

Appendix F: Synchro Model Measures of Effectiveness

HCM Signalized Intersection Capacity Analysis
27: N. Oak St. & Wilson Blvd

Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↑↑	↑		↑			↑		
Traffic Volume (vph)	0	0	0	0	431	73	133	78	0	0	117	71	
Future Volume (vph)	0	0	0	0	431	73	133	78	0	0	117	71	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	16	12	12	12	12	
Grade (%)		0%			5%			0%			0%		
Total Lost time (s)					7.0	7.0		6.5			7.0		
Lane Util. Factor					0.95	1.00		1.00			1.00		
Frbp, ped/bikes					1.00	0.74		1.00			0.95		
Flpb, ped/bikes					1.00	1.00		1.00			1.00		
Frt					1.00	0.85		1.00			0.95		
Flt Protected					1.00	1.00		0.97			1.00		
Satd. Flow (prot)					3409	1145		2047			1518		
Flt Permitted					1.00	1.00		0.10			1.00		
Satd. Flow (perm)					3409	1145		205			1518		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	0	0	0	431	73	133	78	0	0	117	71	
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	431	29	0	211	0	0	188	0	
Confl. Peds. (#/hr)				101		119	87					87	
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0	
Parking (#/hr)											0	0	
Turn Type					NA	Perm	Perm	NA			NA		
Protected Phases					3			14			4		
Permitted Phases						3	14						
Actuated Green, G (s)					36.0	36.0		40.5			28.0		
Effective Green, g (s)					36.0	36.0		33.5			28.0		
Actuated g/C Ratio					0.40	0.40		0.37			0.31		
Clearance Time (s)					7.0	7.0					7.0		
Lane Grp Cap (vph)					1363	458		76			472		
v/s Ratio Prot					c0.13						0.12		
v/s Ratio Perm						0.03		c1.03					
v/c Ratio					0.32	0.06		2.78			0.40		
Uniform Delay, d1					18.5	16.6		28.2			24.4		
Progression Factor					1.38	6.52		1.87			1.05		
Incremental Delay, d2					0.6	0.2		802.7			2.5		
Delay (s)					26.1	108.6		855.6			28.1		
Level of Service					C	F		F			C		
Approach Delay (s)		0.0			38.0			855.6			28.1		
Approach LOS		A			D			F			C		
Intersection Summary													
HCM 2000 Control Delay			227.0		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.50										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					20.5			
Intersection Capacity Utilization			64.4%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
28: N. Pierce St. & Wilson Blvd

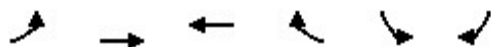
Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↕↕	↗	
Traffic Volume (vph)	0	0	93	268	208	0
Future Volume (vph)	0	0	93	268	208	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12
Grade (%)	0%			2%	-2%	
Total Lost time (s)				7.0	7.0	
Lane Util. Factor				0.95	1.00	
Frbp, ped/bikes				1.00	1.00	
Flpb, ped/bikes				0.95	1.00	
Frt				1.00	1.00	
Flt Protected				0.99	0.95	
Satd. Flow (prot)				3080	1769	
Flt Permitted				0.99	0.95	
Satd. Flow (perm)				3080	1769	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	93	268	208	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	361	208	0
Confl. Peds. (#/hr)			84		65	74
Bus Blockages (#/hr)	0	0	0	6	0	0
Parking (#/hr)			0	0	0	
Turn Type			Perm	NA	Prot	
Protected Phases				2	4	
Permitted Phases			2			
Actuated Green, G (s)				55.0	21.0	
Effective Green, g (s)				55.0	21.0	
Actuated g/C Ratio				0.61	0.23	
Clearance Time (s)				7.0	7.0	
Lane Grp Cap (vph)				1882	412	
v/s Ratio Prot					c0.12	
v/s Ratio Perm				0.12		
v/c Ratio				0.19	0.50	
Uniform Delay, d1				7.7	30.0	
Progression Factor				0.85	1.06	
Incremental Delay, d2				0.2	3.8	
Delay (s)				6.7	35.6	
Level of Service				A	D	
Approach Delay (s)	0.0			6.7	35.6	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			17.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.28			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	14.0
Intersection Capacity Utilization			39.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
29: Wilson Blvd & N. Quinn St.
























Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↗		↗
Traffic Volume (vph)	0	0	267	209	0	138
Future Volume (vph)	0	0	267	209	0	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		0%	0%		-2%	
Total Lost time (s)			7.0	7.0		6.0
Lane Util. Factor			0.95	1.00		1.00
Frbp, ped/bikes			1.00	0.78		1.00
Flpb, ped/bikes			1.00	1.00		1.00
Frt			1.00	0.85		0.86
Flt Protected			1.00	1.00		1.00
Satd. Flow (prot)			3362	1108		1465
Flt Permitted			1.00	1.00		1.00
Satd. Flow (perm)			3362	1108		1465
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	267	209	0	138
RTOR Reduction (vph)	0	0	0	86	0	0
Lane Group Flow (vph)	0	0	267	123	0	138
Confl. Peds. (#/hr)				101		18
Parking (#/hr)			0	0		0
Turn Type			NA	Perm		Prot
Protected Phases			2			4
Permitted Phases				2		
Actuated Green, G (s)			53.0	53.0		24.0
Effective Green, g (s)			53.0	53.0		24.0
Actuated g/C Ratio			0.59	0.59		0.27
Clearance Time (s)			7.0	7.0		6.0
Lane Grp Cap (vph)			1979	652		390
v/s Ratio Prot			0.08			c0.09
v/s Ratio Perm				c0.11		
v/c Ratio			0.13	0.19		0.35
Uniform Delay, d1			8.3	8.6		26.7
Progression Factor			1.41	5.05		1.13
Incremental Delay, d2			0.1	0.6		2.3
Delay (s)			11.8	43.8		32.6
Level of Service			B	D		C
Approach Delay (s)		0.0	25.9		32.6	
Approach LOS		A	C		C	
Intersection Summary						
HCM 2000 Control Delay			27.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.24			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			48.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						
























HCM Signalized Intersection Capacity Analysis
30: N. Rhodes St. & Wilson Blvd

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			  	  
Traffic Volume (vph)	0	0	0	41	263	21	76	89	0	0	156	25
Future Volume (vph)	0	0	0	41	263	21	76	89	0	0	156	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	15	12	12	12	12
Grade (%)		0%			0%			0%			3%	
Total Lost time (s)					5.5			5.5			5.5	5.5
Lane Util. Factor					0.95			1.00			1.00	1.00
Frbp, ped/bikes					0.99			1.00			1.00	0.98
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					0.99			0.98			1.00	1.00
Satd. Flow (prot)					3216			1998			1835	1531
Flt Permitted					0.99			0.81			1.00	1.00
Satd. Flow (perm)					3216			1663			1835	1531
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	41	263	21	76	89	0	0	156	25
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	320	0	0	165	0	0	156	13
Confl. Peds. (#/hr)				36		83	5					5
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					30.5			48.5			48.5	48.5
Effective Green, g (s)					30.5			48.5			48.5	48.5
Actuated g/C Ratio					0.34			0.54			0.54	0.54
Clearance Time (s)					5.5			5.5			5.5	5.5
Lane Grp Cap (vph)					1089			896			988	825
v/s Ratio Prot											0.09	
v/s Ratio Perm					0.10			c0.10				0.01
v/c Ratio					0.29			0.18			0.16	0.02
Uniform Delay, d1					21.8			10.6			10.5	9.7
Progression Factor					0.99			2.27			1.00	1.00
Incremental Delay, d2					0.7			0.4			0.3	0.0
Delay (s)					22.3			24.6			10.8	9.7
Level of Service					C			C			B	A
Approach Delay (s)		0.0			22.3			24.6			10.6	
Approach LOS		A			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.7		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)					11.0		
Intersection Capacity Utilization			60.1%		ICU Level of Service						B	
Analysis Period (min)			15									
c Critical Lane Group												
















HCM Signalized Intersection Capacity Analysis
31: N. Rhodes St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 							 	 	 		
Traffic Volume (vph)	41	825	22	0	0	0	0	124	242	64	133	0	
Future Volume (vph)	41	825	22	0	0	0	0	124	242	64	133	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	11	9	12	11	12	
Grade (%)		-6%			0%			4%			0%		
Total Lost time (s)	6.5	6.5						5.5	5.5	5.5	5.5		
Lane Util. Factor	1.00	0.95						1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	1.00						1.00	0.96	1.00	1.00		
Flpb, ped/bikes	0.97	1.00						1.00	1.00	0.98	1.00		
Frt	1.00	1.00						1.00	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1777	3385						1588	1205	1553	1621		
Flt Permitted	0.95	1.00						1.00	1.00	0.68	1.00		
Satd. Flow (perm)	1777	3385						1588	1205	1107	1621		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	41	825	22	0	0	0	0	124	242	64	133	0	
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	119	0	0	0	
Lane Group Flow (vph)	41	845	0	0	0	0	0	124	123	64	133	0	
Confl. Peds. (#/hr)	14		50						23	23			
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)		0	0					0	0	0	0		
Turn Type	Perm	NA						NA	Perm	Perm	NA		
Protected Phases		2						4			4		
Permitted Phases	2								4	4			
Actuated Green, G (s)	56.5	56.5						21.5	21.5	21.5	21.5		
Effective Green, g (s)	56.5	56.5						21.5	21.5	21.5	21.5		
Actuated g/C Ratio	0.63	0.63						0.24	0.24	0.24	0.24		
Clearance Time (s)	6.5	6.5						5.5	5.5	5.5	5.5		
Lane Grp Cap (vph)	1115	2125						379	287	264	387		
v/s Ratio Prot		c0.25						0.08			0.08		
v/s Ratio Perm	0.02								c0.10	0.06			
v/c Ratio	0.04	0.40						0.33	0.43	0.24	0.34		
Uniform Delay, d1	6.4	8.3						28.3	29.0	27.7	28.4		
Progression Factor	1.00	1.00						1.00	1.00	1.05	1.05		
Incremental Delay, d2	0.1	0.6						2.3	4.6	2.1	2.4		
Delay (s)	6.4	8.9						30.6	33.6	31.2	32.3		
Level of Service	A	A						C	C	C	C		
Approach Delay (s)		8.8			0.0			32.6			32.0		
Approach LOS		A			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			17.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.41										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	12.0
Intersection Capacity Utilization			59.9%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													




















HCM Signalized Intersection Capacity Analysis
 34: N. Pierce St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
 Existing Conditions

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	197	1059	25	0	0	0	0	92	75	52	36	0		
Future Volume (vph)	197	1059	25	0	0	0	0	92	75	52	36	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	12	12	12	12	12	12	12	11	12	12	14	12		
Grade (%)		2%			0%			3%			-3%			
Total Lost time (s)		5.5						5.5			5.5			
Lane Util. Factor		0.95						1.00			1.00			
Frbp, ped/bikes		0.99						0.96			1.00			
Flpb, ped/bikes		0.99						1.00			0.97			
Frt		1.00						0.94			1.00			
Flt Protected		0.99						1.00			0.97			
Satd. Flow (prot)		3176						1608			1709			
Flt Permitted		0.99						1.00			0.76			
Satd. Flow (perm)		3176						1608			1333			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	197	1059	25	0	0	0	0	92	75	52	36	0		
RTOR Reduction (vph)	0	1	0	0	0	0	0	32	0	0	0	0		
Lane Group Flow (vph)	0	1280	0	0	0	0	0	135	0	0	88	0		
Confl. Peds. (#/hr)	40		115						55	55				
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0		
Parking (#/hr)		0									0			
Turn Type	Perm	NA						NA		Perm	NA			
Protected Phases		2						4			4			
Permitted Phases	2									4				
Actuated Green, G (s)		56.5						22.5			22.5			
Effective Green, g (s)		56.5						22.5			22.5			
Actuated g/C Ratio		0.63						0.25			0.25			
Clearance Time (s)		5.5						5.5			5.5			
Lane Grp Cap (vph)		1993						402			333			
v/s Ratio Prot								c0.08						
v/s Ratio Perm		0.40									0.07			
v/c Ratio		0.64						0.34			0.26			
Uniform Delay, d1		10.4						27.6			27.1			
Progression Factor		1.79						1.00			1.09			
Incremental Delay, d2		1.5						2.2			1.9			
Delay (s)		20.2						29.9			31.5			
Level of Service		C						C			C			
Approach Delay (s)		20.2			0.0			29.9			31.5			
Approach LOS		C			A			C			C			
Intersection Summary														
HCM 2000 Control Delay			21.9									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.55											
Actuated Cycle Length (s)			90.0								11.0			
Intersection Capacity Utilization			72.8%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														
















HCM Signalized Intersection Capacity Analysis
36: N. Oak St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	136	818	2	0	0	0	0	75	36	70	47	0	
Future Volume (vph)	136	818	2	0	0	0	0	75	36	70	47	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	11	12	12	12	12	12	12	12	12	16	12	
Grade (%)		-5%			0%			0%			0%		
Total Lost time (s)	6.5	7.0						7.0		7.0	7.0		
Lane Util. Factor	1.00	0.95						1.00		1.00	1.00		
Frpb, ped/bikes	1.00	1.00						0.87		1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00		0.67	1.00		
Frt	1.00	1.00						0.96		1.00	1.00		
Flt Protected	0.95	1.00						1.00		0.95	1.00		
Satd. Flow (prot)	1524	2995						1261		1069	1710		
Flt Permitted	0.95	1.00						1.00		0.69	1.00		
Satd. Flow (perm)	1524	2995						1261		771	1710		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	136	818	2	0	0	0	0	75	36	70	47	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	0	0	0	0	
Lane Group Flow (vph)	136	820	0	0	0	0	0	92	0	70	47	0	
Confl. Peds. (#/hr)	119		101						558	558			
Parking (#/hr)		0						0	0		0		
Turn Type	Prot	NA						NA		Perm	NA		
Protected Phases	1	5						4			4		
Permitted Phases										4			
Actuated Green, G (s)	5.5	48.0						28.0		28.0	28.0		
Effective Green, g (s)	5.5	48.0						28.0		28.0	28.0		
Actuated g/C Ratio	0.06	0.53						0.31		0.31	0.31		
Clearance Time (s)	6.5	7.0						7.0		7.0	7.0		
Lane Grp Cap (vph)	93	1597						392		239	532		
v/s Ratio Prot	c0.09	c0.27						0.07			0.03		
v/s Ratio Perm										c0.09			
v/c Ratio	1.46	0.51						0.23		0.29	0.09		
Uniform Delay, d1	42.2	13.5						23.0		23.5	22.0		
Progression Factor	1.08	0.90						1.00		0.10	0.11		
Incremental Delay, d2	249.1	0.9						1.4		2.9	0.3		
Delay (s)	294.6	13.1						24.4		5.3	2.7		
Level of Service	F	B						C		A	A		
Approach Delay (s)		53.1			0.0			24.4			4.2		
Approach LOS		D			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			45.6									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.52										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	20.5
Intersection Capacity Utilization			54.4%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
 32: N. Quinn St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
 Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1075	10	0	0	0	0	26	25	71	22	0
Future Volume (Veh/h)	46	1075	10	0	0	0	0	26	25	71	22	0
Sign Control		Free			Free			Stop			Stop	
Grade		2%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	46	1075	10	0	0	0	0	26	25	71	22	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		407			544							
pX, platoon unblocked				0.88			0.88	0.88	0.88	0.88	0.88	
vC, conflicting volume	0			1085			1183	1172	542	668	1177	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			835			946	934	222	363	939	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	89	96	84	90	100
cM capacity (veh/h)	1622			702			173	227	691	432	226	1084
Direction, Lane #	EB 1	EB 2	NB 1	SB 1								
Volume Total	584	548	51	93								
Volume Left	46	0	0	71								
Volume Right	0	10	25	0								
cSH	1622	1700	339	355								
Volume to Capacity	0.03	0.32	0.15	0.26								
Queue Length 95th (ft)	2	0	13	26								
Control Delay (s)	0.9	0.0	17.5	18.7								
Lane LOS	A		C	C								
Approach Delay (s)	0.4		17.5	18.7								
Approach LOS			C	C								
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			49.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 33: N. Queen St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
 Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↗
Traffic Volume (veh/h)	1156	15	0	0	0	125
Future Volume (Veh/h)	1156	15	0	0	0	125
Sign Control	Free			Free Stop		
Grade	2%			0% 0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1156	15	0	0	0	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	739			212		
pX, platoon unblocked				0.91	0.91	0.91
vC, conflicting volume				1171	1164	586
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				994	986	352
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	79
cM capacity (veh/h)				630	223	587
Direction, Lane #	EB 1	EB 2	NB 1			
Volume Total	771	400	125			
Volume Left	0	0	0			
Volume Right	0	15	125			
cSH	1700	1700	587			
Volume to Capacity	0.45	0.24	0.21			
Queue Length 95th (ft)	0	0	20			
Control Delay (s)	0.0	0.0	12.8			
Lane LOS			B			
Approach Delay (s)	0.0		12.8			
Approach LOS			B			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			46.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
35: N. Ode St. & Clarendon Blvd.

















Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↗
Traffic Volume (veh/h)	1176	10	0	0	0	8
Future Volume (Veh/h)	1176	10	0	0	0	8
Sign Control	Free			Free Stop		
Grade	-5%			0% 0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1176	10	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)	314					
pX, platoon unblocked			0.78		0.78	0.78
vC, conflicting volume			1186		1181	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			674		668	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			712		305	846
Direction, Lane #	EB 1	EB 2	NB 1			
Volume Total	784	402	8			
Volume Left	0	0	0			
Volume Right	0	10	8			
cSH	1700	1700	846			
Volume to Capacity	0.46	0.24	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	9.3			
Lane LOS			A			
Approach Delay (s)	0.0		9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			42.8%	ICU Level of Service		A
Analysis Period (min)			15			

















HCM Unsignalized Intersection Capacity Analysis
37: N. Oak St. & 17th St.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	139	36	10	0	18	0	59	38	30	19	0
Future Volume (Veh/h)	34	139	36	10	0	18	0	59	38	30	19	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	34	139	36	10	0	18	0	59	38	30	19	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											199	
pX, platoon unblocked												
vC, conflicting volume	175	176	19	262	157	78	19			97		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	175	176	19	262	157	78	19			97		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	80	97	98	100	98	100			98		
cM capacity (veh/h)	761	703	1059	557	720	983	1597			1496		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	209	28	97	49								
Volume Left	34	10	0	30								
Volume Right	36	18	38	0								
cSH	756	772	1700	1496								
Volume to Capacity	0.28	0.04	0.06	0.02								
Queue Length 95th (ft)	28	3	0	2								
Control Delay (s)	11.6	9.8	0.0	4.6								
Lane LOS	B	A		A								
Approach Delay (s)	11.6	9.8	0.0	4.6								
Approach LOS	B	A										
Intersection Summary												
Average Delay			7.6									
Intersection Capacity Utilization			28.4%		ICU Level of Service				A			
Analysis Period (min)			15									

















HCM Unsignalized Intersection Capacity Analysis
38: N. Rhodes St. & 16th St. N.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	15	40	1	3	30	17	319	15	11	137	7
Future Volume (Veh/h)	17	15	40	1	3	30	17	319	15	11	137	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	17	15	40	1	3	30	17	319	15	11	137	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											344	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	554	530	140	570	526	326	144			334		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	508	482	73	524	478	326	77			334		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	97	96	100	99	96	99			99		
cM capacity (veh/h)	425	451	942	406	454	715	1450			1225		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	34	351	155								
Volume Left	17	1	17	11								
Volume Right	40	30	15	7								
cSH	622	666	1450	1225								
Volume to Capacity	0.12	0.05	0.01	0.01								
Queue Length 95th (ft)	10	4	1	1								
Control Delay (s)	11.5	10.7	0.5	0.6								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.5	10.7	0.5	0.6								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			39.8%		ICU Level of Service				A			
Analysis Period (min)			15									

















HCM Unsignalized Intersection Capacity Analysis
 39: N. Queen St./N. Rhodes St. & 14th St. N.

Core of Rosslyn Transportation Study
 Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	31	206	77	21	190	45	49	275	199	84	75	19
Future Volume (vph)	31	206	77	21	190	45	49	275	199	84	75	19
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	31	206	77	21	190	45	49	275	199	84	75	19
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	314	256	523	178								
Volume Left (vph)	31	21	49	84								
Volume Right (vph)	77	45	199	19								
Hadj (s)	-0.09	-0.06	-0.18	0.06								
Departure Headway (s)	6.9	7.1	6.2	7.3								
Degree Utilization, x	0.60	0.50	0.91	0.36								
Capacity (veh/h)	495	476	564	441								
Control Delay (s)	19.7	17.1	42.6	14.5								
Approach Delay (s)	19.7	17.1	42.6	14.5								
Approach LOS	C	C	E	B								
Intersection Summary												
Delay			27.9									
Level of Service			D									
Intersection Capacity Utilization			61.8%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
40: N. Queen St. & Arlington Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	390	51	10	3	2	43	0	90	9	137	31	5
Future Volume (vph)	390	51	10	3	2	43	0	90	9	137	31	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	390	51	10	3	2	43	0	90	9	137	31	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	451	48	99	173								
Volume Left (vph)	390	3	0	137								
Volume Right (vph)	10	43	9	5								
Hadj (s)	0.19	-0.49	-0.02	0.18								
Departure Headway (s)	4.9	4.8	5.5	5.5								
Degree Utilization, x	0.62	0.06	0.15	0.27								
Capacity (veh/h)	705	669	593	596								
Control Delay (s)	15.6	8.2	9.5	10.5								
Approach Delay (s)	15.6	8.2	9.5	10.5								
Approach LOS	C	A	A	B								
Intersection Summary												
Delay			13.2									
Level of Service			B									
Intersection Capacity Utilization			54.4%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis
27: N. Oak St. & Wilson Blvd

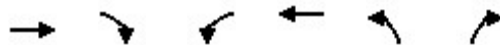
Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↑↑	↑		↑			↑		
Traffic Volume (vph)	0	0	0	0	555	64	89	59	0	0	74	42	
Future Volume (vph)	0	0	0	0	555	64	89	59	0	0	74	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	16	12	12	12	12	
Grade (%)		0%			5%			0%			0%		
Total Lost time (s)					5.5	4.0		6.5			7.0		
Lane Util. Factor					0.95	1.00		1.00			1.00		
Frbp, ped/bikes					1.00	0.74		1.00			0.95		
Flpb, ped/bikes					1.00	1.00		1.00			1.00		
Frt					1.00	0.85		1.00			0.95		
Flt Protected					1.00	1.00		0.97			1.00		
Satd. Flow (prot)					3409	1145		2049			1518		
Flt Permitted					1.00	1.00		0.10			1.00		
Satd. Flow (perm)					3409	1145		206			1518		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	0	0	0	555	64	89	59	0	0	74	42	
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	0	
Lane Group Flow (vph)	0	0	0	0	555	28	0	148	0	0	116	0	
Confl. Peds. (#/hr)				101		119	87					87	
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0	
Parking (#/hr)											0	0	
Turn Type					NA	Perm	Perm	NA			NA		
Protected Phases					3			1 4			4		
Permitted Phases						3	1 4						
Actuated Green, G (s)					37.5	37.5		40.5			28.0		
Effective Green, g (s)					37.5	39.0		33.5			28.0		
Actuated g/C Ratio					0.42	0.43		0.37			0.31		
Clearance Time (s)					5.5	5.5					7.0		
Lane Grp Cap (vph)					1420	496		76			472		
v/s Ratio Prot					c0.16						0.08		
v/s Ratio Perm						0.02		c0.72					
v/c Ratio					0.39	0.06		1.95			0.25		
Uniform Delay, d1					18.3	14.8		28.2			23.1		
Progression Factor					1.27	31.28		2.01			0.95		
Incremental Delay, d2					0.7	0.2		451.6			1.2		
Delay (s)					23.9	463.4		508.4			23.2		
Level of Service					C	F		F			C		
Approach Delay (s)		0.0			69.4			508.4			23.2		
Approach LOS		A			E			F			C		
Intersection Summary													
HCM 2000 Control Delay			136.9		HCM 2000 Level of Service						F		
HCM 2000 Volume to Capacity ratio			1.12										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						19.0		
Intersection Capacity Utilization			44.6%		ICU Level of Service						A		
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
28: N. Pierce St. & Wilson Blvd

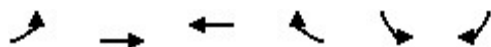
Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↕↕	↗	
Traffic Volume (vph)	0	0	218	633	234	0
Future Volume (vph)	0	0	218	633	234	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	15	12
Grade (%)	0%			2%	-2%	
Total Lost time (s)				5.0	7.0	
Lane Util. Factor				0.95	1.00	
Frbp, ped/bikes				1.00	1.00	
Flpb, ped/bikes				0.95	1.00	
Frt				1.00	1.00	
Flt Protected				0.99	0.95	
Satd. Flow (prot)				3082	1769	
Flt Permitted				0.99	0.95	
Satd. Flow (perm)				3082	1769	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	218	633	234	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	851	234	0
Confl. Peds. (#/hr)			84		65	74
Bus Blockages (#/hr)	0	0	0	6	0	0
Parking (#/hr)			0	0	0	
Turn Type			Perm	NA	Prot	
Protected Phases				2	4	
Permitted Phases			2			
Actuated Green, G (s)				55.0	21.0	
Effective Green, g (s)				57.0	21.0	
Actuated g/C Ratio				0.63	0.23	
Clearance Time (s)				7.0	7.0	
Lane Grp Cap (vph)				1951	412	
v/s Ratio Prot					c0.13	
v/s Ratio Perm				0.28		
v/c Ratio				0.44	0.57	
Uniform Delay, d1				8.4	30.5	
Progression Factor				1.26	0.74	
Incremental Delay, d2				0.7	5.5	
Delay (s)				11.2	28.0	
Level of Service				B	C	
Approach Delay (s)	0.0			11.2	28.0	
Approach LOS	A			B	C	
Intersection Summary						
HCM 2000 Control Delay			14.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			51.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
29: Wilson Blvd & N. Quinn St.
























Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↗		↘
Traffic Volume (vph)	0	0	541	326	0	284
Future Volume (vph)	0	0	541	326	0	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		0%	0%		-2%	
Total Lost time (s)			7.0	4.0		6.0
Lane Util. Factor			0.95	1.00		1.00
Frbp, ped/bikes			1.00	0.61		1.00
Flpb, ped/bikes			1.00	1.00		1.00
Frt			1.00	0.85		0.86
Flt Protected			1.00	1.00		1.00
Satd. Flow (prot)			3362	874		1465
Flt Permitted			1.00	1.00		1.00
Satd. Flow (perm)			3362	874		1465
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	541	326	0	284
RTOR Reduction (vph)	0	0	0	75	0	0
Lane Group Flow (vph)	0	0	541	251	0	284
Confl. Peds. (#/hr)				101		18
Parking (#/hr)			0	0		0
Turn Type			NA	Perm		Prot
Protected Phases			2			4
Permitted Phases				2		
Actuated Green, G (s)			53.0	53.0		97.0
Effective Green, g (s)			53.0	56.0		97.0
Actuated g/C Ratio			0.33	0.34		0.60
Clearance Time (s)			7.0	7.0		6.0
Lane Grp Cap (vph)			1093	300		871
v/s Ratio Prot			0.16			c0.19
v/s Ratio Perm				c0.29		
v/c Ratio			0.49	0.84		0.33
Uniform Delay, d1			44.2	49.2		16.6
Progression Factor			1.00	1.00		1.00
Incremental Delay, d2			1.6	23.2		1.0
Delay (s)			45.8	72.4		17.6
Level of Service			D	E		B
Approach Delay (s)		0.0	55.8		17.6	
Approach LOS		A	E		B	
Intersection Summary						
HCM 2000 Control Delay			46.4		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			163.0		Sum of lost time (s)	13.0
Intersection Capacity Utilization			110.0%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
30: N. Rhodes St. & Wilson Blvd

Core of Rosslyn Transportation Study
Existing Conditions

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					  			 			  	  	
Traffic Volume (vph)	0	0	0	136	616	48	85	81	0	0	55	22	
Future Volume (vph)	0	0	0	136	616	48	85	81	0	0	55	22	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	15	12	12	12	12	
Grade (%)		0%			0%			0%			3%		
Total Lost time (s)					5.5			5.5			5.5	5.5	
Lane Util. Factor					0.95			1.00			1.00	1.00	
Frbp, ped/bikes					0.99			1.00			1.00	0.98	
Flpb, ped/bikes					0.99			1.00			1.00	1.00	
Frt					0.99			1.00			1.00	0.85	
Flt Protected					0.99			0.98			1.00	1.00	
Satd. Flow (prot)					3208			1992			1835	1531	
Flt Permitted					0.99			0.84			1.00	1.00	
Satd. Flow (perm)					3208			1707			1835	1531	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	0	0	136	616	48	85	81	0	0	55	22	
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	10	
Lane Group Flow (vph)	0	0	0	0	795	0	0	166	0	0	55	12	
Confl. Peds. (#/hr)				36		83	5					5	
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0	
Parking (#/hr)				0	0	0							
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			4			4		
Permitted Phases				2			4					4	
Actuated Green, G (s)					31.5			47.5			47.5	47.5	
Effective Green, g (s)					31.5			47.5			47.5	47.5	
Actuated g/C Ratio					0.35			0.53			0.53	0.53	
Clearance Time (s)					5.5			5.5			5.5	5.5	
Lane Grp Cap (vph)					1122			900			968	808	
v/s Ratio Prot											0.03		
v/s Ratio Perm					0.25			0.10				0.01	
v/c Ratio					0.71			0.18			0.06	0.01	
Uniform Delay, d1					25.3			11.1			10.3	10.1	
Progression Factor					1.00			0.56			1.00	1.00	
Incremental Delay, d2					3.8			0.4			0.1	0.0	
Delay (s)					29.1			6.7			10.5	10.1	
Level of Service					C			A			B	B	
Approach Delay (s)		0.0			29.1			6.7			10.4		
Approach LOS		A			C			A			B		
Intersection Summary													
HCM 2000 Control Delay			24.1		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.39										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						11.0		
Intersection Capacity Utilization			63.0%		ICU Level of Service						B		
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
31: N. Rhodes St. & Clarendon Blvd.
















Core of Rosslyn Transportation Study
Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	43	479	43	0	0	0	0	123	135	55	136	0	
Future Volume (vph)	43	479	43	0	0	0	0	123	135	55	136	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	11	9	12	11	12	
Grade (%)		-6%			0%			4%			0%		
Total Lost time (s)	6.5	6.5						5.5	5.5	5.5	5.5		
Lane Util. Factor	1.00	0.95						1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	0.99						1.00	0.96	1.00	1.00		
Flpb, ped/bikes	0.97	1.00						1.00	1.00	0.98	1.00		
Frt	1.00	0.99						1.00	0.85	1.00	1.00		
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1777	3336						1588	1205	1553	1621		
Flt Permitted	0.95	1.00						1.00	1.00	0.68	1.00		
Satd. Flow (perm)	1777	3336						1588	1205	1108	1621		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	43	479	43	0	0	0	0	123	135	55	136	0	
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	98	0	0	0	
Lane Group Flow (vph)	43	515	0	0	0	0	0	123	37	55	136	0	
Confl. Peds. (#/hr)	14		50						23	23			
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)		0	0					0	0	0	0		
Turn Type	Perm	NA						NA	Perm	Perm	NA		
Protected Phases		2						4			4		
Permitted Phases	2								4	4			
Actuated Green, G (s)	53.5	53.5						24.5	24.5	24.5	24.5		
Effective Green, g (s)	53.5	53.5						24.5	24.5	24.5	24.5		
Actuated g/C Ratio	0.59	0.59						0.27	0.27	0.27	0.27		
Clearance Time (s)	6.5	6.5						5.5	5.5	5.5	5.5		
Lane Grp Cap (vph)	1056	1983						432	328	301	441		
v/s Ratio Prot		c0.15						0.08			c0.08		
v/s Ratio Perm	0.02								0.03	0.05			
v/c Ratio	0.04	0.26						0.28	0.11	0.18	0.31		
Uniform Delay, d1	7.6	8.8						25.8	24.6	25.1	26.0		
Progression Factor	1.00	1.00						1.00	1.00	1.30	1.32		
Incremental Delay, d2	0.1	0.3						1.7	0.7	1.2	1.6		
Delay (s)	7.7	9.1						27.5	25.3	33.7	35.8		
Level of Service	A	A						C	C	C	D		
Approach Delay (s)		9.0			0.0			26.3			35.2		
Approach LOS		A			A			C			D		
Intersection Summary													
HCM 2000 Control Delay			18.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.27										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	12.0
Intersection Capacity Utilization			57.1%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 34: N. Pierce St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
 Existing Conditions

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	141	584	42	0	0	0	0	48	43	145	118	0	
Future Volume (vph)	141	584	42	0	0	0	0	48	43	145	118	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	11	12	12	14	12	
Grade (%)		2%			0%			3%			-3%		
Total Lost time (s)		5.5						5.5			5.5		
Lane Util. Factor		0.95						1.00			1.00		
Frbp, ped/bikes		0.98						0.96			1.00		
Flpb, ped/bikes		0.98						1.00			0.97		
Frt		0.99						0.94			1.00		
Flt Protected		0.99						1.00			0.97		
Satd. Flow (prot)		3113						1599			1708		
Flt Permitted		0.99						1.00			0.78		
Satd. Flow (perm)		3113						1599			1367		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	141	584	42	0	0	0	0	48	43	145	118	0	
RTOR Reduction (vph)	0	5	0	0	0	0	0	31	0	0	0	0	
Lane Group Flow (vph)	0	762	0	0	0	0	0	60	0	0	263	0	
Confl. Peds. (#/hr)	40		115						55	55			
Bus Blockages (#/hr)	0	8	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)		0									0		
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						4			4		
Permitted Phases	2									4			
Actuated Green, G (s)		54.5						24.5			24.5		
Effective Green, g (s)		54.5						24.5			24.5		
Actuated g/C Ratio		0.61						0.27			0.27		
Clearance Time (s)		5.5						5.5			5.5		
Lane Grp Cap (vph)		1885						435			372		
v/s Ratio Prot								0.04					
v/s Ratio Perm		0.24									c0.19		
v/c Ratio		0.40						0.14			0.71		
Uniform Delay, d1		9.3						24.8			29.5		
Progression Factor		1.42						1.00			0.62		
Incremental Delay, d2		0.6						0.7			10.4		
Delay (s)		13.8						25.4			28.6		
Level of Service		B						C			C		
Approach Delay (s)		13.8			0.0			25.4			28.6		
Approach LOS		B			A			C			C		
Intersection Summary													
HCM 2000 Control Delay			18.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			52.0%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													
















HCM Signalized Intersection Capacity Analysis
36: N. Oak St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	101	640	3	0	0	0	0	47	43	51	23	0	
Future Volume (vph)	101	640	3	0	0	0	0	47	43	51	23	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	10	11	12	12	12	12	12	12	12	12	16	12	
Grade (%)		-5%			0%			0%			0%		
Total Lost time (s)	6.5	6.0						7.0		7.0	7.0		
Lane Util. Factor	1.00	0.95						1.00		1.00	1.00		
Frpb, ped/bikes	1.00	1.00						0.81		1.00	1.00		
Flpb, ped/bikes	1.00	1.00						1.00		0.65	1.00		
Frt	1.00	1.00						0.94		1.00	1.00		
Flt Protected	0.95	1.00						1.00		0.95	1.00		
Satd. Flow (prot)	1524	2993						1140		1032	1710		
Flt Permitted	0.95	1.00						1.00		0.70	1.00		
Satd. Flow (perm)	1524	2993						1140		759	1710		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	101	640	3	0	0	0	0	47	43	51	23	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	30	0	0	0	0	
Lane Group Flow (vph)	101	643	0	0	0	0	0	60	0	51	23	0	
Confl. Peds. (#/hr)	119		101							558	558		
Parking (#/hr)		0						0	0		0		
Turn Type	Prot	NA						NA		Perm	NA		
Protected Phases	1	5						4			4		
Permitted Phases										4			
Actuated Green, G (s)	5.5	49.0						28.0		28.0	28.0		
Effective Green, g (s)	5.5	49.0						28.0		28.0	28.0		
Actuated g/C Ratio	0.06	0.54						0.31		0.31	0.31		
Clearance Time (s)	6.5	6.0						7.0		7.0	7.0		
Lane Grp Cap (vph)	93	1629						354		236	532		
v/s Ratio Prot	c0.07	c0.21						0.05			0.01		
v/s Ratio Perm										c0.07			
v/c Ratio	1.09	0.39						0.17		0.22	0.04		
Uniform Delay, d1	42.2	11.9						22.6		22.9	21.6		
Progression Factor	1.15	0.87						1.00		0.11	0.11		
Incremental Delay, d2	114.9	0.7						1.0		2.1	0.2		
Delay (s)	163.4	11.0						23.6		4.5	2.5		
Level of Service	F	B						C		A	A		
Approach Delay (s)		31.7			0.0			23.6			3.9		
Approach LOS		C			A			C			A		
Intersection Summary													
HCM 2000 Control Delay			28.6									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.39										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	19.0
Intersection Capacity Utilization			46.5%									ICU Level of Service	A
Analysis Period (min)			15										
c	Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
32: N. Quinn St. & Clarendon Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	625	13	0	0	0	0	17	12	91	57	0
Future Volume (Veh/h)	31	625	13	0	0	0	0	17	12	91	57	0
Sign Control		Free			Free			Stop			Stop	
Grade		2%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	31	625	13	0	0	0	0	17	12	91	57	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		407			544							
pX, platoon unblocked				0.95			0.95	0.95	0.95	0.95	0.95	0.95
vC, conflicting volume	0			638			722	694	319	395	700	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			516			604	574	181	260	581	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	96	98	85	86	100
cM capacity (veh/h)	1622			995			318	399	790	599	395	1084
Direction, Lane #	EB 1	EB 2	NB 1	SB 1								
Volume Total	344	326	29	148								
Volume Left	31	0	0	91								
Volume Right	0	13	12	0								
cSH	1622	1700	501	500								
Volume to Capacity	0.02	0.19	0.06	0.30								
Queue Length 95th (ft)	1	0	5	31								
Control Delay (s)	0.8	0.0	12.6	15.2								
Lane LOS	A		B	C								
Approach Delay (s)	0.4		12.6	15.2								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			40.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
33: N. Queen St. & Clarendon Blvd.

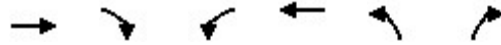
Core of Rosslyn Transportation Study
Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↗
Traffic Volume (veh/h)	696	32	0	0	0	71
Future Volume (Veh/h)	696	32	0	0	0	71
Sign Control	Free			Free Stop		
Grade	2%			0% 0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	696	32	0	0	0	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	739			212		
pX, platoon unblocked						
vC, conflicting volume				728	712	364
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				728	712	364
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	89
cM capacity (veh/h)				871	367	633
Direction, Lane #	EB 1	EB 2	NB 1			
Volume Total	464	264	71			
Volume Left	0	0	0			
Volume Right	0	32	71			
cSH	1700	1700	633			
Volume to Capacity	0.27	0.16	0.11			
Queue Length 95th (ft)	0	0	9			
Control Delay (s)	0.0	0.0	11.4			
Lane LOS						
Approach Delay (s)	0.0		11.4			
Approach LOS						
Intersection Summary						
Average Delay						
			1.0			
Intersection Capacity Utilization			31.3%		ICU Level of Service	
Analysis Period (min)			15		A	

HCM Unsignalized Intersection Capacity Analysis
 35: N. Ode St. & Clarendon Blvd.

















Core of Rosslyn Transportation Study
 Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑					↗
Traffic Volume (veh/h)	766	6	0	0	0	11
Future Volume (Veh/h)	766	6	0	0	0	11
Sign Control	Free			Free Stop		
Grade	-5%			0% 0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	766	6	0	0	0	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	314					
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			772		769	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			578		575	158
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			912		413	790
Direction, Lane #	EB 1	EB 2	NB 1			
Volume Total	511	261	11			
Volume Left	0	0	0			
Volume Right	0	6	11			
cSH	1700	1700	790			
Volume to Capacity	0.30	0.15	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	9.6			
Lane LOS			A			
Approach Delay (s)	0.0		9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			31.4%	ICU Level of Service		A
Analysis Period (min)			15			

















HCM Unsignalized Intersection Capacity Analysis
37: N. Oak St. & 17th St.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	40	29	22	0	22	0	59	12	8	18	0
Future Volume (Veh/h)	9	40	29	22	0	22	0	59	12	8	18	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	9	40	29	22	0	22	0	59	12	8	18	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											199	
pX, platoon unblocked												
vC, conflicting volume	121	105	18	148	99	65	18			71		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	121	105	18	148	99	65	18			71		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	95	97	97	100	98	100			99		
cM capacity (veh/h)	832	781	1061	764	787	999	1599			1529		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	78	44	71	26								
Volume Left	9	22	0	8								
Volume Right	29	22	12	0								
cSH	873	866	1700	1529								
Volume to Capacity	0.09	0.05	0.04	0.01								
Queue Length 95th (ft)	7	4	0	0								
Control Delay (s)	9.5	9.4	0.0	2.3								
Lane LOS	A	A		A								
Approach Delay (s)	9.5	9.4	0.0	2.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			5.6									
Intersection Capacity Utilization			22.4%		ICU Level of Service				A			
Analysis Period (min)			15									

















HCM Unsignalized Intersection Capacity Analysis
38: N. Rhodes St. & 16th St. N.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	11	33	8	13	22	7	230	13	9	149	21
Future Volume (Veh/h)	6	11	33	8	13	22	7	230	13	9	149	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	6	11	33	8	13	22	7	230	13	9	149	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												344
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	456	434	160	466	438	236	170			243		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	407	383	95	417	388	236	106			243		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	96	98	97	97	100			99		
cM capacity (veh/h)	501	519	917	490	516	802	1417			1323		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	43	250	179								
Volume Left	6	8	7	9								
Volume Right	33	22	13	21								
cSH	723	624	1417	1323								
Volume to Capacity	0.07	0.07	0.00	0.01								
Queue Length 95th (ft)	6	6	0	1								
Control Delay (s)	10.3	11.2	0.3	0.4								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.3	11.2	0.3	0.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			
Analysis Period (min)			15									

















HCM Unsignalized Intersection Capacity Analysis
 39: N. Queen St./N. Rhodes St. & 14th St. N.

Core of Rosslyn Transportation Study
 Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	140	70	38	157	66	57	161	124	68	88	34
Future Volume (vph)	23	140	70	38	157	66	57	161	124	68	88	34
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	23	140	70	38	157	66	57	161	124	68	88	34
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	233	261	342	190								
Volume Left (vph)	23	38	57	68								
Volume Right (vph)	70	66	124	34								
Hadj (s)	-0.13	-0.09	-0.15	0.00								
Departure Headway (s)	5.9	5.8	5.6	6.0								
Degree Utilization, x	0.38	0.42	0.53	0.32								
Capacity (veh/h)	551	559	597	519								
Control Delay (s)	12.4	13.0	14.8	11.8								
Approach Delay (s)	12.4	13.0	14.8	11.8								
Approach LOS	B	B	B	B								
Intersection Summary												
Delay			13.2									
Level of Service			B									
Intersection Capacity Utilization			49.3%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
40: N. Queen St. & Arlington Blvd.

Core of Rosslyn Transportation Study
Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	250	54	31	5	5	32	0	60	11	103	70	23
Future Volume (vph)	250	54	31	5	5	32	0	60	11	103	70	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	250	54	31	5	5	32	0	60	11	103	70	23
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	335	42	71	196								
Volume Left (vph)	250	5	0	103								
Volume Right (vph)	31	32	11	23								
Hadj (s)	0.13	-0.40	-0.06	0.07								
Departure Headway (s)	4.8	4.6	5.1	5.0								
Degree Utilization, x	0.44	0.05	0.10	0.27								
Capacity (veh/h)	719	702	646	668								
Control Delay (s)	11.6	7.9	8.6	9.9								
Approach Delay (s)	11.6	7.9	8.6	9.9								
Approach LOS	B	A	A	A								
Intersection Summary												
Delay			10.5									
Level of Service			B									
Intersection Capacity Utilization			49.4%	ICU Level of Service	A							
Analysis Period (min)			15									