

Wisconsin Avenue Giant
7: Newark Street & 38th Street NW

Existing Saturday (Mid-Day)
Sept '08 Counts



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Volume (veh/h)	3	27	35	84	35	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	29	38	91	38	24
Pedestrians		4	7		29	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		0	1		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158				156	117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158				156	117
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	97
cM capacity (veh/h)	1387				809	910
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	33	129	62			
Volume Left	3	0	38			
Volume Right	0	91	24			
cSH	1387	1700	845			
Volume to Capacity	0.00	0.08	0.07			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.8	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s)	0.8	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization		23.0%		ICU Level of Service		A
Analysis Period (min)		15				

Wisconsin Avenue Giant
8: Woodley Road & 38th Street NW

Existing Saturday (Mid-Day)
Sept '08 Counts

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	18	3	14	29	23	0	21	21	29	14	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	20	3	15	32	25	0	23	23	32	15	3
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	24	72	46	50								
Volume Left (vph)	1	15	0	32								
Volume Right (vph)	3	25	23	3								
Hadj (s)	-0.04	-0.13	-0.27	0.12								
Departure Headway (s)	4.1	4.0	3.9	4.3								
Degree Utilization, x	0.03	0.08	0.05	0.06								
Capacity (veh/h)	842	876	891	820								
Control Delay (s)	7.3	7.3	7.1	7.5								
Approach Delay (s)	7.3	7.3	7.1	7.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.3								
HCM Level of Service				A								
Intersection Capacity Utilization				27.3%	ICU Level of Service	A						
Analysis Period (min)				15								

Wisconsin Avenue Giant
9: Newark Street & Idaho Avenue

Existing Saturday (Mid-Day)
Sept '08 Counts

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	17	17	49	44	0	37	0	54	26	58	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	18	18	53	48	0	40	0	59	28	63	20
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	37	101	99	111								
Volume Left (vph)	0	53	40	28								
Volume Right (vph)	18	0	59	20								
Hadj (s)	-0.27	0.14	-0.24	-0.02								
Departure Headway (s)	4.2	4.5	4.1	4.3								
Degree Utilization, x	0.04	0.13	0.11	0.13								
Capacity (veh/h)	803	747	837	795								
Control Delay (s)	7.4	8.2	7.6	8.0								
Approach Delay (s)	7.4	8.2	7.6	8.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.9								
HCM Level of Service				A								
Intersection Capacity Utilization				32.1%	ICU Level of Service	A						
Analysis Period (min)				15								

Wisconsin Avenue Giant
10: Macomb Street & Idaho Avenue

Existing Saturday (Mid-Day)
Sept '08 Counts

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	119	0	0	89	15	33	78	29	19	0	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	129	0	0	97	16	36	85	32	21	0	105
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	166	113	152	126								
Volume Left (vph)	37	0	36	21								
Volume Right (vph)	0	16	32	105								
Hadj (s)	0.08	-0.05	-0.04	-0.43								
Departure Headway (s)	4.8	4.7	4.7	4.4								
Degree Utilization, x	0.22	0.15	0.20	0.15								
Capacity (veh/h)	702	706	718	763								
Control Delay (s)	9.1	8.5	8.9	8.1								
Approach Delay (s)	9.1	8.5	8.9	8.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.7								
HCM Level of Service				A								
Intersection Capacity Utilization				35.7%	ICU Level of Service	A						
Analysis Period (min)				15								

Wisconsin Avenue Giant
11: Macomb Street & 39th Street

Existing Saturday (Mid-Day)
Sept '08 Counts

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	156	1	56	117	13	0	0	0	3	33	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	170	1	61	127	14	0	0	0	3	36	40
Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total (vph)	198	202	79									
Volume Left (vph)	27	61	3									
Volume Right (vph)	1	14	40									
Hadj (s)	0.06	0.05	-0.26									
Departure Headway (s)	4.4	4.4	4.5									
Degree Utilization, x	0.24	0.24	0.10									
Capacity (veh/h)	803	798	731									
Control Delay (s)	8.7	8.8	8.0									
Approach Delay (s)	8.7	8.8	8.0									
Approach LOS	A	A	A									
Intersection Summary												
Delay			8.6									
HCM Level of Service			A									
Intersection Capacity Utilization			32.8%			ICU Level of Service				A		
Analysis Period (min)			15									

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future AM
Improvement

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	889	107	23	1714	151	86	6	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0				
Lane Util. Factor		0.95	1.00		0.91			1.00				
Frpb, ped/bikes		1.00	0.90		0.99			1.00				
Flpb, ped/bikes		1.00	1.00		1.00			1.00				
Frt		1.00	0.85		0.99			0.99				
Flt Protected		1.00	1.00		1.00			0.96				
Satd. Flow (prot)		3181	1279		4468			1595				
Flt Permitted		0.84	1.00		0.92			0.96				
Satd. Flow (perm)		2664	1279		4092			1595				
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)	23	966	116	25	1863	164	93	7	5	0	0	0
RTOR Reduction (vph)	0	0	13	0	10	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	989	103	0	2042	0	0	103	0	0	0	0
Confl. Peds. (#/hr)	39		27	27		39						
Turn Type	Perm		Perm	Perm			Perm					
Protected Phases		2			6			4				
Permitted Phases	2		2	6			4					
Actuated Green, G (s)		71.0	71.0		71.0			17.0				
Effective Green, g (s)		71.0	71.0		71.0			17.0				
Actuated g/C Ratio		0.71	0.71		0.71			0.17				
Clearance Time (s)		6.0	6.0		6.0			6.0				
Lane Grp Cap (vph)		1891	908		2905			271				
v/s Ratio Prot												
v/s Ratio Perm		0.37	0.08		0.50			0.06				
v/c Ratio		0.52	0.11		0.70			0.38				
Uniform Delay, d1		6.7	4.6		8.4			36.8				
Progression Factor		0.74	0.53		1.64			1.00				
Incremental Delay, d2		0.8	0.2		0.9			4.0				
Delay (s)		5.8	2.6		14.6			40.9				
Level of Service		A	A		B			D				
Approach Delay (s)		5.5			14.6			40.9			0.0	
Approach LOS		A			B			D			A	
Intersection Summary												
HCM Average Control Delay			12.4			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			75.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future AM
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	58	98	49	61	21	35	936	5	26	1566	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00			0.95	1.00		0.91	
Frpb, ped/bikes		0.98			0.99			1.00	0.89		0.99	
Flpb, ped/bikes		0.99			0.99			1.00	1.00		1.00	
Frt		0.94			0.98			1.00	0.85		0.99	
Flt Protected		0.99			0.98			1.00	1.00		1.00	
Satd. Flow (prot)		1508			1587			3179	1270		4509	
Flt Permitted		0.90			0.79			0.79	1.00		0.91	
Satd. Flow (perm)		1380			1279			2525	1270		4089	
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)	54	63	107	53	66	23	38	1017	5	28	1702	65
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	224	0	0	142	0	0	1055	5	0	1795	0
Confl. Peds. (#/hr)	22		17	17		22	69		29	29		69
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		25.0			25.0			65.0	65.0		65.0	
Effective Green, g (s)		26.0			26.0			66.0	66.0		66.0	
Actuated g/C Ratio		0.26			0.26			0.66	0.66		0.66	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)		359			333			1667	838		2699	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.11			0.42	0.00		c0.44	
v/c Ratio		0.62			0.43			0.63	0.01		0.67	
Uniform Delay, d1		32.7			30.8			9.9	5.8		10.3	
Progression Factor		1.00			0.93			0.13	0.20		1.44	
Incremental Delay, d2		7.9			3.7			0.8	0.0		1.0	
Delay (s)		40.6			32.3			2.0	1.2		15.8	
Level of Service		D			C			A	A		B	
Approach Delay (s)		40.6			32.3			2.0			15.8	
Approach LOS		D			C			A			B	
Intersection Summary												
HCM Average Control Delay		13.8										
HCM Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		79.7%							D			
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future AM
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	240	81	59	126	32	81	939	40	63	1610	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00			0.95	1.00		0.91	
Frpb, ped/bikes		0.99			0.99			1.00	0.88		1.00	
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	
Frt		0.97			0.98			1.00	0.85		1.00	
Flt Protected		1.00			0.99			1.00	1.00		1.00	
Satd. Flow (prot)		1596			1608			3173	1252		4545	
Flt Permitted		0.97			0.66			0.60	1.00		0.82	
Satd. Flow (perm)		1554			1079			1907	1252		3745	
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)	26	261	88	64	137	35	88	1021	43	68	1750	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	375	0	0	236	0	0	1109	43	0	1842	0
Confl. Peds. (#/hr)	22		21	21		22	62		33	33		62
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		27.0			27.0			63.0	63.0		63.0	
Effective Green, g (s)		28.0			28.0			64.0	64.0		64.0	
Actuated g/C Ratio		0.28			0.28			0.64	0.64		0.64	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)		435			302			1220	801		2397	
v/s Ratio Prot												
v/s Ratio Perm		c0.24			0.22			c0.58	0.03		0.49	
v/c Ratio		0.86			0.78			1.00dl	0.05		0.77	
Uniform Delay, d1		34.2			33.2			15.5	6.7		12.8	
Progression Factor		1.00			1.03			1.00	1.00		1.18	
Incremental Delay, d2		19.6			18.0			11.5	0.1		1.8	
Delay (s)		53.8			52.2			27.0	6.8		16.8	
Level of Service		D			D			C	A		B	
Approach Delay (s)		53.8			52.2			26.2			16.8	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM Average Control Delay		26.0										
HCM Volume to Capacity ratio		0.89										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		110.1%							H			
Analysis Period (min)		15										

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future AM Improvement
NBL Lead & PED

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	889	107	23	1714	151	86	6	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0				
Lane Util. Factor		0.95	1.00		0.91			1.00				
Frpb, ped/bikes		1.00	0.89		0.99			1.00				
Flpb, ped/bikes		1.00	1.00		1.00			1.00				
Frt		1.00	0.85		0.99			0.99				
Flt Protected		1.00	1.00		1.00			0.96				
Satd. Flow (prot)		3182	1273		4465			1595				
Flt Permitted		0.84	1.00		0.91			0.96				
Satd. Flow (perm)		2678	1273		4085			1595				
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)	23	966	116	25	1863	164	93	7	5	0	0	0
RTOR Reduction (vph)	0	0	12	0	10	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	989	104	0	2042	0	0	103	0	0	0	0
Confl. Peds. (#/hr)	39		27	27		39						
Turn Type	pm+pt		Perm	Perm			Perm					
Protected Phases	5	2			6			4				
Permitted Phases	2		2	6			4					
Actuated Green, G (s)		71.0	71.0		63.0			17.0				
Effective Green, g (s)		71.0	71.0		63.0			17.0				
Actuated g/C Ratio		0.68	0.68		0.60			0.16				
Clearance Time (s)		6.0	6.0		6.0			6.0				
Lane Grp Cap (vph)		1830	861		2451			258				
v/s Ratio Prot		c0.02										
v/s Ratio Perm		0.34	0.08		c0.50			0.06				
v/c Ratio		0.54	0.12		0.83			0.40				
Uniform Delay, d1		8.7	6.0		16.8			39.4				
Progression Factor		0.67	0.43		1.00			1.00				
Incremental Delay, d2		0.9	0.2		3.5			4.6				
Delay (s)		6.7	2.8		20.3			44.0				
Level of Service		A	A		C			D				
Approach Delay (s)		6.3			20.3			44.0			0.0	
Approach LOS		A			C			D			A	
Intersection Summary												
HCM Average Control Delay			16.3			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			23.0			
Intersection Capacity Utilization			75.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future AM Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	58	98	49	61	21	35	936	5	26	1566	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00			0.95	1.00		0.91	
Frpb, ped/bikes		0.98			0.99			1.00	0.89		0.99	
Flpb, ped/bikes		0.99			0.99			1.00	1.00		1.00	
Frt		0.94			0.98			1.00	0.85		0.99	
Flt Protected		0.99			0.98			1.00	1.00		1.00	
Satd. Flow (prot)		1506			1586			3180	1264		4507	
Flt Permitted		0.90			0.77			0.78	1.00		0.90	
Satd. Flow (perm)		1371			1249			2473	1264		4081	
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)	54	63	107	53	66	23	38	1017	5	28	1702	65
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	224	0	0	142	0	0	1055	5	0	1795	0
Confl. Peds. (#/hr)	22		17	17		22	69		29	29		69
Turn Type	Perm			Perm			pm+pt		Perm	Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		25.0			25.0			65.0	65.0		57.0	
Effective Green, g (s)		26.0			26.0			66.0	66.0		58.0	
Actuated g/C Ratio		0.25			0.25			0.63	0.63		0.55	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)		339			309			1588	795		2254	
v/s Ratio Prot								c0.03				
v/s Ratio Perm		c0.16			0.11			0.39	0.00		c0.44	
v/c Ratio		0.66			0.46			0.66	0.01		0.80	
Uniform Delay, d1		35.5			33.5			12.4	7.3		18.8	
Progression Factor		1.00			1.00			0.12	0.16		1.50	
Incremental Delay, d2		9.7			4.9			0.6	0.0		1.9	
Delay (s)		45.3			38.4			2.0	1.2		30.1	
Level of Service		D			D			A	A		C	
Approach Delay (s)		45.3			38.4			2.0			30.1	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM Average Control Delay		22.3										
HCM Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		105.0							17.0			
Intersection Capacity Utilization		79.7%										
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future AM Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	240	81	59	126	32	81	939	40	63	1610	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00			1.00			0.95	1.00		0.91	
Frpb, ped/bikes		0.99			0.99			1.00	0.87		1.00	
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	
Frt		0.97			0.98			1.00	0.85		1.00	
Flt Protected		1.00			0.99			1.00	1.00		1.00	
Satd. Flow (prot)		1596			1608			3173	1245		4544	
Flt Permitted		0.97			0.66			0.57	1.00		0.82	
Satd. Flow (perm)		1552			1079			1807	1245		3751	
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)	26	261	88	64	137	35	88	1021	43	68	1750	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	375	0	0	236	0	0	1109	43	0	1842	0
Confl. Peds. (#/hr)	22		21	21		22	62		33	33		62
Turn Type	Perm			Perm			pm+pt		Perm	Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		28.8			28.8			61.2	61.2		53.2	
Effective Green, g (s)		29.8			29.8			62.2	62.2		54.2	
Actuated g/C Ratio		0.28			0.28			0.59	0.59		0.52	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)		440			306			1135	738		1936	
v/s Ratio Prot								c0.05				
v/s Ratio Perm		c0.24			0.22			c0.53	0.03		0.49	
v/c Ratio		0.85			0.77			0.98	0.06		0.95	
Uniform Delay, d1		35.5			34.5			20.7	9.0		24.1	
Progression Factor		1.00			1.00			1.00	1.00		0.76	
Incremental Delay, d2		18.5			17.0			21.8	0.2		8.0	
Delay (s)		54.0			51.5			42.5	9.2		26.3	
Level of Service		D			D			D	A		C	
Approach Delay (s)		54.0			51.5			41.2			26.3	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM Average Control Delay		35.6										
HCM Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		105.0							13.0			
Intersection Capacity Utilization		110.1%										
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future PM
Improvement

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	1246	120	10	1135	170	141	13	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		6.0				
Lane Util. Factor		0.91			0.95	1.00		1.00				
Frpb, ped/bikes		0.98			1.00	0.71		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		0.99			1.00	0.85		1.00				
Flt Protected		1.00			1.00	1.00		0.96				
Satd. Flow (prot)		4434			3183	1017		1599				
Flt Permitted		0.90			0.93	1.00		0.96				
Satd. Flow (perm)		3977			2969	1017		1599				
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)	25	1354	130	11	1234	185	153	14	5	0	0	0
RTOR Reduction (vph)	0	11	0	0	0	31	0	1	0	0	0	0
Lane Group Flow (vph)	0	1498	0	0	1245	154	0	171	0	0	0	0
Confl. Peds. (#/hr)	87		59	59		87						
Turn Type	Perm			Perm		Perm	Perm					
Protected Phases		2			6			4				
Permitted Phases	2			6		6	4					
Actuated Green, G (s)		64.0			64.0	64.0		24.0				
Effective Green, g (s)		64.0			64.0	64.0		24.0				
Actuated g/C Ratio		0.64			0.64	0.64		0.24				
Clearance Time (s)		6.0			6.0	6.0		6.0				
Lane Grp Cap (vph)		2545			1900	651		384				
v/s Ratio Prot												
v/s Ratio Perm		0.38			0.42	0.15		0.11				
v/c Ratio		0.59			0.66	0.24		0.45				
Uniform Delay, d1		10.4			11.2	7.6		32.3				
Progression Factor		0.26			0.29	0.03		1.00				
Incremental Delay, d2		0.8			0.8	0.4		3.7				
Delay (s)		3.5			4.1	0.6		36.1				
Level of Service		A			A	A		D				
Approach Delay (s)		3.5			3.6			36.1			0.0	
Approach LOS		A			A			D			A	
Intersection Summary												
HCM Average Control Delay			5.4				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			68.1%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future PM
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	60	133	20	55	31	73	1290	7	14	970	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			0.91			0.95	1.00
Frpb, ped/bikes		0.98			0.99			1.00			1.00	0.66
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.93			0.96			1.00			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1496			1573			4547			3183	938
Flt Permitted		0.90			0.91			0.79			0.92	1.00
Satd. Flow (perm)		1359			1451			3619			2923	938
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)	72	65	145	22	60	34	79	1402	8	15	1054	116
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	116	0	0	1489	0	0	1069	116
Confl. Peds. (#/hr)	14		19	19		14	105		29	29		105
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		25.0			25.0			65.0			65.0	65.0
Effective Green, g (s)		26.0			26.0			66.0			66.0	66.0
Actuated g/C Ratio		0.26			0.26			0.66			0.66	0.66
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		353			377			2389			1929	619
v/s Ratio Prot												
v/s Ratio Perm		c0.21			0.08			c0.41			0.37	0.12
v/c Ratio		0.80			0.31			0.62			0.55	0.19
Uniform Delay, d1		34.6			29.8			9.8			9.1	6.6
Progression Factor		1.00			0.97			2.25			0.21	0.27
Incremental Delay, d2		17.0			2.0			0.7			0.9	0.5
Delay (s)		51.6			30.7			22.9			2.8	2.3
Level of Service		D			C			C			A	A
Approach Delay (s)		51.6			30.7			22.9			2.7	
Approach LOS		D			C			C			A	
Intersection Summary												
HCM Average Control Delay			18.0									B
HCM Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			100.0								8.0	
Intersection Capacity Utilization			94.0%								F	
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future PM
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Volume (vph)	34	137	130	24	137	32	137	1276	49	27	1093	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			0.91			0.95	1.00
Frpb, ped/bikes		0.96			0.99			0.99			1.00	0.65
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.94			0.98			0.99			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1503			1602			4496			3181	930
Flt Permitted		0.95			0.92			0.67			0.86	1.00
Satd. Flow (perm)		1436			1486			3036			2748	930
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)	37	149	141	26	149	35	149	1387	53	29	1188	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	327	0	0	210	0	0	1589	0	0	1217	36
Confl. Peds. (#/hr)	37		42	42		37	107		44	44		107
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		27.0			27.0			63.0			63.0	63.0
Effective Green, g (s)		28.0			28.0			64.0			64.0	64.0
Actuated g/C Ratio		0.28			0.28			0.64			0.64	0.64
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		402			416			1943			1759	595
v/s Ratio Prot												
v/s Ratio Perm		0.23			0.14			0.52			0.44	0.04
v/c Ratio		0.81			0.50			0.82			0.69	0.06
Uniform Delay, d1		33.6			30.2			13.6			11.6	6.7
Progression Factor		1.00			1.08			1.00			1.66	1.21
Incremental Delay, d2		16.3			4.3			4.0			1.9	0.2
Delay (s)		49.9			36.9			17.6			21.2	8.3
Level of Service		D			D			B			C	A
Approach Delay (s)		49.9			36.9			17.6			20.9	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM Average Control Delay		23.1										
HCM Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		100.0							8.0			
Intersection Capacity Utilization		102.3%							G			
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future PM Improvement
NBL Lead & PED

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	23	1246	120	10	1135	170	141	13	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		6.0				
Lane Util. Factor		0.91			0.95	1.00		1.00				
Frpb, ped/bikes		0.98			1.00	0.70		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		0.99			1.00	0.85		1.00				
Flt Protected		1.00			1.00	1.00		0.96				
Satd. Flow (prot)		4432			3183	998		1599				
Flt Permitted		0.90			0.93	1.00		0.96				
Satd. Flow (perm)		3976			2964	998		1599				
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)	25	1354	130	11	1234	185	153	14	5	0	0	0
RTOR Reduction (vph)	0	11	0	0	0	29	0	1	0	0	0	0
Lane Group Flow (vph)	0	1498	0	0	1245	156	0	171	0	0	0	0
Confl. Peds. (#/hr)	87		59	59		87						
Turn Type	pm+pt			Perm		Perm	Perm					
Protected Phases	5	2			6			4				
Permitted Phases	2			6		6	4					
Actuated Green, G (s)		64.0			56.0	56.0		24.0				
Effective Green, g (s)		64.0			56.0	56.0		24.0				
Actuated g/C Ratio		0.61			0.53	0.53		0.23				
Clearance Time (s)		6.0			6.0	6.0		6.0				
Lane Grp Cap (vph)		2441			1581	532		365				
v/s Ratio Prot		c0.02										
v/s Ratio Perm		0.35			c0.42	0.16		0.11				
v/c Ratio		0.61			0.79	0.29		0.47				
Uniform Delay, d1		12.8			19.7	13.6		35.0				
Progression Factor		0.38			1.00	1.00		1.00				
Incremental Delay, d2		0.8			4.0	1.4		4.3				
Delay (s)		5.7			23.8	15.0		39.3				
Level of Service		A			C	B		D				
Approach Delay (s)		5.7			22.6			39.3			0.0	
Approach LOS		A			C			D			A	
Intersection Summary												
HCM Average Control Delay			15.4		HCM Level of Service				B			
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			105.0		Sum of lost time (s)				23.0			
Intersection Capacity Utilization			68.1%		ICU Level of Service				C			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future PM Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	60	133	20	55	31	73	1290	7	14	970	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			0.91			0.95	1.00
Frpb, ped/bikes		0.97			0.99			1.00			1.00	0.64
Flpb, ped/bikes		0.99			1.00			1.00			1.00	1.00
Frt		0.93			0.96			1.00			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1494			1572			4558			3183	915
Flt Permitted		0.90			0.92			0.75			0.92	1.00
Satd. Flow (perm)		1359			1460			3450			2916	915
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)	72	65	145	22	60	34	79	1402	8	15	1054	116
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	282	0	0	116	0	0	1489	0	0	1069	116
Confl. Peds. (#/hr)	14		19	19		14	105		29	29		105
Turn Type	Perm			Perm			pm+pt			Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		28.0			28.0			62.0			54.0	54.0
Effective Green, g (s)		29.0			29.0			63.0			55.0	55.0
Actuated g/C Ratio		0.28			0.28			0.60			0.52	0.52
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		375			403			2123			1527	479
v/s Ratio Prot								c0.03				
v/s Ratio Perm		c0.21			0.08			c0.39			0.37	0.13
v/c Ratio		0.75			0.29			0.70			0.70	0.24
Uniform Delay, d1		34.7			29.9			14.5			18.8	13.6
Progression Factor		1.00			1.00			2.21			0.09	0.13
Incremental Delay, d2		13.0			1.8			1.0			1.6	0.7
Delay (s)		47.7			31.7			33.1			3.4	2.4
Level of Service		D			C			C			A	A
Approach Delay (s)		47.7			31.7			33.1			3.3	
Approach LOS		D			C			C			A	
Intersection Summary												
HCM Average Control Delay		22.9										
HCM Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		105.0										
Intersection Capacity Utilization		94.0%										
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future PM Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	137	130	24	137	32	137	1276	49	27	1093	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			0.91			0.95	1.00
Frbp, ped/bikes		0.96			0.99			0.99			1.00	0.64
Flpb, ped/bikes		1.00			1.00			1.00			1.00	1.00
Frt		0.94			0.98			0.99			1.00	0.85
Flt Protected		0.99			0.99			1.00			1.00	1.00
Satd. Flow (prot)		1501			1601			4508			3181	906
Flt Permitted		0.95			0.92			0.65			0.86	1.00
Satd. Flow (perm)		1431			1477			2936			2734	906
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)	37	149	141	26	149	35	149	1387	53	29	1188	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	327	0	0	210	0	0	1589	0	0	1217	36
Confl. Peds. (#/hr)	37		42	42		37	107		44	44		107
Turn Type	Perm			Perm			pm+pt			Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)		28.0			28.0			62.0			54.0	54.0
Effective Green, g (s)		29.0			29.0			63.0			55.0	55.0
Actuated g/C Ratio		0.28			0.28			0.60			0.52	0.52
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		395			408			1836			1432	475
v/s Ratio Prot								c0.04				
v/s Ratio Perm		c0.23			0.14			c0.48			0.45	0.04
v/c Ratio		0.83			0.51			0.87			0.85	0.08
Uniform Delay, d1		35.7			32.1			17.5			21.5	12.4
Progression Factor		1.00			1.00			1.00			1.71	1.53
Incremental Delay, d2		17.8			4.6			5.8			4.8	0.2
Delay (s)		53.5			36.6			23.2			41.4	19.2
Level of Service		D			D			C			D	B
Approach Delay (s)		53.5			36.6			23.2			40.7	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM Average Control Delay		33.5									C	
HCM Volume to Capacity ratio		0.85										
Actuated Cycle Length (s)		105.0						13.0				
Intersection Capacity Utilization		102.3%									G	
Analysis Period (min)		15										
c Critical Lane Group												

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future SAT
Improvement

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	17	927	55	10	1020	158	144	12	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0				
Lane Util. Factor		0.95	1.00		0.95	1.00		1.00				
Frpb, ped/bikes		1.00	0.80		1.00	0.71		1.00				
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00				
Frt		1.00	0.85		1.00	0.85		1.00				
Flt Protected		1.00	1.00		1.00	1.00		0.96				
Satd. Flow (prot)		3180	1139		3183	1017		1598				
Flt Permitted		0.92	1.00		0.94	1.00		0.96				
Satd. Flow (perm)		2935	1139		2999	1017		1598				
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)	18	1008	60	11	1109	172	157	13	5	0	0	0
RTOR Reduction (vph)	0	0	6	0	0	21	0	1	0	0	0	0
Lane Group Flow (vph)	0	1026	54	0	1120	151	0	174	0	0	0	0
Confl. Peds. (#/hr)	87		59	59		87						
Turn Type	Perm		Perm	Perm		Perm	Perm					
Protected Phases		2			6			4				
Permitted Phases	2		2	6		6	4					
Actuated Green, G (s)		64.0	64.0		64.0	64.0		24.0				
Effective Green, g (s)		64.0	64.0		64.0	64.0		24.0				
Actuated g/C Ratio		0.64	0.64		0.64	0.64		0.24				
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0				
Lane Grp Cap (vph)		1878	729		1919	651		384				
v/s Ratio Prot												
v/s Ratio Perm		0.35	0.05		0.37	0.15		0.11				
v/c Ratio		0.55	0.07		0.58	0.23		0.45				
Uniform Delay, d1		10.0	6.8		10.3	7.6		32.4				
Progression Factor		0.92	0.73		1.67	1.74		1.00				
Incremental Delay, d2		1.0	0.2		0.9	0.6		3.8				
Delay (s)		10.2	5.1		18.2	13.8		36.2				
Level of Service		B	A		B	B		D				
Approach Delay (s)		9.9			17.6			36.2			0.0	
Approach LOS		A			B			D			A	
Intersection Summary												
HCM Average Control Delay			15.6				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			69.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future SAT
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	65	133	8	41	24	71	933	2	19	889	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	5.0
Lane Util. Factor		1.00			1.00			0.95	1.00		0.95	1.00
Frpb, ped/bikes		0.97			0.97			1.00	0.90		1.00	0.64
Flpb, ped/bikes		0.99			1.00			1.00	1.00		1.00	1.00
Frt		0.93			0.96			1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)		1483			1551			3161	1283		3181	908
Flt Permitted		0.90			0.96			0.78	1.00		0.92	1.00
Satd. Flow (perm)		1345			1493			2489	1283		2917	908
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)	77	71	145	9	45	26	77	1014	2	21	966	117
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	293	0	0	80	0	0	1091	2	0	987	117
Confl. Peds. (#/hr)	36		21	21		36	112		26	26		112
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		26.0			26.0			64.0	64.0		64.0	64.0
Effective Green, g (s)		27.0			27.0			65.0	65.0		65.0	64.0
Actuated g/C Ratio		0.27			0.27			0.65	0.65		0.65	0.64
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		363			403			1618	834		1896	581
v/s Ratio Prot												
v/s Ratio Perm		c0.22			0.05			c0.44	0.00		0.34	0.13
v/c Ratio		0.81			0.20			0.67	0.00		0.52	0.20
Uniform Delay, d1		34.1			28.2			10.9	6.1		9.3	7.4
Progression Factor		1.00			0.95			0.14	0.23		1.70	1.92
Incremental Delay, d2		17.3			1.1			0.9	0.0		0.9	0.7
Delay (s)		51.4			27.8			2.4	1.4		16.6	15.0
Level of Service		D			C			A	A		B	B
Approach Delay (s)		51.4			27.8			2.4			16.4	
Approach LOS		D			C			A			B	
Intersection Summary												
HCM Average Control Delay			14.8									
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			100.0						8.0			
Intersection Capacity Utilization			93.7%						F			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future SAT
Improvement

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	70	138	29	80	24	133	974	31	18	921	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	5.0
Lane Util. Factor		1.00			1.00			0.95	1.00		0.95	1.00
Frpb, ped/bikes		0.97			0.99			1.00	0.95		1.00	0.91
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.92			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99			0.99	1.00		1.00	1.00
Satd. Flow (prot)		1484			1596			3162	1348		3182	1300
Flt Permitted		0.94			0.89			0.63	1.00		0.91	1.00
Satd. Flow (perm)		1410			1443			1999	1348		2913	1300
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)	36	76	150	32	87	26	145	1059	34	20	1001	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	262	0	0	145	0	0	1204	34	0	1021	34
Confl. Peds. (#/hr)	23		22	22		23	22		11	11		22
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		27.0			27.0			63.0	63.0		63.0	63.0
Effective Green, g (s)		28.0			28.0			64.0	64.0		64.0	63.0
Actuated g/C Ratio		0.28			0.28			0.64	0.64		0.64	0.63
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		395			404			1279	863		1864	819
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.10			c0.60	0.03		0.35	0.03
v/c Ratio		0.66			0.36			0.94	0.04		0.55	0.04
Uniform Delay, d1		31.8			28.8			16.3	6.6		10.0	7.0
Progression Factor		1.00			1.01			1.00	1.00		1.49	1.40
Incremental Delay, d2		8.5			2.4			14.6	0.1		1.0	0.1
Delay (s)		40.3			31.7			30.9	6.7		15.9	9.9
Level of Service		D			C			C	A		B	A
Approach Delay (s)		40.3			31.7			30.2			15.7	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM Average Control Delay			25.6			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			92.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
2: Wisconsin Avenue & Idaho Avenue

Total Future SAT Improvement
NBL Lead & PED

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑	↑		↑↑	↑		↑↑				
Volume (vph)	17	927	55	10	1020	158	144	12	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0				
Lane Util. Factor		0.95	1.00		0.95	1.00		1.00				
Frpb, ped/bikes		1.00	0.79		1.00	0.70		1.00				
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00				
Frt		1.00	0.85		1.00	0.85		1.00				
Flt Protected		1.00	1.00		1.00	1.00		0.96				
Satd. Flow (prot)		3183	1126		3182	998		1598				
Flt Permitted		0.92	1.00		0.94	1.00		0.96				
Satd. Flow (perm)		2944	1126		2997	998		1598				
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)	18	1008	60	11	1109	172	157	13	5	0	0	0
RTOR Reduction (vph)	0	0	6	0	0	20	0	1	0	0	0	0
Lane Group Flow (vph)	0	1026	54	0	1120	152	0	174	0	0	0	0
Confl. Peds. (#/hr)	87		59	59		87						
Turn Type	pm+pt		Perm	Perm		Perm	Perm					
Protected Phases	5	2			6			4				
Permitted Phases	2		2	6		6	4					
Actuated Green, G (s)		67.0	67.0		58.5	58.5		21.0				
Effective Green, g (s)		67.0	67.0		58.5	58.5		21.0				
Actuated g/C Ratio		0.64	0.64		0.56	0.56		0.20				
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0				
Lane Grp Cap (vph)		1889	718		1670	556		320				
v/s Ratio Prot		c0.02										
v/s Ratio Perm		0.32	0.05		c0.37	0.15		0.11				
v/c Ratio		0.54	0.07		0.67	0.27		0.54				
Uniform Delay, d1		10.5	7.2		16.4	12.1		37.7				
Progression Factor		1.50	1.53		1.00	1.00		1.00				
Incremental Delay, d2		1.0	0.2		2.2	1.2		6.5				
Delay (s)		16.8	11.2		18.6	13.4		44.2				
Level of Service		B	B		B	B		D				
Approach Delay (s)		16.5			17.9			44.2			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM Average Control Delay			19.1		HCM Level of Service					B		
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			105.0					23.0				
Intersection Capacity Utilization			69.9%							C		
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
4: Newark Street & Wisconsin Avenue

Total Future SAT Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	65	133	8	41	24	71	933	2	19	889	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	5.0
Lane Util. Factor		1.00			1.00			0.95	1.00		0.95	1.00
Frpb, ped/bikes		0.97			0.97			1.00	0.90		1.00	0.62
Flpb, ped/bikes		0.98			1.00			1.00	1.00		1.00	1.00
Frt		0.93			0.96			1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99			1.00	1.00		1.00	1.00
Satd. Flow (prot)		1481			1549			3174	1277		3181	883
Flt Permitted		0.90			0.96			0.72	1.00		0.91	1.00
Satd. Flow (perm)		1345			1494			2282	1277		2910	883
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)	77	71	145	9	45	26	77	1014	2	21	966	117
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	293	0	0	80	0	0	1091	2	0	987	117
Confl. Peds. (#/hr)	36		21	21		36	112		26	26		112
Turn Type	Perm			Perm			pm+pt		Perm	Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		30.0			30.0			60.0	60.0		52.0	52.0
Effective Green, g (s)		31.0			31.0			61.0	61.0		53.0	52.0
Actuated g/C Ratio		0.30			0.30			0.58	0.58		0.50	0.50
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		397			441			1368	742		1469	437
v/s Ratio Prot								c0.04				
v/s Ratio Perm		c0.22			0.05			c0.43	0.00		0.34	0.13
v/c Ratio		0.74			0.18			0.80	0.00		0.67	0.27
Uniform Delay, d1		33.3			27.6			17.2	9.2		19.5	15.4
Progression Factor		1.00			1.00			0.20	0.19		1.16	0.90
Incremental Delay, d2		11.6			0.9			1.3	0.0		1.9	1.2
Delay (s)		45.0			28.5			4.6	1.8		24.6	15.0
Level of Service		D			C			A	A		C	B
Approach Delay (s)		45.0			28.5			4.6			23.5	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM Average Control Delay			18.1			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			93.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Wisconsin Avenue Giant
9: Macomb Street & Wisconsin Avenue

Total Future SAT Improvement
NBL Lead & PED

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	70	138	29	80	24	133	974	31	18	921	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	5.0
Lane Util. Factor		1.00			1.00			0.95	1.00		0.95	1.00
Frpb, ped/bikes		0.97			0.99			1.00	0.94		1.00	0.91
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.92			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99			0.99	1.00		1.00	1.00
Satd. Flow (prot)		1482			1595			3166	1346		3182	1296
Flt Permitted		0.94			0.88			0.59	1.00		0.91	1.00
Satd. Flow (perm)		1407			1420			1867	1346		2907	1296
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)	36	76	150	32	87	26	145	1059	34	20	1001	34
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	262	0	0	145	0	0	1204	34	0	1021	34
Confl. Peds. (#/hr)	23		22	22		23	22		11	11		22
Turn Type	Perm			Perm			pm+pt		Perm	Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		27.0			27.0			63.0	63.0		55.0	55.0
Effective Green, g (s)		28.0			28.0			64.0	64.0		56.0	55.0
Actuated g/C Ratio		0.27			0.27			0.61	0.61		0.53	0.52
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)		375			379			1200	820		1550	679
v/s Ratio Prot								c0.05				
v/s Ratio Perm		c0.19			0.10			c0.56	0.03		0.35	0.03
v/c Ratio		0.70			0.38			1.00	0.04		0.66	0.05
Uniform Delay, d1		34.7			31.4			20.5	8.2		17.6	12.2
Progression Factor		1.00			1.00			1.00	1.00		0.33	0.61
Incremental Delay, d2		10.3			2.9			26.8	0.1		1.6	0.1
Delay (s)		45.0			34.4			47.3	8.3		7.4	7.6
Level of Service		D			C			D	A		A	A
Approach Delay (s)		45.0			34.4			46.2			7.4	
Approach LOS		D			C			D			A	
Intersection Summary												
HCM Average Control Delay			30.3			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			13.0			
Intersection Capacity Utilization			92.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												