












# Queues

1: SW 12th Avenue & Hillsboro Blvd

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	2435	370	1641	505	109	152	261	27	27	27
v/c Ratio	0.97	0.77	1.02	0.59	0.46	0.30	0.77	0.49	0.36	0.35	0.07
Control Delay	113.8	27.5	124.1	22.5	7.7	75.1	102.4	16.2	95.6	95.0	0.4
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	113.8	27.5	124.1	22.8	8.0	75.1	102.4	16.2	95.6	95.0	0.4
Queue Length 50th (ft)	375	724	~240	359	92	62	178	52	33	33	0
Queue Length 95th (ft)	#583	914	#356	325	95	93	255	140	72	72	1
Internal Link Dist (ft)		580		548			436			396	
Turn Bay Length (ft)	450		375		350	225		250	200		
Base Capacity (vph)	325	3147	364	2789	1230	610	331	528	252	257	385
Starvation Cap Reductn	0	0	0	497	226	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	0.97	0.77	1.02	0.72	0.50	0.18	0.46	0.49	0.11	0.11	0.07

## 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.

# 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)	290	2050	190	340	1510	465	100	140	240	40	10	25
Future Volume (vph)	290	2050	190	340	1510	465	100	140	240	40	10	25
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	5020		3433	5085	1583	3433	1863	1583	1681	1719	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	5020		3433	5085	1583	3433	1863	1583	1681	1719	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	2228	207	370	1641	505	109	152	261	43	11	27
RTOR Reduction (vph)	0	4	0	0	0	100	0	0	165	0	0	21
Lane Group Flow (vph)	315	2431	0	370	1641	405	109	152	96	27	27	6
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)	31.1	110.7		17.1	96.7	104.8	19.1	19.1	36.2	8.1	8.1	39.2
Effective Green, g (s)	33.1	112.7		19.1	98.7	108.8	19.1	19.1	36.2	8.1	8.1	39.2
Actuated g/C Ratio	0.18	0.63		0.11	0.55	0.60	0.11	0.11	0.20	0.04	0.04	0.22
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)	325	3143		364	2788	956	364	197	318	75	77	344
v/s Ratio Prot	c0.18	c0.48		0.11	0.32	c0.02	0.03	c0.08	0.03	0.02	0.02	0.00
v/s Ratio Perm						0.23			0.03			0.00
v/c Ratio	0.97	0.77		1.02	0.59	0.42	0.30	0.77	0.30	0.36	0.35	0.02
Uniform Delay, d1	72.9	24.4		80.5	27.1	18.9	74.3	78.3	61.2	83.4	83.4	55.3
Progression Factor	1.00	1.00		1.01	0.77	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.9	1.9		46.4	0.7	0.1	0.2	15.5	0.2	1.1	1.0	0.0
Delay (s)	113.9	26.3		128.0	21.7	15.0	74.4	93.9	61.4	84.5	84.4	55.3
Level of Service	F	C		F	C	B	E	F	E	F	F	E
Approach Delay (s)		36.3			36.0			73.6			74.7	
Approach LOS		D			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			40.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			180.0				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			83.4%				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)	1565	937	1625	642	863
v/c Ratio	0.31	0.59	0.62	0.84	0.71
Control Delay	0.1	5.2	27.5	54.8	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	0.1	5.2	27.5	54.8	44.6
Queue Length 50th (ft)	0	116	335	668	471
Queue Length 95th (ft)	0	197	534	719	473
Internal Link Dist (ft)	548		319		
Turn Bay Length (ft)	150				
Base Capacity (vph)	5085	1583	2622	919	1447
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	0.31	0.59	0.62	0.70	0.60
<b>Intersection Summary</b>					

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# 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	1440	890	0	1495	0	610	0	820	0	0
Future Volume (vph)	0	1440	890	0	1495	0	610	0	820	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		
Frt		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	1565	937	0	1625	0	642	0	863	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1565	937	0	1625	0	642	0	863	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		90.8		76.2		76.2		
Effective Green, g (s)		180.0	180.0		92.8		78.2		78.2		
Actuated g/C Ratio		1.00	1.00		0.52		0.43		0.43		
Clearance Time (s)					6.5		6.5		6.5		
Vehicle Extension (s)					3.0		2.5		2.5		
Lane Grp Cap (vph)		5085	1583		2621		768		1210		
v/s Ratio Prot		0.31			0.32		c0.36		0.31		
v/s Ratio Perm			c0.59								
v/c Ratio		0.31	0.59		0.62		0.84		0.71		
Uniform Delay, d1		0.0	0.0		31.0		45.2		41.7		
Progression Factor		1.00	1.00		0.80		1.00		1.00		
Incremental Delay, d2		0.1	1.1		1.1		7.7		1.9		
Delay (s)		0.1	1.1		26.1		52.9		43.6		
Level of Service		A	A		C		D		D		
Approach Delay (s)		0.5			26.1			47.6		0.0	
Approach LOS		A			C			D		A	
<b>Intersection Summary</b>											
HCM 2000 Control Delay			20.4				HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio			0.72								
Actuated Cycle Length (s)			180.0				Sum of lost time (s)		9.0		
Intersection Capacity Utilization			65.1%				ICU Level of Service		C		
Analysis Period (min)			15								
! Phase conflict between lane groups.											
c Critical Lane Group											

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# Queues

	→	←	↗
Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	1511	1734	842
v/c Ratio	0.58	0.34	0.77
Control Delay	13.8	0.1	28.4
Queue Delay	0.0	0.0	0.0
Total Delay	13.8	0.1	28.4
Queue Length 50th (ft)	178	0	226
Queue Length 95th (ft)	319	m0	268
Internal Link Dist (ft)	286	256	
Turn Bay Length (ft)			
Base Capacity (vph)	2603	5085	1294
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.58	0.34	0.65

## 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)	1390	0	0	1595	0	800
Future Volume (vph)	1390	0	0	1595	0	800
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)	1511	0	0	1734	0	842
RTOR Reduction (vph)	0	0	0	0	0	10
Lane Group Flow (vph)	1511	0	0	1734	0	832
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	NA			NA		Prot
Protected Phases	6			2		5
Permitted Phases						
Actuated Green, G (s)	44.1			90.0		32.9
Effective Green, g (s)	46.1			90.0		34.9
Actuated g/C Ratio	0.51			1.00		0.39
Clearance Time (s)	6.5			6.5		6.5
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	2604			5085		1080
v/s Ratio Prot	c0.30			0.34		c0.30
v/s Ratio Perm						
v/c Ratio	0.58			0.34		0.77
Uniform Delay, d1	15.2			0.0		24.0
Progression Factor	0.80			1.00		1.00
Incremental Delay, d2	0.9			0.1		3.4
Delay (s)	13.1			0.1		27.4
Level of Service	B			A		C
Approach Delay (s)	13.1			0.1	27.4	
Approach LOS	B			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			10.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			77.7%		ICU Level of Service	D
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)	342	1908	130	87	2141	484	92	174	43	5	92
v/c Ratio	1.07	0.56	0.12	0.64	0.75	2.04	0.39	0.49	0.52	0.08	0.42
Control Delay	130.0	13.8	0.8	101.4	31.9	514.9	78.5	13.8	90.8	87.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.0	13.8	0.8	101.4	31.9	514.9	78.5	13.8	90.8	87.0	5.7
Queue Length 50th (ft)	~434	427	3	101	684	~829	103	0	44	6	0
Queue Length 95th (ft)	#653	449	8	167	739	#1063	169	79	85	22	0
Internal Link Dist (ft)		775			631		513			403	
Turn Bay Length (ft)	300		150	100		125					340
Base Capacity (vph)	320	3393	1099	160	2846	237	548	588	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	1.07	0.56	0.12	0.54	0.75	2.04	0.17	0.30	0.52	0.01	0.20

## 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)	315	1755	120	80	1875	95	445	85	160	40	5	85
Future Volume (vph)	315	1755	120	80	1875	95	445	85	160	40	5	85
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	5049		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	5049		767	1863	1583	1299	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)	342	1908	130	87	2038	103	484	92	174	43	5	92
RTOR Reduction (vph)	0	0	44	0	2	0	0	0	152	0	0	88
Lane Group Flow (vph)	342	1908	86	87	2139	0	484	92	22	43	5	4
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)	30.6	117.0	117.0	11.8	98.2		32.2	23.0	23.0	10.4	7.2	7.2
Effective Green, g (s)	32.6	119.0	119.0	13.8	100.2		32.2	23.0	23.0	10.4	7.2	7.2
Actuated g/C Ratio	0.18	0.66	0.66	0.08	0.56		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)	320	3361	1046	135	2810		243	238	202	83	74	63
v/s Ratio Prot	c0.19	0.38		0.05	c0.42		c0.21	0.05		0.01	0.00	
v/s Ratio Perm			0.05				c0.15		0.01	0.02		0.00
v/c Ratio	1.07	0.57	0.08	0.64	0.76		1.99	0.39	0.11	0.52	0.07	0.06
Uniform Delay, d1	73.7	16.5	10.9	80.7	30.7		71.7	72.0	69.4	81.9	83.2	83.1
Progression Factor	0.98	0.82	0.37	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.6	0.6	0.1	7.7	2.0		460.7	0.4	0.1	2.3	0.1	0.1
Delay (s)	136.8	14.1	4.2	88.4	32.7		532.4	72.4	69.5	84.2	83.3	83.3
Level of Service	F	B	A	F	C		F	E	E	F	F	F
Approach Delay (s)		31.2			34.9			368.6			83.6	
Approach LOS		C			C			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			80.0			HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			180.0			Sum of lost time (s)		21.0				
Intersection Capacity Utilization			99.6%			ICU Level of Service		F				
Analysis Period (min)			15									
c Critical Lane Group												

2040AM No-Build\_Hillsboro Blvd.syn



# Queues

1: SW 12th Avenue & Hillsboro Blvd


























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	2316	299	2397	65	250	11	402	274	281	359
v/c Ratio	0.56	0.92	1.29	0.91	0.05	0.70	0.06	1.07	0.91	0.91	0.86
Control Delay	88.5	40.4	206.7	23.2	0.1	70.9	55.1	108.2	88.6	89.3	47.4
Queue Delay	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.5	40.4	206.7	25.1	0.1	70.9	55.1	108.2	88.6	89.3	47.4
Queue Length 50th (ft)	44	718	~181	276	0	115	9	~347	255	263	174
Queue Length 95th (ft)	#98	#897	m#254	#900	m0	157	29	#516	#415	#425	#333
Internal Link Dist (ft)		580		548			436			396	
Turn Bay Length (ft)	450		375		350	225		250	200		
Base Capacity (vph)	88	2511	232	2623	1213	784	425	376	324	330	417
Starvation Cap Reductn	0	0	0	116	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	0.56	0.92	1.29	0.96	0.05	0.32	0.03	1.07	0.85	0.85	0.86

## 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)	45	1985	145	275	2205	60	230	10	370	420	90	330
Future Volume (vph)	45	1985	145	275	2205	60	230	10	370	420	90	330
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
Frt	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)	49	2158	158	299	2397	65	250	11	402	457	98	359
RTOR Reduction (vph)	0	5	0	0	0	19	0	0	62	0	0	82
Lane Group Flow (vph)	49	2311	0	299	2397	46	250	11	340	274	281	277
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	67.7		7.5	70.2	95.4	14.6	14.6	22.1	25.2	25.2	30.2
Effective Green, g (s)	7.0	69.7		9.5	72.2	99.4	14.6	14.6	22.1	25.2	25.2	30.2
Actuated g/C Ratio	0.05	0.50		0.07	0.52	0.71	0.10	0.10	0.16	0.18	0.18	0.22
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)	88	2505		232	2622	1123	358	194	249	302	308	341
v/s Ratio Prot	0.03	0.46		c0.09	c0.47	0.01	0.07	0.01	c0.07	0.16	c0.16	0.03
v/s Ratio Perm						0.02			0.14			0.15
v/c Ratio	0.56	0.92		1.29	0.91	0.04	0.70	0.06	1.36	0.91	0.91	0.81
Uniform Delay, d1	65.0	32.6		65.2	31.1	6.1	60.6	56.5	58.9	56.3	56.3	52.2
Progression Factor	1.00	1.00		1.20	0.57	0.04	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	7.1		149.6	4.3	0.0	4.7	0.0	187.5	28.4	29.3	13.1
Delay (s)	69.3	39.8		228.0	22.0	0.3	65.3	56.5	246.5	84.7	85.6	65.3
Level of Service	E	D		F	C	A	E	E	F	F	F	E
Approach Delay (s)		40.4			43.8			175.0			77.4	
Approach LOS		D			D			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay	60.2			HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio	1.03											
Actuated Cycle Length (s)	140.0			Sum of lost time (s)				23.0				
Intersection Capacity Utilization	92.7%			ICU Level of Service				F				
Analysis Period (min)	15											
c Critical Lane Group												

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# Queues












	→	↘	←	↙	↵
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	2114	874	2098	695	642
v/c Ratio	0.42	0.55	0.82	0.90	0.53
Control Delay	0.1	0.9	25.9	52.5	30.3
Queue Delay	0.0	0.0	1.0	0.0	0.0
Total Delay	0.1	0.9	26.9	52.5	30.3
Queue Length 50th (ft)	0	0	539	562	232
Queue Length 95th (ft)	m0	m0	586	733	286
Internal Link Dist (ft)	548		319		
Turn Bay Length (ft)		150			
Base Capacity (vph)	5085	1583	2544	828	1303
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	217	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.55	0.90	0.84	0.49

## 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	1945	830	0	1930	0	660	0	610	0	0	
Future Volume (vph)	0	1945	830	0	1930	0	660	0	610	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	2114	874	0	2098	0	695	0	642	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	2114	874	0	2098	0	695	0	642	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)		140.0	140.0		68.0		59.0		59.0			
Effective Green, g (s)		140.0	140.0		70.0		61.0		61.0			
Actuated g/C Ratio		1.00	1.00		0.50		0.44		0.44			
Clearance Time (s)					6.5		6.5		6.5			
Vehicle Extension (s)					3.0		2.5		2.5			
Lane Grp Cap (vph)		5085	1583		2542		771		1214			
v/s Ratio Prot		0.42			c0.41		c0.39		0.23			
v/s Ratio Perm			0.55									
v/c Ratio		0.42	0.55		0.83		0.90		0.53			
Uniform Delay, d1		0.0	0.0		29.8		36.7		29.0			
Progression Factor		1.00	1.00		0.74		1.00		1.00			
Incremental Delay, d2		0.1	0.5		3.1		13.7		0.3			
Delay (s)		0.1	0.5		25.0		50.4		29.3			
Level of Service		A	A		C		D		C			
Approach Delay (s)		0.2			25.0			40.3		0.0		
Approach LOS		A			C			D		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			16.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			140.0								Sum of lost time (s)	9.0
Intersection Capacity Utilization			66.1%								ICU Level of Service	C
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

# Queues

3: I-95 NB Ramp & Hillsboro Blvd

	→	←	↗
Lane Group	EBT	WBT	NBR
Lane Group Flow (vph)	2038	2315	789
v/c Ratio	0.73	0.46	0.79
Control Delay	15.7	0.1	26.0
Queue Delay	0.0	0.0	0.0
Total Delay	15.7	0.1	26.0
Queue Length 50th (ft)	280	0	159
Queue Length 95th (ft)	273	m0	228
Internal Link Dist (ft)	286	256	
Turn Bay Length (ft)			
Base Capacity (vph)	2789	5085	1079
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.46	0.73

## 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)	1875	0	0	2130	0	750
Future Volume (vph)	1875	0	0	2130	0	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5		2.0
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)	2038	0	0	2315	0	789
RTOR Reduction (vph)	0	0	0	0	0	5
Lane Group Flow (vph)	2038	0	0	2315	0	784
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type	NA			NA		Prot
Protected Phases	6			2		5
Permitted Phases						
Actuated Green, G (s)	36.4			70.0		23.1
Effective Green, g (s)	38.4			70.0		25.1
Actuated g/C Ratio	0.55			1.00		0.36
Clearance Time (s)	6.5			6.5		4.0
Vehicle Extension (s)	3.0			3.0		3.0
Lane Grp Cap (vph)	2789			5085		999
v/s Ratio Prot	c0.40			0.46		c0.28
v/s Ratio Perm						
v/c Ratio	0.73			0.46		0.78
Uniform Delay, d1	11.9			0.0		20.0
Progression Factor	1.15			1.00		1.00
Incremental Delay, d2	1.5			0.1		4.1
Delay (s)	15.2			0.1		24.1
Level of Service	B			A		C
Approach Delay (s)	15.2			0.1	24.1	
Approach LOS	B			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			9.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	6.5
Intersection Capacity Utilization			90.5%		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)	103	2413	337	152	2505	315	11	141	136	54	337
v/c Ratio	0.92	0.86	0.36	1.00	0.86	1.08	0.03	0.37	0.43	0.16	0.88
Control Delay	119.4	24.4	8.6	135.8	30.2	125.0	43.4	9.7	46.2	46.5	57.8
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	119.4	24.4	8.6	135.8	30.2	125.0	43.4	9.7	46.2	46.5	57.8
Queue Length 50th (ft)	91	572	77	141	676	~286	8	2	100	42	197
Queue Length 95th (ft)	m#160	#919	200	#290	#954	#351	25	56	144	75	291
Internal Link Dist (ft)		775			631		513			402	
Turn Bay Length (ft)	300		150	100		125					340
Base Capacity (vph)	112	2799	928	152	2910	291	492	520	313	505	520
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	0.92	0.86	0.36	1.00	0.86	1.08	0.02	0.27	0.43	0.11	0.65

## 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)	95	2220	310	140	2270	35	290	10	130	125	50	310
Future Volume (vph)	95	2220	310	140	2270	35	290	10	130	125	50	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	4.5		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	0.72	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5074		1345	1863	1583	1341	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)	103	2413	337	152	2467	38	315	11	141	136	54	337
RTOR Reduction (vph)	0	0	57	0	1	0	0	0	115	0	0	103
Lane Group Flow (vph)	103	2413	280	152	2504	0	315	11	26	136	54	234
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)	6.9	75.1	75.1	10.1	78.3		28.8	23.8	23.8	30.8	24.8	24.8
Effective Green, g (s)	8.9	77.1	77.1	12.1	80.3		28.8	23.8	23.8	30.8	24.8	24.8
Actuated g/C Ratio	0.06	0.55	0.55	0.09	0.57		0.21	0.17	0.17	0.22	0.18	0.18
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)	112	2800	871	152	2910		291	316	269	313	330	280
v/s Ratio Prot	0.06	0.47		c0.09	c0.49		c0.04	0.01		0.02	0.03	
v/s Ratio Perm			0.18				c0.18		0.02	0.08		0.15
v/c Ratio	0.92	0.86	0.32	1.00	0.86		1.08	0.03	0.10	0.43	0.16	0.84
Uniform Delay, d1	65.2	26.9	17.2	64.0	25.1		54.9	48.5	49.0	46.6	48.8	55.6
Progression Factor	1.07	0.76	0.65	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.8	2.6	0.7	73.0	3.6		76.5	0.0	0.1	0.4	0.1	18.3
Delay (s)	115.6	23.0	11.9	136.9	28.7		131.4	48.5	49.1	46.9	48.9	73.9
Level of Service	F	C	B	F	C		F	D	D	D	D	E
Approach Delay (s)		25.0			34.9			104.6			64.4	
Approach LOS		C			C			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			38.0			HCM 2000 Level of Service		D				
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)		21.0				
Intersection Capacity Utilization			93.6%			ICU Level of Service		F				
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)	364	2598	174	364	1696	375	207	929	701	522	658	315
v/c Ratio	1.54	1.23	0.23	1.47	1.15	0.48	0.65	0.95	1.20	1.57	0.66	0.53
Control Delay	302.5	143.8	3.4	270.9	109.3	22.7	71.3	69.2	136.1	309.1	48.6	18.0
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	302.5	143.8	3.4	270.9	109.3	22.7	71.3	69.2	136.1	309.1	48.6	18.0
Queue Length 50th (ft)	~238	~1066	0	~229	~925	131	94	439	~629	~345	281	80
Queue Length 95th (ft)	#342	#1151	37	#337	#1071	213	138	#574	#877	#462	352	178
Internal Link Dist (ft)		880			1200			569			457	
Turn Bay Length (ft)	280		500	275			300		300	300		200
Base Capacity (vph)	237	2113	767	247	1481	781	333	975	585	333	990	591
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	1.54	1.23	0.23	1.47	1.15	0.48	0.62	0.95	1.20	1.57	0.66	0.53

## 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)	335	2390	160	335	1560	345	190	855	645	480	605	290
Future Volume (vph)	335	2390	160	335	1560	345	190	855	645	480	605	290
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)	364	2598	174	364	1696	375	207	929	701	522	658	315
RTOR Reduction (vph)	0	0	102	0	0	119	0	0	149	0	0	148
Lane Group Flow (vph)	364	2598	72	364	1696	256	207	929	552	522	658	167
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)	7.7	56.2	56.2	8.1	56.6	56.6	11.0	36.6	36.6	11.6	37.2	37.2
Effective Green, g (s)	9.7	58.2	58.2	10.1	58.6	58.6	13.0	38.6	38.6	13.6	39.2	39.2
Actuated g/C Ratio	0.07	0.42	0.42	0.07	0.42	0.42	0.09	0.28	0.28	0.10	0.28	0.28
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)	237	2113	658	247	1481	662	318	975	436	333	990	443
v/s Ratio Prot	0.11	c0.51		0.11	c0.48		0.06	0.26		c0.15	0.19	
v/s Ratio Perm			0.05			0.16			c0.35			0.11
v/c Ratio	1.54	1.23	0.11	1.47	1.15	0.39	0.65	0.95	1.27	1.57	0.66	0.38
Uniform Delay, d1	65.2	40.9	25.0	65.0	40.7	28.2	61.3	49.8	50.7	63.2	44.6	40.6
Progression Factor	1.00	1.00	1.00	1.04	1.02	1.66	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	261.2	107.7	0.3	226.9	71.0	1.1	3.6	18.4	136.7	269.6	1.7	0.5
Delay (s)	326.4	148.6	25.4	294.3	112.6	48.0	64.9	68.2	187.4	332.8	46.3	41.1
Level of Service	F	F	C	F	F	D	E	E	F	F	D	D
Approach Delay (s)		162.4			129.8			113.3			145.2	
Approach LOS		F			F			F			F	

## Intersection Summary












HCM 2000 Control Delay	140.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

2040AM No-Build\_SW 10th Street.syn

# 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)	332	3489	440	2283	370	35	36	114	27	27	92
v/c Ratio	0.91	1.05	1.04	0.77	0.36	0.49	0.49	0.49	0.42	0.39	0.43
Control Delay	59.0	35.0	110.7	18.4	2.2	87.8	88.0	8.7	85.1	81.7	6.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	35.0	110.7	18.6	2.2	87.8	88.0	8.7	85.1	81.7	6.0
Queue Length 50th (ft)	259	-982	-419	621	5	33	34	0	25	25	0
Queue Length 95th (ft)	m191	m222	#639	666	11	#80	#80	11	61	61	0
Internal Link Dist (ft)		700		595			420			170	
Turn Bay Length (ft)	600		550		295	100					
Base Capacity (vph)	381	3317	424	2976	1014	72	73	231	65	70	217
Starvation Cap Reductn	0	0	0	112	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	0.87	1.05	1.04	0.80	0.36	0.49	0.49	0.49	0.42	0.39	0.42
























## 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.

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# 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)	305	2705	505	405	2100	340	55	10	105	40	10	85
Future Volume (vph)	305	2705	505	405	2100	340	55	10	105	40	10	85
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	0.98		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	0.97	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1736	6257		1770	5085	1524	1681	1710	1583	1453	1573	1154
Flt Permitted	0.05	1.00		0.95	1.00	1.00	0.95	0.97	1.00	0.95	0.97	1.00
Satd. Flow (perm)	99	6257		1770	5085	1524	1681	1710	1583	1453	1573	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)	332	2940	549	440	2283	370	60	11	114	43	11	92
RTOR Reduction (vph)	0	24	0	0	0	122	0	0	109	0	0	88
Lane Group Flow (vph)	332	3465	0	440	2283	248	35	36	5	27	27	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)	95.1	71.7		31.6	79.9	79.9	6.0	6.0	6.0	6.2	6.2	6.2
Effective Green, g (s)	99.1	73.7		33.6	81.9	81.9	6.0	6.0	6.0	6.2	6.2	6.2
Actuated g/C Ratio	0.71	0.53		0.24	0.59	0.59	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)	367	3293		424	2974	891	72	73	67	64	69	51
v/s Ratio Prot	0.16	c0.55		c0.25	0.45		0.02	c0.02	0.00	c0.02	0.02	0.00
v/s Ratio Perm	0.48					0.16						
v/c Ratio	0.90	1.05		1.04	0.77	0.28	0.49	0.49	0.07	0.42	0.39	0.08
Uniform Delay, d1	44.9	33.1		53.2	21.9	14.4	65.5	65.5	64.3	65.2	65.1	64.2
Progression Factor	1.27	0.25		1.19	0.75	0.40	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	24.4		51.3	1.8	0.7	1.9	1.9	0.2	1.6	1.3	0.2
Delay (s)	60.2	32.8		114.4	18.1	6.5	67.4	67.4	64.5	66.8	66.4	64.4
Level of Service	E	C		F	B	A	E	E	E	E	E	E
Approach Delay (s)		35.2			30.4			65.6			65.2	
Approach LOS		D			C			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			34.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			20.5		
Intersection Capacity Utilization			90.9%				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)	2321	777	908	3092
v/c Ratio	0.91	0.49	1.27	0.48
Control Delay	10.0	1.1	151.8	0.2
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	10.5	1.1	151.8	0.2
Queue Length 50th (ft)	362	0	~834	0
Queue Length 95th (ft)	m345	m0	#1253	0
Internal Link Dist (ft)	595			250
Turn Bay Length (ft)				
Base Capacity (vph)	2542	1583	717	6408
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	44	0	0	242
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.49	1.27	0.50

## 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.

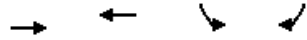
# HCM Signalized Intersection Capacity Analysis

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

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		
Traffic Volume (vph)	2135	715	835	2845	0	0
Future Volume (vph)	2135	715	835	2845	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	114	6408		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2321	777	908	3092	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2321	777	908	3092	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)	66.1	140.0	114.7	140.0		
Effective Green, g (s)	70.1	140.0	118.2	140.0		
Actuated g/C Ratio	0.50	1.00	0.84	1.00		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2546	1583	718	6408		
v/s Ratio Prot	0.46		c0.47	0.48		
v/s Ratio Perm		0.49	c0.59			
v/c Ratio	0.91	0.49	1.26	0.48		
Uniform Delay, d1	32.1	0.0	39.9	0.0		
Progression Factor	0.44	1.00	0.71	1.00		
Incremental Delay, d2	0.5	0.1	127.5	0.2		
Delay (s)	14.6	0.1	156.0	0.2		
Level of Service	B	A	F	A		
Approach Delay (s)	11.0			35.6	0.0	
Approach LOS	B			D	A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			24.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			1.26			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			94.6%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

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# Queues









Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2321	2924	467	1076
v/c Ratio	0.64	0.64	0.87	0.68
Control Delay	7.5	8.0	59.6	2.4
Queue Delay	1.7	0.2	0.0	0.4
Total Delay	9.2	8.2	59.6	2.7
Queue Length 50th (ft)	225	300	167	0
Queue Length 95th (ft)	256	m311	#241	0
Internal Link Dist (ft)	250	635	1117	
Turn Bay Length (ft)			500	500
Base Capacity (vph)	3632	4577	539	1583
Starvation Cap Reductn	1068	664	0	0
Spillback Cap Reductn	0	248	0	139
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.91	0.75	0.87	0.75

## 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

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

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↑↑	↑
Traffic Volume (vph)	0	2135	2690	0	430	990
Future Volume (vph)	0	2135	2690	0	430	990
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	2321	2924	0	467	1076
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2321	2924	0	467	1076
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)		96.1	96.1		18.5	140.0
Effective Green, g (s)		95.7	95.7		22.5	140.0
Actuated g/C Ratio		0.68	0.68		0.16	1.00
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		3475	4380		551	1583
v/s Ratio Prot		0.46	0.46		0.14	
v/s Ratio Perm						c0.68
v/c Ratio		0.67	0.67		0.85	0.68
Uniform Delay, d1		12.9	12.9		57.1	0.0
Progression Factor		1.23	1.31		1.00	1.00
Incremental Delay, d2		0.1	0.2		11.1	2.4
Delay (s)		16.0	17.1		68.2	2.4
Level of Service		B	B		E	A
Approach Delay (s)		16.0	17.1		22.3	
Approach LOS		B	B		C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			17.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			61.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

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# Queues

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1299	1489	315	2000	990	445
v/c Ratio	1.08	0.94	0.61	0.72	1.05	1.12
Control Delay	85.4	24.8	37.9	18.9	92.0	128.1
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	85.4	24.8	37.9	19.1	92.0	128.1
Queue Length 50th (ft)	~705	1228	188	422	~505	~512
Queue Length 95th (ft)	#850	#1270	m239	458	#638	#748
Internal Link Dist (ft)	635			630	537	
Turn Bay Length (ft)			275		200	200
Base Capacity (vph)	1200	1583	513	2778	942	397
Starvation Cap Reductn	0	0	0	160	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.94	0.61	0.76	1.05	1.12

## 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)	1195	1370	290	1840	850	470
Future Volume (vph)	1195	1370	290	1840	850	470
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	0.99	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	1770	5085	3418	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	1770	5085	3418	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1299	1489	315	2000	924	511
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1299	1489	315	2000	990	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)	45.5	140.0	38.6	74.6	36.6	36.6
Effective Green, g (s)	43.5	140.0	40.6	76.6	38.6	38.6
Actuated g/C Ratio	0.31	1.00	0.29	0.55	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)	1099	1583	513	2782	942	397
v/s Ratio Prot	c0.37		0.18	0.39	0.29	c0.31
v/s Ratio Perm		c0.94				
v/c Ratio	1.18	0.94	0.61	0.72	1.05	1.12
Uniform Delay, d1	48.2	0.0	42.9	23.7	50.7	50.7
Progression Factor	0.84	1.00	0.81	0.76	1.00	1.00
Incremental Delay, d2	89.0	9.6	0.8	0.4	43.6	82.2
Delay (s)	129.3	9.6	35.4	18.3	94.3	132.9
Level of Service	F	A	D	B	F	F
Approach Delay (s)	65.4			20.6	106.3	
Approach LOS	E			C	F	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			58.5		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.17			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			89.3%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

2040AM 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)	272	1538	168	1685	92	239	163	163	250	201	391
v/c Ratio	1.00	0.76	0.62	0.83	0.12	0.90	0.41	0.42	0.78	0.77	0.91
Control Delay	44.4	25.3	20.7	23.4	0.3	61.3	32.1	4.5	40.8	50.0	39.8
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	44.4	25.3	20.7	23.4	0.3	61.3	32.1	4.5	40.8	50.0	39.8
Queue Length 50th (ft)	~140	383	33	233	0	82	34	0	86	84	61
Queue Length 95th (ft)	m118	m351	#90	293	0	#200	62	16	#144	#178	#217
Internal Link Dist (ft)		630		1233			420			420	
Turn Bay Length (ft)	140		200		200	185		185	170		
Base Capacity (vph)	273	2037	273	2038	773	265	419	401	319	274	439
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	1.00	0.76	0.62	0.83	0.12	0.90	0.39	0.41	0.78	0.73	0.89




























## 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.

2040AM No-Build\_SW 10th Street.syn

# 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)	250	1135	280	155	1550	85	220	150	150	230	185	360
Future Volume (vph)	250	1135	280	155	1550	85	220	150	150	230	185	360
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	4935		1770	5085	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.14	1.00		0.14	1.00	1.00	0.63	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	265	4935		265	5085	1583	1177	3539	1583	962	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)	272	1234	304	168	1685	92	239	163	163	250	201	391
RTOR Reduction (vph)	0	60	0	0	0	55	0	0	145	0	0	208
Lane Group Flow (vph)	272	1478	0	168	1685	37	239	163	18	250	201	183
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)	30.7	26.1		30.7	26.1	26.1	13.1	7.8	7.8	17.1	9.8	9.8
Effective Green, g (s)	34.7	28.1		34.7	28.1	28.1	13.1	7.8	7.8	17.1	9.8	9.8
Actuated g/C Ratio	0.50	0.40		0.50	0.40	0.40	0.19	0.11	0.11	0.24	0.14	0.14
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)	273	1981		273	2041	635	265	394	176	319	260	221
v/s Ratio Prot	c0.09	0.30		0.06	0.33		0.07	0.05		c0.08	0.11	
v/s Ratio Perm	c0.40			0.25		0.02	0.10		0.01	0.11		c0.12
v/c Ratio	1.00	0.75		0.62	0.83	0.06	0.90	0.41	0.10	0.78	0.77	0.83
Uniform Delay, d1	14.5	17.9		12.0	18.8	12.8	27.1	29.0	28.0	23.7	29.0	29.3
Progression Factor	2.17	1.48		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.4	0.2		2.9	4.0	0.2	30.3	0.3	0.1	11.0	12.2	20.8
Delay (s)	46.8	26.7		14.9	22.7	13.0	57.5	29.2	28.1	34.7	41.2	50.1
Level of Service	D	C		B	C	B	E	C	C	C	D	D
Approach Delay (s)		29.8			21.6			40.8			43.4	
Approach LOS		C			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			30.1	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			70.0	Sum of lost time (s)				20.2				
Intersection Capacity Utilization			82.6%	ICU Level of Service				E				
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)	397	1924	212	473	2571	554	223	717	391	272	967	538
v/c Ratio	1.30	0.90	0.27	0.84	1.46	0.61	1.03	1.13	0.73	1.11	1.45	1.10
Control Delay	198.9	39.1	3.5	43.8	234.8	7.3	123.4	120.3	20.0	139.5	247.7	96.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	198.9	39.1	3.5	43.8	234.8	7.3	123.4	120.3	20.0	139.5	247.7	96.8
Queue Length 50th (ft)	~202	502	0	170	~1476	133	-94	~337	58	~123	~537	~314
Queue Length 95th (ft)	#304	574	42	m165	m#1381	m124	#177	#461	178	#212	#668	#534
Internal Link Dist (ft)		880			1200			569			457	
Turn Bay Length (ft)	280		500	275			300		300	300		200
Base Capacity (vph)	306	2146	794	575	1757	914	217	637	535	246	666	489
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	1.30	0.90	0.27	0.82	1.46	0.61	1.03	1.13	0.73	1.11	1.45	1.10

## 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.

2040PM No-Build\_SW 10th Street.syn

# 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)	365	1770	195	435	2365	510	205	660	360	250	890	495
Future Volume (vph)	365	1770	195	435	2365	510	205	660	360	250	890	495
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)	397	1924	212	473	2571	554	223	717	391	272	967	538
RTOR Reduction (vph)	0	0	123	0	0	128	0	0	250	0	0	192
Lane Group Flow (vph)	397	1924	89	473	2571	426	223	717	141	272	967	346
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)	8.7	48.6	48.6	17.7	57.6	57.6	5.6	19.6	19.6	6.6	20.6	20.6
Effective Green, g (s)	10.7	50.6	50.6	19.7	59.6	59.6	7.6	21.6	21.6	8.6	22.6	22.6
Actuated g/C Ratio	0.09	0.42	0.42	0.16	0.50	0.50	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)	306	2144	667	563	1757	786	217	637	284	246	666	298
v/s Ratio Prot	c0.12	0.38		0.14	c0.73		0.06	c0.20		0.08	c0.27	
v/s Ratio Perm			0.06			0.27			0.09			0.22
v/c Ratio	1.30	0.90	0.13	0.84	1.46	0.54	1.03	1.13	0.50	1.11	1.45	1.16
Uniform Delay, d1	54.6	32.3	21.3	48.6	30.2	20.8	56.2	49.2	44.3	55.7	48.7	48.7
Progression Factor	1.00	1.00	1.00	0.86	0.92	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	155.9	6.4	0.4	1.1	208.8	0.2	68.5	75.5	1.4	88.6	211.7	103.6
Delay (s)	210.5	38.7	21.7	43.0	236.6	13.3	124.7	124.7	45.7	144.3	260.4	152.3
Level of Service	F	D	C	D	F	B	F	F	D	F	F	F
Approach Delay (s)		64.2			176.8			101.5			209.9	
Approach LOS		E			F			F			F	

Intersection Summary		
HCM 2000 Control Delay	141.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.44	F
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	122.5%	19.5
Analysis Period (min)	15	ICU Level of Service
		H

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)	82	2505	152	2815	125	194	197	478	62	63	402
v/c Ratio	0.57	0.86	0.78	1.04	0.16	0.77	0.78	1.18	0.34	0.34	1.20
Control Delay	41.7	12.7	89.2	51.4	1.1	69.8	70.6	129.2	54.9	54.9	137.0
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	41.7	12.7	89.2	51.4	1.1	69.8	70.6	129.2	54.9	54.9	137.0
Queue Length 50th (ft)	21	467	120	-890	0	153	156	-304	47	48	-229
Queue Length 95th (ft)	m30	m406	#222	#979	2	#272	#278	#517	94	96	#430
Internal Link Dist (ft)		700		595			420			170	
Turn Bay Length (ft)	600		550		295	100					
Base Capacity (vph)	143	2922	200	2703	792	252	253	406	184	185	336
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	0.57	0.86	0.76	1.04	0.16	0.77	0.78	1.18	0.34	0.34	1.20
























## 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.

2040PM 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)	75	2235	70	140	2590	115	350	10	440	110	5	370
Future Volume (vph)	75	2235	70	140	2590	115	350	10	440	110	5	370
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
Frt	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	0.95	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1597	6379		1770	5085	1369	1681	1690	1583	1665	1677	1417
Flt Permitted	0.07	1.00		0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.96	1.00
Satd. Flow (perm)	123	6379		1770	5085	1369	1681	1690	1583	1665	1677	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)	82	2429	76	152	2815	125	380	11	478	120	5	402
RTOR Reduction (vph)	0	3	0	0	0	60	0	0	169	0	0	180
Lane Group Flow (vph)	82	2502	0	152	2815	65	194	197	309	62	63	222
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)	56.6	52.9		11.3	60.5	60.5	18.0	18.0	18.0	13.3	13.3	13.3
Effective Green, g (s)	60.6	54.9		13.3	62.5	62.5	18.0	18.0	18.0	13.3	13.3	13.3
Actuated g/C Ratio	0.51	0.46		0.11	0.52	0.52	0.15	0.15	0.15	0.11	0.11	0.11
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)	132	2918		196	2648	713	252	253	237	184	185	157
v/s Ratio Prot	0.03	0.39		c0.09	c0.55		0.12	0.12	c0.20	0.04	0.04	c0.16
v/s Ratio Perm	0.29					0.05						
v/c Ratio	0.62	0.86		0.78	1.06	0.09	0.77	0.78	1.30	0.34	0.34	1.42
Uniform Delay, d1	26.8	29.1		51.9	28.8	14.5	49.0	49.1	51.0	49.3	49.3	53.4
Progression Factor	1.97	0.38		1.27	0.76	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	1.5		15.0	36.3	0.2	12.0	12.9	163.6	0.4	0.4	220.6
Delay (s)	55.7	12.6		80.9	58.3	5.2	61.0	61.9	214.6	49.7	49.7	273.9
Level of Service	E	B		F	E	A	E	E	F	D	D	F
Approach Delay (s)		13.9			57.3			145.7			220.7	
Approach LOS		B			E			F			F	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			64.5				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		20.5			
Intersection Capacity Utilization			96.3%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

2040PM No-Build\_SW 10th Street.syn



# Queues

	→	↘	↙	←
Lane Group	EBT	EBR	WBL	WBT
Lane Group Flow (vph)	2245	783	913	3092
v/c Ratio	0.83	0.49	1.45	0.48
Control Delay	8.9	1.9	231.4	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.9	1.9	231.4	0.2
Queue Length 50th (ft)	195	20	~916	0
Queue Length 95th (ft)	m256	m17	#1169	0
Internal Link Dist (ft)	595			250
Turn Bay Length (ft)				
Base Capacity (vph)	2712	1583	630	6408
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	910
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.49	1.45	0.56

## 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

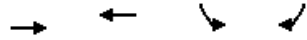
7: I-95 SB On-Ramp & SR 869/SW 10th Street

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑		
Traffic Volume (vph)	2065	720	840	2845	0	0
Future Volume (vph)	2065	720	840	2845	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	0.07	1.00		
Satd. Flow (perm)	5085	1583	125	6408		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2245	783	913	3092	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2245	783	913	3092	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)	60.1	120.0	94.7	120.0		
Effective Green, g (s)	64.1	120.0	98.2	120.0		
Actuated g/C Ratio	0.53	1.00	0.82	1.00		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2716	1583	631	6408		
v/s Ratio Prot	0.44		c0.47	0.48		
v/s Ratio Perm		0.49	c0.72			
v/c Ratio	0.83	0.49	1.45	0.48		
Uniform Delay, d1	23.3	0.0	35.8	0.0		
Progression Factor	0.59	1.00	0.83	1.00		
Incremental Delay, d2	0.9	0.5	207.6	0.2		
Delay (s)	14.7	0.5	237.2	0.2		
Level of Service	B	A	F	A		
Approach Delay (s)	11.0			54.2	0.0	
Approach LOS	B			D	A	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			35.6		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.45			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			93.5%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

2040PM 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)	2245	2712	337	1293
v/c Ratio	0.64	0.61	0.62	0.82
Control Delay	4.7	9.3	36.1	4.8
Queue Delay	0.4	0.1	0.0	2.3
Total Delay	5.1	9.4	36.1	7.0
Queue Length 50th (ft)	97	356	95	0
Queue Length 95th (ft)	173	m283	133	0
Internal Link Dist (ft)	250	635	1117	
Turn Bay Length (ft)			500	500
Base Capacity (vph)	3517	4432	543	1583
Starvation Cap Reductn	653	373	0	0
Spillback Cap Reductn	0	334	0	170
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.67	0.62	0.92

## Intersection Summary

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

# 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	2065	2495	0	310	1190
Future Volume (vph)	0	2065	2495	0	310	1190
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	2245	2712	0	337	1293
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2245	2712	0	337	1293
Turn Type		NA	NA		Prot	Free
Protected Phases		2 3 4	2 3 4		1 5	
Permitted Phases						Free
Actuated Green, G (s)		79.1	79.1		15.5	120.0
Effective Green, g (s)		78.7	78.7		19.5	120.0
Actuated g/C Ratio		0.66	0.66		0.16	1.00
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		3334	4202		557	1583
v/s Ratio Prot		0.44	0.42		0.10	
v/s Ratio Perm						c0.82
v/c Ratio		0.67	0.65		0.61	0.82
Uniform Delay, d1		12.7	12.3		46.7	0.0
Progression Factor		0.70	1.63		1.00	1.00
Incremental Delay, d2		0.2	0.1		1.3	4.8
Delay (s)		9.1	20.2		48.0	4.8
Level of Service		A	C		D	A
Approach Delay (s)		9.1	20.2		13.7	
Approach LOS		A	C		B	

## Intersection Summary

HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.8
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2040PM No-Build\_SW 10th Street.syn

# Queues

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1495	1087	348	1723	1189	539
v/c Ratio	1.19	0.69	0.89	0.71	1.12	1.20
Control Delay	119.5	6.2	54.5	17.3	106.4	144.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.5	6.2	54.5	17.3	106.4	144.8
Queue Length 50th (ft)	~719	233	278	168	~547	~554
Queue Length 95th (ft)	#864	150	m#371	m208	#681	#792
Internal Link Dist (ft)	635			630	537	
Turn Bay Length (ft)			275		200	200
Base Capacity (vph)	1253	1583	392	2436	1059	451
Starvation Cap Reductn	0	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	1.19	0.69	0.89	0.71	1.12	1.20

## 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)	1375	1000	320	1585	910	680
Future Volume (vph)	1375	1000	320	1585	910	680
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	0.97	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	1770	5085	3382	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	1770	5085	3382	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1495	1087	348	1723	989	739
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1495	1087	348	1723	1189	539
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)	40.5	120.0	24.6	55.6	35.6	35.6
Effective Green, g (s)	38.5	120.0	26.6	57.6	37.6	37.6
Actuated g/C Ratio	0.32	1.00	0.22	0.48	0.31	0.31
Clearance Time (s)			6.4		6.4	6.4
Vehicle Extension (s)			2.0		3.5	3.5
Lane Grp Cap (vph)	1135	1583	392	2440	1059	451
v/s Ratio Prot	c0.42		c0.20	0.34	0.35	c0.37
v/s Ratio Perm		0.69				
v/c Ratio	1.32	0.69	0.89	0.71	1.12	1.20
Uniform Delay, d1	40.8	0.0	45.3	24.5	41.2	41.2
Progression Factor	0.66	1.00	0.82	0.66	1.00	1.00
Incremental Delay, d2	147.6	1.9	13.2	0.5	67.9	107.7
Delay (s)	174.6	1.9	50.4	16.5	109.1	148.9
Level of Service	F	A	D	B	F	F
Approach Delay (s)	101.9			22.2	121.5	
Approach LOS	F			C	F	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			81.3		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.21			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	21.8
Intersection Capacity Utilization			99.9%		ICU Level of Service	F
Analysis Period (min)			15			

c Critical Lane Group

2040PM 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)	266	1967	239	1348	125	304	147	136	261	310	418
v/c Ratio	0.84	0.92	0.97	0.69	0.18	1.06	0.23	0.34	0.61	0.95	0.96
Control Delay	41.8	11.1	82.5	33.3	4.2	103.1	43.2	8.9	37.3	88.2	60.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	11.1	82.5	33.3	4.2	103.1	43.2	8.9	37.3	88.2	60.7
Queue Length 50th (ft)	145	238	137	323	0	~209	52	0	153	240	186
Queue Length 95th (ft)	m110	m167	#303	379	34	#392	83	51	230	#414	#390
Internal Link Dist (ft)		630		1233			420			420	
Turn Bay Length (ft)	140		200		200	185		185	170		
Base Capacity (vph)	339	2130	247	1965	695	287	648	404	440	330	439
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	0.78	0.92	0.97	0.69	0.18	1.06	0.23	0.34	0.59	0.94	0.95




























## 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.

2040PM No-Build\_SW 10th Street.syn

# 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)	245	1575	235	220	1240	115	280	135	125	240	285	385
Future Volume (vph)	245	1575	235	220	1240	115	280	135	125	240	285	385
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	4986		1770	5085	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.09	1.00		0.09	1.00	1.00	0.18	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	160	4986		161	5085	1583	339	3539	1583	1227	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)	266	1712	255	239	1348	125	304	147	136	261	310	418
RTOR Reduction (vph)	0	16	0	0	0	77	0	0	111	0	0	159
Lane Group Flow (vph)	266	1951	0	239	1348	48	304	147	25	261	310	259
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)	63.9	48.8		54.9	44.3	44.3	37.3	22.0	22.0	35.5	21.1	21.1
Effective Green, g (s)	67.8	50.8		58.9	46.3	46.3	37.3	22.0	22.0	35.5	21.1	21.1
Actuated g/C Ratio	0.56	0.42		0.49	0.39	0.39	0.31	0.18	0.18	0.30	0.18	0.18
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)	319	2110		247	1961	610	287	648	290	428	327	278
v/s Ratio Prot	c0.12	c0.39		c0.10	0.27		c0.13	0.04		0.07	0.17	
v/s Ratio Perm	0.35			0.37		0.03	c0.19		0.02	0.11		0.16
v/c Ratio	0.83	0.92		0.97	0.69	0.08	1.06	0.23	0.09	0.61	0.95	0.93
Uniform Delay, d1	31.8	32.8		34.8	30.8	23.3	36.0	41.8	40.7	34.9	48.9	48.7
Progression Factor	1.38	0.29		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.9		47.5	2.0	0.3	69.6	0.1	0.0	1.7	35.5	35.7
Delay (s)	45.6	10.5		82.3	32.8	23.6	105.6	41.8	40.7	36.6	84.4	84.4
Level of Service	D	B		F	C	C	F	D	D	D	F	F
Approach Delay (s)		14.7			39.0			74.6			71.8	
Approach LOS		B			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			38.8	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			120.0	Sum of lost time (s)				20.2				
Intersection Capacity Utilization			95.2%	ICU Level of Service				F				
Analysis Period (min)			15									

c Critical Lane Group

2040PM No-Build\_SW 10th Street.syn



# Queues

1: NW 5th Terr & SAMPLE ROAD

	→	↖	←	↗	↘
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2554	174	2011	158	207
v/c Ratio	0.60	0.79	0.53	0.69	0.54
Control Delay	17.9	78.8	2.1	64.9	11.3
Queue Delay	0.0	1.5	0.1	0.0	0.0
Total Delay	17.9	80.3	2.1	64.9	11.3
Queue Length 50th (ft)	298	104	37	119	0
Queue Length 95th (ft)	377	#237	32	181	65
Internal Link Dist (ft)	575		175	531	
Turn Bay Length (ft)					
Base Capacity (vph)	4279	221	3791	545	631
Starvation Cap Reductn	0	7	458	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.81	0.60	0.29	0.33

## Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis

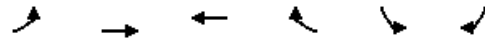
1: NW 5th Terr & SAMPLE ROAD

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	>		>	>	>	>
Traffic Volume (vph)	2235	115	160	1850	145	190
Future Volume (vph)	2235	115	160	1850	145	190
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)	7489		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	7489		1770	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2429	125	174	2011	158	207
RTOR Reduction (vph)	5	0	0	0	0	180
Lane Group Flow (vph)	2549	0	174	2011	158	27
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2 3		1	1 2 3	4	
Permitted Phases					4	4
Actuated Green, G (s)	66.5		13.0	87.5	15.5	15.5
Effective Green, g (s)	68.5		15.0	89.5	15.5	15.5
Actuated g/C Ratio	0.57		0.12	0.75	0.13	0.13
Clearance Time (s)			8.0		9.0	9.0
Vehicle Extension (s)			1.5		2.0	2.0
Lane Grp Cap (vph)	4274		221	3792	228	204
v/s Ratio Prot	c0.34		c0.10	0.40	c0.09	
v/s Ratio Perm						0.02
v/c Ratio	0.60		0.79	0.53	0.69	0.13
Uniform Delay, d1	16.8		51.0	6.4	50.0	46.3
Progression Factor	1.00		1.11	0.23	1.00	1.00
Incremental Delay, d2	0.2		14.0	0.1	7.1	0.1
Delay (s)	16.9		70.6	1.5	57.1	46.4
Level of Service	B		E	A	E	D
Approach Delay (s)	16.9			7.0	51.0	
Approach LOS	B			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			15.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			61.8%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

# Queues

2: SAMPLE ROAD & NW 5th Ave




















Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	103	2533	2005	92	272	179
v/c Ratio	0.78	0.53	0.50	0.09	0.61	0.53
Control Delay	70.9	2.7	11.1	1.4	54.8	16.1
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	70.9	2.7	11.1	1.4	54.8	16.1
Queue Length 50th (ft)	80	29	233	1	104	17
Queue Length 95th (ft)	m#174	46	298	m6	140	82
Internal Link Dist (ft)		175	1004		271	
Turn Bay Length (ft)				450		
Base Capacity (vph)	132	4778	3977	1017	1058	594
Starvation Cap Reductn	0	476	0	0	0	0
Spillback Cap Reductn	0	0	40	0	0	5
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.59	0.51	0.09	0.26	0.30

## 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)	95	2330	1845	85	250	165
Future Volume (vph)	95	2330	1845	85	250	165
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)	103	2533	2005	92	272	179
RTOR Reduction (vph)	0	0	0	35	0	134
Lane Group Flow (vph)	103	2533	2005	57	272	45
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	87.5	72.5	72.5	15.5	15.5
Effective Green, g (s)	9.0	89.5	74.5	74.5	15.5	15.5
Actuated g/C Ratio	0.08	0.75	0.62	0.62	0.13	0.13
Clearance Time (s)	8.0				9.0	9.0
Vehicle Extension (s)	1.5				2.0	2.0
Lane Grp Cap (vph)	132	4779	3978	982	443	204
v/s Ratio Prot	c0.06	c0.40	0.31		c0.08	
v/s Ratio Perm				0.04		0.03
v/c Ratio	0.78	0.53	0.50	0.06	0.61	0.22
Uniform Delay, d1	54.5	6.4	12.6	8.9	49.4	46.8
Progression Factor	0.71	0.34	0.82	0.55	1.00	1.00
Incremental Delay, d2	19.9	0.0	0.0	0.0	1.8	0.2
Delay (s)	58.5	2.2	10.3	4.9	51.2	47.0
Level of Service	E	A	B	A	D	D
Approach Delay (s)		4.4	10.1		49.5	
Approach LOS		A	B		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			10.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			56.6%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

# Queues












	→	↘	←	↙	↘
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	1717	1053	1500	526	579
v/c Ratio	0.48	0.67	0.53	0.59	0.80
Control Delay	6.3	10.1	7.9	22.5	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	10.1	7.9	22.5	30.9
Queue Length 50th (ft)	86	344	146	84	109
Queue Length 95th (ft)	159	486	168	127	#189
Internal Link Dist (ft)	1004		259		
Turn Bay Length (ft)		250			
Base Capacity (vph)	3567	1583	2830	909	738
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	0.48	0.67	0.53	0.58	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	1580	1000	0	1380	0	500	0	550	0	0	
Future Volume (vph)	0	1580	1000	0	1380	0	500	0	550	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	1717	1053	0	1500	0	526	0	579	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1717	1053	0	1500	0	526	0	579	0	0	
Turn Type		NA	Free		NA		Prot		Prot			
Protected Phases		6			2		3		3			
Permitted Phases			Free									
Actuated Green, G (s)		31.4	60.0		31.4		13.6		13.6			
Effective Green, g (s)		33.4	60.0		33.4		15.6		15.6			
Actuated g/C Ratio		0.56	1.00		0.56		0.26		0.26			
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)		3567	1583		2830		892		724			
v/s Ratio Prot		0.27			0.29		0.15		0.21			
v/s Ratio Perm			c0.67									
v/c Ratio		0.48	0.67		0.53		0.59		0.80			
Uniform Delay, d <sub>1</sub>		8.1	0.0		8.4		19.4		20.7			
Progression Factor		0.72	1.00		0.88		1.00		1.00			
Incremental Delay, d <sub>2</sub>		0.4	2.0		0.5		0.8		6.0			
Delay (s)		6.2	2.0		7.9		20.2		26.7			
Level of Service		A	A		A		C		C			
Approach Delay (s)		4.6			7.9			23.6		0.0		
Approach LOS		A			A			C		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			9.4								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			60.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			63.4%								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)	1293	1957	600	579	442
v/c Ratio	0.45	0.68	0.38	0.68	0.64
Control Delay	6.8	7.3	0.2	25.0	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	7.3	0.2	25.0	24.9
Queue Length 50th (ft)	111	172	0	95	79
Queue Length 95th (ft)	97	m160	m0	143	126
Internal Link Dist (ft)	270	1155			
Turn Bay Length (ft)			250		
Base Capacity (vph)	2895	2895	1583	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	0.45	0.68	0.38	0.65	0.61

## 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	1190	0	0	1800	570	550	0	420	0	0	
Future Volume (vph)	0	1190	0	0	1800	570	550	0	420	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	1293	0	0	1957	600	579	0	442	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	1293	0	0	1957	600	579	0	442	0	0	
Turn Type		NA			NA	Free	Prot		Prot			
Protected Phases		6			2		4		4			
Permitted Phases						Free						
Actuated Green, G (s)		32.2			32.2	60.0	12.8		12.8			
Effective Green, g (s)		34.2			34.2	60.0	14.8		14.8			
Actuated g/C Ratio		0.57			0.57	1.00	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)		2898			2898	1583	846		687			
v/s Ratio Prot		0.25			c0.38		c0.17		0.16			
v/s Ratio Perm						0.38						
v/c Ratio		0.45			0.68	0.38	0.68		0.64			
Uniform Delay, d1		7.4			9.0	0.0	20.5		20.2			
Progression Factor		0.84			0.75	1.00	1.00		1.00			
Incremental Delay, d2		0.4			0.3	0.2	2.1		1.8			
Delay (s)		6.7			7.1	0.2	22.6		22.1			
Level of Service		A			A	A	C		C			
Approach Delay (s)		6.7			5.5			22.4		0.0		
Approach LOS		A			A			C		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			9.3								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.68									
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

5: NE 3rd Ave & SAMPLE ROAD






























										
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	424	1326	60	1847	250	228	82	109	223	571
v/c Ratio	1.00	0.60	0.48	1.00	0.73	0.45	0.15	0.32	0.44	1.04
Control Delay	87.3	20.6	66.9	60.1	46.2	39.3	0.6	28.7	39.2	80.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.3	20.6	66.9	60.1	46.2	39.3	0.6	28.7	39.2	80.7
Queue Length 50th (ft)	168	252	45	-524	140	146	0	56	143	-381
Queue Length 95th (ft)	#281	307	91	#645	#224	225	0	98	219	#604
Internal Link Dist (ft)		1155		834		912			742	
Turn Bay Length (ft)	550		490		250		225	200		
Base Capacity (vph)	425	2194	131	1838	341	509	544	338	507	548
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	1.00	0.60	0.46	1.00	0.73	0.45	0.15	0.32	0.44	1.04

## 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

5: NE 3rd Ave & SAMPLE ROAD

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 			 	 	
Traffic Volume (vph)	390	1075	145	55	1615	85	230	210	75	100	205	525
Future Volume (vph)	390	1075	145	55	1615	85	230	210	75	100	205	525
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)	3400	4946		1752	4998		1752	1845	1568	1752	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.50	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	3400	4946		1752	4998		921	1845	1568	913	1845	1568
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)	424	1168	158	60	1755	92	250	228	82	109	223	571
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	59	0	0	117
Lane Group Flow (vph)	424	1312	0	60	1843	0	250	228	23	109	223	454
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
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)	13.0	49.5		5.5	42.0		39.1	33.1	33.1	38.9	33.0	33.0
Effective Green, g (s)	15.0	51.5		7.5	44.0		39.1	33.1	33.1	38.9	33.0	33.0
Actuated g/C Ratio	0.12	0.43		0.06	0.37		0.33	0.28	0.28	0.32	0.28	0.28
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)	425	2122		109	1832		341	508	432	337	507	431
v/s Ratio Prot	c0.12	0.27		0.03	c0.37		c0.04	0.12		0.02	0.12	
v/s Ratio Perm							0.20		0.01	0.09		c0.29
v/c Ratio	1.00	0.62		0.55	1.01		0.73	0.45	0.05	0.32	0.44	1.05
Uniform Delay, d1	52.5	26.6		54.6	38.0		36.0	35.9	31.9	29.4	35.9	43.5
Progression Factor	0.87	0.75		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.2	1.2		3.4	22.4		6.9	0.2	0.0	0.2	0.2	57.8
Delay (s)	86.0	21.2		58.0	60.4		42.9	36.1	31.9	29.6	36.1	101.3
Level of Service	F	C		E	E		D	D	C	C	D	F
Approach Delay (s)		36.9			60.3			38.5			76.5	
Approach LOS		D			E			D			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			52.8				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			92.5%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

2040AM No-Build\_Sample Road.syn

# Queues

1: NW 5th Terr & SAMPLE ROAD

	→	↖	←	↙	↗
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2777	272	2571	125	130
v/c Ratio	0.63	1.15	0.66	0.65	0.45
Control Delay	17.8	152.1	2.1	66.5	13.1
Queue Delay	0.0	1.0	0.3	0.0	0.0
Total Delay	17.8	153.1	2.4	66.5	13.1
Queue Length 50th (ft)	330	~239	45	94	0
Queue Length 95th (ft)	405	#413	33	152	56
Internal Link Dist (ft)	575		175	531	
Turn Bay Length (ft)					
Base Capacity (vph)	4375	236	3896	545	578
Starvation Cap Reductn	0	16	582	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.63	1.24	0.78	0.23	0.22

## 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.

2040PM No-Build\_Sample Road.syn

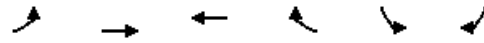
# HCM Signalized Intersection Capacity Analysis

1: NW 5th Terr & SAMPLE ROAD

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↘	↑↑↑	↘	↗
Traffic Volume (vph)	2460	95	250	2365	115	120
Future Volume (vph)	2460	95	250	2365	115	120
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)	7502		1770	5085	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	7502		1770	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2674	103	272	2571	125	130
RTOR Reduction (vph)	4	0	0	0	0	116
Lane Group Flow (vph)	2773	0	272	2571	125	14
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2 3		1	1 2 3	4	
Permitted Phases					4	4
Actuated Green, G (s)	68.0		14.0	90.0	13.0	13.0
Effective Green, g (s)	70.0		16.0	92.0	13.0	13.0
Actuated g/C Ratio	0.58		0.13	0.77	0.11	0.11
Clearance Time (s)			8.0		9.0	9.0
Vehicle Extension (s)			1.5		2.0	2.0
Lane Grp Cap (vph)	4376		236	3898	191	171
v/s Ratio Prot	0.37		c0.15	c0.51	c0.07	
v/s Ratio Perm						0.01
v/c Ratio	0.63		1.15	0.66	0.65	0.08
Uniform Delay, d1	16.5		52.0	6.6	51.3	48.1
Progression Factor	1.00		1.20	0.20	1.00	1.00
Incremental Delay, d2	0.2		98.8	0.2	6.0	0.1
Delay (s)	16.7		161.1	1.6	57.4	48.2
Level of Service	B		F	A	E	D
Approach Delay (s)	16.7			16.8	52.7	
Approach LOS	B			B	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			18.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.80			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			67.5%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

# Queues















Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	196	2609	2674	315	207	168
v/c Ratio	1.11	0.53	0.68	0.29	0.55	0.52
Control Delay	129.7	2.2	13.6	2.4	55.8	13.0
Queue Delay	0.0	0.1	0.1	0.0	0.0	0.1
Total Delay	129.7	2.2	13.7	2.4	55.8	13.1
Queue Length 50th (ft)	~174	25	266	7	79	0
Queue Length 95th (ft)	#326	38	393	m44	113	63
Internal Link Dist (ft)		175	1004		271	
Turn Bay Length (ft)				450		
Base Capacity (vph)	177	4910	3949	1096	1058	604
Starvation Cap Reductn	0	535	0	0	0	0
Spillback Cap Reductn	0	0	215	0	0	67
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.60	0.72	0.29	0.20	0.31

## 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

2: SAMPLE ROAD & NW 5th Ave

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	2400	2460	290	190	155
Future Volume (vph)	180	2400	2460	290	190	155
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)	196	2609	2674	315	207	168
RTOR Reduction (vph)	0	0	0	121	0	150
Lane Group Flow (vph)	196	2609	2674	194	207	18
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)	10.0	90.0	72.0	72.0	13.0	13.0
Effective Green, g (s)	12.0	92.0	74.0	74.0	13.0	13.0
Actuated g/C Ratio	0.10	0.77	0.62	0.62	0.11	0.11
Clearance Time (s)	8.0				9.0	9.0
Vehicle Extension (s)	1.5				2.0	2.0
Lane Grp Cap (vph)	177	4912	3951	976	371	171
v/s Ratio Prot	c0.11	0.41	c0.42		c0.06	
v/s Ratio Perm				0.12		0.01
v/c Ratio	1.11	0.53	0.68	0.20	0.56	0.11
Uniform Delay, d1	54.0	5.5	15.1	10.1	50.8	48.3
Progression Factor	0.70	0.31	0.83	1.52	1.00	1.00
Incremental Delay, d2	91.8	0.0	0.2	0.0	1.0	0.1
Delay (s)	129.6	1.8	12.7	15.3	51.8	48.4
Level of Service	F	A	B	B	D	D
Approach Delay (s)		10.7	13.0		50.3	
Approach LOS		B	B		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			14.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	27.0
Intersection Capacity Utilization			68.5%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

2040PM No-Build\_Sample Road.syn












# Queues

	→	↘	←	↙	↗
Lane Group	EBT	EBR	WBT	SBL2	SBR
Lane Group Flow (vph)	2054	737	2174	589	789
v/c Ratio	0.57	0.47	0.75	0.50	0.83
Control Delay	11.5	2.2	22.3	32.5	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	2.2	22.3	32.5	44.3
Queue Length 50th (ft)	136	19	451	182	311
Queue Length 95th (ft)	173	53	549	226	382
Internal Link Dist (ft)	1004		259		
Turn Bay Length (ft)		250			
Base Capacity (vph)	3631	1583	2881	1301	1056
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	0.47	0.75	0.45	0.75
<b>Intersection Summary</b>					

2040PM 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	1890	700	0	2000	0	560	0	750	0	0	
Future Volume (vph)	0	1890	700	0	2000	0	560	0	750	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	2054	737	0	2174	0	589	0	789	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	2054	737	0	2174	0	589	0	789	0	0	
Turn Type		NA	Free		NA		Prot		Prot			
Protected Phases		6			2		3		3			
Permitted Phases			Free									
Actuated Green, G (s)		66.0	120.0		66.0		39.0		39.0			
Effective Green, g (s)		68.0	120.0		68.0		41.0		41.0			
Actuated g/C Ratio		0.57	1.00		0.57		0.34		0.34			
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)		3631	1583		2881		1172		952			
v/s Ratio Prot		0.32			c0.43		0.17		c0.28			
v/s Ratio Perm			0.47									
v/c Ratio		0.57	0.47		0.75		0.50		0.83			
Uniform Delay, d <sub>1</sub>		16.6	0.0		19.7		31.4		36.3			
Progression Factor		0.64	1.00		1.02		1.00		1.00			
Incremental Delay, d <sub>2</sub>		0.6	0.9		1.2		0.2		5.9			
Delay (s)		11.1	0.9		21.3		31.6		42.2			
Level of Service		B	A		C		C		D			
Approach Delay (s)		8.4			21.3			37.7		0.0		
Approach LOS		A			C			D		A		
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.2								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			120.0								Sum of lost time (s)	11.0
Intersection Capacity Utilization			74.0%								ICU Level of Service	D
Analysis Period (min)			15									

c Critical Lane Group



# Queues












	→	←	↖	↗	
Lane Group	EBT	WBT	WBR	NBL2	NBR
Lane Group Flow (vph)	1880	1891	453	1200	705
v/c Ratio	0.75	0.76	0.29	0.84	0.61
Control Delay	18.3	24.0	0.2	37.4	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	24.0	0.2	37.4	29.5
Queue Length 50th (ft)	287	263	0	412	232
Queue Length 95th (ft)	339	m343	m0	488	292
Internal Link Dist (ft)	270	1155			
Turn Bay Length (ft)			250		
Base Capacity (vph)	2502	2502	1583	1530	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	0.75	0.76	0.29	0.78	0.57

## 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	1730	0	0	1740	430	1140	0	670	0	0
Future Volume (vph)	0	1730	0	0	1740	430	1140	0	670	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		
Flt		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	1880	0	0	1891	453	1200	0	705	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1880	0	0	1891	453	1200	0	705	0	0
Turn Type		NA			NA	Free	Prot		Prot		
Protected Phases		6			2		4		4		
Permitted Phases						Free					
Actuated Green, G (s)		57.1			57.1	120.0	47.9		47.9		
Effective Green, g (s)		59.1			59.1	120.0	49.9		49.9		
Actuated g/C Ratio		0.49			0.49	1.00	0.42		0.42		
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)		2504			2504	1583	1427		1158		
v/s Ratio Prot		0.37			c0.37		c0.35		0.25		
v/s Ratio Perm						0.29					
v/c Ratio		0.75			0.76	0.29	0.84		0.61		
Uniform Delay, d1		24.5			24.6	0.0	31.5		27.4		
Progression Factor		0.65			0.90	1.00	1.00		1.00		
Incremental Delay, d2		1.1			1.0	0.2	4.6		0.8		
Delay (s)		17.0			23.2	0.2	36.1		28.2		
Level of Service		B			C	A	D		C		
Approach Delay (s)		17.0			18.7			33.2		0.0	
Approach LOS		B			B			C		A	
<b>Intersection Summary</b>											
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.79								
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			11.0		
Intersection Capacity Utilization			66.0%			ICU Level of Service			C		
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)	511	2098	114	1820	261	337	120	87	266	418
v/c Ratio	0.99	0.86	0.97	0.90	1.12	0.84	0.23	0.50	0.69	0.84
Control Delay	92.4	23.3	130.5	41.1	130.1	63.2	1.1	38.8	53.3	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.4	23.3	130.5	41.1	130.1	63.2	1.1	38.8	53.3	36.4
Queue Length 50th (ft)	216	263	90	477	~184	251	0	48	191	155
Queue Length 95th (ft)	#329	#685	#210	#662	#314	336	0	81	265	267
Internal Link Dist (ft)		1155		834		912			742	
Turn Bay Length (ft)	550		490		250		225	200		
Base Capacity (vph)	514	2441	118	2030	233	512	593	176	496	582
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	0.99	0.86	0.97	0.90	1.12	0.66	0.20	0.49	0.54	0.72

## 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

5: NE 3rd Ave & SAMPLE ROAD

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 					 	 	
Traffic Volume (vph)	470	1715	215	105	1545	130	240	310	110	80	245	385
Future Volume (vph)	470	1715	215	105	1545	130	240	310	110	80	245	385
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
Frt	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	5026		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.33	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)	3433	5000		1770	5026		607	1863	1583	430	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)	511	1864	234	114	1679	141	261	337	120	87	266	418
RTOR Reduction (vph)	0	12	0	0	7	0	0	0	94	0	0	173
Lane Group Flow (vph)	511	2086	0	114	1813	0	261	337	26	87	266	245
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)	16.0	56.3		6.0	46.3		32.9	25.9	25.9	30.5	24.7	24.7
Effective Green, g (s)	18.0	58.3		8.0	48.3		32.9	25.9	25.9	30.5	24.7	24.7
Actuated g/C Ratio	0.15	0.49		0.07	0.40		0.27	0.22	0.22	0.25	0.21	0.21
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)	514	2429		118	2022		234	402	341	174	383	325
v/s Ratio Prot	c0.15	c0.42		0.06	0.36		c0.07	0.18		0.02	0.14	
v/s Ratio Perm							c0.24		0.02	0.10		0.15
v/c Ratio	0.99	0.86		0.97	0.90		1.12	0.84	0.08	0.50	0.69	0.75
Uniform Delay, d1	50.9	27.2		55.9	33.5		43.1	45.0	37.5	36.1	44.2	44.8
Progression Factor	1.20	0.70		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.7	3.0		71.2	6.7		93.3	13.6	0.0	0.8	4.4	8.5
Delay (s)	92.8	22.1		127.1	40.3		136.4	58.6	37.5	36.9	48.5	53.3
Level of Service	F	C		F	D		F	E	D	D	D	D
Approach Delay (s)		36.0			45.4			83.4			49.8	
Approach LOS		D			D			F			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			46.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			90.7%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group