

LEVEL OF SERVICE CALCULATIONS

for the

MAPLE LEAF COMMONS PROJECT

8511-15TH Avenue NE

DPD #3008142

Prepared by:

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JANUARY 2008

Campfire Cottages
378: NE 80th St & 15th Ave NE

Existing 2007 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99		0.96		1.00			1.00			1.00	
Frt			0.850		0.998			0.992			0.997	
Flt Protected	0.950				0.993			0.989			0.997	
Satd. Flow (prot)	1668	1881	1386	0	1766	0	0	3337	0	0	3453	0
Flt Permitted	0.524				0.939			0.816			0.932	
Satd. Flow (perm)	913	1881	1332	0	1666	0	0	2747	0	0	3228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44		1			6			2	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.01	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1329			1324			257	
Travel Time (s)		5.1			30.2			25.8			4.7	
Volume (vph)	10	135	40	35	225	5	40	135	10	15	255	5
Confl. Peds. (#/hr)	7		12	12		7	5					5
Confl. Bikes (#/hr)			1						1			7
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.78	0.78	0.78	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	4	0
Adj. Flow (vph)	15	201	60	43	278	6	51	173	13	18	311	6
Lane Group Flow (vph)	15	201	60	0	327	0	0	237	0	0	335	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	70.0	70.0	70.0	70.0	70.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	0.0%	41.7%	41.7%	0.0%	41.7%	41.7%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	94.8	94.8	94.8		94.8			17.2			17.2	
Actuated g/C Ratio	0.79	0.79	0.79		0.79			0.14			0.14	
v/c Ratio	0.02	0.14	0.06		0.25			0.59			0.72	
Control Delay	2.2	2.1	0.6		4.1			52.7			63.7	
Queue Delay	0.0	0.8	0.0		0.3			0.1			0.1	
Total Delay	2.2	2.8	0.6		4.4			52.8			63.7	

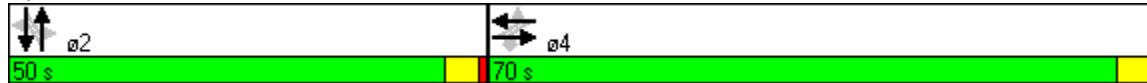
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		A			D			E	
Approach Delay		2.3			4.4			52.8			63.7	
Approach LOS		A			A			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 85 (71%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 30.6
 Intersection Capacity Utilization 54.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City WY NE

Existing 2007 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	9	10	12	12	11	9	12	11	9
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt		0.967			0.994			0.988			0.995	
Flt Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1685	1876	0	1608	1745	0	0	3312	0	0	3435	0
Flt Permitted	0.553			0.487				0.605				
Satd. Flow (perm)	979	1876	0	821	1745	0	0	2008	0	0	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			2			17			6	
Headway Factor	1.09	0.96	1.00	1.14	1.09	1.00	1.00	1.04	1.14	1.00	1.04	1.14
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1083			224			605			327	
Travel Time (s)		24.6			5.1			11.8			6.4	
Volume (vph)	125	125	35	155	115	5	30	655	60	0	2430	80
Confl. Peds. (#/hr)	1		4	4		1	2		2	2		2
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.80	0.80	0.80	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%	4%	4%	0%	1%	1%	1%
Adj. Flow (vph)	156	156	44	209	155	7	38	819	75	0	2761	91
Lane Group Flow (vph)	156	200	0	209	162	0	0	932	0	0	2852	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		20.5	20.5	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	0.0%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	31.0	31.0		31.0	31.0			81.0			81.0	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.68			0.68	
v/c Ratio	0.62	0.41		0.99	0.36			0.68			1.23	
Control Delay	51.3	39.2		101.8	37.0			14.8			120.4	
Queue Delay	0.0	0.0		49.3	7.2			0.0			0.0	
Total Delay	51.3	39.2		151.1	44.2			14.8			120.4	
LOS	D	D		F	D			B			F	
Approach Delay		44.5			104.4			14.8			120.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Approach LOS		D			F			B			F	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 91.3
 Intersection Capacity Utilization 105.8%
 Analysis Period (min) 15


















Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 379: NE 80th St & Lake City WY NE

ø2	ø4
85 s	35 s
ø6	
85 s	













Campfire Cottages
380: 15th Ave NE & Lake City WY NE

Existing 2007 AM
Timing Plan: DEFAULT

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		51	51	51	51		51	51		51	51	
Trailing Detector (ft)		0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.98		0.98			1.00				
Frt			0.850		0.922			0.999				
Flt Protected					0.999			0.998				
Satd. Flow (prot)	0	3094	1436	0	2836	0	0	3313	0	0	3388	0
Flt Permitted					0.949			0.634				
Satd. Flow (perm)	0	3094	1408	0	2694	0	0	2105	0	0	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52		10			1				
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			806			327			1063	
Travel Time (s)		5.0			14.9			6.4			20.7	
Volume (vph)	0	115	35	10	275	310	30	750	5	0	2195	0
Confl. Peds. (#/hr)	16		4	4		16	3		1	1		3
Confl. Bikes (#/hr)						7			1			
Peak Hour Factor	0.67	0.67	0.67	0.85	0.85	0.85	0.88	0.88	0.88	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	0	172	52	12	324	365	34	852	6	0	2286	0
Lane Group Flow (vph)	0	172	52	0	701	0	0	892	0	0	2286	0
Turn Type			Perm	Perm			Perm			Perm		
Protected Phases		4			4			6			2	
Permitted Phases			4	4			6			2		
Detector Phases		4	4	4	4		6	6		2	2	
Minimum Initial (s)		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		24.5	24.5	24.5	24.5		26.5	26.5		26.5	26.5	
Total Split (s)	0.0	35.0	35.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	0.0%	29.2%	29.2%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Ped	Ped	Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		31.0	31.0		31.0			81.0			81.0	
Actuated g/C Ratio		0.26	0.26		0.26			0.68			0.68	
v/c Ratio		0.22	0.13		1.00			0.63			1.00	
Control Delay		36.7	23.1		77.4			8.1			38.7	
Queue Delay		0.0	0.0		73.0			0.6			7.3	
Total Delay		36.7	23.1		150.4			8.7			46.0	
LOS		D	C		F			A			D	

Campfire Cottages
 380: 15th Ave NE & Lake City WY NE

Existing 2007 AM
 Timing Plan: DEFAULT

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Approach Delay		33.6			150.4			8.7			46.0	
Approach LOS		C			F			A			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 115 (96%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 55.0
 Intersection Capacity Utilization 89.4%
 Analysis Period (min) 15

Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 380: 15th Ave NE & Lake City WY NE

 ø2	 ø4
85 s	35 s
 ø6	
85 s	

















Campfire Cottages
1: NE 85th Street & 15th Ave NE

Existing 2007 AM
Timing Plan: DEFAULT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	2	0	5	10	5	5	120	5	2	555	10
Peak Hour Factor	0.50	0.50	0.50	0.45	0.45	0.45	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	10	4	0	11	22	11	6	145	6	2	617	11
Pedestrians		4						2			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								806				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	815	793	628	790	796	150	632			151		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	808	786	628	783	789	120	632			121		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	96	99	100	96	92	99	99			100		
cM capacity (veh/h)	265	310	480	280	295	866	938			1417		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	44	157	630								
Volume Left	10	11	6	2								
Volume Right	0	11	6	11								
cSH	277	348	938	1417								
Volume to Capacity	0.05	0.13	0.01	0.00								
Queue Length 95th (ft)	4	11	0	0								
Control Delay (s)	18.7	16.9	0.4	0.0								
Lane LOS	C	C	A	A								
Approach Delay (s)	18.7	16.9	0.4	0.0								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			41.2%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
4: NE 86th Street & 15th Ave NE

Existing 2007 AM
Timing Plan: DEFAULT

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	5	5	0	10	1	115	1	5	575	0
Peak Hour Factor	0.38	0.38	0.38	0.63	0.63	0.63	0.85	0.85	0.85	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	13	8	0	16	1	135	1	5	599	0
Pedestrians		7			2			2			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)								1153				
pX, platoon unblocked												
vC, conflicting volume	771	757	608	765	757	139	606			138		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	771	757	608	765	757	139	606			138		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	97	97	100	98	100			100		
cM capacity (veh/h)	306	333	492	302	327	894	952			1443		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	13	24	138	604								
Volume Left	0	8	1	5								
Volume Right	13	16	1	0								
cSH	492	540	952	1443								
Volume to Capacity	0.03	0.04	0.00	0.00								
Queue Length 95th (ft)	2	3	0	0								
Control Delay (s)	12.5	12.0	0.1	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.5	12.0	0.1	0.1								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			45.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
378: NE 80th St & 15th Ave NE

Existing 2007 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00		0.97		1.00			1.00			1.00	
Frt			0.850		0.991			0.995			0.996	
Flt Protected	0.950				0.993			0.996			0.997	
Satd. Flow (prot)	1652	1863	1372	0	1787	0	0	3501	0	0	3507	0
Flt Permitted	0.496				0.907			0.868			0.881	
Satd. Flow (perm)	858	1863	1328	0	1630	0	0	3051	0	0	3098	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			35		5			5			4	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1335			1315			257	
Travel Time (s)		5.1			30.3			25.6			4.7	
Volume (vph)	15	295	70	45	235	20	50	515	20	25	345	10
Confl. Peds. (#/hr)	6		11	11		6			10	10		
Confl. Bikes (#/hr)						2			2			
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Adj. Flow (vph)	17	339	80	50	261	22	60	613	24	30	411	12
Lane Group Flow (vph)	17	339	80	0	333	0	0	697	0	0	453	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	49.9	49.9	49.9	49.9	49.9	0.0	50.1	50.1	0.0	50.1	50.1	0.0
Total Split (%)	49.9%	49.9%	49.9%	49.9%	49.9%	0.0%	50.1%	50.1%	0.0%	50.1%	50.1%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	63.0	63.0	63.0		63.0			29.0			29.0	
Actuated g/C Ratio	0.63	0.63	0.63		0.63			0.29			0.29	
v/c Ratio	0.03	0.29	0.09		0.32			0.78			0.50	
Control Delay	2.9	2.9	0.4		10.6			38.6			35.3	
Queue Delay	0.0	0.9	0.5		0.1			0.1			0.3	
Total Delay	2.9	3.8	1.0		10.7			38.7			35.6	

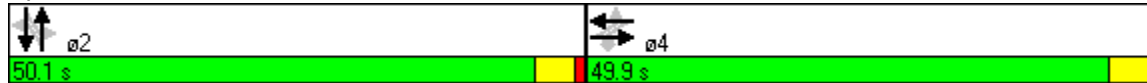
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		B			D			D	
Approach Delay		3.3			10.7			38.7			35.6	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 74 (74%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization 71.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City Way NE

Existing 2007 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00				
Frt		0.995			0.993			0.993			0.990	
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1787	1871	0	1805	1868	0	0	3537	0	0	3508	0
Flt Permitted	0.421			0.253				0.694				
Satd. Flow (perm)	791	1871	0	480	1868	0	0	2462	0	0	3508	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			9			15	
Headway 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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1098			224			1461			327	
Travel Time (s)		25.0			5.1			28.5			6.4	
Volume (vph)	200	290	10	85	200	10	125	1780	90	0	900	65
Confl. Peds. (#/hr)	2		4	4		2			6	6		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	0%	0%	2%	0%
Adj. Flow (vph)	250	362	12	106	250	12	130	1854	94	0	1000	72
Lane Group Flow (vph)	250	374	0	106	262	0	0	2078	0	0	1072	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		24.5	24.5	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	68.0	68.0	0.0	68.0	68.0	0.0
Total Split (%)	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%	68.0%	68.0%	0.0%	68.0%	68.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	28.0	28.0		28.0	28.0			64.0			64.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28			0.64			0.64	
v/c Ratio	1.13	0.71		0.79	0.50			1.32			0.48	
Control Delay	135.9	40.9		66.1	27.5			168.1			4.8	
Queue Delay	116.5	0.0		0.0	9.2			13.4			0.1	
Total Delay	252.4	40.9		66.1	36.7			181.5			4.9	
LOS	F	D		E	D			F			A	
Approach Delay		125.7			45.2			181.5			4.9	
Approach LOS		F			D			F			A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.32
 Intersection Signal Delay: 115.3
 Intersection Capacity Utilization 124.6%
 Analysis Period (min) 15


















Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 379: NE 80th St & Lake City Way NE



Campfire Cottages
380: 15th Ave NE & Lake City Way NE

Existing 2007 PM
Timing Plan: Default

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.952			0.998			0.998	
Flt Protected								0.991				
Satd. Flow (prot)	0	3185	1478	0	3032	0	0	3417	0	0	3414	0
Flt Permitted					0.951			0.618				
Satd. Flow (perm)	0	3185	1478	0	2884	0	0	2131	0	0	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			54		70			3			2	
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			792			327			950	
Travel Time (s)		5.0			14.6			6.4			18.5	
Volume (vph)	0	305	240	5	355	170	345	1625	25	0	795	10
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.98	0.98	0.98	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	332	261	6	413	198	352	1658	26	0	837	11
Lane Group Flow (vph)	0	332	261	0	617	0	0	2036	0	0	848	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			4		1	6			2	
Permitted Phases	4		4	4			6			2		
Detector Phases	4	4	4	4	4		1	6		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		10.0	26.0		26.0	26.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	0.0	10.0	76.0	0.0	66.0	66.0	0.0
Total Split (%)	24.0%	24.0%	24.0%	24.0%	24.0%	0.0%	10.0%	76.0%	0.0%	66.0%	66.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Ped	Ped	Ped	Ped	Ped		Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		20.0	20.0		20.0			72.0			62.0	
Actuated g/C Ratio		0.20	0.20		0.20			0.72			0.62	
v/c Ratio		0.52	0.77		0.97			1.26			0.40	
Control Delay		45.9	52.7		66.4			134.5			10.3	
Queue Delay		1.1	7.0		8.8			81.1			0.0	
Total Delay		47.0	59.7		75.2			215.6			10.3	
LOS		D	E		E			F			B	
Approach Delay		52.6			75.2			215.6			10.3	
Approach LOS		D			E			F			B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 5 (5%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.26
 Intersection Signal Delay: 128.3
 Intersection Capacity Utilization 107.0%
 Analysis Period (min) 15

















Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 380: 15th Ave NE & Lake City Way NE



Campfire Cottages
1: NE 85th Street & 15th Ave NE

Existing 2007 PM
Timing Plan: Default

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	5	15	10	15	10	660	20	5	280	5
Peak Hour Factor	0.50	0.50	0.50	0.61	0.61	0.61	0.97	0.97	0.97	0.86	0.86	0.86
Hourly flow rate (vph)	20	10	10	25	16	25	10	680	21	6	326	6
Pedestrians		4			3			1			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								792				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	1093	1069	333	1070	1061	699	335			704		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1109	1080	333	1082	1071	649	335			655		
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 %	85	94	99	84	91	94	99			99		
cM capacity (veh/h)	135	181	699	155	185	401	1220			798		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	40	66	711	337								
Volume Left	20	25	10	6								
Volume Right	10	25	21	6								
cSH	184	213	1220	798								
Volume to Capacity	0.22	0.31	0.01	0.01								
Queue Length 95th (ft)	20	31	1	1								
Control Delay (s)	29.9	29.3	0.2	0.2								
Lane LOS	D	D	A	A								
Approach Delay (s)	29.9	29.3	0.2	0.2								
Approach LOS	D	D										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			52.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
3: NE 86th Street & 15th Ave NE

Existing 2007 PM
Timing Plan: Default

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	0	15	1	655	10	5	300	0
Peak Hour Factor	0.92	0.92	0.92	0.43	0.43	0.43	0.96	0.96	0.96	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	12	0	35	1	682	10	6	353	0
Pedestrians		12			7							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								1128				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	1101	1078	365	1061	1073	694	365			700		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1116	1090	365	1070	1084	649	365			655		
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 %	100	100	100	93	100	91	100			99		
cM capacity (veh/h)	143	183	673	169	184	406	1182			806		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	47	694	359								
Volume Left	0	12	1	6								
Volume Right	0	35	10	0								
cSH	1700	300	1182	806								
Volume to Capacity	0.00	0.15	0.00	0.01								
Queue Length 95th (ft)	0	14	0	1								
Control Delay (s)	0.0	19.2	0.0	0.2								
Lane LOS	A	C	A	A								
Approach Delay (s)	0.0	19.2	0.0	0.2								
Approach LOS	A	C										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			45.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
378: NE 80th St & 15th Ave NE

WP 2009 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00		0.97		1.00			1.00			1.00	
Frt			0.850		0.991			0.995			0.996	
Flt Protected	0.950				0.993			0.996			0.997	
Satd. Flow (prot)	1652	1863	1372	0	1787	0	0	3501	0	0	3507	0
Flt Permitted	0.494				0.905			0.869			0.879	
Satd. Flow (perm)	855	1863	1328	0	1626	0	0	3054	0	0	3091	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			34		5			5			4	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1335			1315			257	
Travel Time (s)		5.1			30.3			25.6			4.7	
Volume (vph)	15	300	70	45	235	20	50	527	20	25	346	10
Confl. Peds. (#/hr)	6		11	11		6			10	10		
Confl. Bikes (#/hr)						2			2			
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Adj. Flow (vph)	17	345	80	50	261	22	60	627	24	30	412	12
Lane Group Flow (vph)	17	345	80	0	333	0	0	711	0	0	454	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	49.3	49.3	49.3	49.3	49.3	0.0	50.7	50.7	0.0	50.7	50.7	0.0
Total Split (%)	49.3%	49.3%	49.3%	49.3%	49.3%	0.0%	50.7%	50.7%	0.0%	50.7%	50.7%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	62.4	62.4	62.4		62.4			29.6			29.6	
Actuated g/C Ratio	0.62	0.62	0.62		0.62			0.30			0.30	
v/c Ratio	0.03	0.30	0.10		0.33			0.78			0.49	
Control Delay	3.0	3.0	0.4		10.9			38.2			35.5	
Queue Delay	0.0	0.9	0.5		0.1			0.1			0.3	
Total Delay	3.0	3.9	1.0		11.0			38.3			35.8	

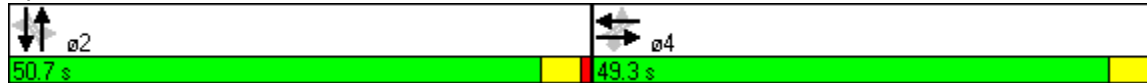
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		B			D			D	
Approach Delay		3.3			11.0			38.3			35.8	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 74 (74%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization 72.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City Way NE

WP 2009 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00				
Frt		0.995			0.993			0.993			0.990	
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1787	1871	0	1805	1868	0	0	3537	0	0	3508	0
Flt Permitted	0.421			0.242				0.693				
Satd. Flow (perm)	791	1871	0	459	1868	0	0	2458	0	0	3508	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			9			15	
Headway 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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1098			224			1461			327	
Travel Time (s)		25.0			5.1			28.5			6.4	
Volume (vph)	200	295	10	85	200	10	125	1812	90	0	907	65
Confl. Peds. (#/hr)	2		4	4		2			6	6		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	0%	0%	2%	0%
Adj. Flow (vph)	250	369	12	106	250	12	130	1888	94	0	1008	72
Lane Group Flow (vph)	250	381	0	106	262	0	0	2112	0	0	1080	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		24.5	24.5	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	68.0	68.0	0.0	68.0	68.0	0.0
Total Split (%)	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%	68.0%	68.0%	0.0%	68.0%	68.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	28.0	28.0		28.0	28.0			64.0			64.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28			0.64			0.64	
v/c Ratio	1.13	0.73		0.82	0.50			1.34			0.48	
Control Delay	135.9	41.6		72.2	27.4			178.7			4.4	
Queue Delay	109.6	0.0		0.0	9.0			20.9			0.1	
Total Delay	245.5	41.6		72.2	36.4			199.6			4.5	
LOS	F	D		E	D			F			A	
Approach Delay		122.4			46.7			199.6			4.5	
Approach LOS		F			D			F			A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 124.3
 Intersection Capacity Utilization 125.7%
 Analysis Period (min) 15

Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 379: NE 80th St & Lake City Way NE



Campfire Cottages
380: 15th Ave NE & Lake City Way NE

WP 2009 PM
Timing Plan: Default

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.952			0.998			0.998	
Flt Protected								0.991				
Satd. Flow (prot)	0	3185	1478	0	3032	0	0	3417	0	0	3414	0
Flt Permitted					0.951			0.611				
Satd. Flow (perm)	0	3185	1478	0	2884	0	0	2107	0	0	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51		70			3			2	
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			792			327			950	
Travel Time (s)		5.0			14.6			6.4			18.5	
Volume (vph)	0	317	240	5	361	171	357	1640	25	0	800	10
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.98	0.98	0.98	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	345	261	6	420	199	364	1673	26	0	842	11
Lane Group Flow (vph)	0	345	261	0	625	0	0	2063	0	0	853	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			4		1	6			2	
Permitted Phases	4		4	4			6			2		
Detector Phases	4	4	4	4	4		1	6		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		10.0	26.0		26.0	26.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	0.0	11.0	75.0	0.0	64.0	64.0	0.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	0.0%	11.0%	75.0%	0.0%	64.0%	64.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Ped	Ped	Ped	Ped	Ped		Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		21.0	21.0		21.0			71.0			60.0	
Actuated g/C Ratio		0.21	0.21		0.21			0.71			0.60	
v/c Ratio		0.52	0.74		0.95			1.30			0.42	
Control Delay		45.3	50.9		59.5			150.9			11.4	
Queue Delay		1.4	8.4		6.4			82.4			0.0	
Total Delay		46.7	59.3		65.9			233.3			11.4	
LOS		D	E		E			F			B	
Approach Delay		52.1			65.9			233.3			11.4	
Approach LOS		D			E			F			B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 5 (5%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 136.0
 Intersection Capacity Utilization 108.1%
 Analysis Period (min) 15

















Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 380: 15th Ave NE & Lake City Way NE



















Campfire Cottages
1: NE 85th Street & 15th Ave NE

WP 2009 AM
Timing Plan: DEFAULT

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	2	8	5	10	5	2	120	5	2	561	9
Peak Hour Factor	0.50	0.50	0.50	0.45	0.45	0.45	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	16	4	16	11	22	11	2	145	6	2	623	10
Pedestrians		4						2			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								806				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	813	792	634	805	794	150	637			151		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	807	785	634	799	787	122	637			123		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	94	99	97	96	93	99	100			100		
cM capacity (veh/h)	267	312	476	266	297	866	934			1418		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	36	44	153	636								
Volume Left	16	11	2	2								
Volume Right	16	11	6	10								
cSH	339	343	934	1418								
Volume to Capacity	0.11	0.13	0.00	0.00								
Queue Length 95th (ft)	9	11	0	0								
Control Delay (s)	16.9	17.0	0.2	0.0								
Lane LOS	C	C	A	A								
Approach Delay (s)	16.9	17.0	0.2	0.0								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			41.8%		ICU Level of Service				A			
Analysis Period (min)			15									











Campfire Cottages
4: NE 86th Street & 15th Ave NE

WP 2009 AM
Timing Plan: DEFAULT

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	6	5	0	10	1	118	1	5	584	0
Peak Hour Factor	0.38	0.38	0.38	0.63	0.63	0.63	0.85	0.85	0.85	0.96	0.96	0.96
Hourly flow rate (vph)	3	0	16	8	0	16	1	139	1	5	608	0
Pedestrians		7			2			2			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)								1153				
pX, platoon unblocked												
vC, conflicting volume	784	770	617	780	770	142	615			142		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	784	770	617	780	770	142	615			142		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	99	100	97	97	100	98	100			100		
cM capacity (veh/h)	300	327	486	293	322	890	944			1438		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	18	24	141	614								
Volume Left	3	8	1	5								
Volume Right	16	16	1	0								
cSH	447	530	944	1438								
Volume to Capacity	0.04	0.04	0.00	0.00								
Queue Length 95th (ft)	3	4	0	0								
Control Delay (s)	13.4	12.1	0.1	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	13.4	12.1	0.1	0.1								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			44.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
7: NE 85th Street & Campfire Site Access













WP 2009 AM
Timing Plan: DEFAULT

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	5	14	7	13	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	15	8	14	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	23				24	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23				24	19
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				99	99
cM capacity (veh/h)	1592				991	1059
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	5	23	22			
Volume Left	0	0	14			
Volume Right	0	8	8			
cSH	1592	1700	1014			
Volume to Capacity	0.00	0.01	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.0	8.6			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

Campfire Cottages
378: NE 80th St & 15th Ave NE

WP 2009 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99		0.96		1.00			1.00			1.00	
Frt			0.850		0.998			0.992			0.997	
Flt Protected	0.950				0.993			0.989			0.997	
Satd. Flow (prot)	1668	1881	1386	0	1766	0	0	3337	0	0	3453	0
Flt Permitted	0.524				0.938			0.812			0.933	
Satd. Flow (perm)	913	1881	1332	0	1664	0	0	2734	0	0	3231	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		1			6			2	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.01	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1329			1324			257	
Travel Time (s)		5.1			30.2			25.8			4.7	
Volume (vph)	10	140	40	35	225	5	40	134	10	15	266	5
Confl. Peds. (#/hr)	7		12	12		7	5					5
Confl. Bikes (#/hr)			1						1			7
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.78	0.78	0.78	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	4	0
Adj. Flow (vph)	15	209	60	43	278	6	51	172	13	18	324	6
Lane Group Flow (vph)	15	209	60	0	327	0	0	236	0	0	348	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	70.0	70.0	70.0	70.0	70.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	0.0%	41.7%	41.7%	0.0%	41.7%	41.7%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	94.4	94.4	94.4		94.4			17.6			17.6	
Actuated g/C Ratio	0.79	0.79	0.79		0.79			0.15			0.15	
v/c Ratio	0.02	0.14	0.06		0.25			0.58			0.73	
Control Delay	2.2	2.2	0.7		4.3			51.9			63.6	
Queue Delay	0.0	0.8	0.0		0.3			0.1			0.1	
Total Delay	2.2	3.0	0.7		4.5			52.0			63.6	

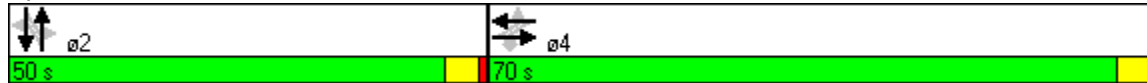
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		A			D			E	
Approach Delay		2.4			4.5			52.0			63.6	
Approach LOS		A			A			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 85 (71%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 30.6
 Intersection Capacity Utilization 55.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City WY NE

WP 2009 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	9	10	12	12	11	9	12	11	9
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt		0.967			0.994			0.988			0.995	
Flt Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1685	1876	0	1608	1745	0	0	3312	0	0	3435	0
Flt Permitted	0.553			0.487				0.605				
Satd. Flow (perm)	979	1876	0	821	1745	0	0	2008	0	0	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			17			6	
Headway Factor	1.09	0.96	1.00	1.14	1.09	1.00	1.00	1.04	1.14	1.00	1.04	1.14
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1083			224			605			327	
Travel Time (s)		24.6			5.1			11.8			6.4	
Volume (vph)	125	125	35	155	115	5	30	658	60	0	2459	80
Confl. Peds. (#/hr)	1		4	4		1	2		2	2		2
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.80	0.80	0.80	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%	4%	4%	0%	1%	1%	1%
Adj. Flow (vph)	156	156	44	209	155	7	38	822	75	0	2794	91
Lane Group Flow (vph)	156	200	0	209	162	0	0	935	0	0	2885	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		20.5	20.5	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	0.0%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	31.0	31.0		31.0	31.0			81.0			81.0	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.68			0.68	
v/c Ratio	0.62	0.41		0.99	0.36			0.69			1.24	
Control Delay	51.3	39.4		101.7	36.9			14.9			126.8	
Queue Delay	0.0	0.0		49.3	7.0			0.0			0.0	
Total Delay	51.3	39.4		151.1	43.9			14.9			126.8	
LOS	D	D		F	D			B			F	
Approach Delay		44.7			104.3			14.9			126.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Approach LOS		D			F			B			F	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 95.5
 Intersection Capacity Utilization 106.6%
 Analysis Period (min) 15


















Intersection LOS: F
 ICU Level of Service G













Splits and Phases: 379: NE 80th St & Lake City WY NE

ø2	ø4
85 s	35 s
ø6	
85 s	

Campfire Cottages
380: 15th Ave NE & Lake City WY NE

WP 2009 AM
Timing Plan: DEFAULT

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		51	51	51	51		51	51		51	51	
Trailing Detector (ft)		0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.98		0.98			1.00				
Frt			0.850		0.922			0.999				
Flt Protected					0.999			0.998				
Satd. Flow (prot)	0	3094	1436	0	2836	0	0	3313	0	0	3388	0
Flt Permitted					0.949			0.637				
Satd. Flow (perm)	0	3094	1408	0	2694	0	0	2115	0	0	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52		10			1				
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			806			327			1063	
Travel Time (s)		5.0			14.9			6.4			20.7	
Volume (vph)	0	114	35	10	281	318	28	760	5	0	2215	0
Confl. Peds. (#/hr)	16		4	4		16	3		1	1		3
Confl. Bikes (#/hr)						7			1			
Peak Hour Factor	0.67	0.67	0.67	0.85	0.85	0.85	0.88	0.88	0.88	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	0	170	52	12	331	374	32	864	6	0	2307	0
Lane Group Flow (vph)	0	170	52	0	717	0	0	902	0	0	2307	0
Turn Type			Perm	Perm			Perm			Perm		
Protected Phases		4			4			6			2	
Permitted Phases			4	4			6			2		
Detector Phases		4	4	4	4		6	6		2	2	
Minimum Initial (s)		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		24.5	24.5	24.5	24.5		26.5	26.5		26.5	26.5	
Total Split (s)	0.0	35.0	35.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	0.0%	29.2%	29.2%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Ped	Ped	Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		31.0	31.0		31.0			81.0			81.0	
Actuated g/C Ratio		0.26	0.26		0.26			0.68			0.68	
v/c Ratio		0.21	0.13		1.02			0.63			1.01	
Control Delay		36.7	23.1		82.6			8.2			41.1	
Queue Delay		0.0	0.0		100.6			0.6			8.3	
Total Delay		36.7	23.1		183.2			8.8			49.3	
LOS		D	C		F			A			D	

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Approach Delay		33.5			183.2			8.8			49.3	
Approach LOS		C			F			A			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 115 (96%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 62.8
 Intersection Capacity Utilization 90.3%
 Analysis Period (min) 15

















Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 380: 15th Ave NE & Lake City WY NE

 ø2	 ø4
85 s	35 s
 ø6	
85 s	

Campfire Cottages
1: NE 85th Street & 15th Ave NE

WOP 2009 PM
Timing Plan: Default

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	5	5	15	10	15	10	670	20	5	285	5
Peak Hour Factor	0.50	0.50	0.50	0.61	0.61	0.61	0.97	0.97	0.97	0.86	0.86	0.86
Hourly flow rate (vph)	20	10	10	25	16	25	10	691	21	6	331	6
Pedestrians		4			3			1			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								792				
pX, platoon unblocked	0.86	0.86		0.86	0.86	0.86				0.86		
vC, conflicting volume	1109	1085	339	1087	1077	709	341			714		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1127	1099	339	1101	1090	661	341			667		
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 %	85	94	99	84	91	94	99			99		
cM capacity (veh/h)	131	176	693	150	181	394	1214			790		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	40	66	722	343								
Volume Left	20	25	10	6								
Volume Right	10	25	21	6								
cSH	179	207	1214	790								
Volume to Capacity	0.22	0.32	0.01	0.01								
Queue Length 95th (ft)	21	32	1	1								
Control Delay (s)	30.9	30.3	0.2	0.2								
Lane LOS	D	D	A	A								
Approach Delay (s)	30.9	30.3	0.2	0.2								
Approach LOS	D	D										
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			53.4%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
3: NE 86th Street & 15th Ave NE

WOP 2009 PM
Timing Plan: Default

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	0	15	2	665	10	5	305	0
Peak Hour Factor	0.92	0.92	0.92	0.43	0.43	0.43	0.96	0.96	0.96	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	12	0	35	2	693	10	6	359	0
Pedestrians		12			7							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								1128				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	1120	1097	371	1080	1092	705	371			710		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1138	1112	371	1092	1106	660	371			666		
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 %	100	100	100	93	100	91	100			99		
cM capacity (veh/h)	138	177	668	163	178	400	1176			797		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	47	705	365								
Volume Left	0	12	2	6								
Volume Right	0	35	10	0								
cSH	1700	293	1176	797								
Volume to Capacity	0.00	0.16	0.00	0.01								
Queue Length 95th (ft)	0	14	0	1								
Control Delay (s)	0.0	19.6	0.0	0.2								
Lane LOS	A	C	A	A								
Approach Delay (s)	0.0	19.6	0.0	0.2								
Approach LOS	A	C										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			46.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
378: NE 80th St & 15th Ave NE

WOP 2009 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00		0.97		1.00			1.00			1.00	
Frt			0.850		0.991			0.995			0.996	
Flt Protected	0.950				0.993			0.996			0.997	
Satd. Flow (prot)	1652	1863	1372	0	1787	0	0	3501	0	0	3507	0
Flt Permitted	0.495				0.905			0.868			0.880	
Satd. Flow (perm)	856	1863	1328	0	1626	0	0	3051	0	0	3094	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			34		5			5			4	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.00	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1335			1315			257	
Travel Time (s)		5.1			30.3			25.6			4.7	
Volume (vph)	15	300	70	45	235	20	50	520	20	25	345	10
Confl. Peds. (#/hr)	6		11	11		6			10	10		
Confl. Bikes (#/hr)						2			2			
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	0
Adj. Flow (vph)	17	345	80	50	261	22	60	619	24	30	411	12
Lane Group Flow (vph)	17	345	80	0	333	0	0	703	0	0	453	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	49.7	49.7	49.7	49.7	49.7	0.0	50.3	50.3	0.0	50.3	50.3	0.0
Total Split (%)	49.7%	49.7%	49.7%	49.7%	49.7%	0.0%	50.3%	50.3%	0.0%	50.3%	50.3%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	62.7	62.7	62.7		62.7			29.3			29.3	
Actuated g/C Ratio	0.63	0.63	0.63		0.63			0.29			0.29	
v/c Ratio	0.03	0.30	0.09		0.33			0.78			0.50	
Control Delay	2.9	2.9	0.4		10.7			38.4			35.9	
Queue Delay	0.0	0.9	0.5		0.1			0.1			0.3	
Total Delay	2.9	3.9	1.0		10.8			38.6			36.2	

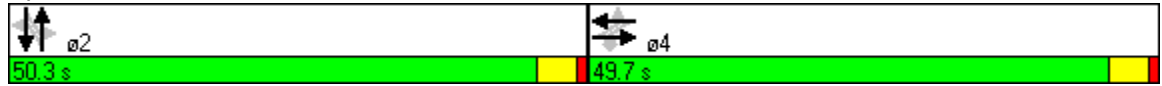
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		B			D			D	
Approach Delay		3.3			10.8			38.6			36.2	
Approach LOS		A			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 74 (74%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization 72.3%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City Way NE

WOP 2009 PM
Timing Plan: Default

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00				
Frt		0.995			0.993			0.993			0.990	
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1787	1871	0	1805	1868	0	0	3537	0	0	3508	0
Flt Permitted	0.421			0.242				0.693				
Satd. Flow (perm)	791	1871	0	459	1868	0	0	2458	0	0	3508	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			9			15	
Headway 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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1098			224			1461			327	
Travel Time (s)		25.0			5.1			28.5			6.4	
Volume (vph)	200	295	10	85	200	10	125	1800	90	0	905	65
Confl. Peds. (#/hr)	2		4	4		2			6	6		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.96	0.96	0.96	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	0%	1%	0%	0%	1%	0%	0%	2%	0%
Adj. Flow (vph)	250	369	12	106	250	12	130	1875	94	0	1006	72
Lane Group Flow (vph)	250	381	0	106	262	0	0	2099	0	0	1078	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		24.5	24.5	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	68.0	68.0	0.0	68.0	68.0	0.0
Total Split (%)	32.0%	32.0%	0.0%	32.0%	32.0%	0.0%	68.0%	68.0%	0.0%	68.0%	68.0%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	28.0	28.0		28.0	28.0			64.0			64.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28			0.64			0.64	
v/c Ratio	1.13	0.73		0.82	0.50			1.33			0.48	
Control Delay	135.9	41.6		72.2	27.5			175.1			4.4	
Queue Delay	109.6	0.0		0.0	9.2			19.2			0.1	
Total Delay	245.5	41.6		72.2	36.7			194.2			4.5	
LOS	F	D		E	D			F			A	
Approach Delay		122.4			46.9			194.2			4.5	
Approach LOS		F			D			F			A	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 121.4
 Intersection Capacity Utilization 125.3%
 Analysis Period (min) 15


















Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 379: NE 80th St & Lake City Way NE



Campfire Cottages
380: 15th Ave NE & Lake City Way NE

WOP 2009 PM
Timing Plan: Default

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.952			0.998			0.998	
Flt Protected								0.991				
Satd. Flow (prot)	0	3185	1478	0	3032	0	0	3417	0	0	3414	0
Flt Permitted					0.951			0.614				
Satd. Flow (perm)	0	3185	1478	0	2884	0	0	2117	0	0	3414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51		69			3			2	
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			792			327			950	
Travel Time (s)		5.0			14.6			6.4			18.5	
Volume (vph)	0	310	240	5	360	170	345	1640	25	0	800	10
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.98	0.98	0.98	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	337	261	6	419	198	352	1673	26	0	842	11
Lane Group Flow (vph)	0	337	261	0	623	0	0	2051	0	0	853	0
Turn Type	Perm		Perm	Perm			pm+pt			Perm		
Protected Phases		4			4		1	6			2	
Permitted Phases	4		4	4			6			2		
Detector Phases	4	4	4	4	4		1	6		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		10.0	26.0		26.0	26.0	
Total Split (s)	25.0	25.0	25.0	25.0	25.0	0.0	11.0	75.0	0.0	64.0	64.0	0.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	0.0%	11.0%	75.0%	0.0%	64.0%	64.0%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?												
Recall Mode	Ped	Ped	Ped	Ped	Ped		Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		21.0	21.0		21.0			71.0			60.0	
Actuated g/C Ratio		0.21	0.21		0.21			0.71			0.60	
v/c Ratio		0.50	0.74		0.95			1.29			0.42	
Control Delay		44.8	50.7		59.4			145.0			11.4	
Queue Delay		1.3	8.4		6.3			82.2			0.0	
Total Delay		46.1	59.1		65.7			227.2			11.4	
LOS		D	E		E			F			B	
Approach Delay		51.8			65.7			227.2			11.4	
Approach LOS		D			E			F			B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 5 (5%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 132.8
 Intersection Capacity Utilization 107.6%
 Analysis Period (min) 15

















Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 380: 15th Ave NE & Lake City Way NE



















Campfire Cottages
1: NE 85th Street & 15th Ave NE

WOP 2009 AM
Timing Plan: DEFAULT

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	2	0	5	10	5	5	120	5	2	560	10
Peak Hour Factor	0.50	0.50	0.50	0.45	0.45	0.45	0.83	0.83	0.83	0.90	0.90	0.90
Hourly flow rate (vph)	10	4	0	11	22	11	6	145	6	2	622	11
Pedestrians		4						2			2	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		4.0						4.0			4.0	
Percent Blockage		0						0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)								806				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	820	799	634	796	801	150	637			151		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	814	792	634	789	795	120	637			121		
tC, single (s)	7.1	6.5	6.2	7.2	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	96	99	100	96	92	99	99			100		
cM capacity (veh/h)	263	307	477	278	292	866	934			1417		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	44	157	636								
Volume Left	10	11	6	2								
Volume Right	0	11	6	11								
cSH	274	345	934	1417								
Volume to Capacity	0.05	0.13	0.01	0.00								
Queue Length 95th (ft)	4	11	0	0								
Control Delay (s)	18.8	17.0	0.4	0.0								
Lane LOS	C	C	A	A								
Approach Delay (s)	18.8	17.0	0.4	0.0								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			41.5%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
4: NE 86th Street & 15th Ave NE













WOP 2009 AM
Timing Plan: DEFAULT

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	5	5	0	10	1	115	1	5	585	0
Peak Hour Factor	0.38	0.38	0.38	0.63	0.63	0.63	0.85	0.85	0.85	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	13	8	0	16	1	135	1	5	609	0
Pedestrians		7			2			2			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								1153				
pX, platoon unblocked												
vC, conflicting volume	782	768	618	775	767	139	616			138		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	782	768	618	775	767	139	616			138		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	97	97	100	98	100			100		
cM capacity (veh/h)	301	328	485	297	323	894	944			1443		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	13	24	138	615								
Volume Left	0	8	1	5								
Volume Right	13	16	1	0								
cSH	485	535	944	1443								
Volume to Capacity	0.03	0.04	0.00	0.00								
Queue Length 95th (ft)	2	3	0	0								
Control Delay (s)	12.6	12.0	0.1	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.6	12.0	0.1	0.1								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			46.5%		ICU Level of Service					A		
Analysis Period (min)			15									

Campfire Cottages
378: NE 80th St & 15th Ave NE

WOP 2009 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	8	12	11	12	9	12	12	9	12	12
Storage Length (ft)	60		30	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51	51	51	51		51	51		51	51	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99		0.96		1.00			1.00			1.00	
Frt			0.850		0.998			0.992			0.997	
Flt Protected	0.950				0.993			0.989			0.997	
Satd. Flow (prot)	1668	1881	1386	0	1766	0	0	3337	0	0	3453	0
Flt Permitted	0.524				0.938			0.814			0.932	
Satd. Flow (perm)	913	1881	1332	0	1664	0	0	2740	0	0	3228	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		1			6			2	
Headway Factor	1.09	1.00	1.20	1.00	1.04	1.00	1.14	1.00	1.00	1.14	1.01	1.00
Link Speed (mph)		30			30			35			37	
Link Distance (ft)		224			1329			1324			257	
Travel Time (s)		5.1			30.2			25.8			4.7	
Volume (vph)	10	140	40	35	225	5	40	135	10	15	260	5
Confl. Peds. (#/hr)	7		12	12		7	5					5
Confl. Bikes (#/hr)			1						1			7
Peak Hour Factor	0.67	0.67	0.67	0.81	0.81	0.81	0.78	0.78	0.78	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	4	0
Adj. Flow (vph)	15	209	60	43	278	6	51	173	13	18	317	6
Lane Group Flow (vph)	15	209	60	0	327	0	0	237	0	0	341	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Detector Phases	4	4	4	4	4		2	2		2	2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	20.5	20.5	20.5	20.5	20.5		18.5	18.5		18.5	18.5	
Total Split (s)	70.0	70.0	70.0	70.0	70.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	0.0%	41.7%	41.7%	0.0%	41.7%	41.7%	0.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Min	Min		Min	Min	
Act Effct Green (s)	94.6	94.6	94.6		94.6			17.4			17.4	
Actuated g/C Ratio	0.79	0.79	0.79		0.79			0.14			0.14	
v/c Ratio	0.02	0.14	0.06		0.25			0.59			0.73	
Control Delay	2.2	2.1	0.6		4.2			52.4			63.7	
Queue Delay	0.0	0.8	0.0		0.3			0.1			0.1	
Total Delay	2.2	2.9	0.6		4.4			52.5			63.8	

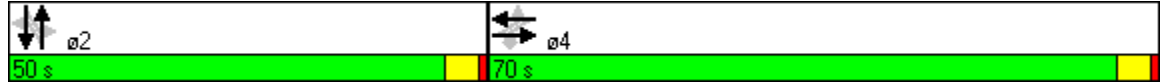
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	A	A	A		A			D			E	
Approach Delay		2.4			4.4			52.5			63.8	
Approach LOS		A			A			D			E	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 85 (71%), Referenced to phase 4:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 30.6
 Intersection Capacity Utilization 55.0%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 378: NE 80th St & 15th Ave NE



Campfire Cottages
379: NE 80th St & Lake City WY NE

WOP 2009 AM
Timing Plan: DEFAULT

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	13	12	9	10	12	12	11	9	12	11	9
Storage Length (ft)	60		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	51	51		51	51		51	51		51	51	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt		0.967			0.994			0.988			0.995	
Flt Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1685	1876	0	1608	1745	0	0	3312	0	0	3435	0
Flt Permitted	0.553			0.487				0.605				
Satd. Flow (perm)	979	1876	0	821	1745	0	0	2008	0	0	3435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			2			17			6	
Headway Factor	1.09	0.96	1.00	1.14	1.09	1.00	1.00	1.04	1.14	1.00	1.04	1.14
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1083			224			605			327	
Travel Time (s)		24.6			5.1			11.8			6.4	
Volume (vph)	125	125	35	155	115	5	30	660	60	0	2450	80
Confl. Peds. (#/hr)	1		4	4		1	2		2	2		2
Peak Hour Factor	0.80	0.80	0.80	0.74	0.74	0.74	0.80	0.80	0.80	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%	4%	4%	0%	1%	1%	1%
Adj. Flow (vph)	156	156	44	209	155	7	38	825	75	0	2784	91
Lane Group Flow (vph)	156	200	0	209	162	0	0	938	0	0	2875	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			4			2			6	
Permitted Phases	4			4			2			6		
Detector Phases	4	4		4	4		2	2		6	6	
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		24.5	24.5		20.5	20.5	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	0.0%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)	31.0	31.0		31.0	31.0			81.0			81.0	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.68			0.68	
v/c Ratio	0.62	0.41		0.99	0.36			0.69			1.24	
Control Delay	51.3	39.4		101.7	36.9			14.9			124.8	
Queue Delay	0.0	0.0		49.3	7.0			0.0			0.0	
Total Delay	51.3	39.4		151.1	44.0			14.9			124.8	
LOS	D	D		F	D			B			F	
Approach Delay		44.7			104.3			14.9			124.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Approach LOS		D			F			B			F	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green, Master Intersection
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 94.1
 Intersection Capacity Utilization 106.4%
 Analysis Period (min) 15













Intersection LOS: F
 ICU Level of Service G













Splits and Phases: 379: NE 80th St & Lake City WY NE

ø2	ø4
85 s	35 s
ø6	
85 s	

Campfire Cottages
380: 15th Ave NE & Lake City WY NE

WOP 2009 AM
Timing Plan: DEFAULT

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑	↗		↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	12	9	10	9	11	12	9	11	12
Storage Length (ft)	0		60	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		51	51	51	51		51	51		51	51	
Trailing Detector (ft)		0	0	0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.98		0.98			1.00				
Frt			0.850		0.921			0.999				
Flt Protected					0.999			0.998				
Satd. Flow (prot)	0	3094	1436	0	2832	0	0	3313	0	0	3388	0
Flt Permitted					0.949			0.629				
Satd. Flow (perm)	0	3094	1408	0	2690	0	0	2088	0	0	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52		10			1				
Headway Factor	1.14	1.14	1.09	1.00	1.14	1.09	1.14	1.04	1.00	1.14	1.04	1.00
Link Speed (mph)		35			37			35			35	
Link Distance (ft)		257			806			327			1063	
Travel Time (s)		5.0			14.9			6.4			20.7	
Volume (vph)	0	115	35	10	275	315	30	760	5	0	2215	0
Confl. Peds. (#/hr)	16		4	4		16	3		1	1		3
Confl. Bikes (#/hr)						7			1			
Peak Hour Factor	0.67	0.67	0.67	0.85	0.85	0.85	0.88	0.88	0.88	0.96	0.96	0.96
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	0	172	52	12	324	371	34	864	6	0	2307	0
Lane Group Flow (vph)	0	172	52	0	707	0	0	904	0	0	2307	0
Turn Type			Perm	Perm			Perm			Perm		
Protected Phases		4			4			6			2	
Permitted Phases			4	4			6			2		
Detector Phases		4	4	4	4		6	6		2	2	
Minimum Initial (s)		7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)		24.5	24.5	24.5	24.5		26.5	26.5		26.5	26.5	
Total Split (s)	0.0	35.0	35.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	0.0%	29.2%	29.2%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Ped	Ped	Ped	Ped		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		31.0	31.0		31.0			81.0			81.0	
Actuated g/C Ratio		0.26	0.26		0.26			0.68			0.68	
v/c Ratio		0.22	0.13		1.03dr			0.64			1.01	
Control Delay		36.7	23.0		79.7			8.3			41.1	
Queue Delay		0.0	0.0		90.6			0.6			8.3	
Total Delay		36.7	23.0		170.3			8.9			49.3	
LOS		D	C		F			A			D	

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Approach Delay		33.5			170.3			8.9			49.3	
Approach LOS		C			F			A			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 115 (96%), Referenced to phase 2:SWTL and 6:NETL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 60.3
 Intersection Capacity Utilization 90.1%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service E
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 380: 15th Ave NE & Lake City WY NE

 ø2	 ø4
85 s	35 s
 ø6	
85 s	

Campfire Cottages
1: NE 85th Street & 15th Ave NE

WP 2009 PM
Timing Plan: Default

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	5	5	15	11	15	28	671	20	5	285	7
Peak Hour Factor	0.50	0.50	0.50	0.61	0.61	0.61	0.97	0.97	0.97	0.86	0.86	0.86
Hourly flow rate (vph)	26	10	10	25	18	25	29	692	21	6	331	8
Pedestrians		4			3			1			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								792				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	1149	1124	340	1126	1118	710	344			715		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1175	1145	340	1147	1138	661	344			667		
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 %	78	94	99	82	89	94	98			99		
cM capacity (veh/h)	118	162	692	137	166	393	1211			786		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	46	67	741	345								
Volume Left	26	25	29	6								
Volume Right	10	25	21	8								
cSH	155	191	1211	786								
Volume to Capacity	0.30	0.35	0.02	0.01								
Queue Length 95th (ft)	29	37	2	1								
Control Delay (s)	37.8	33.7	0.6	0.2								
Lane LOS	E	D	A	A								
Approach Delay (s)	37.8	33.7	0.6	0.2								
Approach LOS	E	D										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			63.4%		ICU Level of Service					B		
Analysis Period (min)			15									

Campfire Cottages
3: NE 86th Street & 15th Ave NE

WP 2009 PM
Timing Plan: Default

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	5	0	15	2	668	10	5	307	1
Peak Hour Factor	0.92	0.92	0.92	0.43	0.43	0.43	0.96	0.96	0.96	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	12	0	35	2	696	10	6	361	1
Pedestrians		12			7							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		1			1							
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								1128				
pX, platoon unblocked	0.87	0.87		0.87	0.87	0.87				0.87		
vC, conflicting volume	1126	1103	374	1086	1098	708	374			713		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1145	1118	374	1099	1113	664	374			670		
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 %	100	100	100	93	100	91	100			99		
cM capacity (veh/h)	136	175	666	161	177	398	1172			795		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	47	708	368								
Volume Left	0	12	2	6								
Volume Right	0	35	10	1								
cSH	1700	291	1172	795								
Volume to Capacity	0.00	0.16	0.00	0.01								
Queue Length 95th (ft)	0	14	0	1								
Control Delay (s)	0.0	19.7	0.0	0.2								
Lane LOS	A	C	A	A								
Approach Delay (s)	0.0	19.7	0.0	0.2								
Approach LOS	A	C										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			46.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	13	23	23	10	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	14	25	25	11	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	50				52	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	50				52	38
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				99	100
cM capacity (veh/h)	1557				957	1035
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	14	50	15			
Volume Left	0	0	11			
Volume Right	0	25	4			
cSH	1557	1700	978			
Volume to Capacity	0.00	0.03	0.02			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	8.7			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			