane Grp Cap (vph)	4246		299	3993	175	157
v/s Ratio Prot	c0.34		c0.15	c0.45	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.60		0.87	0.57	0.65	0.08
Uniform Delay, d1	18.2		52.6	5.4	56.4	53.1
Progression Factor	1.00		1.01	0.22	1.00	1.00
Incremental Delay, d2	0.2		19.3	0.1	6.5	0.1
Delay (s)	18.4		72.6	1.3	62.8	53.2
Level of Service	B		E	A	E	D
Approach Delay (s)	18.4			8.6	57.9	
Approach LOS	B			A	E	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			15.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			64.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

2020PM No-Build\_Sample Road.syn

# Queues

2: SAMPLE ROAD & NW 5th Ave






















Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	179	2397	2391	272	185	158
v/c Ratio	0.82	0.48	0.61	0.25	0.54	0.53
Control Delay	63.5	1.9	12.7	1.7	61.0	14.3
Queue Delay	6.0	0.1	0.0	0.0	0.0	0.1
Total Delay	69.6	2.0	12.7	1.7	61.0	14.4
Queue Length 50th (ft)	149	23	274	21	77	0
Queue Length 95th (ft)	#278	35	336	m34	112	64
Internal Link Dist (ft)		175	1004		271	
Turn Bay Length (ft)				450		
Base Capacity (vph)	217	5031	3947	1079	977	563
Starvation Cap Reductn	16	786	0	0	0	0
Spillback Cap Reductn	0	0	127	0	0	51
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.56	0.63	0.25	0.19	0.31

## Intersection Summary

- # 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.

# HCM Signalized Intersection Capacity Analysis

2: SAMPLE ROAD & NW 5th Ave

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		  	  		 	 	
Traffic Volume (vph)	165	2205	2200	250	170	145	
Future Volume (vph)	165	2205	2200	250	170	145	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0	6.0	9.0	9.0	
Lane Util. Factor	1.00	0.86	0.86	1.00	0.97	1.00	
Frt	1.00	1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	6408	1583	3433	1583	
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	6408	1583	3433	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	179	2397	2391	272	185	158	
RTOR Reduction (vph)	0	0	0	104	0	142	
Lane Group Flow (vph)	179	2397	2391	168	185	16	
Turn Type	Prot	NA	NA	Perm	Prot	Perm	
Protected Phases	3	1 2 3	1 2		4		
Permitted Phases				1 2		4	
Actuated Green, G (s)	14.0	100.1	78.1	78.1	12.9	12.9	
Effective Green, g (s)	16.0	102.1	80.1	80.1	12.9	12.9	
Actuated g/C Ratio	0.12	0.79	0.62	0.62	0.10	0.10	
Clearance Time (s)	8.0				9.0	9.0	
Vehicle Extension (s)	1.5				2.0	2.0	
Lane Grp Cap (vph)	217	5032	3948	975	340	157	
v/s Ratio Prot	c0.10	0.37	c0.37		c0.05		
v/s Ratio Perm				0.11		0.01	
v/c Ratio	0.82	0.48	0.61	0.17	0.54	0.10	
Uniform Delay, d1	55.6	4.8	15.3	10.7	55.8	53.3	
Progression Factor	0.68	0.33	0.77	0.93	1.00	1.00	
Incremental Delay, d2	17.7	0.0	0.1	0.0	1.0	0.1	
Delay (s)	55.4	1.6	11.9	10.0	56.7	53.4	
Level of Service	E	A	B	A	E	D	
Approach Delay (s)		5.3	11.7		55.2		
Approach LOS		A	B		E		
<b>Intersection Summary</b>							
HCM 2000 Control Delay			11.4		HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.67				
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	27.0	
Intersection Capacity Utilization			63.5%		ICU Level of Service	B	
Analysis Period (min)			15				

c Critical Lane Group

2020PM No-Build\_Sample Road.syn

# Queues












	→	↘	←	↙	↗
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	1908	653	1957	484	684
v/c Ratio	0.57	0.41	0.73	0.46	0.81
Control Delay	13.5	1.6	15.1	19.8	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	1.6	15.1	19.8	29.6
Queue Length 50th (ft)	240	7	271	77	138
Queue Length 95th (ft)	357	18	330	116	#211
Internal Link Dist (ft)	1004		259		
Turn Bay Length (ft)		250			
Base Capacity (vph)	3369	1583	2673	1082	878
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.41	0.73	0.45	0.78

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

3: SAMPLE ROAD & I-95 SB RAMP

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR	
Lane Configurations		↑↑↑	↑		↑↑↑		↑↑		↑↑			
Traffic Volume (vph)	0	1755	620	0	1800	0	460	0	650	0	0	
Future Volume (vph)	0	1755	620	0	1800	0	460	0	650	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5	2.0		5.5		5.5		5.5			
Lane Util. Factor		0.86	1.00		0.91		0.97		0.88			
Fr <sub>t</sub>		1.00	0.85		1.00		1.00		0.85			
Fl <sub>t</sub> Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		6408	1583		5085		3433		2787			
Fl <sub>t</sub> Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		6408	1583		5085		3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.95	0.92	0.92	
Adj. Flow (vph)	0	1908	653	0	1957	0	484	0	684	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1908	653	0	1957	0	484	0	684	0	0	
Turn Type		NA	Free		NA		Prot		Prot			
Protected Phases		6			2		3		3			
Permitted Phases			Free									
Actuated Green, G (s)		32.2	65.0		32.2		17.8		17.8			
Effective Green, g (s)		34.2	65.0		34.2		19.8		19.8			
Actuated g/C Ratio		0.53	1.00		0.53		0.30		0.30			
Clearance Time (s)		7.5			7.5		7.5		7.5			
Vehicle Extension (s)		3.0			3.0		2.5		2.5			
Lane Grp Cap (vph)		3371	1583		2675		1045		848			
v/s Ratio Prot		0.30			c0.38		0.14		c0.25			
v/s Ratio Perm			0.41									
v/c Ratio		0.57	0.41		0.73		0.46		0.81			
Uniform Delay, d <sub>1</sub>		10.4	0.0		11.9		18.3		20.8			
Progression Factor		1.22	1.00		1.13		1.00		1.00			
Incremental Delay, d <sub>2</sub>		0.6	0.7		1.4		0.2		5.5			
Delay (s)		13.3	0.7		14.7		18.5		26.3			
Level of Service		B	A		B		B		C			
Approach Delay (s)		10.1			14.7			23.1		0.0		
Approach LOS		B			B			C		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.4								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			65.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			66.7%								ICU Level of Service	C
Analysis Period (min)			15									

c Critical Lane Group



# Queues












	→	←	↖	↗	
Lane Group	EBT	WBT	WBR	NBL2	NBR
Lane Group Flow (vph)	1723	1717	358	1074	579
v/c Ratio	0.64	0.64	0.23	0.81	0.54
Control Delay	13.6	13.9	0.2	40.8	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	13.9	0.2	40.8	32.4
Queue Length 50th (ft)	280	184	0	410	211
Queue Length 95th (ft)	239	m194	m0	451	248
Internal Link Dist (ft)	270	1155			
Turn Bay Length (ft)			250		
Base Capacity (vph)	2693	2693	1583	1518	1232
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.64	0.64	0.23	0.71	0.47

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis











4: I-95 NB RAMP & SAMPLE ROAD

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	
Lane Configurations		↑↑↑			↑↑↑	↑	↑↑		↑↑			
Traffic Volume (vph)	0	1585	0	0	1580	340	1020	0	550	0	0	
Future Volume (vph)	0	1585	0	0	1580	340	1020	0	550	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.5			5.5	2.0	5.5		5.5			
Lane Util. Factor		0.91			0.91	1.00	0.97		0.88			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085			5085	1583	3433		2787			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085			5085	1583	3433		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.92	0.95	0.92	0.92	
Adj. Flow (vph)	0	1723	0	0	1717	358	1074	0	579	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1723	0	0	1717	358	1074	0	579	0	0	
Turn Type		NA			NA	Free	Prot		Prot			
Protected Phases		6			2		4		4			
Permitted Phases						Free						
Actuated Green, G (s)		66.9			66.9	130.0	48.1		48.1			
Effective Green, g (s)		68.9			68.9	130.0	50.1		50.1			
Actuated g/C Ratio		0.53			0.53	1.00	0.39		0.39			
Clearance Time (s)		7.5			7.5		7.5		7.5			
Vehicle Extension (s)		3.0			3.0		2.5		2.5			
Lane Grp Cap (vph)		2695			2695	1583	1323		1074			
v/s Ratio Prot		c0.34			0.34		c0.31		0.21			
v/s Ratio Perm						0.23						
v/c Ratio		0.64			0.64	0.23	0.81		0.54			
Uniform Delay, d1		21.7			21.7	0.0	35.7		31.0			
Progression Factor		0.55			0.58	1.00	1.00		1.00			
Incremental Delay, d2		0.4			0.7	0.2	3.8		0.4			
Delay (s)		12.5			13.3	0.2	39.5		31.4			
Level of Service		B			B	A	D		C			
Approach Delay (s)		12.5			11.0			36.7		0.0		
Approach LOS		B			B			D		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.3								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			130.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			59.0%								ICU Level of Service	B
Analysis Period (min)			15									

c Critical Lane Group

# Queues

5: NE 3rd Ave & SAMPLE ROAD























										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	467	1854	98	1604	228	326	87	71	255	375
v/c Ratio	0.86	0.73	0.74	0.76	0.96	0.76	0.17	0.41	0.78	0.80
Control Delay	76.5	23.3	89.8	35.7	89.0	58.5	0.7	39.8	66.9	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	23.3	89.8	35.7	89.0	58.5	0.7	39.8	66.9	31.5
Queue Length 50th (ft)	213	261	82	411	156	266	0	44	209	119
Queue Length 95th (ft)	#288	390	#171	#542	#210	342	0	74	279	223
Internal Link Dist (ft)		1155		834		912			742	
Turn Bay Length (ft)	550		490		250		225	200		
Base Capacity (vph)	554	2528	136	2120	237	530	594	174	458	565
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	0.84	0.73	0.72	0.76	0.96	0.62	0.15	0.41	0.56	0.66

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

5: NE 3rd Ave & SAMPLE ROAD

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1525	180	90	1365	110	210	300	80	65	235	345
Future Volume (vph)	430	1525	180	90	1365	110	210	300	80	65	235	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91		1.00	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5005		1770	5028		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.25	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	3433	5005		1770	5028		467	1863	1583	607	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1658	196	98	1484	120	228	326	87	71	255	375
RTOR Reduction (vph)	0	10	0	0	6	0	0	0	67	0	0	190
Lane Group Flow (vph)	467	1844	0	98	1598	0	228	326	20	71	255	185
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4		4	8		8
Actuated Green, G (s)	18.5	62.3		7.7	51.5		40.0	30.0	30.0	28.0	24.0	24.0
Effective Green, g (s)	20.5	64.3		9.7	53.5		40.0	30.0	30.0	28.0	24.0	24.0
Actuated g/C Ratio	0.16	0.49		0.07	0.41		0.31	0.23	0.23	0.22	0.18	0.18
Clearance Time (s)	7.0	7.0		7.0	7.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	1.5	3.0		1.5	3.0		1.5	2.0	2.0	1.5	2.0	2.0
Lane Grp Cap (vph)	541	2475		132	2069		243	429	365	166	343	292
v/s Ratio Prot	c0.14	c0.37		0.06	0.32		c0.07	0.18		0.01	0.14	
v/s Ratio Perm							c0.22		0.01	0.08		0.12
v/c Ratio	0.86	0.75		0.74	0.77		0.94	0.76	0.06	0.43	0.74	0.63
Uniform Delay, d1	53.4	26.3		58.9	33.0		41.2	46.6	39.0	42.6	50.1	48.9
Progression Factor	1.18	0.82		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.8	1.7		17.7	2.9		40.2	6.7	0.0	0.6	7.4	3.3
Delay (s)	73.7	23.3		76.7	35.9		81.4	53.4	39.0	43.3	57.5	52.2
Level of Service	E	C		E	D		F	D	D	D	E	D
Approach Delay (s)		33.4			38.2			61.4			53.2	
Approach LOS		C			D			E			D	

## Intersection Summary

HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group