Twin Towers, Suite 400, 4955 Steubenville Pike, Pittsburgh, PA 15205 T (412) 490-0630 F (412) 490-0631

February 5, 2013

Ms. Susan Tymoczko
Zoning Administrator
City of Pittsburgh Zoning Department
200 Ross Street, Third Floor
Pittsburgh, PA 15219

Subject: Oakland Portal Phase 2
Response to Comments

Dear Ms. Tymoczko:

Trans Associates (TA) is in receipt of review comments provided in an email dated December 10, 2012 referencing the Oakland Portal Development Phase 2 Traffic and Parking Study dated September 12, 2012. The following reiterates the City's comments followed by TA's response in bold.

1. Page 4, Section 1.2.4, Principal Findings, will the stop controlled intersection cause more accidents from drivers attempting to merge into traffic during peak hours? Will the rate of incidents increase on Forbes and the driveway due to drivers from the development attempting to merge right on Forbes to turn right onto Devitt Street or Craft Avenue?

   Appropriate signage and pavement markings will be provided as well as the required sight distance.

2. Page 5, Section 1.2.4 Principal Findings, clarify in the report whether there are 80 bicycle spaces in each of the three parking garages or 80 bicycle spaces total proposed in the project.

   A total of 80 bicycle parking spaces should be provided for the proposed development (all three buildings).

3. Page 5, Section 1.2.5, Recommendations, add a no right turn sign on the northbound driveway at Fifth Avenue and a no left turn sign except buses on Southbound Robinson Street and Fifth Avenue.

   The required signage will be included in the recommended improvements.

4. Page 6 Section 1.2.5 Recommendations and Figure 31, add pedestrian warning signs for the crosswalk located midblock near Building B entrance and exit and stop signs at garage and parking exits. The crossing between building b and building c should be a raised crossing.

The required signage will be included in the recommended improvements. However, a raised crosswalk is not recommended between Building B and Building C due to the close proximity of the proposed garage driveways, which would inhibit vehicles entering and exiting the garage driveways. In addition, based on traffic calming guidelines provided in the Pennsylvania Department of Transportation (PennDOT) Publication 383, *Pennsylvania's Traffic Calming Handbook, July 2012* speed humps/raised crosswalks should be placed approximately 250 feet to 600 feet apart. A raised pedestrian crossing at the requested location would result in speed humps/raised crosswalks places approximately 150 feet apart or less.

5. Further discussion is required pertaining to the design of the intersection of Robinson and Fifth Avenue.

   The proposed design is illustrated in the attached Figure 1. As shown, the intersection will be signalized with the lanes reconfigured. Full pedestrian amenities will be provided as well as an exclusive westbound bus lane/layover area as requested by PAAC. This new configuration will permit legal, signal controlled movements from southbound Robinson Street onto Fifth Avenue to access the Boulevard of the Allies on ramp. Capacity analysis and queue analysis have been revised for this intersection. The results of the revised analysis are presented on Table 1 through Table 4. Printouts of the revised analysis have been included with this correspondence.

6. Page 17, Section 3.4.1 Parking Demand and page 23, Section 4.3.2 page 25, Section 4.3.2, page 26, Section 4.3.5, 2020 Combined Traffic Volumes Intersections Level of Services, 2015 Combined Traffic Volumes – Intersections Levels of Service, Section 3.4.1, page 30, 5.4.1, Parking Segment and Appendix C ATR Sheets, check spelling errors.

   These errors are typographical and do not affect the results of the analysis.

7. Figures, include turning templates for trucks entering the loading docks or parking lots as appropriate.

   Turning template were included the transportation study in Figures 22 through 28 in the report.

8. Figure 31, include a stop sign for traffic exiting the Building A, Building B, and Building C parking garages.

   The required signage will be included in the recommended improvements.

9. Figure S-5, are there plans to include a stop bar on the northbound site driveway and Fifth Avenue? Also, consider a crosswalk crossing the northbound site driveway at Fifth Avenue.

   A stop bar and pedestrian crosswalk will be provided on the northbound site driveway approach. The proposed design is illustrated in the attached Figure 1.

10. Appendices, includes modified traffic signal drawings and timing sheets for the proposed recommendations.

    Modified signal and timings plans will be completed as part of the design phase.

11. Appendices, include accident reports within the study area.

    The crash data information provided by the Pennsylvania Department of Transportation was not included in the appendices because it is confidential information pursuant to 75 Pa. C.S. 3754 and 23 U.S.C. 409 and may not be published, reproduced, or released without the written permission of the Pennsylvania Department of Transportation.

12. Appendix C, check peak hours ATR Counts.

    The network peak hours have been verified as 7:45 A.M. to 8:45 A.M. and 4:45 P.M. to 5:45 P.M., as utilized in the study. A peak hour calculation spreadsheet has been included with this correspondence.

13. Appendix C, ATR counts from 2:00 PM to 4:00 PM are missing from intersections of Forbes Avenue and Brady Street, Forbes Avenue and Birmingham Bridge, Fifth and Ramp to Boulevard of the Allies, and Fifth Avenue and Birmingham Bridge for PM peak counts. The pedestrian counts for the intersection of Robinson Street and Fifth Avenue and Fifth Avenue and Craft Avenue are missing for both AM and PM peak hours.

    Based on the approved revised Form B, the required P.M. peak period to be counted at the study intersections was from 4:00 P.M. to 6:00 P.M. Pedestrian counts were completed at the intersections of Fifth Avenue/Craft Avenue and Fifth Avenue/Robinson Street. A copy of these pedestrian counts have been included with this correspondence.

14. Appendix C, ATR counts for the 15 minute interval of 3:00 PM to 3:15 PM are missing for the intersection of Forbes Avenue and Craft Avenue.

    See response to Comment 13.

15. Appendix C and Figure 5, clarify the reasoning why 2012 peak hour counts in Figure 5 are different from the 2012 peak hour traffic counts in Appendix C.

    As detailed in Section 3.3.2.4, the manual turning movement counts were conducted in 2010, 2011, and 2012. These existing volumes, which are provided in Appendix C, were adjusted to reflect 2012 existing conditions by applying a 0.55 percent per year linear growth rate. In addition, because the turning movement counts were conducted on different days during different years, once the growth rate was applied the volumes between intersections were balanced. Detailed calculations were provided in Appendix C of the study.

16. Appendix C, describe in the report the reasoning for balancing the traffic counts for 2012 peak hours.

    See response to Comment 15.

17. Appendix E, G, H, I, J, K, L, and N check the volumes with the ATR counts in Appendix C.

    See response to Comment 12 through Comment 16.

This concludes TA's response to the City of Pittsburgh comments. If you have any questions or need further information, please contact me.

Yours truly,

Cynthia A. Jampole, P.E.
Principal

CAJ:MDS:mz

cc: File – amfma00/12013/Response to City Comments

TABLE 1
LEVEL OF SERVICE SUMMARY
FIFTH AVENUE AND ROBINSON STREET REVISED ANALYSIS
AM PEAK HOUR
Oakland Portal Development Phase 2 Transportation Study
Response to Comments 02/05/2013
City of Pittsburgh, Allegheny County, Pennsylvania

Direction	Approach/ Movement	Level of Service (Delay) [1] A.M. Peak Hour					
		Forecasted 2015 – Without Development	Forecasted 2015 – With Development	Forecasted 2015 – With Development Mitigated	Forecasted 2020 – Without Development	Forecasted 2020 – With Development	Forecasted 2020 – With Development Mitigated
Fifth Avenue and Robinson Street/Proposed Site Driveway							
Eastbound *Fifth Ave- Bus Ln*	Through	A (0.0)	A (0.0)	A (7.5)	A (0.0)	A (0.0)	A (8.3)
Westbound *Fifth Avenue*	Left Turn	--	--	A (2.6)	--	--	A (2.8)
	Left Turn/Through	A (0.0)	A (5.3)	--	A (0.0)	A (2.5)	--
	Through	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
	Through/Right Turn	--	--	A (9.4)	--	--	B (10.2)
	Right Turn	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
	Approach	A (0.0)	A (2.6)	A (8.0)	A (0.0)	A (2.5)	A (8.7)
Northbound *Proposed Site Dwy*	Left Turn/Through	A (0.0)	F (>1000.0)	C (29.9)	A (0.0)	F (>1000.0)	C (28.4)
Southbound *Robinson Street To Blvd of Allies*	Left Turn/Through/Right Turn	B (12.0)	F (>1000.0)	--	B (12.2)	F (>1000.0)	--
	Left Turn/Through	--	--	A (7.7)	--	--	A (0.4)
	Right Turn	--	--	A (8.4)	--	--	A (1.7)
	Approach	B (12.0)	F (>1000.0)	A (8.2)	--	--	A (1.3)
OVERALL		A (1.3)	F (>1000.0)	A (8.6)	A (1.3)	F (>1000.0)	A (8.5)
Robinson Street and Bus Turn Around Lane							
Westbound *Bus Lane*	Left Turn	--	--	D (43.1)	--	--	D (45.6)
Northbound *Robinson Street*	Through	--	--	A (0.1)	--	--	A (0.1)
Southbound *Robinson Street*	Through/Right	--	--	C (30.7)	--	--	C (30.0)
OVERALL		--	--	B (15.3)	--	--	B (15.2)

(1) Level of Service and vehicular delay calculated using Synchro Traffic Signal Coordination Software, Version 8.

Source: Analysis by Trans Associates.

TABLE 2
LEVEL OF SERVICE SUMMARY
FIFTH AVENUE AND ROBINSON STREET REVISED ANALYSIS
PM PEAK HOUR
Oakland Portal Development Phase 2 Transportation Study
Response to Comments 02/05/2013
City of Pittsburgh, Allegheny County, Pennsylvania

Direction	Approach/ Movement	Level of Service (Delay) [1] P.M. Peak Hour					
		Forecasted 2015 – Without Development	Forecasted 2015 – With Development	Forecasted 2015 – With Development Mitigated	Forecasted 2020 – Without Development	Forecasted 2020 – With Development	Forecasted 2020 – With Development Mitigated
Fifth Avenue and Robinson Street/Proposed Site Driveway							
Eastbound *Fifth Ave- Bus Ln*	Through	A (0.0)	A (0.0)	B (10.7)	A (0.0)	A (0.0)	B (10.7)
Westbound *Fifth Avenue*	Left Turn	--	--	A (4.4)	--	--	A (4.9)
	Left Turn/Through	A (0.0)	A (1.7)	--	A (0.0)	A (1.7)	--
	Through	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
	Through/Right Turn	--	--	E (66.7)	--	--	E (78.9)
	Right Turn	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
	Approach	A (0.0)	A (0.6)	E (63.7)	A (0.0)	A (0.6)	E (75.3)
Northbound *Proposed Site Dwy*	Left Turn/Through	A (0.0)	F (>1000.0)	E (75.5)	A (0.0)	F (>1000.0)	E (75.5)
Southbound *Robinson Street To Blvd of Allies*	Left Turn/Through/Right Turn	D (26.5)	F (>1000.0)	--	D (30.3)	F (>1000.0)	--
	Left Turn/Through	--	--	A (1.0)	--	--	A (1.0)
	Right Turn	--	--	A (6.4)	--	--	A (7.2)
	Approach	B (12.0)	F (>1000.0)	A (6.0)	--	--	A (6.8)
OVERALL		A (4.6)	F (>1000.0)	E (56.4)	A (5.2)	F (>1000.0)	E (65.0)
Robinson Street and Bus Turn Around Lane							
Westbound *Bus Lane*	Left Turn	--	--	D (43.3)	--	--	D (45.5)
Northbound *Robinson Street*	Through	--	--	A (0.9)	--	--	A (0.9)
Southbound *Robinson Street*	Through/Right	--	--	C (28.7)	--	--	C (28.3)
OVERALL		--	--	B (17.0)	--	--	B (16.3)

(1) Level of Service and vehicular delay calculated using Synchro Traffic Signal Coordination Software, Version 8.

Source: Analysis by Trans Associates.

TABLE 3
QUEUE LENGTH SUMMARY
FIFTH AVENUE AND ROBINSON STREET REVISED ANALYSIS
AM PEAK HOUR
Oakland Portal Development Phase 2 Transportation Study
Response to Comments 02/05/2013
City of Pittsburgh, Allegheny County, Pennsylvania

Direction	Movement/Approach	Queue Length (Feet)						
			A.M. Peak Hour					
		Existing Queue Capacity	Forecasted 2015 – Without Development	Forecasted 2015 – With Development	Forecasted 2015 – With Development Mitigated	Forecasted 2020 – Without Development	Forecasted 2020 – With Development	Forecasted 2020 – With Development Mitigated
Fifth Avenue and Robinson Street/Proposed Site Driveway								
Eastbound *Fifth Ave- Bus Ln*	Through	--	--	--	20	--	--	21
Westbound *Fifth Avenue*	Left Turn	--	--	--	18	--	--	18
	Left Turn/Through	300	0	25	--	0	25	--
	Through	300	0	0	--	0	0	--
	Through/Right Turn	300	--	--	37	--	--	37
	Right Turn	300	0	0	--	0	0	--
Northbound *Proposed Site Dwy*	Left Turn/Through	220	0	∞	55	0	∞	53
Southbound *Robinson Street To Blvd of Allies*	Left Turn/Through/Right Turn	830	23	∞	--	24	∞	--
	Left Turn/Through	830	--	--	11	--	--	1
	Right Turn	830	--	--	20	--	--	16
Robinson Street and Bus Turn Around Lane								
Westbound *Bus Lane*	Left Turn	--	--	--	0	--	--	0
Northbound *Robinson Street*	Through	--	--	--	1	--	--	1
Southbound *Robinson Street*	Through/Right	--	--	--	74	--	--	91

(1) Queue length analysis calculated using Synchro Traffic Signal Coordination Software, Version 8.

Source: Analysis by Trans Associates.

TABLE 4
QUEUE LENGTH SUMMARY
FIFTH AVENUE AND ROBINSON STREET REVISED ANALYSIS
PM PEAK HOUR
Oakland Portal Development Phase 2 Transportation Study
Response to Comments 02/05/2013
City of Pittsburgh, Allegheny County, Pennsylvania

Direction	Movement/Approach	Queue Length (Feet)						
			P.M. Peak Hour					
		Existing Queue Capacity	Forecasted 2015 – Without Development	Forecasted 2015 – With Development	Forecasted 2015 – With Development Mitigated	Forecasted 2020 – Without Development	Forecasted 2020 – With Development	Forecasted 2020 – With Development Mitigated
Fifth Avenue and Robinson Street/Proposed Site Driveway								
Eastbound *Fifth Ave- Bus Ln*	Through	--	--	--	24	--	--	24
Westbound *Fifth Avenue*	Left Turn	--	--	--	7	--	--	9
	Left Turn/Through	300	0	0	--	0	0	--
	Through	300	0	0	--	0	0	--
	Through/Right Turn	300	--	--	67	--	--	82
	Right Turn	300	0	0	--	0	0	--
Northbound *Proposed Site Dwy*	Left Turn/Through	220	0	∞	339	0	∞	339
Southbound *Robinson Street To Blvd of Allies*	Left Turn/Through/Right Turn	830	138	∞	--	159	∞	--
	Left Turn/Through	830	--	--	1	--	--	1
	Right Turn	830	--	--	78	--	--	93
Robinson Street and Bus Turn Around Lane								
Westbound *Bus Lane*	Left Turn	--	--	--	2	--	--	1
Northbound *Robinson Street*	Through	--	--	--	13	--	--	13
Southbound *Robinson Street*	Through/Right	--	--	--	147	--	--	148

(1) Queue length analysis calculated using Synchro Traffic Signal Coordination Software, Version 8.

Source: Analysis by Trans Associates.

File – amfma00/12013/Oakland Portal 2 Response to City Comments Tables 25-13

PLOTTED: 2/4/2013

N

Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO.	AMFMA00-12013
PROJECT:	OAKLAND PORTAL PHASE II
TITLE:	Proposed Fifth Avenue and Robinson Street Improvements
FIGURE	1
D.B.	CTZ
C.B.	
REV.	

FILE NAME: P:\oakland\OA12013 - Oakland Portal\Intersection Layout 2-2013.dgn

TRAFFIC COUNT SUMMARY PERFORMED BY TRANS ASSOCIATES

OVERALL INTERSECTION CALCULATION SUMMARY SHEET

Municipality: City of Pittsburgh
Job No: AMFMA00
Client Code: 09344

A.M. Peak Hour

Intersection		Fifth Avenue and Craft Avenue	Fifth Avenue and Robinson Street	Fifth Avenue and Moultrie Street	Forbes Avenue and Moultrie Street	Forbes Avenue and Craft Avenue	Fifth Avenue and Birmingham Bridge	Fifth Avenue and Blvd of Allies On Ramp	Birmingham Bridge Off Ramp at Forbes Ave	Forbes Avenue and Brady Street	Forbes Avenue and McDevitt Street	Totals			
												Network Peak Hour	7:45	8:45	
Begin	End	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15 Min	Hour	Peak	
7:00	7:15	342	325	182	127	541	346	302	66	167	566	2964	2964	31384	7:00 - 8:00
7:15	7:30	401	372	187	104	554	414	353	71	165	456	3077	6041	41539	7:15 - 8:15
7:30	7:45	452	445	210	144	617	477	385	68	154	470	3422	9463	48735	7:30 - 8:30
7:45	8:00	483	431	208	127	623	490	391	73	152	475	3453	12916	**52411**	**7:45 - 8:45**
8:00	8:15	382	378	206	153	492	457	362	68	184	485	3167	13119	52305	8:00 - 9:00
8:15	8:30	384	362	205	152	535	439	310	89	179	540	3195	13237		
8:30	8:45	416	377	213	148	619	447	367	65	166	506	3324	13139		
8:45	9:00	369	331	208	169	611	391	309	67	165	504	3124	12810		
Totals		3229	3021	1619	1124	4592	3461	2779	567	1332	4002	25726	13237		

P.M. Peak Hour

Intersection		Fifth Avenue and Craft Avenue	Fifth Avenue and Robinson Street	Fifth Avenue and Moultrie Street	Forbes Avenue and Moultrie Street	Forbes Avenue and Craft Avenue	Fifth Avenue and Birmingham Bridge	Fifth Avenue and Blvd of Allies On Ramp	Birmingham Bridge Off Ramp at Forbes Ave	Forbes Avenue and Brady Street	Forbes Avenue and McDevitt Street	Totals			
												Network Peak Hour	4:45	5:45	
Begin	End	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15-Min Total	15 Min	Hour	Peak	
16:00	16:15	527	493	204	333	600	473	493	76	341	402	3942	3942	41447	4:00 -5:00
16:15	16:30	574	536	208	322	648	479	472	70	355	471	4135	8077	54589	4:15 - 5:15
16:30	16:45	582	549	261	430	637	531	523	74	421	481	4489	12566	63694	4:30 - 5:30
16:45	17:00	586	553	210	370	626	535	479	72	378	487	4296	16862	**67704**	**4:45 - 5:45**
17:00	17:15	542	537	184	333	647	481	455	61	398	526	4164	17084	66763	5:00 - 6:00
17:15	17:30	567	533	205	337	625	505	444	87	387	543	4233	17182		
17:30	17:45	551	498	221	277	539	451	405	65	339	537	3883	16576	-	
17:45	18:00	532	465	221	225	545	383	393	55	274	548	3641	15921	-	
Totals		4461	4164	1714	2627	4867	3838	3664	560	2893	3995	32783	17182		

AM
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PM
PM

Trans Associates
Twin Towers/Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15208
412.490.0630

Fith Ave. & Craft Ave./Carlow Col. Lot

File Name : Fifth Ave. & Craft Ave._ PM peds
Site Code : 00555006
Start Date : 7/10/2012
Page No : 1

Groups Printed- Pedestrains

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Craft Ave. Northbound					Carlow College Lot Dwy. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:45 PM	0	0	0	0	0	5	0	0	1	6	2	0	0	5	7	6	0	0	3	9	22
Total	0	0	0	0	0	5	0	0	1	6	2	0	0	5	7	6	0	0	3	9	22
05:00 PM	1	0	0	0	1	9	0	0	6	15	0	0	0	0	0	5	0	0	4	9	25
05:15 PM	3	0	0	0	3	6	0	0	7	13	0	0	0	0	0	6	0	0	5	11	27
05:30 PM	2	0	0	0	2	6	0	0	4	10	2	0	0	2	4	4	0	0	1	5	21
Grand Total	6	0	0	0	6	26	0	0	18	44	4	0	0	7	11	21	0	0	13	34	95
Apprch %	100	0	0	0		59.1	0	0	40.9		36.4	0	0	63.6		61.8	0	0	38.2		
Total %	6.3	0	0	0	6.3	27.4	0	0	18.9	46.3	4.2	0	0	7.4	11.6	22.1	0	0	13.7	35.8	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Craft Ave. Northbound					Carlow College Lot Dwy. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	5	0	0	1	6	**2**	0	0	**5**	**7**	**6**	0	0	3	9	22
05:00 PM	1	0	0	0	1	**9**	0	0	6	**15**	0	0	0	0	0	5	0	0	4	9	25
05:15 PM	**3**	0	0	0	**3**	6	0	0	**7**	13	0	0	0	0	0	6	0	0	**5**	**11**	**27**
05:30 PM	2	0	0	0	2	6	0	0	4	10	2	0	0	2	4	4	0	0	1	5	21
Total Volume	6	0	0	0	6	26	0	0	18	44	4	0	0	7	11	21	0	0	13	34	95
% App. Total	100	0	0	0		59.1	0	0	40.9		36.4	0	0	63.6		61.8	0	0	38.2		
PHF	.500	.000	.000	.000	.500	.722	.000	.000	.643	.733	.500	.000	.000	.350	.393	.875	.000	.000	.650	.773	.880

Trans Associates
Twin Towers/Suite 400
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Pittsburgh, PA, 15208
412.490.0630

Fifth Ave. & Robinson St.

File Name : Fifth Ave. & Robinson St._ PM peds
Site Code : 00555005
Start Date : 7/10/2012
Page No : 1

Groups Printed- Pedestrains

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Maurice St. Northbound					Robinson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:45 PM	2	0	0	2	4	1	0	0	0	1	2	0	0	2	4	6	0	0	1	7	16
Total	2	0	0	2	4	1	0	0	0	1	2	0	0	2	4	6	0	0	1	7	16
05:00 PM	0	0	0	2	2	0	0	0	0	0	1	0	0	0	1	1	0	0	1	2	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4	4	0	0	3	7	11
05:30 PM	0	0	0	4	4	0	0	0	0	0	0	0	0	4	4	3	0	0	1	4	12
Grand Total	2	0	0	8	10	1	0	0	0	1	4	0	0	9	13	14	0	0	6	20	44
Apprch %	20	0	0	80		100	0	0	0		30.8	0	0	69.2		70	0	0	30		
Total %	4.5	0	0	18.2	22.7	2.3	0	0	0	2.3	9.1	0	0	20.5	29.5	31.8	0	0	13.6	45.5	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Maurice St. Northbound					Robinson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**2**	0	0	2	**4**	**1**	0	0	0	**1**	**2**	0	0	2	**4**	**6**	0	0	1	**7**	**16**
05:00 PM	0	0	0	2	2	0	0	0	0	0	1	0	0	0	1	1	0	0	1	2	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4	4	0	0	**3**	7	11
05:30 PM	0	0	0	**4**	4	0	0	0	0	0	0	0	0	**4**	4	3	0	0	1	4	12
Total Volume	2	0	0	8	10	1	0	0	0	1	4	0	0	9	13	14	0	0	6	20	44
% App. Total	20	0	0	80		100	0	0	0		30.8	0	0	69.2		70	0	0	30		
PHF	.250	.000	.000	.500	.625	.250	.000	.000	.000	.250	.500	.000	.000	.563	.813	.583	.000	.000	.500	.714	.688

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	27	0	360	1262	223	27	26	0	1	59	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Total Lost time (s)		5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor		1.00		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99			1.00			1.00	0.98
Flpb, ped/bikes		1.00		0.99	1.00			1.00			1.00	1.00
Frt		1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			1.00	1.00
Satd. Flow (prot)		936		1797	3345			1835			1800	1468
Flt Permitted		1.00		0.74	1.00			0.83			0.99	1.00
Satd. Flow (perm)		936		1398	3345			1555			1788	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.94	0.90	0.90	0.90	0.90	0.25	0.90	0.87
Adj. Flow (vph)	0	28	0	400	1343	248	30	29	0	4	66	156
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	28	0	400	1591	0	0	59	0	0	70	156
Confl. Peds. (#/hr)	9		6	6		9	7		3	3		7
Confl. Bikes (#/hr)			2			5						1
Heavy Vehicles (%)	0%	100%	0%	0%	6%	4%	0%	0%	0%	100%	0%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Actuated Green, G (s)		46.2		46.2	46.2			12.7			23.8	23.8
Effective Green, g (s)		46.2		46.2	46.2			12.7			23.8	23.8
Actuated g/C Ratio		0.58		0.58	0.58			0.16			0.30	0.30
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		540		807	1931			246			531	436
v/s Ratio Prot		0.03			c0.48							
v/s Ratio Perm				0.29				0.04			0.04	c0.11
v/c Ratio		0.05		0.50	0.82			0.24			0.13	0.36
Uniform Delay, d1		7.4		10.0	13.6			29.4			20.5	22.1
Progression Factor		1.00		0.24	0.66			1.00			0.37	0.36
Incremental Delay, d2		0.2		0.2	0.4			0.5			0.1	0.5
Delay (s)		7.5		2.6	9.4			29.9			7.7	8.4
Level of Service		A		A	A			C			A	A
Approach Delay (s)		7.5			8.0			29.9			8.2	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	0	0	0	249	0	0	136	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Total Lost time (s)				5.0				5.0			5.0	
Lane Util. Factor				1.00				1.00			0.95	
Frt				1.00				1.00			0.96	
Flt Protected				0.95				1.00			1.00	
Satd. Flow (prot)				912				1890			3434	
Flt Permitted				0.95				1.00			1.00	
Satd. Flow (perm)				912				1890			3434	
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.92	0.74	0.25	0.90	0.25	0.83	0.87	0.73
Adj. Flow (vph)	0	0	0	1	0	0	0	277	0	0	156	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1	0	0	0	277	0	0	215	0
Heavy Vehicles (%)	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%	8%	2%
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Actuated Green, G (s)				6.1				63.9			12.7	
Effective Green, g (s)				6.1				63.9			12.7	
Actuated g/C Ratio				0.08				0.80			0.16	
Clearance Time (s)				5.0							5.0	
Vehicle Extension (s)				3.0							3.0	
Lane Grp Cap (vph)				69				1509			545	
v/s Ratio Prot				c0.00				c0.15			c0.06	
v/s Ratio Perm												
v/c Ratio				0.01				0.18			0.39	
Uniform Delay, d1				34.2				1.9			30.2	
Progression Factor				1.26				0.04			1.00	
Incremental Delay, d2				0.0				0.0			0.5	
Delay (s)				43.1				0.1			30.7	
Level of Service				D				A			C	
Approach Delay (s)		0.0			43.1			0.1			30.7	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	27	0	360	1262	223	27	26	0	1	59	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Storage Length (ft)	0		0	0		50	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	936	0	1823	3346	0	0	1843	0	0	1801	1503
Flt Permitted				0.739				0.827			0.990	
Satd. Flow (perm)	0	936	0	1398	3346	0	0	1556	0	0	1788	1469
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		191			223			248			110	
Travel Time (s)		5.2			6.1			6.8			3.0	
Confl. Peds. (#/hr)	9		6	6		9	7		3	3		7
Confl. Bikes (#/hr)			2			5						1
Peak Hour Factor	0.95	0.95	0.95	0.90	0.94	0.90	0.90	0.90	0.90	0.25	0.90	0.87
Heavy Vehicles (%)	0%	100%	0%	0%	6%	4%	0%	0%	0%	100%	0%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	400	1591	0	0	59	0	0	70	156
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Detector Phase	2	2		6	6		4	4		8 14	8 14	8 14
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Minimum Split (s)	21.0	21.0		21.0	21.0		26.0	26.0				
Total Split (s)	42.0	42.0		42.0	42.0		26.0	26.0				
Total Split (%)	52.5%	52.5%		52.5%	52.5%		32.5%	32.5%				
Maximum Green (s)	37.0	37.0		37.0	37.0		21.0	21.0				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None				
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)		46.2		46.2	46.2			12.7			23.8	23.8
Actuated g/C Ratio		0.58		0.58	0.58			0.16			0.30	0.30
v/c Ratio		0.05		0.50	0.82			0.24			0.13	0.36
Control Delay		9.3		3.0	11.3			30.2			7.5	9.9
Queue Delay		0.0		0.7	4.2			0.0			9.5	8.8
Total Delay		9.3		3.7	15.5			30.2			17.1	18.7
LOS		A		A	B			C			B	B

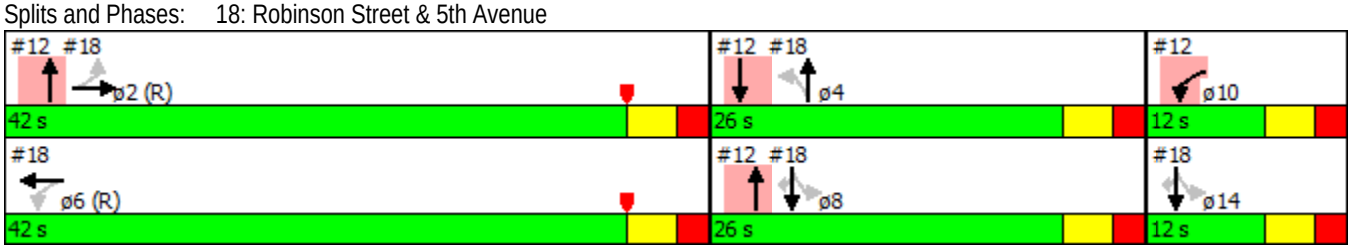
Lane Group	ø8	ø10	ø14
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	8	10	14
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	21.0	12.0	12.0
Total Split (s)	26.0	12.0	12.0
Total Split (%)	33%	15%	15%
Maximum Green (s)	21.0	7.0	7.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		9.3			13.1			30.2			18.2	
Approach LOS		A			B			C			B	
Queue Length 50th (ft)		6		27	112			26			7	17
Queue Length 95th (ft)		20		m18	m37			55			11	20
Internal Link Dist (ft)		111			143			168			30	
Turn Bay Length (ft)												
Base Capacity (vph)		540		807	1932			408			548	450
Starvation Cap Reductn		0		160	267			0			443	253
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.05		0.62	0.96			0.14			0.67	0.79

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 13 (16%), Referenced to phase 2:NBT and 6:, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Robinson Street & 5th Avenue



Lane Group	ø8	ø10	ø14
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

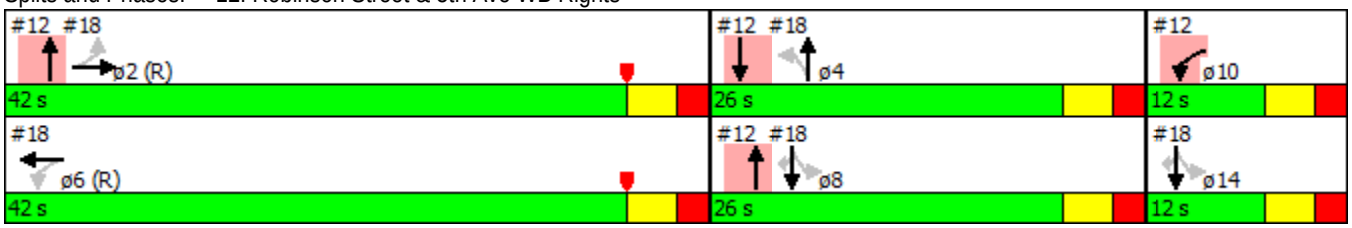
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	0	0	0	249	0	0	136	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Storage Length (ft)	0		0	0		0	0		0	0		100
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	912	0	0	0	1890	0	0	3434	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	912	0	0	0	1890	0	0	3434	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		269			225			110			1718	
Travel Time (s)		7.3			6.1			3.0			46.9	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.92	0.74	0.25	0.90	0.25	0.83	0.87	0.73
Heavy Vehicles (%)	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	1	0	0	0	277	0	0	215	0
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Detector Phase				10				2 8			4	
Switch Phase												
Minimum Initial (s)				4.0							4.0	
Minimum Split (s)				12.0							26.0	
Total Split (s)				12.0							26.0	
Total Split (%)				15.0%							32.5%	
Maximum Green (s)				7.0							21.0	
Yellow Time (s)				3.0							3.0	
All-Red Time (s)				2.0							2.0	
Lost Time Adjust (s)				0.0							0.0	
Total Lost Time (s)				5.0							5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0							3.0	
Recall Mode				None							None	
Walk Time (s)											5.0	
Flash Dont Walk (s)											11.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				6.1				63.9			12.7	
Actuated g/C Ratio				0.08				0.80			0.16	
v/c Ratio				0.01				0.18			0.39	
Control Delay				43.0				0.2			31.4	
Queue Delay				0.0				0.7			0.0	
Total Delay				43.0				1.0			31.4	
LOS				D				A			C	
Approach Delay								1.0			31.4	
Approach LOS								A			C	

Lane Group	ø2	ø6	ø8	ø14
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	6	8	14
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	12.0
Total Split (s)	42.0	42.0	26.0	12.0
Total Split (%)	53%	53%	33%	15%
Maximum Green (s)	37.0	37.0	21.0	7.0
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)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min	None	None
Walk Time (s)	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)				0				1			51	
Queue Length 95th (ft)				m0				m1			74	
Internal Link Dist (ft)		189			145			30			1638	
Turn Bay Length (ft)												
Base Capacity (vph)				79				1705			901	
Starvation Cap Reductn				0				1111			0	
Spillback Cap Reductn				0				0			0	
Storage Cap Reductn				0				0			0	
Reduced v/c Ratio				0.01				0.47			0.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 13 (16%), Referenced to phase 2:NBT and 6:, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 23.9%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 12: Robinson Street & 5th Ave WB Rights



Lane Group	ø2	ø6	ø8	ø14
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	33	0	90	1660	155	159	152	0	3	15	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Total Lost time (s)		5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor		1.00		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99			1.00			1.00	0.98
Flpb, ped/bikes		1.00		0.97	1.00			1.00			1.00	1.00
Frt		1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)		936		1767	3422			1838			1423	1502
Flt Permitted		1.00		0.73	1.00			0.83			0.90	1.00
Satd. Flow (perm)		936		1357	3422			1556			1302	1502
Peak-hour factor, PHF	0.95	0.79	0.95	0.90	0.96	0.74	0.90	0.90	0.90	0.38	0.90	0.86
Adj. Flow (vph)	0	42	0	100	1729	209	177	169	0	8	17	362
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	42	0	100	1938	0	0	346	0	0	25	362
Confl. Peds. (#/hr)	20		13	13		20	4		1	1		4
Confl. Bikes (#/hr)			3			5						2
Heavy Vehicles (%)	0%	100%	0%	0%	4%	4%	0%	0%	0%	100%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Actuated Green, G (s)		40.2		40.2	40.2			18.0			29.8	29.8
Effective Green, g (s)		40.2		40.2	40.2			18.0			29.8	29.8
Actuated g/C Ratio		0.50		0.50	0.50			0.22			0.37	0.37
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		470		681	1719			350			484	559
v/s Ratio Prot		0.04			c0.57							
v/s Ratio Perm				0.07				c0.22			0.02	c0.24
v/c Ratio		0.09		0.15	1.13			0.99			0.05	0.65
Uniform Delay, d1		10.4		10.7	19.9			30.9			16.1	20.8
Progression Factor		1.00		0.41	0.43			1.00			0.06	0.20
Incremental Delay, d2		0.4		0.0	58.2			44.6			0.0	2.3
Delay (s)		10.7		4.4	66.7			75.5			1.0	6.4
Level of Service		B		A	E			E			A	A
Approach Delay (s)		10.7			63.7			75.5			6.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	0	0	307	0	0	311	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Total Lost time (s)				5.0				5.0			5.0	
Lane Util. Factor				1.00				1.00			0.95	
Frt				1.00				1.00			0.97	
Flt Protected				0.95				1.00			1.00	
Satd. Flow (prot)				912				1890			3521	
Flt Permitted				0.95				1.00			1.00	
Satd. Flow (perm)				912				1890			3521	
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.92	0.83	0.25	0.90	0.25	0.83	0.86	0.61
Adj. Flow (vph)	0	0	0	4	0	0	0	341	0	0	362	98
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	4	0	0	0	341	0	0	460	0
Heavy Vehicles (%)	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Actuated Green, G (s)				6.8				63.2			18.0	
Effective Green, g (s)				6.8				63.2			18.0	
Actuated g/C Ratio				0.08				0.79			0.22	
Clearance Time (s)				5.0							5.0	
Vehicle Extension (s)				3.0							3.0	
Lane Grp Cap (vph)				77				1493			792	
v/s Ratio Prot				c0.00				c0.18			c0.13	
v/s Ratio Perm												
v/c Ratio				0.05				0.23			0.58	
Uniform Delay, d1				33.6				2.2			27.6	
Progression Factor				1.29				0.41			1.00	
Incremental Delay, d2				0.0				0.0			1.1	
Delay (s)				43.3				0.9			28.7	
Level of Service				D				A			C	
Approach Delay (s)		0.0			43.3			0.9			28.7	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	33	0	90	1660	155	159	152	0	3	15	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Storage Length (ft)	0		0	0		50	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	936	0	1823	3423	0	0	1843	0	0	1423	1531
Flt Permitted				0.730				0.826			0.900	
Satd. Flow (perm)	0	936	0	1358	3423	0	0	1557	0	0	1302	1502
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		191			223			248			110	
Travel Time (s)		5.2			6.1			6.8			3.0	
Confl. Peds. (#/hr)	20		13	13		20	4		1	1		4
Confl. Bikes (#/hr)			3			5						2
Peak Hour Factor	0.95	0.79	0.95	0.90	0.96	0.74	0.90	0.90	0.90	0.38	0.90	0.86
Heavy Vehicles (%)	0%	100%	0%	0%	4%	4%	0%	0%	0%	100%	0%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	0	100	1938	0	0	346	0	0	25	362
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Detector Phase	2	2		6	6		4	4		8 14	8 14	8 14
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Minimum Split (s)	21.0	21.0		21.0	21.0		23.0	23.0				
Total Split (s)	45.0	45.0		45.0	45.0		23.0	23.0				
Total Split (%)	56.3%	56.3%		56.3%	56.3%		28.8%	28.8%				
Maximum Green (s)	40.0	40.0		40.0	40.0		18.0	18.0				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None				
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)		40.2		40.2	40.2			18.0			29.8	29.8
Actuated g/C Ratio		0.50		0.50	0.50			0.22			0.37	0.37
v/c Ratio		0.09		0.15	1.13			0.99			0.05	0.65
Control Delay		11.2		4.6	71.2			79.3			1.1	9.3
Queue Delay		0.0		0.0	0.5			0.0			1.9	12.3
Total Delay		11.2		4.6	71.7			79.3			3.0	21.6
LOS		B		A	E			E			A	C

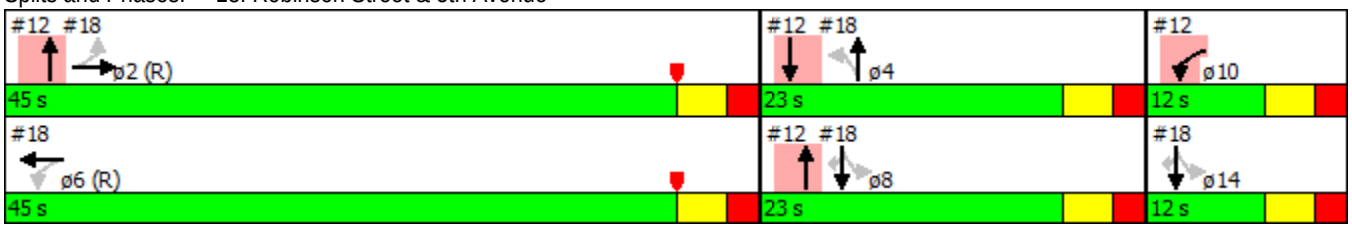
Lane Group	ø8	ø10	ø14
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	8	10	14
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	21.0	12.0	12.0
Total Split (s)	23.0	12.0	12.0
Total Split (%)	29%	15%	15%
Maximum Green (s)	18.0	7.0	7.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		11.2			68.5			79.3			20.4	
Approach LOS		B			E			E			C	
Queue Length 50th (ft)		10		9	~629			173			0	63
Queue Length 95th (ft)		24		m7	m67			#339			m1	78
Internal Link Dist (ft)		111			143			168			30	
Turn Bay Length (ft)												
Base Capacity (vph)		470		683	1720			350			488	563
Starvation Cap Reductn		0		0	249			0			391	177
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.09		0.15	1.32			0.99			0.26	0.94

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 14 (18%), Referenced to phase 2:NBT and 6:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 62.3 Intersection LOS: E
Intersection Capacity Utilization 100.0% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Robinson Street & 5th Avenue



Lane Group	ø8	ø10	ø14
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	0	0	307	0	0	311	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Storage Length (ft)	0		0	0		0	0		0	0		100
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	912	0	0	0	1890	0	0	3520	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	912	0	0	0	1890	0	0	3520	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		269			225			110			1718	
Travel Time (s)		7.3			6.1			3.0			46.9	
Peak Hour Factor	0.92	0.92	0.92	0.83	0.92	0.83	0.25	0.90	0.25	0.83	0.86	0.61
Heavy Vehicles (%)	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	4	0	0	0	341	0	0	460	0
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Detector Phase				10				2 8			4	
Switch Phase												
Minimum Initial (s)				4.0							4.0	
Minimum Split (s)				12.0							23.0	
Total Split (s)				12.0							23.0	
Total Split (%)				15.0%							28.8%	
Maximum Green (s)				7.0							18.0	
Yellow Time (s)				3.0							3.0	
All-Red Time (s)				2.0							2.0	
Lost Time Adjust (s)				0.0							0.0	
Total Lost Time (s)				5.0							5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0							3.0	
Recall Mode				None							None	
Walk Time (s)											5.0	
Flash Dont Walk (s)											11.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				6.8				63.2			18.0	
Actuated g/C Ratio				0.08				0.79			0.22	
v/c Ratio				0.05				0.23			0.58	
Control Delay				43.7				1.0			31.1	
Queue Delay				0.0				16.8			0.8	
Total Delay				43.7				17.7			31.8	
LOS				D				B			C	
Approach Delay								17.7			31.8	
Approach LOS								B			C	

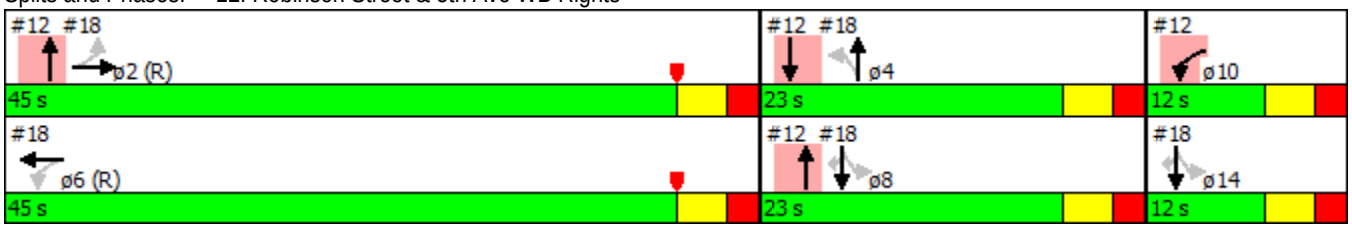
Lane Group	ø2	ø6	ø8	ø14
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	6	8	14
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	12.0
Total Split (s)	45.0	45.0	23.0	12.0
Total Split (%)	56%	56%	29%	15%
Maximum Green (s)	40.0	40.0	18.0	7.0
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)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min	None	None
Walk Time (s)	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)				2				13			108	
Queue Length 95th (ft)				m2				m13			147	
Internal Link Dist (ft)		189			145			30			1638	
Turn Bay Length (ft)												
Base Capacity (vph)				79				1493			792	
Starvation Cap Reductn				0				1135			0	
Spillback Cap Reductn				0				0			117	
Storage Cap Reductn				0				0			0	
Reduced v/c Ratio				0.05				0.95			0.68	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 14 (18%), Referenced to phase 2:NBT and 6:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 27.0% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Robinson Street & 5th Ave WB Rights



Lane Group	ø2	ø6	ø8	ø14
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	27	0	360	1296	229	27	26	0	1	59	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Total Lost time (s)		5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor		1.00		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99			1.00			1.00	0.98
Flpb, ped/bikes		1.00		0.99	1.00			1.00			1.00	1.00
Frt		1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			1.00	1.00
Satd. Flow (prot)		936		1797	3346			1835			1800	1468
Flt Permitted		1.00		0.74	1.00			0.84			0.99	1.00
Satd. Flow (perm)		936		1398	3346			1572			1788	1468
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.94	0.90	0.90	0.90	0.90	0.25	0.90	0.87
Adj. Flow (vph)	0	28	0	400	1379	254	30	29	0	4	66	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	28	0	400	1633	0	0	59	0	0	70	161
Confl. Peds. (#/hr)	9		6	6		9	7		3	3		7
Confl. Bikes (#/hr)			2			5						1
Heavy Vehicles (%)	0%	100%	0%	0%	6%	4%	0%	0%	0%	100%	0%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Actuated Green, G (s)		44.6		44.6	44.6			14.3			25.4	25.4
Effective Green, g (s)		44.6		44.6	44.6			14.3			25.4	25.4
Actuated g/C Ratio		0.56		0.56	0.56			0.18			0.32	0.32
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		521		779	1865			280			567	466
v/s Ratio Prot		0.03			c0.49							
v/s Ratio Perm				0.29				0.04			0.04	c0.11
v/c Ratio		0.05		0.51	0.88			0.21			0.12	0.35
Uniform Delay, d1		8.1		11.0	15.3			28.0			19.4	20.9
Progression Factor		1.00		0.23	0.63			1.00			0.02	0.06
Incremental Delay, d2		0.2		0.2	0.6			0.4			0.1	0.4
Delay (s)		8.3		2.8	10.2			28.4			0.4	1.7
Level of Service		A		A	B			C			A	A
Approach Delay (s)		8.3			8.7			28.4			1.3	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	0	0	0	255	0	0	198	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Total Lost time (s)				5.0				5.0			5.0	
Lane Util. Factor				1.00				1.00			0.95	
Frt				1.00				1.00			0.97	
Flt Protected				0.95				1.00			1.00	
Satd. Flow (prot)				912				1890			3456	
Flt Permitted				0.95				1.00			1.00	
Satd. Flow (perm)				912				1890			3456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.92	0.74	0.25	0.90	0.25	0.83	0.87	0.73
Adj. Flow (vph)	0	0	0	1	0	0	0	283	0	0	228	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1	0	0	0	283	0	0	288	0
Heavy Vehicles (%)	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%	8%	2%
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Actuated Green, G (s)				6.1				63.9			14.3	
Effective Green, g (s)				6.1				63.9			14.3	
Actuated g/C Ratio				0.08				0.80			0.18	
Clearance Time (s)				5.0							5.0	
Vehicle Extension (s)				3.0							3.0	
Lane Grp Cap (vph)				69				1509			617	
v/s Ratio Prot				c0.00				c0.15			c0.08	
v/s Ratio Perm												
v/c Ratio				0.01				0.19			0.47	
Uniform Delay, d1				34.2				1.9			29.4	
Progression Factor				1.33				0.03			1.00	
Incremental Delay, d2				0.0				0.0			0.6	
Delay (s)				45.6				0.1			30.0	
Level of Service				D				A			C	
Approach Delay (s)		0.0			45.6			0.1			30.0	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	27	0	360	1296	229	27	26	0	1	59	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Storage Length (ft)	0		0	0		50	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	936	0	1823	3346	0	0	1843	0	0	1801	1503
Flt Permitted				0.739				0.835			0.990	
Satd. Flow (perm)	0	936	0	1398	3346	0	0	1571	0	0	1788	1469
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		191			223			248			110	
Travel Time (s)		5.2			6.1			6.8			3.0	
Confl. Peds. (#/hr)	9		6	6		9	7		3	3		7
Confl. Bikes (#/hr)			2			5						1
Peak Hour Factor	0.95	0.95	0.95	0.90	0.94	0.90	0.90	0.90	0.90	0.25	0.90	0.87
Heavy Vehicles (%)	0%	100%	0%	0%	6%	4%	0%	0%	0%	100%	0%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	400	1633	0	0	59	0	0	70	161
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Detector Phase	2	2		6	6		4	4		8 14	8 14	8 14
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Minimum Split (s)	21.0	21.0		21.0	21.0		26.0	26.0				
Total Split (s)	42.0	42.0		42.0	42.0		26.0	26.0				
Total Split (%)	52.5%	52.5%		52.5%	52.5%		32.5%	32.5%				
Maximum Green (s)	37.0	37.0		37.0	37.0		21.0	21.0				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None				
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)		44.6		44.6	44.6			14.3			25.4	25.4
Actuated g/C Ratio		0.56		0.56	0.56			0.18			0.32	0.32
v/c Ratio		0.05		0.51	0.88			0.21			0.12	0.35
Control Delay		10.4		3.2	12.8			27.9			0.7	3.2
Queue Delay		0.0		0.7	11.4			0.0			3.0	1.5
Total Delay		10.4		3.9	24.2			27.9			3.8	4.7
LOS		B		A	C			C			A	A

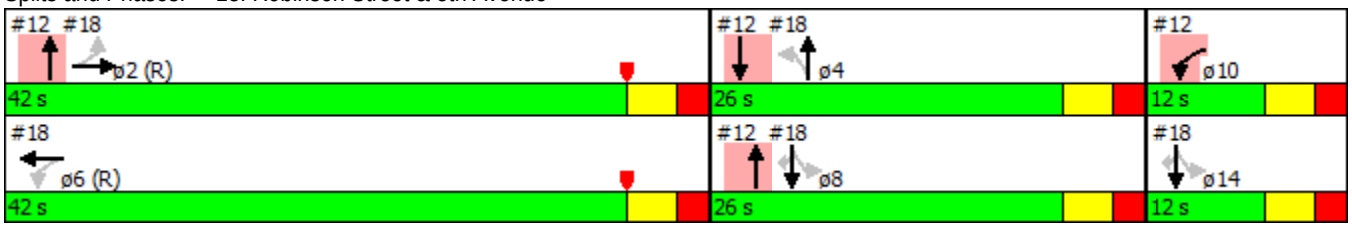
Lane Group	ø8	ø10	ø14
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	8	10	14
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	21.0	12.0	12.0
Total Split (s)	26.0	12.0	12.0
Total Split (%)	33%	15%	15%
Maximum Green (s)	21.0	7.0	7.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		10.4			20.2			27.9			4.4	
Approach LOS		B			C			C			A	
Queue Length 50th (ft)		6		27	125			26			0	0
Queue Length 95th (ft)		21		m18	m37			53			1	16
Internal Link Dist (ft)		111			143			168			30	
Turn Bay Length (ft)												
Base Capacity (vph)		521		778	1864			412			566	465
Starvation Cap Reductn		0		143	239			0			417	169
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.05		0.63	1.00			0.14			0.47	0.54

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 13 (16%), Referenced to phase 2:NBT and 6:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Robinson Street & 5th Avenue



Lane Group	ø8	ø10	ø14
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

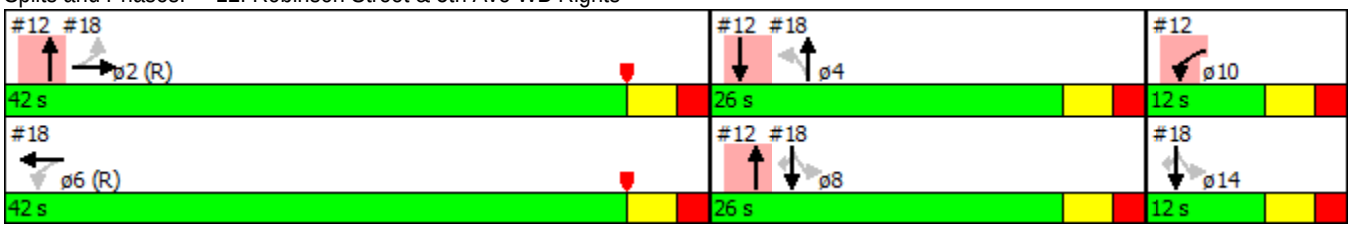
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	0	0	0	255	0	0	198	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Storage Length (ft)	0		0	0		0	0		0	0		100
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	912	0	0	0	1890	0	0	3457	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	912	0	0	0	1890	0	0	3457	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		269			225			110			1718	
Travel Time (s)		7.3			6.1			3.0			46.9	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.92	0.74	0.25	0.90	0.25	0.83	0.87	0.73
Heavy Vehicles (%)	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	1	0	0	0	283	0	0	288	0
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Detector Phase				10				2 8			4	
Switch Phase												
Minimum Initial (s)				4.0							4.0	
Minimum Split (s)				12.0							26.0	
Total Split (s)				12.0							26.0	
Total Split (%)				15.0%							32.5%	
Maximum Green (s)				7.0							21.0	
Yellow Time (s)				3.0							3.0	
All-Red Time (s)				2.0							2.0	
Lost Time Adjust (s)				0.0							0.0	
Total Lost Time (s)				5.0							5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0							3.0	
Recall Mode				None							None	
Walk Time (s)											5.0	
Flash Dont Walk (s)											11.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				6.1				63.9			14.3	
Actuated g/C Ratio				0.08				0.80			0.18	
v/c Ratio				0.01				0.19			0.47	
Control Delay				45.0				0.2			31.1	
Queue Delay				0.0				1.0			0.0	
Total Delay				45.0				1.2			31.1	
LOS				D				A			C	
Approach Delay								1.2			31.1	
Approach LOS								A			C	

Lane Group	ø2	ø6	ø8	ø14
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	6	8	14
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	12.0
Total Split (s)	42.0	42.0	26.0	12.0
Total Split (%)	53%	53%	33%	15%
Maximum Green (s)	37.0	37.0	21.0	7.0
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)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min	None	None
Walk Time (s)	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)				0				1			68	
Queue Length 95th (ft)				m0				m1			91	
Internal Link Dist (ft)		189			145			30			1638	
Turn Bay Length (ft)												
Base Capacity (vph)				79				1667			907	
Starvation Cap Reductn				0				1121			0	
Spillback Cap Reductn				0				0			23	
Storage Cap Reductn				0				0			0	
Reduced v/c Ratio				0.01				0.52			0.33	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 13 (16%), Referenced to phase 2:NBT and 6:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 16.3	Intersection LOS: B
Intersection Capacity Utilization 24.3%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 12: Robinson Street & 5th Ave WB Rights



Lane Group	ø2	ø6	ø8	ø14
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	33	0	90	1704	159	159	152	0	3	15	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Total Lost time (s)		5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor		1.00		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00		1.00	0.99			1.00			1.00	0.98
Flpb, ped/bikes		1.00		0.97	1.00			1.00			1.00	1.00
Frt		1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)		936		1767	3422			1838			1423	1502
Flt Permitted		1.00		0.73	1.00			0.83			0.90	1.00
Satd. Flow (perm)		936		1357	3422			1556			1302	1502
Peak-hour factor, PHF	0.95	0.79	0.95	0.90	0.96	0.74	0.90	0.90	0.90	0.38	0.90	0.86
Adj. Flow (vph)	0	42	0	100	1775	215	177	169	0	8	17	371
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	42	0	100	1990	0	0	346	0	0	25	371
Confl. Peds. (#/hr)	20		13	13		20	4		1	1		4
Confl. Bikes (#/hr)			3			5						2
Heavy Vehicles (%)	0%	100%	0%	0%	4%	4%	0%	0%	0%	100%	0%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Actuated Green, G (s)		40.2		40.2	40.2			18.0			29.8	29.8
Effective Green, g (s)		40.2		40.2	40.2			18.0			29.8	29.8
Actuated g/C Ratio		0.50		0.50	0.50			0.22			0.37	0.37
Clearance Time (s)		5.0		5.0	5.0			5.0				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		470		681	1719			350			484	559
v/s Ratio Prot		0.04			c0.58							
v/s Ratio Perm				0.07				c0.22			0.02	c0.25
v/c Ratio		0.09		0.15	1.16			0.99			0.05	0.66
Uniform Delay, d1		10.4		10.7	19.9			30.9			16.1	20.9
Progression Factor		1.00		0.46	0.36			1.00			0.06	0.22
Incremental Delay, d2		0.4		0.0	71.6			44.6			0.0	2.6
Delay (s)		10.7		4.9	78.9			75.5			1.0	7.2
Level of Service		B		A	E			E			A	A
Approach Delay (s)		10.7			75.3			75.5			6.8	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	0	0	311	0	0	334	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Total Lost time (s)				5.0				5.0			5.0	
Lane Util. Factor				1.00				1.00			0.95	
Frt				1.00				1.00			0.98	
Flt Protected				0.95				1.00			1.00	
Satd. Flow (prot)				912				1890			3541	
Flt Permitted				0.95				1.00			1.00	
Satd. Flow (perm)				912				1890			3541	
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	3	0	0	0	346	0	0	371	68
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	3	0	0	0	346	0	0	439	0
Heavy Vehicles (%)	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Actuated Green, G (s)				6.8				63.2			18.0	
Effective Green, g (s)				6.8				63.2			18.0	
Actuated g/C Ratio				0.08				0.79			0.22	
Clearance Time (s)				5.0							5.0	
Vehicle Extension (s)				3.0							3.0	
Lane Grp Cap (vph)				77				1493			796	
v/s Ratio Prot				c0.00				c0.18			c0.12	
v/s Ratio Perm												
v/c Ratio				0.04				0.23			0.55	
Uniform Delay, d1				33.6				2.2			27.4	
Progression Factor				1.35				0.41			1.00	
Incremental Delay, d2				0.0				0.0			0.8	
Delay (s)				45.5				0.9			28.3	
Level of Service				D				A			C	
Approach Delay (s)		0.0			45.5			0.9			28.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	33	0	90	1704	159	159	152	0	3	15	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-2%			1%			-1%	
Storage Length (ft)	0		0	0		50	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	936	0	1823	3423	0	0	1843	0	0	1423	1531
Flt Permitted				0.730				0.826			0.900	
Satd. Flow (perm)	0	936	0	1358	3423	0	0	1557	0	0	1302	1502
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		191			223			248			110	
Travel Time (s)		5.2			6.1			6.8			3.0	
Confl. Peds. (#/hr)	20		13	13		20	4		1	1		4
Confl. Bikes (#/hr)			3			5						2
Peak Hour Factor	0.95	0.79	0.95	0.90	0.96	0.74	0.90	0.90	0.90	0.38	0.90	0.86
Heavy Vehicles (%)	0%	100%	0%	0%	4%	4%	0%	0%	0%	100%	0%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	0	100	1990	0	0	346	0	0	25	371
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8 14	
Permitted Phases	2			6			4			8 14		8 14
Detector Phase	2	2		6	6		4	4		8 14	8 14	8 14
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0				
Minimum Split (s)	21.0	21.0		21.0	21.0		26.0	26.0				
Total Split (s)	45.0	45.0		45.0	45.0		23.0	23.0				
Total Split (%)	56.3%	56.3%		56.3%	56.3%		28.8%	28.8%				
Maximum Green (s)	40.0	40.0		40.0	40.0		18.0	18.0				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0				
Lost Time Adjust (s)		0.0		0.0	0.0			0.0				
Total Lost Time (s)		5.0		5.0	5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0				
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None				
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0				
Pedestrian Calls (#/hr)	0	0		0	0		0	0				
Act Effct Green (s)		40.2		40.2	40.2			18.0			29.8	29.8
Actuated g/C Ratio		0.50		0.50	0.50			0.22			0.37	0.37
v/c Ratio		0.09		0.15	1.16			0.99			0.05	0.66
Control Delay		11.2		5.1	84.2			79.3			1.1	10.2
Queue Delay		0.0		0.0	0.5			0.0			1.8	15.5
Total Delay		11.2		5.1	84.7			79.3			2.9	25.7
LOS		B		A	F			E			A	C

Lane Group	ø8	ø10	ø14
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor			
Heavy Vehicles (%)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	8	10	14
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	21.0	12.0	12.0
Total Split (s)	23.0	12.0	12.0
Total Split (%)	29%	15%	15%
Maximum Green (s)	18.0	7.0	7.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	5.0		
Flash Dont Walk (s)	11.0		
Pedestrian Calls (#/hr)	0		
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		11.2			80.9			79.3			24.3	
Approach LOS		B			F			E			C	
Queue Length 50th (ft)		10		10	~657			173			0	74
Queue Length 95th (ft)		24		m9	m82			#339			m1	93
Internal Link Dist (ft)		111			143			168			30	
Turn Bay Length (ft)												
Base Capacity (vph)		470		683	1720			350			488	563
Starvation Cap Reductn		0		0	250			0			389	177
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.09		0.15	1.35			0.99			0.25	0.96

Intersection Summary

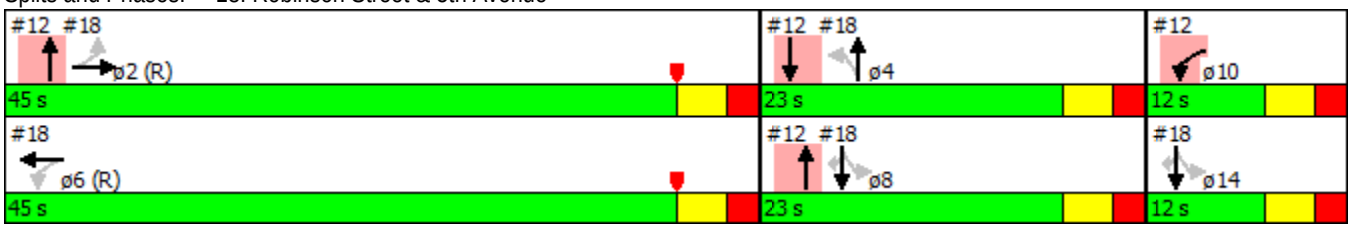
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 14 (18%), Referenced to phase 2:NBT and 6:, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 71.9 Intersection LOS: E
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 18: Robinson Street & 5th Avenue



Lane Group	ø8	ø10	ø14
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	3	0	0	0	311	0	0	334	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-2%			1%			-11%	
Storage Length (ft)	0		0	0		0	0		0	0		100
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	912	0	0	0	1890	0	0	3541	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	0	912	0	0	0	1890	0	0	3541	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		269			225			110			1718	
Travel Time (s)		7.3			6.1			3.0			46.9	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	3	0	0	0	346	0	0	439	0
Turn Type				Prot				NA			NA	
Protected Phases				10				2 8			4	
Permitted Phases												
Detector Phase				10				2 8			4	
Switch Phase												
Minimum Initial (s)				4.0							4.0	
Minimum Split (s)				12.0							26.0	
Total Split (s)				12.0							23.0	
Total Split (%)				15.0%							28.8%	
Maximum Green (s)				7.0							18.0	
Yellow Time (s)				3.0							3.0	
All-Red Time (s)				2.0							2.0	
Lost Time Adjust (s)				0.0							0.0	
Total Lost Time (s)				5.0							5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0							3.0	
Recall Mode				None							None	
Walk Time (s)											5.0	
Flash Dont Walk (s)											11.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)				6.8				63.2			18.0	
Actuated g/C Ratio				0.08				0.79			0.22	
v/c Ratio				0.04				0.23			0.55	
Control Delay				45.7				0.9			30.5	
Queue Delay				0.0				19.6			0.7	
Total Delay				45.7				20.5			31.2	
LOS				D				C			C	
Approach Delay								20.5			31.2	
Approach LOS								C			C	

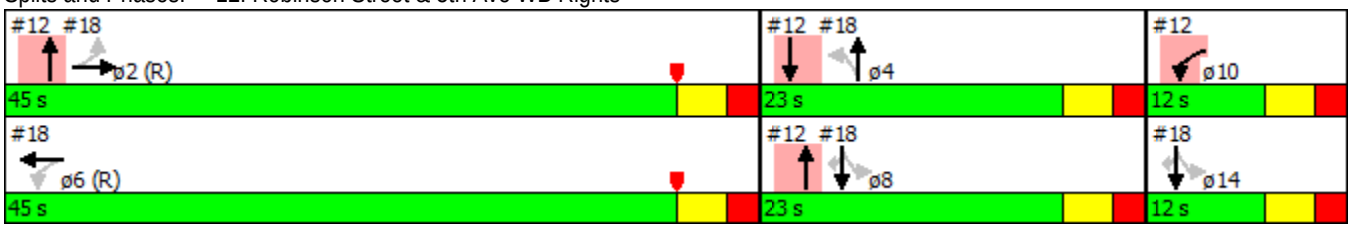
Lane Group	ø2	ø6	ø8	ø14
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	6	8	14
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	12.0
Total Split (s)	45.0	45.0	23.0	12.0
Total Split (%)	56%	56%	29%	15%
Maximum Green (s)	40.0	40.0	18.0	7.0
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)				
Total Lost Time (s)				
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	C-Min	C-Min	None	None
Walk Time (s)	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)				2				13			102	
Queue Length 95th (ft)				m1				m13			148	
Internal Link Dist (ft)		189			145			30			1638	
Turn Bay Length (ft)												
Base Capacity (vph)				79				1493			796	
Starvation Cap Reductn				0				1136			0	
Spillback Cap Reductn				0				0			123	
Storage Cap Reductn				0				0			0	
Reduced v/c Ratio				0.04				0.97			0.65	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 26.5	Intersection LOS: C
Intersection Capacity Utilization 27.2%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 12: Robinson Street & 5th Ave WB Rights



Lane Group	ø2	ø6	ø8	ø14
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

Intersection Summary