Appendix C: Transportation Analysis

Automatic Traffic Recorder (ATR) Data
Turning Movement Count (TMC) Summary
Pedestrian Count Summary
On-Street Parking Supply and Demand Summary
Signal Timings
Synchro Analysis (Existing / No Build / Construction)
Physical Inventory

Automatic Traffic Recorder (ATR) Data

ATR DATA

LOCATION: 8th Avenue between 27th and 28th streets
DIRECTION: NB
START DAY: 4/13/2018
START TIME: 2:45 PM

ONE HOUR INTERVAL	MONDAY (1/22/18)	TUESDAY (1/23/18)	WEDNESDAY (1/24/18)	THURSDAY (1/25/18)	FRIDAY (1/26/18)	AVERAGE TUES-THUR
12:00 AM - 1:00 AM	632	623	792	943	1,057	786
1:00 AM - 2:00 AM	468	436	554	651	763	547
2:00 AM - 3:00 AM	394	326	409	420	564	385
3:00 AM - 4:00 AM	312	285	365	335	437	328
4:00 AM - 5:00 AM	243	256	326	312	388	298
5:00 AM - 6:00 AM	350	399	486	410	494	432
6:00 AM - 7:00 AM	689	764	755	746	761	755
7:00 AM - 8:00 AM	957	1,032	971	867	1,068	957
8:00 AM - 9:00 AM	1,014	1,208	1,204	1,166	1,288	1,193
9:00 AM - 10:00 AM	1,253	1,240	1,235	1,250	1,260	1,242
10:00 AM - 11:00 AM	1,391	1,250	1,193	1,228	1,247	1,224
11:00 AM - 12:00 PM	651	1,239	1,434	1,185	1,367	1,286
12:00 PM - 1:00 PM	772	1,146	1,295	1,211	1,419	1,217
1:00 PM - 2:00 PM	1,145	1,173	1,548	1,238	1,620	1,320
2:00 PM - 3:00 PM	1,310	1,431	1,542	1,451	1,598	1,475
3:00 PM - 4:00 PM	1,251	1,254	1,701	1,535	1,698	1,497
4:00 PM - 5:00 PM	1,149	1,241	1,642	1,599	1,545	1,494
5:00 PM - 6:00 PM	1,016	1,233	1,404	1,624	1,405	1,420
6:00 PM - 7:00 PM	1,090	1,289	1,506	1,507	1,172	1,434
7:00 PM - 8:00 PM	1,104	1,327	1,455	1,414	1,265	1,399
8:00 PM - 9:00 PM	1,011	1,244	1,429	1,367	1,261	1,347
9:00 PM - 10:00 PM	953	1,063	1,200	1,272	1,344	1,178
10:00 PM - 11:00 PM	877	941	1,059	1,089	1,213	1,030
11:00 PM - 12:00 AM	748	879	994	939	1,289	937
24 HOUR TOTAL	20,780	23,279	26,499	25,759	27,523	25,179

ATR DATA

LOCATION: 9th Avenue between 28th and 29th streets
DIRECTION: SB
START DAY: 4/13/2018
START TIME: 2:00 PM

ONE HOUR INTERVAL	MONDAY (1/22/18)	TUESDAY (1/23/18)	WEDNESDAY (1/24/18)	THURSDAY (1/25/18)	FRIDAY (1/26/18)	AVERAGE TUES-THUR
12:00 AM - 1:00 AM	275	364	718	946	958	676
1:00 AM - 2:00 AM	192	367	479	612	750	486
2:00 AM - 3:00 AM	128	305	342	441	596	363
3:00 AM - 4:00 AM	107	287	293	316	484	299
4:00 AM - 5:00 AM	117	333	365	405	438	368
5:00 AM - 6:00 AM	294	619	599	686	653	635
6:00 AM - 7:00 AM	466	1,151	1,176	1,061	1,098	1,129
7:00 AM - 8:00 AM	607	1,367	1,452	1,324	1,270	1,381
8:00 AM - 9:00 AM	735	1,350	1,494	1,522	1,502	1,455
9:00 AM - 10:00 AM	851	1,521	1,528	1,585	1,656	1,545
10:00 AM - 11:00 AM	872	1,565	1,493	1,723	1,600	1,594
11:00 AM - 12:00 PM	894	1,474	1,550	1,554	1,440	1,526
12:00 PM - 1:00 PM	714	1,143	1,406	1,464	1,304	1,338
1:00 PM - 2:00 PM	678	1,336	1,410	1,347	1,156	1,364
2:00 PM - 3:00 PM	747	1,384	1,422	1,359	1,239	1,388
3:00 PM - 4:00 PM	767	1,330	1,296	1,190	913	1,272
4:00 PM - 5:00 PM	811	1,330	1,137	1,007	942	1,158
5:00 PM - 6:00 PM	866	1,313	1,067	1,062	991	1,147
6:00 PM - 7:00 PM	842	1,477	1,169	1,273	1,093	1,306
7:00 PM - 8:00 PM	672	1,441	1,544	1,449	1,498	1,478
8:00 PM - 9:00 PM	498	1,304	1,717	1,375	1,485	1,465
9:00 PM - 10:00 PM	476	1,196	1,387	1,295	1,428	1,293
10:00 PM - 11:00 PM	428	1,191	1,301	1,262	1,444	1,251
11:00 PM - 12:00 AM	346	1,068	1,172	1,244	1,453	1,161
24 HOUR TOTAL	13,383	26,216	27,517	27,502	27,391	27,078

ATR DATA

LOCATION: 28th Street between 9th and 8th
DIRECTION: EB
START DAY: 4/13/2018
START TIME: 2:00 PM

ONE HOUR INTERVAL	MONDAY (1/22/18)	TUESDAY (1/23/18)	WEDNESDAY (1/24/18)	THURSDAY (1/25/18)	FRIDAY (1/26/18)	AVERAGE TUES-THUR
12:00 AM - 1:00 AM	149	146	128	222	179	165
1:00 AM - 2:00 AM	112	66	94	122	136	94
2:00 AM - 3:00 AM	91	57	72	138	140	89
3:00 AM - 4:00 AM	78	47	63	99	115	70
4:00 AM - 5:00 AM	57	64	70	104	107	79
5:00 AM - 6:00 AM	136	119	110	116	112	115
6:00 AM - 7:00 AM	323	275	312	282	283	290
7:00 AM - 8:00 AM	337	229	370	275	340	291
8:00 AM - 9:00 AM	516	522	515	441	468	493
9:00 AM - 10:00 AM	474	540	571	524	546	545
10:00 AM - 11:00 AM	358	494	423	578	468	498
11:00 AM - 12:00 PM	408	474	476	455	426	468
12:00 PM - 1:00 PM	394	413	439	445	353	432
1:00 PM - 2:00 PM	357	233	371	381	245	328
2:00 PM - 3:00 PM	405	209	282	381	276	291
3:00 PM - 4:00 PM	375	242	361	338	271	314
4:00 PM - 5:00 PM	404	364	340	285	276	330
5:00 PM - 6:00 PM	508	412	325	322	341	353
6:00 PM - 7:00 PM	416	381	415	415	452	404
7:00 PM - 8:00 PM	364	357	388	455	477	400
8:00 PM - 9:00 PM	277	368	534	370	381	424
9:00 PM - 10:00 PM	261	277	339	330	409	315
10:00 PM - 11:00 PM	219	229	270	296	426	265
11:00 PM - 12:00 AM	176	197	261	223	321	227
24 HOUR TOTAL	7,195	6,715	7,529	7,597	7,548	7,280

Turning Movement Count (TMC) Summary

Type or copy name of intersection worksheet into appropriate type period

AM Peak	Cell with Total	8th Ave at 28th Street AM	9th Ave at 28th Street AM	TOTAL
7:00 - 8:00	AA30	1,280	1,563	**2,843**
7:15 - 8:15	AA33	1,341	1,623	**2,964**
7:30 - 8:30	AA36	1,451	1,627	**3,078**
7:45 - 8:45	AA39	1,518	1,699	**3,217**
8:00 - 9:00	AA42	1,608	1,767	**3,375**

MD Peak	Cell with Total	8th Ave at 28th Street MD	9th Ave at 28th Street MD	TOTAL
12:00 - 13:00	AA30	1,481	1,563	**3,044**
12:15 - 13:15	AA33	1,570	1,623	**3,193**
12:30 - 13:30	AA36	1,544	1,627	**3,171**
12:45 - 13:45	AA39	1,558	1,699	**3,257**
13:00 - 14:00	AA42	1,594	1,767	**3,361**

PM Peak	Cell with Total	8th Ave at 28th Street PM	9th Ave at 28th Street PM	TOTAL
16:00 - 17:00	AA30	1,763	1,563	**3,326**
16:15 - 17:15	AA33	1,693	1,623	**3,316**
16:30 - 17:30	AA36	1,601	1,627	**3,228**
16:45 - 17:45	AA39	1,580	1,699	**3,279**
17:00 -18:00	AA42	1,508	1,767	**3,275**

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 8th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*8th Avenue* (NB)			*8th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
7:00	Auto		0	160	14	0	0	0	50	30	0	0	0	0	288		
to	Truck		0	18	3	0	0	0	4	3	0	0	0	0			
7:15	Bus		0	5	0	0	0	0	1	0	0	0	0	0			
7:15	Auto		0	188	13	0	0	0	46	37	0	0	0	0	312		
to	Truck		0	15	1	0	0	0	4	4	0	0	0	0			
7:30	Bus		0	4	0	0	0	0	0	0	0	0	0	0			
7:30	Auto		0	221	14	0	0	0	47	43	0	0	0	0	354		
to	Truck		0	13	2	0	0	0	5	1	0	0	0	0			
7:45	Bus		0	5	0	0	0	0	1	2	0	0	0	0			
7:45	Auto		0	231	14	0	0	0	24	31	0	0	0	0	326		
to	Truck		0	11	0	0	0	0	1	6	0	0	0	0			
8:00	Bus		0	7	0	0	0	0	0	1	0	0	0	0		1,280	
8:00	Auto	1	0	208	13	0	0	0	35	64	0	0	0	0	349		
to	Truck		0	16	1	0	0	0	3	5	0	0	0	0			
8:15	Bus		0	3	0	0	0	0	1	0	0	0	0	0		1,341	
8:15	Auto		0	283	11	0	0	0	43	66	0	0	0	0	422		
to	Truck		0	9	2	0	0	0	1	4	0	0	0	0			
8:30	Bus		0	3	0	0	0	0	0	0	0	0	0	0		1,451	
8:30	Auto		0	244	27	0	0	0	50	57	0	0	0	0	421		
to	Truck		0	27	1	0	0	0	3	7	0	0	0	0			
8:45	Bus		0	4	0	0	0	0	1	0	0	0	0	0		1,518	
8:45	Auto		0	243	20	0	0	0	68	54	0	0	0	0	416		
to	Truck		0	15	3	0	0	0	2	2	0	0	0	0			
9:00	Bus		0	8	0	0	0	0	1	0	0	0	0	0		1,608	
9:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		1,259	
9:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		837	
9:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		416	
9:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
10:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,608
Peak Hour Volume (PHV)			0	1,063	78	0	0	0	208	259	0	0	0	0	1,608		
PHV (by approach)			1,141			0			467			0					
Peak Hour Factor (PHF)			0.93			#DIV/0!			0.92			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.88			0.80			0.84			0.80					
Max Peak Hour Factor (PHF)			0.93			#DIV/0!			0.92			#DIV/0!					
Total Autos			1,049			0			437			0					
Total Trucks			74			0			27			0					
Total Buses			18			0			3			0					
% Auto			91.9%			#DIV/0!			93.6%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			8.1%			#DIV/0!			6.4%			#DIV/0!					

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 8th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*8th Avenue* (NB)			*8th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
12:00	Auto		0	133	18	0	0	0	50	56	0	0	0	0	281		
to	Truck		0	13	2	0	0	0	2	1	0	0	0	0			
12:15	Bus		0	3	0	0	0	0	3	0	0	0	0	0			
12:15	Auto		0	290	24	0	0	0	51	47	0	0	0	0	439		
to	Truck		0	13	1	0	0	0	5	4	0	0	0	0			
12:30	Bus		0	3	0	0	0	0	1	0	0	0	0	0			
12:30	Auto		0	271	20	0	0	0	49	45	0	0	0	0	415		
to	Truck		0	11	1	0	0	0	3	3	0	0	0	0			
12:45	Bus		0	9	0	0	0	0	1	2	0	0	0	0			
12:45	Auto		0	241	31	0	0	0	19	25	0	0	0	0	346		
to	Truck		0	15	5	0	0	0	2	2	0	0	0	0			
13:00	Bus		0	5	0	0	0	0	1	0	0	0	0	0		1,481	
13:00	Auto	1	0	268	18	0	0	0	43	19	0	0	0	0	370		
to	Truck		0	12	1	0	0	0	0	2	0	0	0	0			
13:15	Bus		0	5	0	0	0	0	2	0	0	0	0	0		1,570	
13:15	Auto		0	285	27	0	0	0	30	40	0	0	0	0	413		
to	Truck		0	16	2	0	0	0	0	4	0	0	0	0			
13:30	Bus		0	5	0	0	0	0	3	1	0	0	0	0		1,544	
13:30	Auto		0	318	26	0	0	0	23	44	0	0	0	0	429		
to	Truck		0	6	4	0	0	0	1	3	0	0	0	0			
13:45	Bus		0	3	0	0	0	0	0	1	0	0	0	0		1,558	
13:45	Auto		0	262	24	0	0	0	21	51	0	0	0	0	382		
to	Truck		0	17	0	0	0	0	1	2	0	0	0	0			
14:00	Bus		0	4	0	0	0	0	0	0	0	0	0	0		1,594	
14:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		1,224	
14:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		811	
14:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		382	
14:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
15:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,594
Peak Hour Volume (PHV)			0	1,201	102	0	0	0	124	167	0	0	0	0	1,594		
PHV (by approach)			1,303			0			291			0					
Peak Hour Factor (PHF)			0.91			#DIV/0!			0.93			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.90			0.80			0.82			0.80					
Max Peak Hour Factor (PHF)			0.91			#DIV/0!			0.93			#DIV/0!					
Total Autos			1,228			0			271			0					
Total Trucks			58			0			13			0					
Total Buses			17			0			7			0					
% Auto			94.2%			#DIV/0!			93.1%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			5.8%			#DIV/0!			6.9%			#DIV/0!					

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 8th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*8th Avenue* (NB)			*8th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
16:00	Auto	1	0	345	31	0	0	0	10	49	0	0	0	0	455		
to	Truck		0	10	1	0	0	0	0	1	0	0	0	0			
16:15	Bus		0	5	0	0	0	0	1	2	0	0	0	0			
16:15	Auto		0	316	36	0	0	0	14	50	0	0	0	0	435		
to	Truck		0	10	0	0	0	0	1	3	0	0	0	0			
16:30	Bus		0	4	0	0	0	0	0	1	0	0	0	0			
16:30	Auto		0	304	20	0	0	0	17	54	0	0	0	0	415		
to	Truck		0	16	0	0	0	0	1	1	0	0	0	0			
16:45	Bus		0	1	0	0	0	0	0	1	0	0	0	0			
16:45	Auto		0	315	43	0	0	0	24	56	0	0	0	0	458		
to	Truck		0	7	2	0	0	0	2	1	0	0	0	0			
17:00	Bus		0	6	0	0	0	0	1	1	0	0	0	0		1,763	
17:00	Auto		0	256	36	0	0	0	26	48	0	0	0	0	385		
to	Truck		0	12	0	0	0	0	0	2	0	0	0	0			
17:15	Bus		0	3	1	0	0	0	1	0	0	0	0	0		1,693	
17:15	Auto		0	247	16	0	0	0	26	34	0	0	0	0	343		
to	Truck		0	10	0	0	0	0	1	2	0	0	0	0			
17:30	Bus		0	6	0	0	0	0	0	1	0	0	0	0		1,601	
17:30	Auto		0	264	39	0	0	0	27	48	0	0	0	0	394		
to	Truck		0	11	1	0	0	0	1	1	0	0	0	0			
17:45	Bus		0	2	0	0	0	0	0	0	0	0	0	0		1,580	
17:45	Auto		0	262	34	0	0	0	22	51	0	0	0	0	386		
to	Truck		0	12	1	0	0	0	1	0	0	0	0	0			
18:00	Bus		0	3	0	0	0	0	0	0	0	0	0	0		1,508	
18:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		1,123	
18:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		780	
18:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		386	
18:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
19:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,763
Peak Hour Volume (PHV)			0	1,339	133	0	0	0	71	220	0	0	0	0	1,763		
PHV (by approach)			1,472			0			291			0					
Peak Hour Factor (PHF)			0.94			#DIV/0!			0.86			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.91			0.80			0.82			0.80					
Max Peak Hour Factor (PHF)			0.94			#DIV/0!			0.86			#DIV/0!					
Total Autos			1,410			0			274			0					
Total Trucks			46			0			10			0					
Total Buses			16			0			7			0					
% Auto			95.8%			#DIV/0!			94.2%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			4.2%			#DIV/0!			5.8%			#DIV/0!					

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 9th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*9th Avenue* (NB)			*9th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
7:00	Auto		0	0	0	60	240	0	0	26	3	0	0	0	383		
to	Truck		0	0	0	4	39	0	0	5	0	0	0	0			
7:15	Bus		0	0	0	1	5	0	0	0	0	0	0	0			
7:15	Auto		0	0	0	52	255	0	0	34	17	0	0	0	409		
to	Truck		0	0	0	6	33	0	0	0	0	0	0	0			
7:30	Bus		0	0	0	0	12	0	0	0	0	0	0	0			
7:30	Auto		0	0	0	56	255	0	0	25	10	0	0	0	381		
to	Truck		0	0	0	4	21	0	0	0	1	0	0	0			
7:45	Bus		0	0	0	3	6	0	0	0	0	0	0	0			
7:45	Auto		0	0	0	27	272	0	0	31	14	0	0	0	390		
to	Truck		0	0	0	4	29	0	0	3	2	0	0	0			
8:00	Bus		0	0	0	1	7	0	0	0	0	0	0	0		1,563	
8:00	Auto	1	0	0	0	47	248	0	0	62	28	0	0	0	443		
to	Truck		0	0	0	3	35	0	0	5	2	0	0	0			
8:15	Bus		0	0	0	0	12	0	0	1	0	0	0	0		1,623	
8:15	Auto		0	0	0	38	241	0	0	69	31	0	0	0	413		
to	Truck		0	0	0	2	21	0	0	1	3	0	0	0			
8:30	Bus		0	0	0	0	7	0	0	0	0	0	0	0		1,627	
8:30	Auto		0	0	0	49	265	0	0	60	38	0	0	0	453		
to	Truck		0	0	0	5	26	0	0	3	2	0	0	0			
8:45	Bus		0	0	0	1	4	0	0	0	0	0	0	0		1,699	
8:45	Auto		0	0	0	56	267	0	0	70	17	0	0	0	458		
to	Truck		0	0	0	3	34	0	0	1	2	0	0	0			
9:00	Bus		0	0	0	1	7	0	0	0	0	0	0	0		1,767	
9:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		1,324	
9:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		911	
9:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
9:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		458	
9:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
10:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,767
Peak Hour Volume (PHV)			0	0	0	205	1,167	0	0	272	123	0	0	0	1,767		
PHV (by approach)			0			1,372			395			0					
Peak Hour Factor (PHF)			#DIV/0!			0.93			0.95			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.80			0.90			0.83			0.80					
Max Peak Hour Factor (PHF)			#DIV/0!			0.93			0.95			#DIV/0!					
Total Autos			0			1,211			375			0					
Total Trucks			0			129			19			0					
Total Buses			0			32			1			0					
% Auto			#DIV/0!			88.3%			94.9%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			#DIV/0!			11.7%			5.1%			#DIV/0!					

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 9th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*9th Avenue* (NB)			*9th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
12:00	Auto		0	0	0	54	274	0	0	56	15	0	0	0	433		
to	Truck		0	0	0	4	27	0	0	0	0	0	0	0			
12:15	Bus		0	0	0	0	1	0	0	1	1	0	0	0			
12:15	Auto		0	0	0	52	258	0	0	50	12	0	0	0	406		
to	Truck		0	0	0	2	18	0	0	6	1	0	0	0			
12:30	Bus		0	0	0	1	5	0	0	0	1	0	0	0			
12:30	Auto		0	0	0	23	226	0	0	60	13	0	0	0	361		
to	Truck		0	0	0	1	27	0	0	6	0	0	0	0			
12:45	Bus		0	0	0	1	3	0	0	1	0	0	0	0			
12:45	Auto		0	0	0	36	244	0	0	8	4	0	0	0	316		
to	Truck		0	0	0	2	16	0	0	1	0	0	0	0			
13:00	Bus		0	0	0	3	2	0	0	0	0	0	0	0		1,516	
13:00	Auto	1	0	0	0	54	265	0	0	4	4	0	0	0	347		
to	Truck		0	0	0	2	15	0	0	0	0	0	0	0			
13:15	Bus		0	0	0	1	2	0	0	0	0	0	0	0		1,430	
13:15	Auto		0	0	0	65	244	0	0	14	11	0	0	0	362		
to	Truck		0	0	0	5	15	0	0	1	0	0	0	0			
13:30	Bus		0	0	0	3	4	0	0	0	0	0	0	0		1,386	
13:30	Auto		0	0	0	39	249	0	0	32	9	0	0	0	354		
to	Truck		0	0	0	1	15	0	0	1	1	0	0	0			
13:45	Bus		0	0	0	1	6	0	0	0	0	0	0	0		1,379	
13:45	Auto		0	0	0	45	222	0	0	23	8	0	0	0	324		
to	Truck		0	0	0	1	18	0	0	3	0	0	0	0			
14:00	Bus		0	0	0	0	4	0	0	0	0	0	0	0		1,387	
14:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		1,040	
14:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		678	
14:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
14:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		324	
14:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
15:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,516
Peak Hour Volume (PHV)			0	0	0	217	1,059	0	0	78	33	0	0	0	1,387		
PHV (by approach)			0			1,276			111			0					
Peak Hour Factor (PHF)			#DIV/0!			0.94			0.65			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.80			0.89			0.81			0.80					
Max Peak Hour Factor (PHF)			#DIV/0!			0.94			0.81			#DIV/0!					
Total Autos			0			1,183			105			0					
Total Trucks			0			72			6			0					
Total Buses			0			21			0			0					
% Auto			#DIV/0!			92.7%			94.6%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			#DIV/0!			7.3%			5.4%			#DIV/0!					

PROJECT: 28th Street Substation
FILE NAME: TMC_Summary.xls
LOCATION: 9th Avenue at 28th Street
TIME PERIOD: Wednesday AM Peak Period
COUNT DATE : 04/18/18
WEATHER/PAVEMENT: Clear/Dry
PRINT TIME : 11/01/21
11:53 AM

TURNING MOVEMENT COUNT SUMMARY

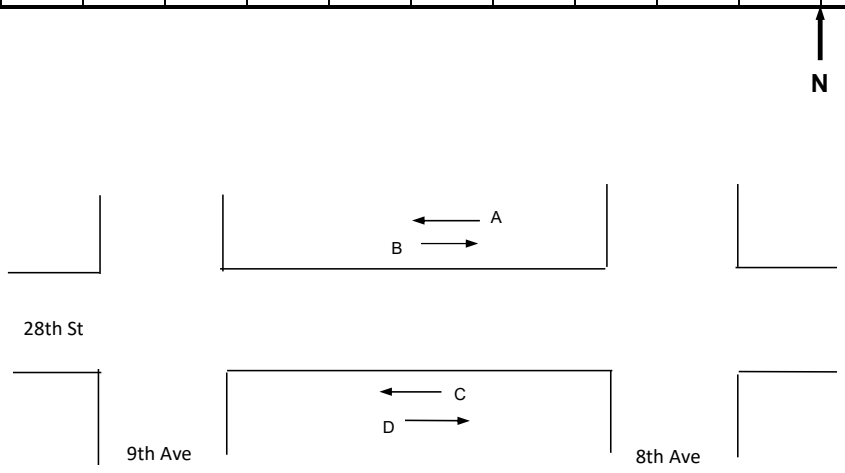
TIME PERIOD	VEHICLE CLASS.	INPUT "1" AT START OF PEAK HOUR	*9th Avenue* (NB)			*9th Avenue* (SB)			*28th Street* (EB)			*28th Street* (WB)			15-MIN. VOLUME	HOURLY VOLUME	HIGHEST HOURLY VOLUME
			L	T	R	L	T	R	L	T	R	L	T	R			
16:00	Auto	1	0	0	0	26	254	0	0	30	31	0	0	0	365		
to	Truck		0	0	0	0	12	0	0	2	0	0	0	0			
16:15	Bus		0	0	0	2	7	0	0	1	0	0	0	0			
16:15	Auto		0	0	0	32	243	0	0	34	7	0	0	0	334		
to	Truck		0	0	0	2	7	0	0	2	2	0	0	0			
16:30	Bus		0	0	0	1	4	0	0	0	0	0	0	0			
16:30	Auto		0	0	0	25	188	0	0	41	15	0	0	0	287		
to	Truck		0	0	0	0	12	0	0	1	0	0	0	0			
16:45	Bus		0	0	0	1	4	0	0	0	0	0	0	0			
16:45	Auto		0	0	0	27	178	0	0	52	24	0	0	0	301		
to	Truck		0	0	0	0	15	0	0	2	0	0	0	0			
17:00	Bus		0	0	0	1	1	0	0	1	0	0	0	0		1,287	
17:00	Auto		0	0	0	27	237	0	0	53	26	0	0	0	367		
to	Truck		0	0	0	1	14	0	0	2	1	0	0	0			
17:15	Bus		0	0	0	0	5	0	0	1	0	0	0	0		1,289	
17:15	Auto		0	0	0	15	210	0	0	44	23	0	0	0	305		
to	Truck		0	0	0	1	7	0	0	1	0	0	0	0			
17:30	Bus		0	0	0	1	1	0	0	0	2	0	0	0		1,260	
17:30	Auto		0	0	0	18	182	0	0	57	13	0	0	0	278		
to	Truck		0	0	0	1	3	0	0	2	0	0	0	0			
17:45	Bus		0	0	0	0	2	0	0	0	0	0	0	0		1,251	
17:45	Auto		0	0	0	17	193	0	0	58	23	0	0	0	308		
to	Truck		0	0	0	0	14	0	0	0	1	0	0	0			
18:00	Bus		0	0	0	0	2	0	0	0	0	0	0	0		1,258	
18:00	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:15	Bus		0	0	0	0	0	0	0	0	0	0	0	0		891	
18:15	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:30	Bus		0	0	0	0	0	0	0	0	0	0	0	0		586	
18:30	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
18:45	Bus		0	0	0	0	0	0	0	0	0	0	0	0		308	
18:45	Auto		0	0	0	0	0	0	0	0	0	0	0	0	0		
to	Truck		0	0	0	0	0	0	0	0	0	0	0	0			
19:00	Bus		0	0	0	0	0	0	0	0	0	0	0	0		0	1,289
Peak Hour Volume (PHV)			0	0	0	117	925	0	0	166	79	0	0	0	1,287		
PHV (by approach)			0			1,042			245			0					
Peak Hour Factor (PHF)			#DIV/0!			0.87			0.78			#DIV/0!					
Min. Peak Hour Factor (PHF)			0.80			0.88			0.82			0.80					
Max Peak Hour Factor (PHF)			#DIV/0!			0.88			0.82			#DIV/0!					
Total Autos			0			973			234			0					
Total Trucks			0			48			9			0					
Total Buses			0			21			2			0					
% Auto			#DIV/0!			93.4%			95.5%			#DIV/0!					
% Heavy Vehicles (Trucks & Buses)			#DIV/0!			6.6%			4.5%			#DIV/0!					

Pedestrian Count Summary

Segment ID:
Station ID:
Location1 (On): 28th St
Location2 (From): 9th Ave
Location2 (To): 8th Ave
Borough Code: 1
Start Date: 4/18/2018
Start Time: 7:00
End Date: 4/18/2018
End Time: 18:00
Interval (min): 15

PEDESTRIAN TURNING MOVEMENT COUNT

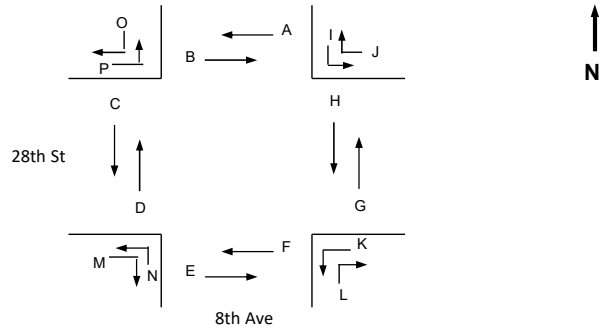
	Sidewalk												
Start Time	**A**	**B**	**C**	**D**									
7:00	4	3	17	9									
7:15	6	2	12	15									
7:30	8	5	9	24									
7:45	13	13	21	25									
8:00	**16**	**13**	**30**	**19**									
8:15	**15**	**14**	**21**	**33**									
8:30	**5**	**16**	**25**	**31**									
8:45	**16**	**24**	**23**	**33**									
12:00	19	21	43	43									
12:15	17	20	26	39									
12:30	9	22	19	39									
12:45	19	25	33	21									
13:00	**21**	**19**	**18**	**24**									
13:15	**13**	**22**	**13**	**32**									
13:30	**26**	**16**	**25**	**29**									
13:45	**16**	**18**	**25**	**41**									
16:00	**19**	**20**	**14**	**35**									
16:15	**11**	**20**	**20**	**29**									
16:30	**13**	**8**	**34**	**30**									
16:45	**8**	**17**	**34**	**29**									
17:00	22	32	36	37									
17:15	24	24	45	27									
17:30	17	26	20	37									
17:45	14	32	54	41									



Node ID:
Location1 (N/S): 8th Ave
Location2 (E/W): 28th St
Borough Code: 1
Start Date: 4/18/2018
Start Time: 7:00
End Date: 4/18/2018
End Time: 18:00
Interval (min): 15

PEDESTRIAN TURNING MOVEMENT COUNT

	Crosswalk															
Start Time	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
7:00	5	4	31	19	21	10	21	55	5	5	1	2	2	5	6	2
7:15	3	7	57	12	12	9	22	56	15	4	3	3	2	3	2	3
7:30	7	13	65	24	28	6	29	62	14	10	2	6	4	1	7	5
7:45	12	25	66	32	27	14	39	95	11	5	5	4	7	3	3	4
8:00	**12**	**27**	**100**	**27**	**37**	**23**	**37**	**105**	**19**	**5**	**7**	**9**	**1**	**4**	**4**	**4**
8:15	**16**	**27**	**102**	**42**	**42**	**20**	**57**	**140**	**13**	**6**	**8**	**6**	**5**	**5**	**2**	**3**
8:30	**7**	**33**	**116**	**39**	**40**	**21**	**56**	**162**	**16**	**4**	**7**	**8**	**8**	**5**	**4**	**7**
8:45	**21**	**48**	**100**	**47**	**41**	**24**	**72**	**227**	**21**	**13**	**13**	**9**	**13**	**2**	**7**	**6**
12:00	18	25	67	64	51	41	84	101	14	8	6	12	7	6	9	3
12:15	52	23	99	75	41	31	70	123	12	9	9	9	4	7	9	8
12:30	26	23	77	70	40	18	97	120	10	10	12	7	14	9	5	9
12:45	18	28	67	63	24	25	89	105	8	11	4	10	4	13	5	10
13:00	**26**	**22**	**65**	**71**	**38**	**33**	**131**	**100**	**11**	**10**	**7**	**13**	**5**	**5**	**3**	**12**
13:15	**18**	**32**	**76**	**77**	**32**	**18**	**77**	**109**	**9**	**4**	**9**	**7**	**10**	**1**	**5**	**8**
13:30	**22**	**18**	**83**	**61**	**38**	**20**	**115**	**103**	**9**	**12**	**9**	**6**	**14**	**18**	**4**	**7**
13:45	**23**	**32**	**64**	**67**	**31**	**28**	**105**	**147**	**9**	**10**	**11**	**8**	**11**	**3**	**8**	**5**
16:00	**15**	**27**	**64**	**60**	**31**	**26**	**107**	**93**	**7**	**12**	**10**	**13**	**9**	**4**	**2**	**8**
16:15	**13**	**26**	**56**	**82**	**24**	**35**	**116**	**81**	**14**	**20**	**13**	**8**	**10**	**11**	**4**	**13**
16:30	**25**	**13**	**51**	**72**	**35**	**34**	**129**	**75**	**12**	**12**	**13**	**8**	**9**	**10**	**2**	**2**
16:45	**22**	**25**	**56**	**72**	**35**	**42**	**113**	**138**	**10**	**12**	**16**	**11**	**9**	**10**	**6**	**9**
17:00	29	24	68	128	51	61	183	112	10	23	11	18	9	13	6	10
17:15	26	26	89	119	38	39	170	128	16	12	10	4	5	13	6	10
17:30	28	33	92	113	32	33	137	110	16	21	17	14	8	14	6	5
17:45	25	46	87	113	41	52	169	150	14	15	17	6	8	10	7	6



On-Street Parking Supply and Demand Summary

NYCTA 28th Street Substation, On-Street Parking Regulations
Parking Regulations and Capacity

24th Street											
Between		North Side					South Side				
			Available	Available Spaces	Observed Parking			Available	Available Spaces	Observed Parking	
From	To	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg
7th Avenue	8th Avenue	Metered Parking					NP Tuesday-Friday 11-12:30P				
8th Avenue	9th Avenue	NP Monday-Thursday 11-12:30P	40	40	40	39	NP Tuesday-Friday 11-12:30P	29	0	0	29
9th Avenue	10th Avenue	NP Monday-Thursday 11-12:30P	40	40	40	40	NP Tuesday-Friday 11-12:30P	38	0	0	37

25th Street											
Between		North Side					South Side				
			Available	Available Spaces	Observed Parking			Available	Available Spaces	Observed Parking	
From	To	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg
7th Avenue	8th Avenue	NP					NP				
8th Avenue	9th Avenue	NP Monday-Thursday 11-12:30P	29	28	28	29	NP Tuesday-Friday 11-12:30P	43	0	0	43
9th Avenue	10th Avenue	NP Monday-Thursday 11-12:30P	34	34	34	34	NP Tuesday-Friday 11-12:30P	30	0	0	30

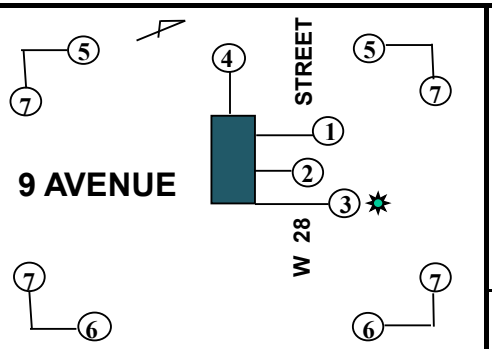
26th Street											
Between		North Side					South Side				
			Available	Available Spaces	Observed Parking			Available	Available Spaces	Observed Parking	
From	To	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg
7th Avenue	8th Avenue	NP Monday-Thursday 11-12:30P					NP				
8th Avenue	9th Avenue	NP Monday-Thursday 11-12:30P	29	23	23	29	NP Tuesday-Friday 11-12:30P	27	0	0	27
9th Avenue	10th Avenue	NP Monday-Thursday 11-12:30P	18	17	17	18	NP Tuesday-Friday 11-12:30P	26	0	0	26

28th Street											
Between		North Side					South Side				
			Available	Available Spaces	Observed Parking			Available	Available Spaces	Observed Parking	
From	To	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg
7th Avenue	8th Avenue	NP					NP				
8th Avenue	9th Avenue	NP Monday-Thursday 11-12:30P	36	34	34	36	NP Tuesday-Friday 11-12:30P	34	0	0	34
9th Avenue	10th Avenue	NP					NP Tuesday-Friday 11-12:30P	20	0	0	20

29th Street											
Between		North Side					South Side				
			Available	Available Spaces	Observed Parking			Available	Available Spaces	Observed Parking	
From	To	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg	Regulation(s)	Spaces w/o Reg	w/ Reg	Reg	No-Reg
7th Avenue	8th Avenue	NP					NP				
8th Avenue	9th Avenue	NP Monday-Thursday 11-12:30P	32	31	31	32	NP Tuesday-Friday 11-12:30P	14	0	0	14
9th Avenue	10th Avenue	NP					NP				

Signal Timings

	1	2	3	4	5	6	7	8
	R	R←	R	R	DW	DW	DW	
	A	A←	A	A	WK	WK	WK	
	G↑	G←	G	G				
L/S #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	
NEMA	**OL1**	**2**	**1**	**3**	**POL1**	**1P**	**3P**	
	(1+2)				**(1+2)**			
PHASE A	G↑	R←	G	R	WK	WK	DW	
SPARE	G↑	R←	G	R	WK	WK	DW	
PED CL	G↑	R←	G	R	WK	**FLDW**	DW	
VEH CL	G↑	R←	A	R	WK	DW	DW	
VEH CL	G↑	R←	R	R	WK	DW	DW	
PHASE B	G↑	G←	R	R	WK	DW	DW	
PED CL	G↑	G←	R	R	**FLDW**	DW	DW	
TSP EXT	G↑	G←	R	R	DW	DW	DW	
VEH CL	A	A←	R	R	DW	DW	DW	
VEH CL	R	R←	R	R	DW	DW	DW	
PHASE C	R	R←	R	G	DW	DW	WK	
PED CL	R	R←	R	G	DW	DW	**FLDW**	
VEH CL	R	R←	R	A	DW	DW	DW	
VEH CL	R	R←	R	R	DW	DW	DW	



	1	2	3	4
	MON-FRI 06:00-10:00	**MON-FRI 10:00-11:00 23:00-06:00 WEEKEND AAT**	**MON-FRI 11:00-15:00 20:00-23:00**	**MON-FRI 15:00-20:00**
	90 SEC	**90 SEC**	**90 SEC**	**90 SEC**
PHASE A	11	11	11	11
SPARE	2	2	2	2
PED CL	12	12	12	12
VEH CL	3	3	3	3
VEH CL	2	2	2	2
	30	**30**	**30**	**30**
PHASE B	11	11	11	11
PED CL	7	7	7	7
TSP EXT	1	1	1	1
VEH CL	3	3	3	3
VEH CL	2	2	2	2
	24	**24**	**24**	**24**
PHASE C	12	12	12	12
PED CL	19	19	19	19
VEH CL	3	3	3	3
VEH CL	2	2	2	2
	36	**36**	**36**	**36**
OFFSET				
	77	**77**	**36**	**36**

CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd. Long Island City, NY 11101

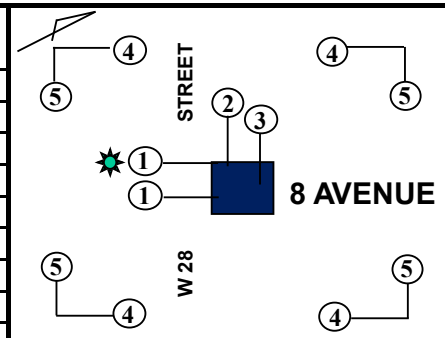
6/20	YK	SCHEDULE MODIFICATION
DATE	BY	REVISIONS

NOTES: NON-ACTUATED
PC = 3.0 FT/SEC
PEDESTRIAN COUNTDOWN
BICYCLE SIGNAL
INTERVAL PROGRAM
CABINET TYPE: ASTC-12
CABINET ADDRESS: 0A1B

9 AVENUE @ WEST 28 STREET

Prep Y.KUSHNIR Date 6/16/2020
Appr. Date

	1	2	3	4	5	5	6	7	8
	R	R	← R	DW	DW				
	A	A	← A	WK	WK				
	G	G	←FL-A						
L/S #	**1**	**2**	**3**	**5**	**6**				
NEMA	1	**OL1**	3	1P	**POL1**				
		2+3			2+3				
PHASE A	G	R	← R	WK	DW				
SPARE	G	R	← R	WK	DW				
PED CL	G	R	← R	**FLDW**	DW				
TSP EXT	G	R	← R	DW	DW				
VEH CL	A	R	← R	DW	DW				
VEH CL	R	R	← R	DW	DW				
PHASE B	R	G	← R	DW	WK				
(LPI)	R	G	← R	DW	WK				
PHASE C	R	G	←FL-A	DW	WK				
PED CL	R	G	←FL-A	DW	**FLDW**				
VEH CL	R	A	← A	DW	DW				
VEH CL	R	R	← R	DW	DW				



	1	2	3	4
	MON-FRI 6:00-10:00	**MON-FRI 10:00-11:00 23:00-06:00 WEEKEND AAT**	**MON-FRI 11:00-15:00 20:00-23:00**	**MON-FRI 15:00-20:00**
	90 SEC	**90 SEC**	**90 SEC**	**90 SEC**
PHASE A	29	27	27	29
SPARE	2	2	2	2
PED CL	14	14	14	14
TSP EXT	1	1	1	1
VEH CL	3	3	3	3
VEH CL	2	2	2	2
	51	**49**	**49**	**51**
PHASE B	3	6	6	3
(LPI)	4	4	4	4
	7	**10**	**10**	**7**
PHASE C	8	7	7	8
PED CL	19	19	19	19
VEH CL	3	3	3	3
VEH CL	2	2	2	2
	32	**31**	**31**	**32**
OFFSET	**54**	**54**	**66**	**66**

CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd. Long Island City, NY 11101

DON'T USE DEFAULT I/O MAPPING
USE "ALT" I/O MAPPING

NOTES: NON-ACTUATED
PC = 3.0 FT/SEC
SIGNAL FOR BICYCLE USE
INTERVAL PROGRAM
PEDESTRIAN COUNTDOWN
CABINET TYPE: ASTC-6
CABINET ADDRESS: 1121

04/20	TN	RETIMING IN HOUSE AM&PM 25MPH
DATE	BY	REVISIONS

8 AVENUE @ W 28 STREET

Prep. T.NGO Date 04/02/20
Appr. Date

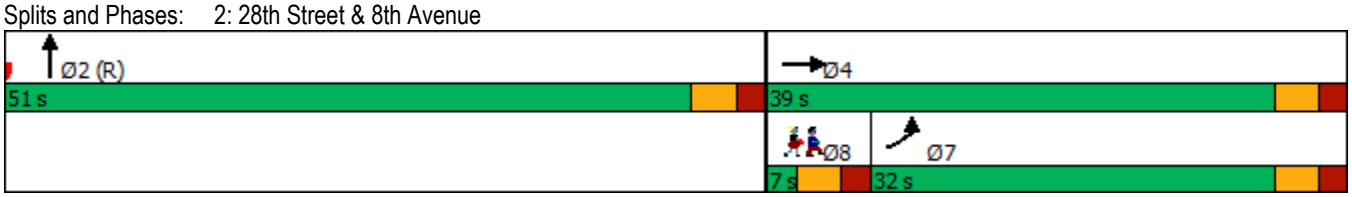
Synchro Analysis

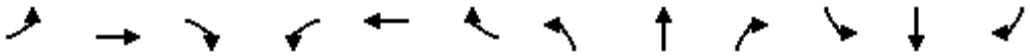
Existing 2018

Lane Group	EBL	EBT	NBT	Ø8
Lane Configurations				
Traffic Volume (vph)	208	258	1039	
Future Volume (vph)	208	258	1039	
Turn Type	Prot	NA	NA	
Protected Phases	7	4	2	8
Permitted Phases				
Detector Phase	7	4	2	
Switch Phase				
Minimum Initial (s)	27.0	34.0	46.0	2.0
Minimum Split (s)	32.0	39.0	51.0	7.0
Total Split (s)	32.0	39.0	51.0	7.0
Total Split (%)	35.6%	43.3%	56.7%	8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	27.0	34.0	46.0	
Actuated g/C Ratio	0.30	0.38	0.51	
v/c Ratio	0.50	0.47	0.45	
Control Delay	33.9	28.6	14.7	
Queue Delay	0.0	0.0	0.0	
Total Delay	33.9	28.6	14.7	
LOS	C	C	B	
Approach Delay		31.0	14.7	
Approach LOS		C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 54 (60%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: 28th Street & 8th Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	258	0	0	0	0	0	1039	76	0	0	0
Future Volume (vph)	208	258	0	0	0	0	0	1039	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1498	1577						5185				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1498	1577						5185				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	226	280	0	0	0	0	0	1117	82	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	226	280	0	0	0	0	0	1199	0	0	0	0
Confl. Peds. (#/hr)	191								856			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	3	3	3	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	27.0	34.0						46.0				
Effective Green, g (s)	27.0	34.0						46.0				
Actuated g/C Ratio	0.30	0.38						0.51				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	449	595						2650				
v/s Ratio Prot	0.15	c0.18						c0.23				
v/s Ratio Perm												
v/c Ratio	0.50	0.47						0.45				
Uniform Delay, d1	26.0	21.2						14.0				
Progression Factor	1.17	1.23						1.00				
Incremental Delay, d2	2.7	1.8						0.6				
Delay (s)	33.1	27.9						14.6				
Level of Service	C	C						B				
Approach Delay (s)		30.2			0.0			14.6			0.0	
Approach LOS		C			A			B			A	

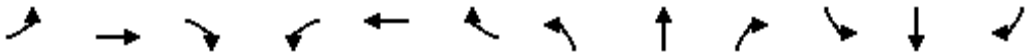
Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	SBL	SBT	Ø1
Lane Configurations				
Traffic Volume (vph)	266	200	1174	
Future Volume (vph)	266	200	1174	
Turn Type	NA	Prot	NA	
Protected Phases	4	2	6	1
Permitted Phases				
Detector Phase	4	2	6	
Switch Phase				
Minimum Initial (s)	31.0	19.0	49.0	25.0
Minimum Split (s)	36.0	24.0	54.0	30.0
Total Split (s)	36.0	24.0	54.0	30.0
Total Split (%)	40.0%	26.7%	60.0%	33%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	31.0	19.0	49.0	
Actuated g/C Ratio	0.34	0.21	0.54	
v/c Ratio	0.81	0.65	0.48	
Control Delay	41.6	42.6	13.5	
Queue Delay	0.0	0.0	0.0	
Total Delay	41.6	42.6	13.5	
LOS	D	D	B	
Approach Delay	41.6		17.7	
Approach LOS	D		B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 77 (86%), Referenced to phase 1:Ped and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: 9th Avenue & 28th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	266	125	0	0	0	0	0	0	200	1174	0
Future Volume (vph)	0	266	125	0	0	0	0	0	0	200	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1473								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1473								1579	4796	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	280	132	0	0	0	0	0	0	215	1262	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	412	0	0	0	0	0	0	0	215	1262	0
Confl. Peds. (#/hr)			250							900		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		507								333	2611	
v/s Ratio Prot		c0.28								c0.14	c0.26	
v/s Ratio Perm												
v/c Ratio		0.81								0.65	0.48	
Uniform Delay, d1		26.9								32.4	12.7	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		13.3								9.3	0.6	
Delay (s)		40.2								41.7	13.3	
Level of Service		D								D	B	
Approach Delay (s)		40.2			0.0			0.0			17.5	
Approach LOS		D			A			A			B	

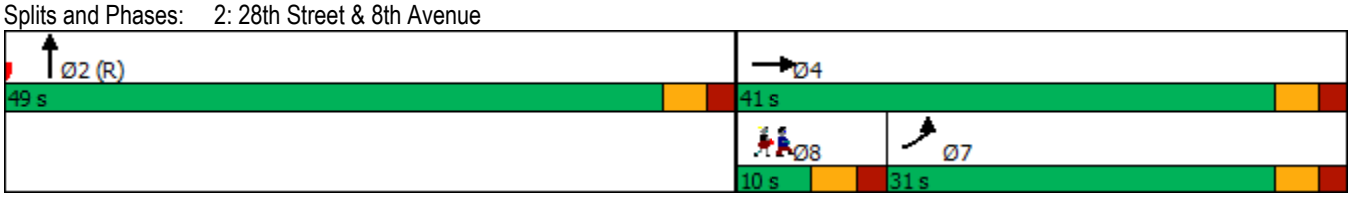
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

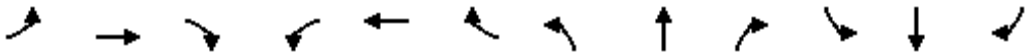
c Critical Lane Group

Lane Group	EBL	EBT	NBT	Ø8
Lane Configurations				
Traffic Volume (vph)	121	161	1091	
Future Volume (vph)	121	161	1091	
Turn Type	Prot	NA	NA	
Protected Phases	7	4	2	8
Permitted Phases				
Detector Phase	7	4	2	
Switch Phase				
Minimum Initial (s)	26.0	36.0	44.0	5.0
Minimum Split (s)	31.0	41.0	49.0	10.0
Total Split (s)	31.0	41.0	49.0	10.0
Total Split (%)	34.4%	45.6%	54.4%	11%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	26.0	36.0	44.0	
Actuated g/C Ratio	0.29	0.40	0.49	
v/c Ratio	0.30	0.28	0.51	
Control Delay	27.3	18.1	16.5	
Queue Delay	0.0	0.0	0.0	
Total Delay	27.3	18.1	16.5	
LOS	C	B	B	
Approach Delay		22.0	16.5	
Approach LOS		C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: 28th Street & 8th Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	161	0	0	0	0	0	1091	92	0	0	0
Future Volume (vph)	121	161	0	0	0	0	0	1091	92	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1484	1563						5250				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1484	1563						5250				
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	130	173	0	0	0	0	0	1199	101	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	130	173	0	0	0	0	0	1300	0	0	0	0
Confl. Peds. (#/hr)	218								835			
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	6%	6%	6%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	26.0	36.0						44.0				
Effective Green, g (s)	26.0	36.0						44.0				
Actuated g/C Ratio	0.29	0.40						0.49				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	428	625						2566				
v/s Ratio Prot	0.09	c0.11						c0.25				
v/s Ratio Perm												
v/c Ratio	0.30	0.28						0.51				
Uniform Delay, d1	24.9	18.2						15.6				
Progression Factor	1.01	0.92						1.00				
Incremental Delay, d2	1.6	1.0						0.7				
Delay (s)	26.7	17.7						16.3				
Level of Service	C	B						B				
Approach Delay (s)		21.6			0.0			16.3			0.0	
Approach LOS		C			A			B			A	

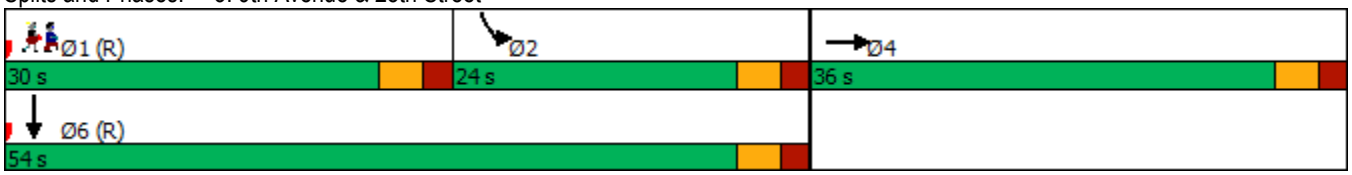
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

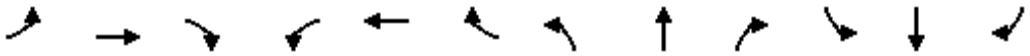
c Critical Lane Group

Lane Group	EBT	SBL	SBT	Ø1
Lane Configurations				
Traffic Volume (vph)	76	206	974	
Future Volume (vph)	76	206	974	
Turn Type	NA	Prot	NA	
Protected Phases	4	2	6	1
Permitted Phases				
Detector Phase	4	2	6	
Switch Phase				
Minimum Initial (s)	31.0	19.0	49.0	25.0
Minimum Split (s)	36.0	24.0	54.0	30.0
Total Split (s)	36.0	24.0	54.0	30.0
Total Split (%)	40.0%	26.7%	60.0%	33%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	31.0	19.0	49.0	
Actuated g/C Ratio	0.34	0.21	0.54	
v/c Ratio	0.25	0.63	0.40	
Control Delay	22.9	41.5	12.5	
Queue Delay	0.0	0.0	0.0	
Total Delay	22.9	41.5	12.5	
LOS	C	D	B	
Approach Delay	22.9		17.5	
Approach LOS	C		B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 36 (40%), Referenced to phase 1:Ped and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: 9th Avenue & 28th Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	76	30	0	0	0	0	0	0	206	974	0
Future Volume (vph)	0	76	30	0	0	0	0	0	0	206	974	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	14	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.94								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1495								1646	4809	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1495								1646	4809	
Peak-hour factor, PHF	0.81	0.81	0.81	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	94	37	0	0	0	0	0	0	219	1036	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	131	0	0	0	0	0	0	0	219	1036	0
Confl. Peds. (#/hr)			250							850		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	6	6	6
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		514								347	2618	
v/s Ratio Prot		c0.09								c0.13	c0.22	
v/s Ratio Perm												
v/c Ratio		0.25								0.63	0.40	
Uniform Delay, d1		21.2								32.3	11.9	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		1.2								8.4	0.4	
Delay (s)		22.4								40.8	12.4	
Level of Service		C								D	B	
Approach Delay (s)		22.4			0.0			0.0			17.3	
Approach LOS		C			A			A			B	

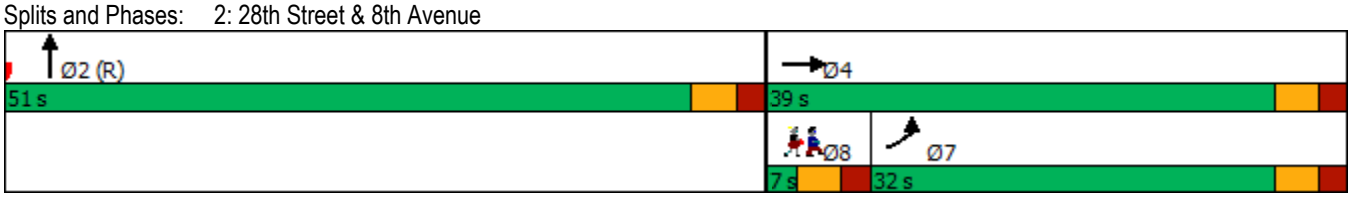
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

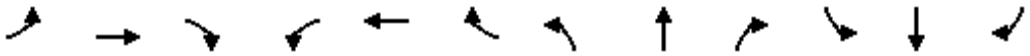
c Critical Lane Group

Lane Group	EBL	EBT	NBT	Ø8
Lane Configurations				
Traffic Volume (vph)	69	215	1280	
Future Volume (vph)	69	215	1280	
Turn Type	Prot	NA	NA	
Protected Phases	7	4	2	8
Permitted Phases				
Detector Phase	7	4	2	
Switch Phase				
Minimum Initial (s)	27.0	34.0	46.0	2.0
Minimum Split (s)	32.0	39.0	51.0	7.0
Total Split (s)	32.0	39.0	51.0	7.0
Total Split (%)	35.6%	43.3%	56.7%	8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag	Lag			Lead
Lead-Lag Optimize?	Yes			Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	27.0	34.0	46.0	
Actuated g/C Ratio	0.30	0.38	0.51	
v/c Ratio	0.18	0.42	0.56	
Control Delay	16.9	16.0	16.0	
Queue Delay	0.0	0.0	0.0	
Total Delay	16.9	16.0	16.0	
LOS	B	B	B	
Approach Delay		16.2	16.0	
Approach LOS		B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: 28th Street & 8th Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	215	0	0	0	0	0	1280	127	0	0	0
Future Volume (vph)	69	215	0	0	0	0	0	1280	127	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.94				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1498	1577						5261				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1498	1577						5261				
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	80	250	0	0	0	0	0	1362	135	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	80	250	0	0	0	0	0	1497	0	0	0	0
Confl. Peds. (#/hr)	237								1159			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	4	4	4	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	27.0	34.0						46.0				
Effective Green, g (s)	27.0	34.0						46.0				
Actuated g/C Ratio	0.30	0.38						0.51				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	449	595						2688				
v/s Ratio Prot	0.05	c0.16						c0.28				
v/s Ratio Perm												
v/c Ratio	0.18	0.42						0.56				
Uniform Delay, d1	23.3	20.7						15.0				
Progression Factor	0.68	0.66						1.00				
Incremental Delay, d2	0.8	1.9						0.8				
Delay (s)	16.6	15.6						15.9				
Level of Service	B	B						B				
Approach Delay (s)		15.9			0.0			15.9			0.0	
Approach LOS		B			A			B			A	

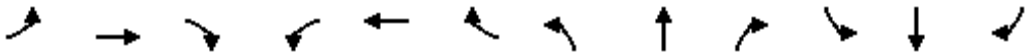
Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	SBL	SBT	Ø1
Lane Configurations				
Traffic Volume (vph)	169	115	876	
Future Volume (vph)	169	115	876	
Turn Type	NA	Prot	NA	
Protected Phases	4	2	6	1
Permitted Phases				
Detector Phase	4	2	6	
Switch Phase				
Minimum Initial (s)	31.0	19.0	49.0	25.0
Minimum Split (s)	36.0	24.0	54.0	30.0
Total Split (s)	36.0	24.0	54.0	30.0
Total Split (%)	40.0%	26.7%	60.0%	33%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	31.0	19.0	49.0	
Actuated g/C Ratio	0.34	0.21	0.54	
v/c Ratio	0.60	0.39	0.38	
Control Delay	30.4	34.7	12.3	
Queue Delay	0.0	0.0	0.0	
Total Delay	30.4	34.7	12.3	
LOS	C	C	B	
Approach Delay	30.4		14.9	
Approach LOS	C		B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 36 (40%), Referenced to phase 1:Ped and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: 9th Avenue & 28th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	169	77	0	0	0	0	0	0	115	876	0
Future Volume (vph)	0	169	77	0	0	0	0	0	0	115	876	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.92								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1456								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1456								1579	4796	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	206	94	0	0	0	0	0	0	131	995	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	300	0	0	0	0	0	0	0	131	995	0
Confl. Peds. (#/hr)			300							850		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		501								333	2611	
v/s Ratio Prot		c0.21								0.08	c0.21	
v/s Ratio Perm												
v/c Ratio		0.60								0.39	0.38	
Uniform Delay, d1		24.4								30.5	11.8	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		5.2								3.5	0.4	
Delay (s)		29.6								34.0	12.2	
Level of Service		C								C	B	
Approach Delay (s)		29.6			0.0			0.0			14.7	
Approach LOS		C			A			A			B	

Intersection Summary					
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D		
Analysis Period (min)	15				

c Critical Lane Group

Synchro Analysis

No-Build 2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	297	0	0	0	0	0	1055	88	0	0	0
Future Volume (vph)	211	297	0	0	0	0	0	1055	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1498	1577						5128				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1498	1577						5128				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	229	323	0	0	0	0	0	1134	95	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	229	323	0	0	0	0	0	1229	0	0	0	0
Confl. Peds. (#/hr)	336								1132			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	3	3	3	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	27.0	34.0						46.0				
Effective Green, g (s)	27.0	34.0						46.0				
Actuated g/C Ratio	0.30	0.38						0.51				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	449	595						2620				
v/s Ratio Prot	0.15	c0.20						c0.24				
v/s Ratio Perm												
v/c Ratio	0.51	0.54						0.47				
Uniform Delay, d1	26.0	21.9						14.1				
Progression Factor	1.27	1.32						1.00				
Incremental Delay, d2	2.5	2.2						0.6				
Delay (s)	35.5	31.1						14.8				
Level of Service	D	C						B				
Approach Delay (s)		32.9			0.0			14.8			0.0	
Approach LOS		C			A			B			A	

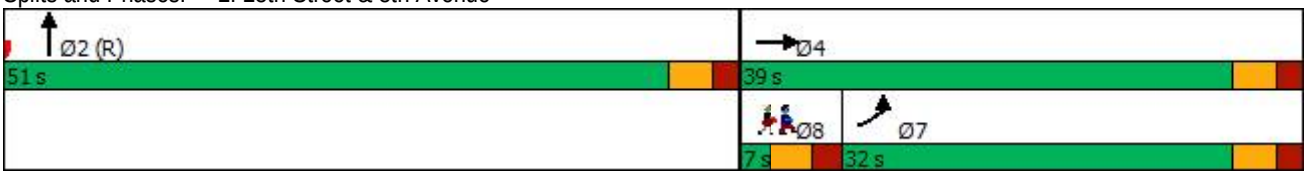
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	7	8
Movement	NBT	EBT	EBL	Ped
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	51	39	32	7
Maximum Split (%)	56.7%	43.3%	35.6%	7.8%
Minimum Split (s)	51	39	32	7
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	46	34	27	2
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	31	15	8	0
Flash Dont Walk (s)	14	19	19	0
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	54	15	22	15
End Time (s)	15	54	54	22
Yield/Force Off (s)	10	49	49	17
Yield/Force Off 170(s)	86	30	30	17
Local Start Time (s)	0	51	58	51
Local Yield (s)	46	85	85	53
Local Yield 170(s)	32	66	66	53

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 54 (60%), Referenced to phase 2:NBT, Start of Green	

Splits and Phases: 2: 28th Street & 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	290	127	0	0	0	0	0	0	219	1191	0
Future Volume (vph)	0	290	127	0	0	0	0	0	0	219	1191	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1480								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1480								1579	4796	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	305	134	0	0	0	0	0	0	235	1281	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	439	0	0	0	0	0	0	0	235	1281	0
Confl. Peds. (#/hr)			254							914		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		509								333	2611	
v/s Ratio Prot		c0.30								c0.15	c0.27	
v/s Ratio Perm												
v/c Ratio		0.86								0.71	0.49	
Uniform Delay, d1		27.5								32.9	12.7	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		17.3								11.9	0.7	
Delay (s)		44.8								44.8	13.4	
Level of Service		D								D	B	
Approach Delay (s)		44.8			0.0			0.0			18.3	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	6
Movement	Ped	SBL	EBT	SBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize	Yes	Yes		
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	30	24	36	54
Maximum Split (%)	33.3%	26.7%	40.0%	60.0%
Minimum Split (s)	30	24	36	54
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	25	19	31	49
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	0	11	12	24
Flash Dont Walk (s)	0	7	19	19
Dual Entry	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	77	17	41	77
End Time (s)	17	41	77	41
Yield/Force Off (s)	12	36	72	36
Yield/Force Off 170(s)	12	29	53	17
Local Start Time (s)	0	30	54	0
Local Yield (s)	25	49	85	49
Local Yield 170(s)	25	42	66	30

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 77 (86%), Referenced to phase 1:Ped and 6:SBT, Start of Green	

Splits and Phases: 3: 9th Avenue & 28th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	191	0	0	0	0	0	1107	111	0	0	0
Future Volume (vph)	123	191	0	0	0	0	0	1107	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.94				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1484	1563						5165				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1484	1563						5165				
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	132	205	0	0	0	0	0	1216	122	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	132	205	0	0	0	0	0	1338	0	0	0	0
Confl. Peds. (#/hr)	392								1134			
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	6%	6%	6%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	26.0	36.0						44.0				
Effective Green, g (s)	26.0	36.0						44.0				
Actuated g/C Ratio	0.29	0.40						0.49				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	428	625						2525				
v/s Ratio Prot	0.09	c0.13						c0.26				
v/s Ratio Perm												
v/c Ratio	0.31	0.33						0.53				
Uniform Delay, d1	25.0	18.6						15.9				
Progression Factor	0.99	0.93						1.00				
Incremental Delay, d2	1.5	1.2						0.8				
Delay (s)	26.3	18.4						16.7				
Level of Service	C	B						B				
Approach Delay (s)		21.5			0.0			16.7			0.0	
Approach LOS		C			A			B			A	

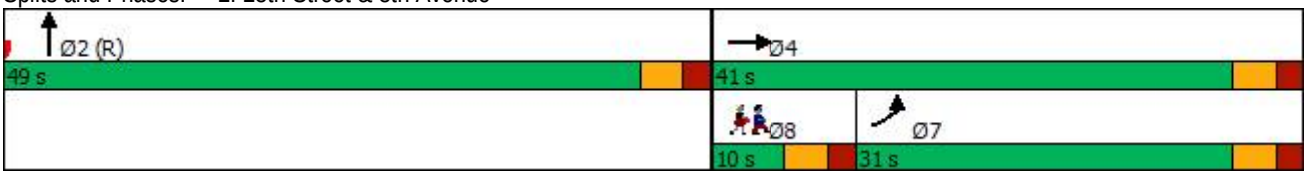
Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	7	8
Movement	NBT	EBT	EBL	Ped
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	49	41	31	10
Maximum Split (%)	54.4%	45.6%	34.4%	11.1%
Minimum Split (s)	49	41	31	10
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	44	36	26	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	29	17	7	0
Flash Dont Walk (s)	14	19	19	0
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	66	25	35	25
End Time (s)	25	66	66	35
Yield/Force Off (s)	20	61	61	30
Yield/Force Off 170(s)	6	42	42	30
Local Start Time (s)	0	49	59	49
Local Yield (s)	44	85	85	54
Local Yield 170(s)	30	66	66	54

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 66 (73%), Referenced to phase 2:NBT, Start of Green	

Splits and Phases: 2: 28th Street & 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	30	0	0	0	0	0	0	230	989	0
Future Volume (vph)	0	84	30	0	0	0	0	0	0	230	989	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	14	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.94								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1505								1646	4809	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1505								1646	4809	
Peak-hour factor, PHF	0.81	0.81	0.81	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	104	37	0	0	0	0	0	0	245	1052	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	141	0	0	0	0	0	0	0	245	1052	0
Confl. Peds. (#/hr)			254							863		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	6	6	6
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		518								347	2618	
v/s Ratio Prot		c0.09								c0.15	c0.22	
v/s Ratio Perm												
v/c Ratio		0.27								0.71	0.40	
Uniform Delay, d1		21.3								32.9	12.0	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		1.3								11.5	0.5	
Delay (s)		22.6								44.4	12.4	
Level of Service		C								D	B	
Approach Delay (s)		22.6			0.0			0.0			18.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	4	6
Movement	Ped	SBL	EBT	SBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize	Yes	Yes		
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	30	24	36	54
Maximum Split (%)	33.3%	26.7%	40.0%	60.0%
Minimum Split (s)	30	24	36	54
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	25	19	31	49
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	0	11	12	24
Flash Dont Walk (s)	0	7	19	19
Dual Entry	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	66	0	36
End Time (s)	66	0	36	0
Yield/Force Off (s)	61	85	31	85
Yield/Force Off 170(s)	61	78	12	66
Local Start Time (s)	0	30	54	0
Local Yield (s)	25	49	85	49
Local Yield 170(s)	25	42	66	30

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 36 (40%), Referenced to phase 1:Ped and 6:SBT, Start of Green	

Splits and Phases: 3: 9th Avenue & 28th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	247	0	0	0	0	0	1299	146	0	0	0
Future Volume (vph)	70	247	0	0	0	0	0	1299	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.93				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1498	1577						5181				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1498	1577						5181				
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	81	287	0	0	0	0	0	1382	155	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	81	287	0	0	0	0	0	1537	0	0	0	0
Confl. Peds. (#/hr)	381								1463			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	4	4	4	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	27.0	34.0						46.0				
Effective Green, g (s)	27.0	34.0						46.0				
Actuated g/C Ratio	0.30	0.38						0.51				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	449	595						2648				
v/s Ratio Prot	0.05	c0.18						c0.30				
v/s Ratio Perm												
v/c Ratio	0.18	0.48						0.58				
Uniform Delay, d1	23.3	21.3						15.3				
Progression Factor	0.59	0.59						1.00				
Incremental Delay, d2	0.7	2.3						0.9				
Delay (s)	14.6	14.8						16.2				
Level of Service	B	B						B				
Approach Delay (s)		14.8			0.0			16.2			0.0	
Approach LOS		B			A			B			A	

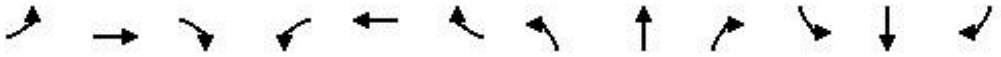
Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	7	8
Movement	NBT	EBT	EBL	Ped
Lead/Lag			Lag	Lead
Lead-Lag Optimize			Yes	Yes
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	51	39	32	7
Maximum Split (%)	56.7%	43.3%	35.6%	7.8%
Minimum Split (s)	51	39	32	7
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	46	34	27	2
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	31	15	8	0
Flash Dont Walk (s)	14	19	19	0
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	66	27	34	27
End Time (s)	27	66	66	34
Yield/Force Off (s)	22	61	61	29
Yield/Force Off 170(s)	8	42	42	29
Local Start Time (s)	0	51	58	51
Local Yield (s)	46	85	85	53
Local Yield 170(s)	32	66	66	53

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 66 (73%), Referenced to phase 2:NBT, Start of Green	

Splits and Phases: 2: 28th Street & 8th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	188	78	0	0	0	0	0	0	128	890	0
Future Volume (vph)	0	188	78	0	0	0	0	0	0	128	890	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.92								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1467								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1467								1579	4796	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	229	95	0	0	0	0	0	0	145	1011	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	324	0	0	0	0	0	0	0	145	1011	0
Confl. Peds. (#/hr)			305							863		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		505								333	2611	
v/s Ratio Prot		c0.22								0.09	c0.21	
v/s Ratio Perm												
v/c Ratio		0.64								0.44	0.39	
Uniform Delay, d1		24.8								30.8	11.8	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		6.1								4.1	0.4	
Delay (s)		31.0								34.9	12.3	
Level of Service		C								C	B	
Approach Delay (s)		31.0			0.0			0.0			15.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

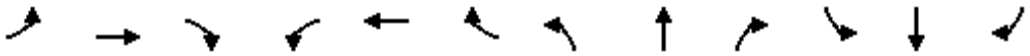
Phase Number	1	2	4	6
Movement	Ped	SBL	EBT	SBT
Lead/Lag	Lead	Lag		
Lead-Lag Optimize	Yes	Yes		
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	30	24	36	54
Maximum Split (%)	33.3%	26.7%	40.0%	60.0%
Minimum Split (s)	30	24	36	54
Yellow Time (s)	3	3	3	3
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	25	19	31	49
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	0	11	12	24
Flash Dont Walk (s)	0	7	19	19
Dual Entry	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	36	66	0	36
End Time (s)	66	0	36	0
Yield/Force Off (s)	61	85	31	85
Yield/Force Off 170(s)	61	78	12	66
Local Start Time (s)	0	30	54	0
Local Yield (s)	25	49	85	49
Local Yield 170(s)	25	42	66	30

Intersection Summary	
Cycle Length	90
Control Type	Pretimed
Natural Cycle	90
Offset: 36 (40%), Referenced to phase 1:Ped and 6:SBT, Start of Green	

Splits and Phases: 3: 9th Avenue & 28th Street

Synchro Analysis

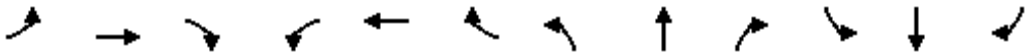
Construction Phase 2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	297	0	0	0	0	0	1055	88	0	0	0
Future Volume (vph)	211	297	0	0	0	0	0	1055	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)	5.0	5.0						5.0				
Lane Util. Factor	1.00	1.00						0.86				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	1.00	1.00						1.00				
Frt	1.00	1.00						0.99				
Flt Protected	0.95	1.00						1.00				
Satd. Flow (prot)	1449	1525						5101				
Flt Permitted	0.95	1.00						1.00				
Satd. Flow (perm)	1449	1525						5101				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	229	323	0	0	0	0	0	1134	95	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	229	323	0	0	0	0	0	1229	0	0	0	0
Confl. Peds. (#/hr)									1468			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	8%	8%	8%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	3	3	3	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)	27.0	34.0						46.0				
Effective Green, g (s)	27.0	34.0						46.0				
Actuated g/C Ratio	0.30	0.38						0.51				
Clearance Time (s)	5.0	5.0						5.0				
Lane Grp Cap (vph)	434	576						2607				
v/s Ratio Prot	0.16	c0.21						c0.24				
v/s Ratio Perm												
v/c Ratio	0.53	0.56						0.47				
Uniform Delay, d1	26.2	22.1						14.2				
Progression Factor	1.26	1.32						1.00				
Incremental Delay, d2	2.8	2.4						0.6				
Delay (s)	35.9	31.5						14.8				
Level of Service	D	C						B				
Approach Delay (s)		33.3			0.0			14.8			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

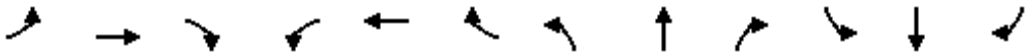
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	290	127	0	0	0	0	0	0	219	1191	0
Future Volume (vph)	0	290	127	0	0	0	0	0	0	219	1191	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1480								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1480								1579	4796	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	305	134	0	0	0	0	0	0	235	1281	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	439	0	0	0	0	0	0	0	235	1281	0
Confl. Peds. (#/hr)			254							914		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		509								333	2611	
v/s Ratio Prot		c0.30								c0.15	c0.27	
v/s Ratio Perm												
v/c Ratio		0.86								0.71	0.49	
Uniform Delay, d1		27.5								32.9	12.7	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		17.3								11.9	0.7	
Delay (s)		44.8								44.8	13.4	
Level of Service		D								D	B	
Approach Delay (s)		44.8			0.0			0.0			18.3	
Approach LOS		D			A			A			B	

Intersection Summary				
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.71			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	75.0%	ICU Level of Service	D	
Analysis Period (min)	15			

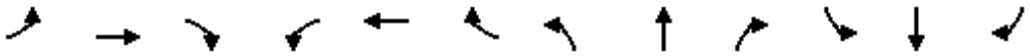
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	191	0	0	0	0	0	1107	111	0	0	0
Future Volume (vph)	123	191	0	0	0	0	0	1107	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.86				
Frpb, ped/bikes		1.00						0.93				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.99				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		1533						5125				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		1533						5125				
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	132	205	0	0	0	0	0	1216	122	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	337	0	0	0	0	0	1338	0	0	0	0
Confl. Peds. (#/hr)									1526			
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	6%	6%	6%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	2	2	2	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)		36.0						44.0				
Effective Green, g (s)		36.0						44.0				
Actuated g/C Ratio		0.40						0.49				
Clearance Time (s)		5.0						5.0				
Lane Grp Cap (vph)		613						2505				
v/s Ratio Prot		c0.16						c0.26				
v/s Ratio Perm		0.06										
v/c Ratio		0.55						0.53				
Uniform Delay, d1		20.8						15.9				
Progression Factor		1.04						1.00				
Incremental Delay, d2		2.9						0.8				
Delay (s)		24.6						16.7				
Level of Service		C						B				
Approach Delay (s)		24.6			0.0			16.7			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

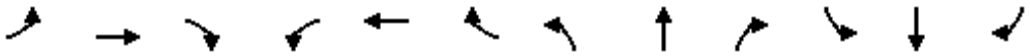
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	30	0	0	0	0	0	0	230	989	0
Future Volume (vph)	0	84	30	0	0	0	0	0	0	230	989	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	14	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.94								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1505								1646	4809	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1505								1646	4809	
Peak-hour factor, PHF	0.81	0.81	0.81	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	104	37	0	0	0	0	0	0	245	1052	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	141	0	0	0	0	0	0	0	245	1052	0
Confl. Peds. (#/hr)			254							863		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	6	6	6
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		518								347	2618	
v/s Ratio Prot		c0.09								c0.15	c0.22	
v/s Ratio Perm												
v/c Ratio		0.27								0.71	0.40	
Uniform Delay, d1		21.3								32.9	12.0	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		1.3								11.5	0.5	
Delay (s)		22.6								44.4	12.4	
Level of Service		C								D	B	
Approach Delay (s)		22.6			0.0			0.0			18.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

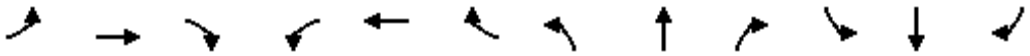
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	247	0	0	0	0	0	1299	146	0	0	0
Future Volume (vph)	70	247	0	0	0	0	0	1299	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	12	12	10	10	10	12	12	12
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.86				
Frpb, ped/bikes		1.00						0.92				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		1560						5139				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		1560						5139				
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	81	287	0	0	0	0	0	1382	155	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	368	0	0	0	0	0	1537	0	0	0	0
Confl. Peds. (#/hr)									1844			
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	4	4	4	0	0	0
Parking (#/hr)	4	4						5	2			
Turn Type	Prot	NA						NA				
Protected Phases	7	4						2				
Permitted Phases												
Actuated Green, G (s)		34.0						46.0				
Effective Green, g (s)		34.0						46.0				
Actuated g/C Ratio		0.38						0.51				
Clearance Time (s)		5.0						5.0				
Lane Grp Cap (vph)		589						2626				
v/s Ratio Prot		c0.19						c0.30				
v/s Ratio Perm		0.05										
v/c Ratio		0.62						0.59				
Uniform Delay, d1		22.8						15.3				
Progression Factor		0.73						1.00				
Incremental Delay, d2		4.1						1.0				
Delay (s)		20.8						16.3				
Level of Service		C						B				
Approach Delay (s)		20.8			0.0			16.3			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

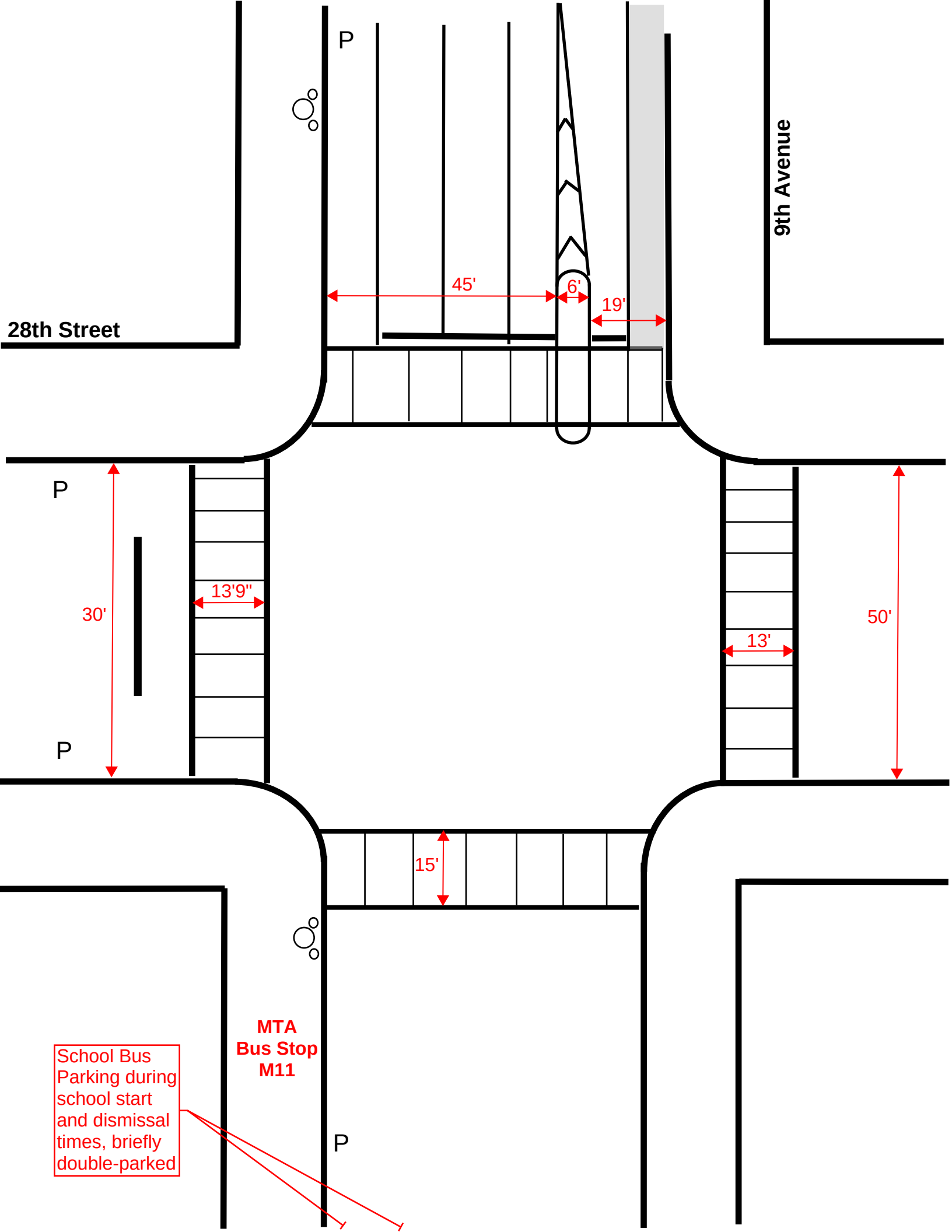


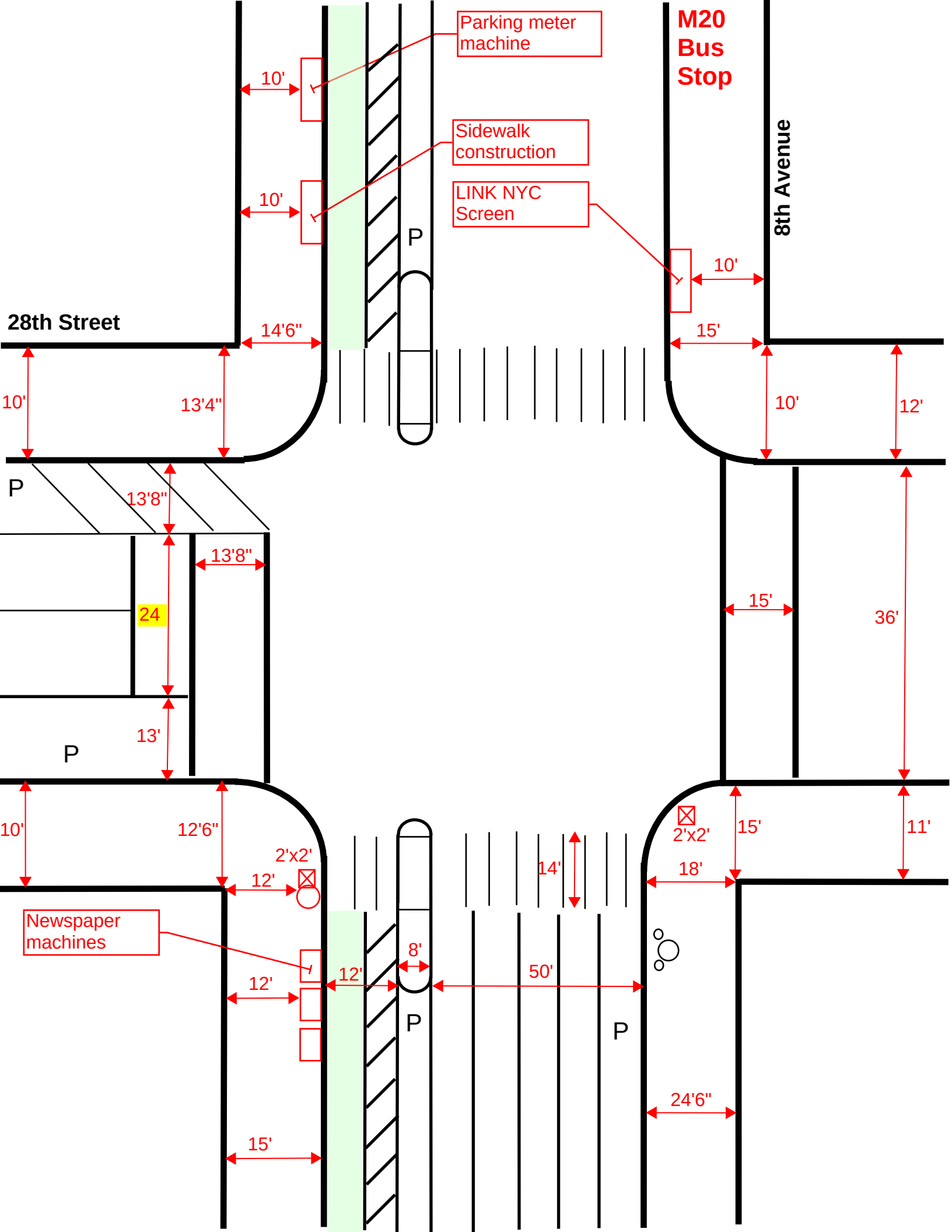
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	188	78	0	0	0	0	0	0	128	890	0
Future Volume (vph)	0	188	78	0	0	0	0	0	0	128	890	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	12	12	12	12	12	12	12	11	12	12
Total Lost time (s)		5.0								5.0	5.0	
Lane Util. Factor		1.00								1.00	0.91	
Frpb, ped/bikes		0.92								1.00	1.00	
Flpb, ped/bikes		1.00								1.00	1.00	
Frt		0.96								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		1467								1579	4796	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		1467								1579	4796	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	229	95	0	0	0	0	0	0	145	1011	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	324	0	0	0	0	0	0	0	145	1011	0
Confl. Peds. (#/hr)			305							863		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	2%	2%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	8	8	8
Parking (#/hr)		8	8									
Turn Type		NA								Prot	NA	
Protected Phases		4								2	6	
Permitted Phases												
Actuated Green, G (s)		31.0								19.0	49.0	
Effective Green, g (s)		31.0								19.0	49.0	
Actuated g/C Ratio		0.34								0.21	0.54	
Clearance Time (s)		5.0								5.0	5.0	
Lane Grp Cap (vph)		505								333	2611	
v/s Ratio Prot		c0.22								0.09	c0.21	
v/s Ratio Perm												
v/c Ratio		0.64								0.44	0.39	
Uniform Delay, d1		24.8								30.8	11.8	
Progression Factor		1.00								1.00	1.00	
Incremental Delay, d2		6.1								4.1	0.4	
Delay (s)		31.0								34.9	12.3	
Level of Service		C								C	B	
Approach Delay (s)		31.0			0.0			0.0			15.1	
Approach LOS		C			A			A			B	

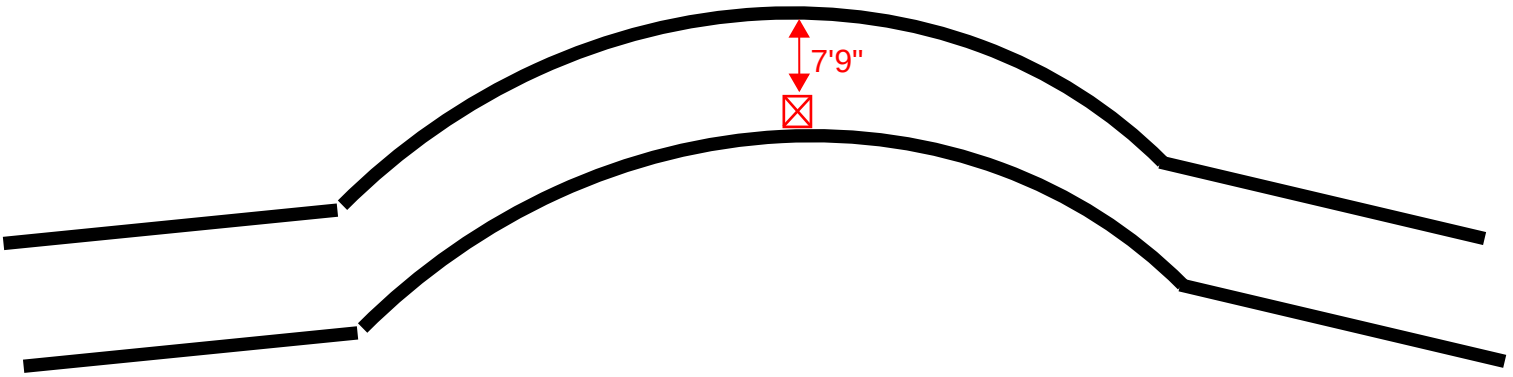
Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Physical Inventory


P
9th Avenue
28th Street
45'
6'
19'
P
30'
13'9"
P
50'
13'
15'
MTA
Bus Stop
M11
School Bus
Parking during
school start
and dismissal
times, briefly
double-parked
P


Parking meter machine
Sidewalk construction
LINK NYC Screen
M20 Bus Stop
8th Avenue
28th Street
Newspaper machines
10'
14'6"
13'4"
13'8"
24
13'
12'6"
2'x2'
12'
8'
50'
14'
18'
15'
36'
11'
24'6"
P



28th Street