CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: IVY GROUP, LLC / DBA IVY NIGHTCLUB
IN CARE OF: KEVIN HARDY
ADDRESS: 1532 WASHINGTON AVE
MIAMI BEACH, FL 33139-7801

RECEIPT NUMBER: RL-10007320
Beginning: 10/01/2015
Expires: 09/30/2016
Parcel No: 0242040020040

A penalty is imposed for failure to keep this Business Tax Receipt exhibited conspicuously at your place of business.

A certificate of Use / Business Tax Receipt issued under this article does not waive or supersede other City laws, does not constitute City approval of a particular business activity and does not excuse the licensee from all other laws applicable to the licensee's business.

This Receipt may be transferred:

A. Within 30 days of a bonafide sale, otherwise a complete annual payment is due.

B. To another location within the City if proper approvals and the Receipt are obtained prior to the opening of the new location.

Additional Information

Storage Locations

TRADE ADDRESS: 1045 5TH ST

Code	Certificate of Use/Occupation
000701	ALCOHOL BEV. (NO LATER THAN 5AM)
005805	DANCE HALL/ENTERT. W/ALCOHOL
005825	NIGHT CLUB LOAD FEE
016400	RESTAURANT / BARS

CERTIFICATE OF USE	910
SQUARE FOOTAGE	191
# OF SEATS	191
NIGHTCLUB LOAD FEE	520
OCCUPANCY LOAD	520
C_U # OF UNITS	191
ALC BEV, THROUGH 5AM	Y
DANCE_ENT W_ ALCOHOL	Y

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

PRESORTED
FIRST CLASS
U.S. POSTAGE
PAID
MIAMI BEACH, FL
PERMIT No 1525

KEVIN HARDY
1045 5TH ST
MIAMI BEACH, FL 33139-6504

CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: ELITE BARTENDING SCHOOL, LLC
IN CARE OF: AUSTIN GAGNON
ADDRESS: 1504 BAY RD, APT 715
MIAMI BEACH, FL 33139-3270

RECEIPT NUMBER: RL-10002831
Beginning: 10/01/2015
Expires: 09/30/2016
Parcel No: 0242040020040

A penalty is imposed for failure to keep this Business Tax Receipt exhibited conspicuously at your place of business.

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Additional Information

Storage Locations

TRADE ADDRESS: 1045 5TH ST

Code	Certificate of Use/Occupation
015700	PRIVATE SCHOOL

CERTIFICATE OF USE	9999
Private School FF	Y

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

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PERMIT No 1525

AUSTIN GAGNON
1045 5TH ST
MIAMI BEACH, FL 33139-6504

CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: APS PARKING SERVICES LLC
IN CARE OF: FREDDY DIAZ
ADDRESS: 1059 NE 204TH LN
MIAMI, FL 33179-2533

LICENSE NUMBER: RL-10000482
Beginning: 10/01/2015
Expires: 09/30/2016
Parcel No: 0242040020040

TRADE ADDRESS: 1045 5TH ST

A penalty is imposed for failure to keep this license exhibited conspicuously at your place of business.

A certificate of Use Occupational License issued under this article does not waive or supersede other City laws, does not constitute City approval of a particular business activity and does not excuse the licensee from all other laws applicable to the licensee's business.

This license may be transferred:

A. Within 30 days of a bonafide sale, otherwise a complete annual payment is due.

B. To another location within the City if proper approvals and the license are obtained prior to the opening of the new location.

Code	Certificate of Use/Occupation
020700	VALET PARKING

# OF LOCATIONS	24

Additional Information

- 0 (Zero) Street

- 1045 5th St - Play #38440
- 235 23rd St - Mokai #42458
- 1424 Alton Rd - Drunken Dragon LLC - #90713
- 1426-A Alton Rd - Foxhole #63201
- 1450 Collins Ave- Senor Frogs #89919
- 1510 Collins Ave - Parisian Hotel #91381
- 224 Española Way - Amami Restaurant #80919
- 448 Española Way - Tapas Y Tintos
- 1415 Euclid Av - Temple House, #71763
- 320 Lincoln Rd - SET #40820
- 1445 Penn Av - Tantra #62622
- 1216 Wash Av - Miami Slims #73655
- 1235 Wash Av - ICON # 59840
- 1342 Wash Av - Jazid #98242
- 1437 Wash Av - Axis #72496
- 1438 Wash Av - Clay Hotel
- 1439 Wash Av - Axis #72496

Storage Locations

630 Alton Rd - RL 10004420

650 Alton Rd- RL 10004056

1401 Alton Rd- RL-05000213

1435 Alton Rd-RL-10005829

1501 Alton Rd-RL-10005970

1511 Alton Rd - RL06002485

400 Collins Ave - RL-10000347

721 Alton Rd - RL 04002578

1501 Collins Ave -RL 10003588

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

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PERMIT No 1525

FREDDY R. DIAZ
1059 NE 204TH LN
MIAMI, FL 33179-2533

CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: APS PARKING SERVICES LLC

IN CARE OF: FREDDY DIAZ
ADDRESS: 1059 NE 204TH LN
MIAMI, FL 33179-2533

LICENSE NUMBER: RL-10000482
Beginning: 10/01/2015
Expires: 09/30/2016
Parcel No: 0242040020040

TRADE ADDRESS: 1045 5TH ST

- 1443 Wash Av - Osteria Del Teatro
- 1445 Wash Av - Cameo
- 1448 Wash Av - Sushi Yama #50638
- 1500 Wash Av - Five Guys Burger #28619
- 1532 Wash Av - Dream
- 1311 Wash Av - Antica Roma Tratoria #91212

1420 Washington Ave - RL-10001670

426 Euclid Ave - RL-10005839

1681 Lenox Ave - RL-10000137

800 Lincoln - RL-0000472 (00077181)

1111 Lincoln Rd - RL99000957

2231 Prairie Ave - RL10000482

930 Washington Ave - RL-93177490

1681 West Ave - RL-10006345

1424 Drexel Ave - RL-10001671

1501 Collins Ave - RL-10003588

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

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PAID
MIAMI BEACH, FL
PERMIT No 1525

FREDDY R. DIAZ
1059 NE 204TH LN
MIAMI, FL 33179-2533

CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: CAREFREE LIFESTYLES INC.
IN CARE OF: GARY MAROTTA
ADDRESS: 21136 HELMSMOA DR
MIAMI, FL 33180

RECEIPT NUMBER: RL-05000063
Beginning: 10/01/2015
Expires: 09/30/2016
Parcel No: 0242040020030

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B. To another location within the City if proper approvals and the Receipt are obtained prior to the opening of the new location.

Additional Information
No storage of limousines outdoors.
Must be indoors or screened.
No signs on cars.

Storage Locations

TRADE ADDRESS: 1031 5TH ST

Code	Certificate of Use/Occupation
001703	AUTOMOBILE/TRUCK: SUB RENTAL AGENCY (NO (
001705	AUTOMOBILE FOR HIRE: LIMOUSINE SERVICE

CERTIFICATE OF USE	400
C_U # OF UNITS	1700
AUTO_TRUCK_SUB_RENT	Y
Limousine Service	Y

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

PRESORTED
FIRST CLASS
U.S. POSTAGE
PAID
MIAMI BEACH, FL
PERMIT No 1525

GARY MAROTTA
1301 ALTON RD
MIAMI BEACH, FL 33139-3811

CITY OF MIAMI BEACH
CERTIFICATE OF USE, ANNUAL FIRE FEE, AND BUSINESS TAX RECEIPT

1700 Convention Center Drive
Miami Beach, Florida 33139-1819

TRADE NAME: CAREFREE PROPERTIES, INC.
IN CARE OF: DAVID MAROTTA
ADDRESS: 1031 5TH ST
MIAMI BEACH, FL 33139-6504

RECEIPT NUMBER: RL-05000104
Beginning: 10/01/2012
Expires: 09/30/2013
Parcel No: 0242040020030

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B. To another location within the City if proper approvals and the Receipt are obtained prior to the opening of the new location.

Additional Information

Storage Locations

TRADE ADDRESS: 1031 5TH ST

Code	Certificate of Use/Occupation
000670	REAL ESTATE BROKERAGE FIRM, CORP

CERTIFICATE OF USE	9999
C_U # OF UNITS	0
RealEst Brokerage FF	Y

FROM: CITY OF MIAMI BEACH
1700 CONVENTION CENTER DRIVE
MIAMI BEACH, FL 33139-1819

PRESORTED
FIRST CLASS
U.S. POSTAGE
PAID
MIAMI BEACH, FL
PERMIT No 1525

CAREFREE PROPERTIES, INC
1029 5TH ST
MIAMI BEACH, FL 33139-6504

Kimley»Horn

July 18, 2017

Josiel Ferrer-Diaz, E.I.
City of Miami Beach
1688 Meridian Avenue, Suite 801
Miami Beach, Florida 33139

Re: 5th Street and Lenox Avenue Retail Development
Updated Trip Generation and Future Total Conditions Analysis
Miami Beach, Florida

Dear Mr. Ferrer-Diaz:

Kimley-Horn and Associates, Inc. has performed updated trip generation calculations and future total conditions analysis for the right-in/right-out and left-in driveway configuration. The City of Miami Beach Transportation Department approved this configuration on March 31, 2017. Please note that the square-footage of the development has been updated to include 67,006 square feet of retail space. All previous analyses including the right-in/right-out and left-in driveway configuration analysis were prepared for 66,100 square feet of retail space. The trip generation, intersection operations analysis, and queuing analysis were updated based on the square-footage change. The following sections contain the updated analyses.

TRIP GENERATION ANALYSIS

Consistent with the previously approved *5th Street and Lenox Avenue Retail Development Traffic Impact Analysis*, July 2016, trip generation calculations for the proposed redevelopment were updated using the Institute of Transportation Engineers' (ITE's) *Trip Generation Manual*, 9th Edition. ITE Land Use Code (LUC) 925 (Drinking Place) was used for the existing night club. Existing driveway turning movement counts during the P.M. peak hour were used to calculate the trip generation for the existing car rental facility as a Land Use Code (LUC) for car rental facilities are not included in the ITE's *Trip Generation Manual*, 9th Edition. ITE LUC 820 (Shopping Center) was used for the proposed retail facility.

The 10.0 percent (10.0%) multimodal reduction factor and 34.0 percent (34.0%) pass-by factor used in the previously approved *5th Street and Lenox Avenue Retail Development Traffic Impact Analysis*, July 2016 was also used in the updated trip generation analysis. Internal Capture calculations were updated based on the latest development program.

The project is expected to result in an increase of one (1) net new P.M. peak hour trip and two (2) P.M. peak hour driveway volume trips. Detailed trip generation calculations are included in Attachment A. Table 1 provides a summary of the trip generation for the proposed redevelopment.

Table 1: Trip Generation Summary						
Development Plan	**Net New P.M. Peak Hour Trips**			**P.M. Peak Hour Driveway Volumes**		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Previously Approved Development Program (66,100 square feet of retail)	35	76	111	157	170	327
Current Development Program (67,006 square feet of retail)	35	77	112	158	171	329
Net Trip Generation	**0**	**1**	**1**	**1**	**1**	**2**

FUTURE TOTAL CONDITIONS

Future background conditions, growth rates, and project access for the driveway configuration were gathered from the *5th Street and Lenox Avenue Retail Development Supplemental Future Total Conditions Analysis,* October 2016. Updated volume development worksheets, trip distribution figures, and trip assignment figures are contained in Attachment B.

INTERSECTION CAPACITY ANALYSIS

The project driveway and study area intersections were analyzed for the approved right-in/right-out and left-in configuration for future total conditions with two (2) northbound through lanes on Lenox Avenue between 5th Street and 6th Street and with one (1) northbound through lane on Lenox Avenue between 5th Street and 6th Street during the weekday P.M. peak hour using Trafficware's *Synchro 9.0* software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM), 2000/2010 Editions. Synchro worksheets for the study intersections are included in Attachment C. A summary of the intersection capacity analysis results is presented in Table 2 for the weekday P.M. peak hour.

As Table 2 indicates, the project driveway and study area intersections are expected to operate at adopted levels of service (LOS D+20 or better) under the approved right-in/right-out and left-in access configuration during the weekday P.M. peak hour with two (2) northbound through lanes on Lenox Avenue between 5th Street and 6th Street and with one (1) northbound through lane on Lenox Avenue between 5th Street and 6th Street.

Table 2: P.M. Peak Hour Future Total Intersection Capacity Analysis						
Intersection	**Traffic Control**	**Overall LOS/Delay (sec)**	**Approach LOS**			
			EB	**WB**	**NB**	**SB**
Right-in/Right-out and Left-in Access (Right-in/Right-out and Left-in Access with Northbound Lane Reduction)						
5th Street and Alton Road(1)	Signalized	D+20/57.4 (D+20/57.4)	C (C)	D (D)	F (F)	C (C)
5th Street and Lenox Avenue	Signalized	A/9.7 (A/9.7)	A (A)	A (A)	E (E)	E (E)
5th Street and Michigan Avenue	Signalized	B/13.8 (B/13.8)	A (A)	A (A)	E (E)	E (E)
6th Street and Alton Road(1)	Signalized	B/13.1 (B/13.1)	(4)	E (E)	A (A)	B (B)
6th Street and Lenox Avenue	All-Way, Stop-Controlled	B/10.5 (B/12.3)	A (A)	A (B)	B (B)	B (B)
6th Street and Michigan Avenue	All-Way, Stop-Controlled	A/9.6 (A/9.6)	A (A)	A (A)	A (A)	A (A)
Lenox Avenue and Fifth & Alton Garage	One-Way, Stop-Controlled	(2)	C (D)	(4)	(3)	(3)
Lenox Avenue and Proposed Retail Parking Garage	One-Way, Stop-Controlled	(2)	(4)	B (B)	(3)	(3)

Notes:
(1) Intersection cannot be analyzed in HCM 2010; therefore HCM 2000 was used.
(2) Overall intersection LOS is not defined, as intersection operates under stop-control conditions.
(3) Approach operates under free-flow conditions. LOS is not defined.
(4) Approach does not exist.

QUEUING ANALYSIS

A 95th percentile queuing analysis was conducted using the weekday P.M. peak hour volumes collected at the intersection of Lenox Avenue and the Fifth & Alton Garage driveway to determine if the expected queues at the Fifth & Alton Garage driveway and proposed retail development driveway can be accommodated with the right-in/right-out and left-in configuration with two (2) northbound through lanes on Lenox Avenue between 5th Street and 6th Street and with one (1) northbound through lane on Lenox Avenue between 5th Street and 6th Street under future total conditions. The 95th percentile queue lengths were calculated using Trafficware's *Synchro 9.0* software, which applies methodologies outlined in the HCM, 2000/2010 Editions.

As summarized in Table 3, expected vehicle queue lengths are not anticipated to extend beyond the provided storage lengths onto public right-of-way. Synchro worksheets for the proposed driveway queues are included in Attachment C.

Table 3: Future Total Peak Hour Queuing Analysis Summary			
Intersection	**Location**	**Storage Length**	**Weekend P.M. Peak Period 95th Percentile Queue**
Right-in/Right-out and Left-in Access (Right-in/Right-out and Left-in Access with Northbound Lane Reduction)			
Lenox Avenue and Fifth & Alton Garage	Eastbound Left-turn Lane	-	85 feet (97 feet)
	Eastbound Right-turn Lane	-	32 feet (29 feet)
	Northbound Left-turn Lane(1)	75 feet	<25 feet (<25 feet)
Lenox Avenue and Proposed Retail Parking Garage	Westbound Right-turn Lane	-	<25 feet (28 feet)
	Southbound Left-turn Lane	75 feet	<25 feet (<25 feet)

Note: (1)95th percentile queue does not account for queues from the entry gate at the Fifth & Alton garage.

CONCLUSION

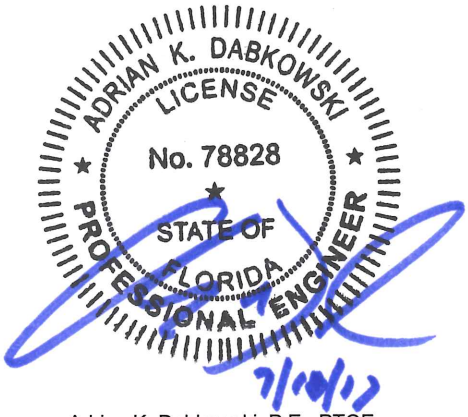
The proposed redevelopment was approved with a right-in/right-out and left-in access configuration based on 66,100 square feet of retail space. The trip generation, intersection operations analysis, and queuing analysis were updated based on a revised development program of 67,006 square feet of retail space. The analysis results indict that the proposed redevelopment will generate one (1) net new P.M. peak hour trip and that all study intersections are expected to operate at adopted LOS with the redevelopment in place. Furthermore, expected vehicle queue lengths are not anticipated to extend beyond the provided storage lengths onto public right-of-way at the project driveway.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Adrian K. Dabkowski, P.E., PTOE
Associate

Attachments



Adrian K. Dabkowski, P.E., PTOE
Florida Registration Number 78828
Kimley-Horn and Associates, Inc.
600 North Pine Island Road, Suite 450
Plantation, Florida 33324
CA # 00000696

K:\FTL_TPTO\043770000-MAC 5th & Lenox\Correspondence\ltr\5th and Lenox - Trip Generation Statement and Analysis 07 18 17.docx

Attachment A:

Trip Generation

Approved Trip Generation

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Car Dealership[1]	N/A	N/A	5.568	ksf	50%	50%	3	3	6	10%	1	3	2	5	0.0%	0	3	2	5	0.0%	0	3	2	5
	2	Drinking Place	9	925	9.812	ksf	66%	34%	73	38	111	10%	11	66	34	100	0.0%	0	66	34	100	0.0%	0	66	34	100
	3																									
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	76	41	117	10.0%	12	69	36	105	0.0%	0	69	36	105	0.0%	0	69	36	105
		925		Y=11.34(X)																						

Note: [1] Trip generation obtained from driveway volumes counted on 02/18/2016 as per the request of the City of Miami Beach.

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

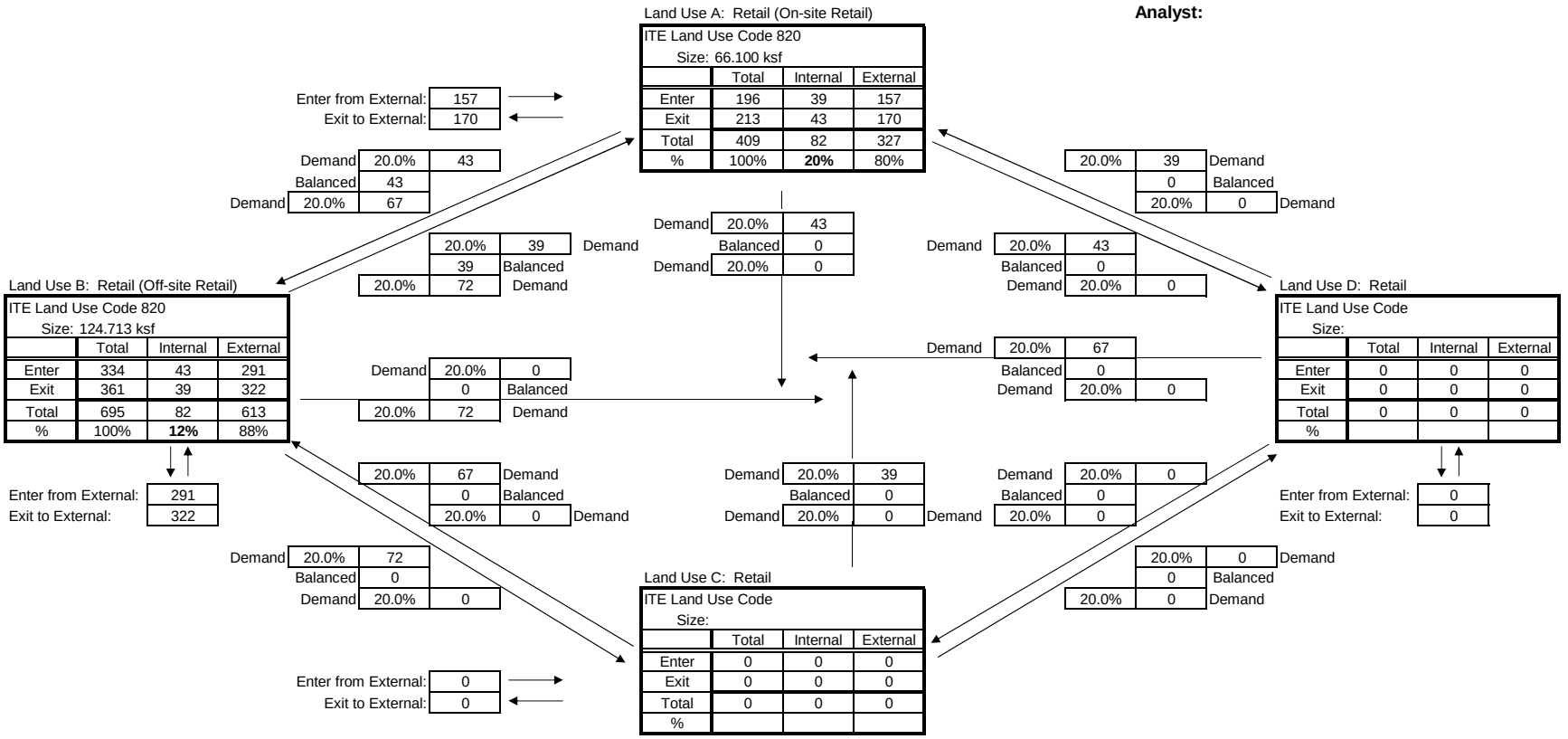
		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Shopping Center	9	820	66.1	ksf	48%	52%	218	236	454	10%	45	196	213	409	20.0%	82	157	170	327	34.0%	111	104	112	216
	2																									
	3																									
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	218	236	454	10.0%	45	196	213	409	20.0%	82	157	170	327	34.0%	111	104	112	216
		820		LN(Y) = 0.67*LN(X)+3.31																						

	IN	OUT	TOTAL
Net New Vehicle Trips	**35**	**76**	**111**

ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

(Source: Chapter 7, ITE Trip Generation Handbook, June 2004)

Project Number:
Project Name:
Scenario:
Analysis Period: PM Peak
Analyst:



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category	Land Use A	B	C	D	Total
Enter	157	291	0	0	448
Exit	170	322	0	0	492
Total	327	613	0	0	**940**
Single Use Trip Gen Estimate	409	695	0	0	**1,104**
	20.0%	11.8%	#DIV/0!		

Overall Internal Capture = 14.86%

Proposed Trip Generation

PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 1	1	Car Dealership[1]	N/A	N/A	5.568	ksf	50%	50%	3	3	6	10%	1	3	2	5	0.0%	0	3	2	5	0.0%	0	3	2	5
	2	Drinking Place	9	925	9.812	ksf	66%	34%	73	38	111	10%	11	66	34	100	0.0%	0	66	34	100	0.0%	0	66	34	100
	3																									
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	76	41	117	10.0%	12	69	36	105	0.0%	0	69	36	105	0.0%	0	69	36	105
		925		Y=11.34(X)																						

Note: [1] Trip generation obtained from driveway volumes counted on 02/18/2016 as per the request of the City of Miami Beach.

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
GROUP 2	1	Shopping Center	9	820	67.006	ksf	48%	52%	220	238	458	10%	46	198	214	412	20.1%	83	158	171	329	34.0%	112	104	113	217
	2																									
	3																									
	4																									
	5																									
	6																									
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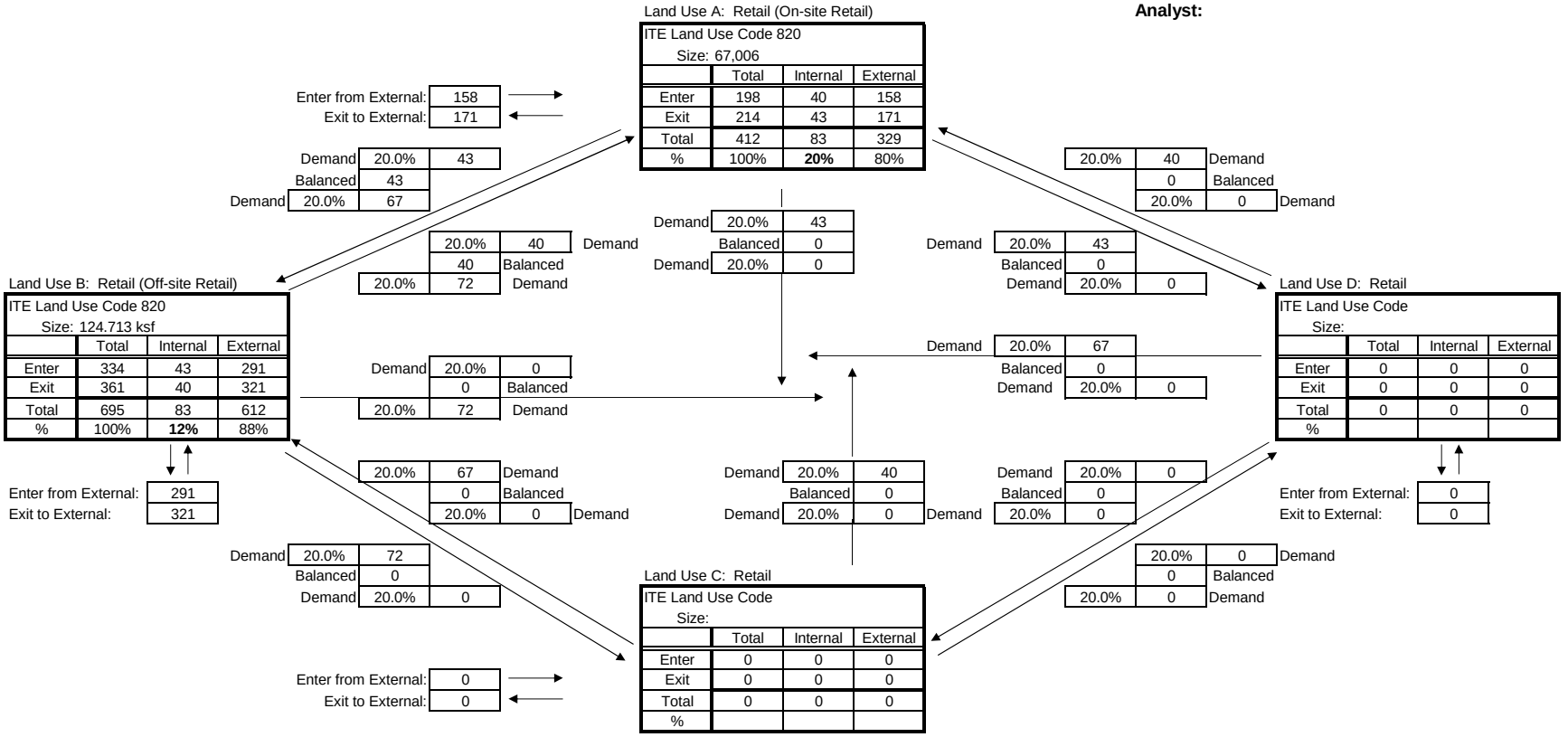
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				**Total:**	220	238	458	10.0%	46	198	214	412	20.1%	83	158	171	329	34.0%	112	104	113	217
		820		LN(Y) = 0.67*LN(X)+3.31																						

	IN	OUT	TOTAL
Net New Vehicle Trips	**35**	**77**	**112**

ITE MULTI-USE PROJECT INTERNAL CAPTURE WORKSHEET

(Source: Chapter 7, ITE Trip Generation Handbook, June 2004)

Project Number:
Project Name:
Scenario:
Analysis Period: PM Peak
Analyst:



NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT

Category	Land Use A	B	C	D	Total
Enter	158	291	0	0	449
Exit	171	321	0	0	492
Total	329	612	0	0	**941**
Single Use Trip Gen Estimate	412	695	0	0	**1,107**
	20.1%	11.9%	#DIV/0!		

Overall Internal Capture = 15.00%

Attachment B:

Volume Development

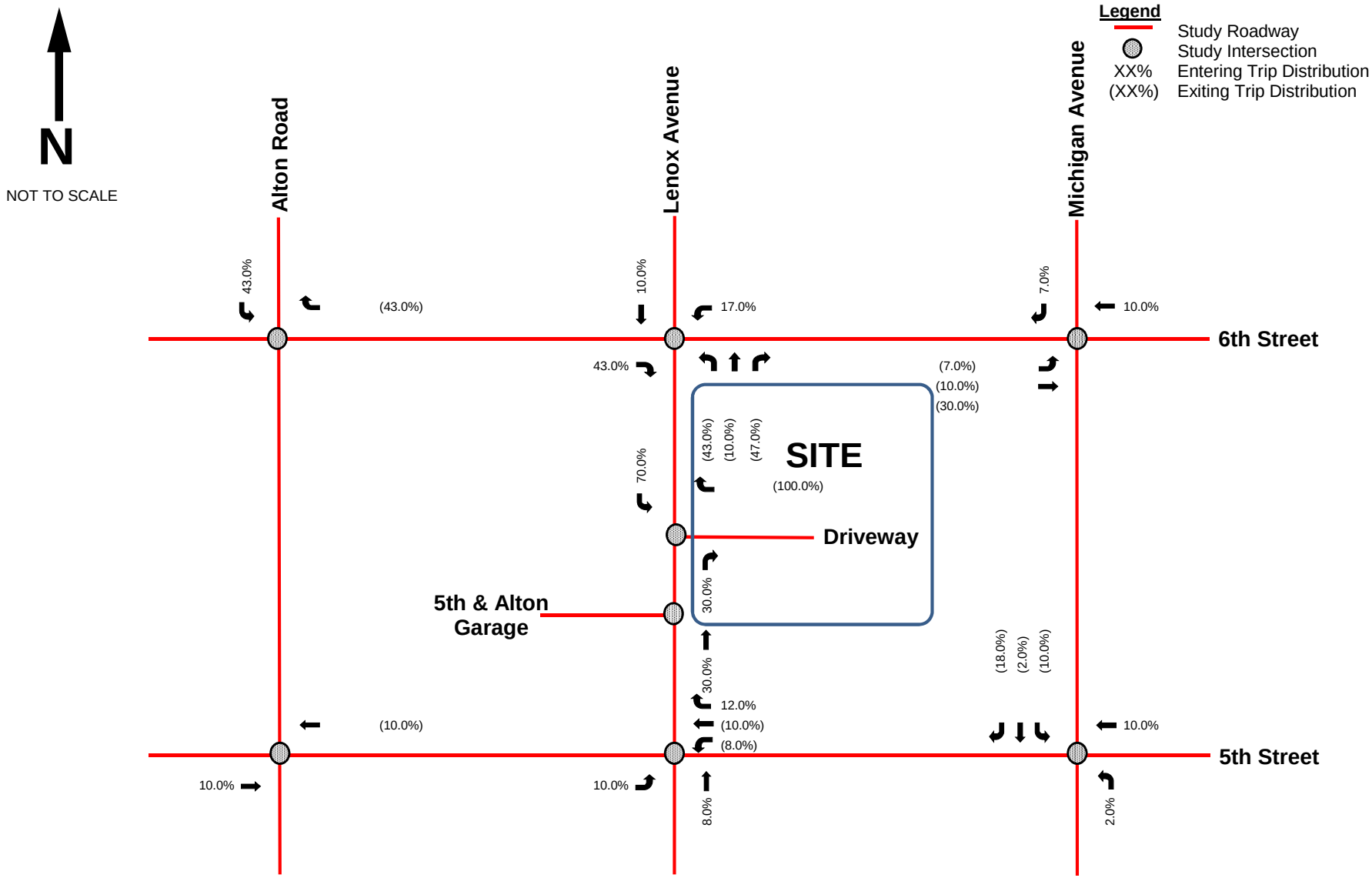


Figure 5
Peak Hour Net New Trip Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn

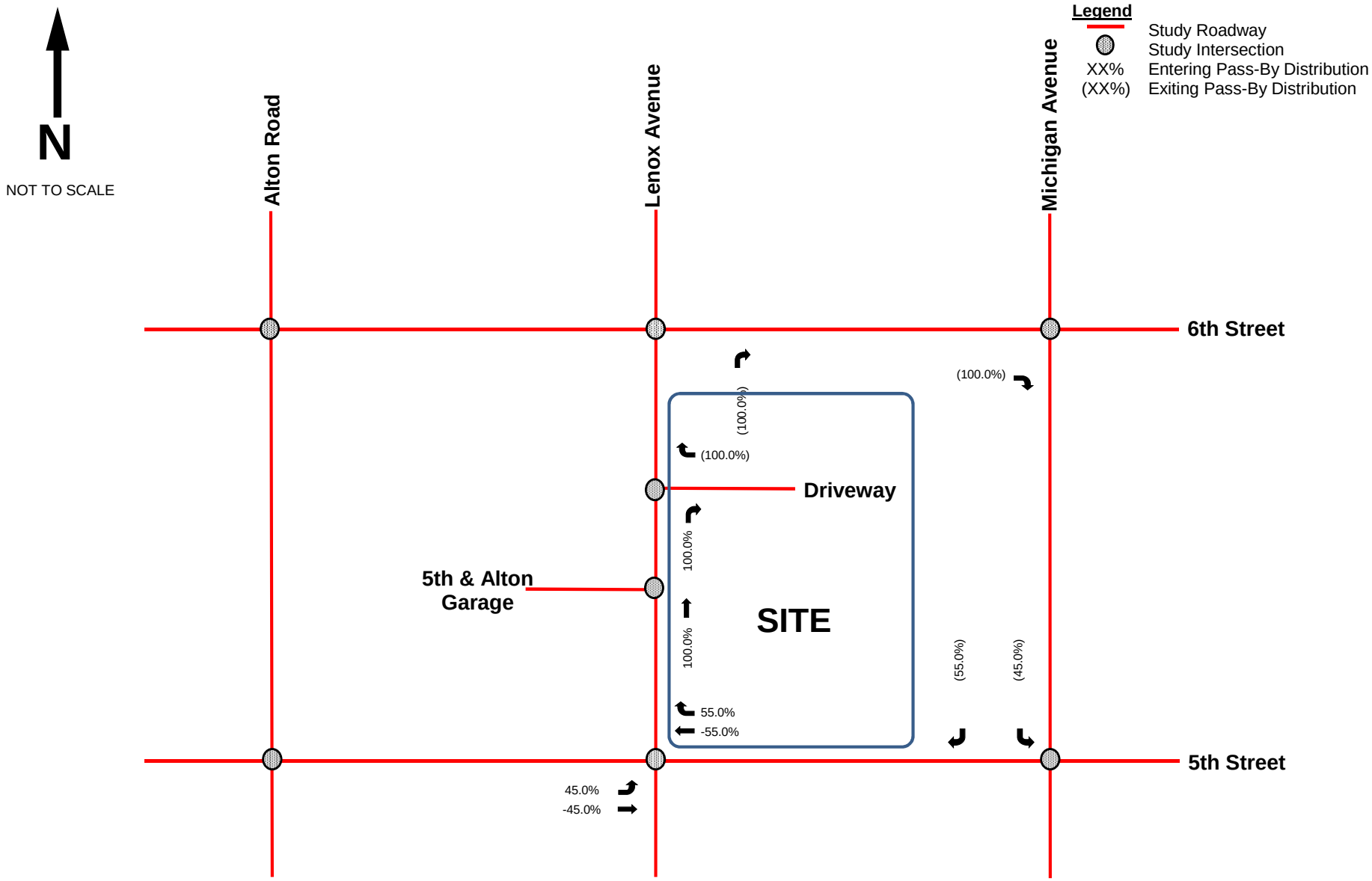
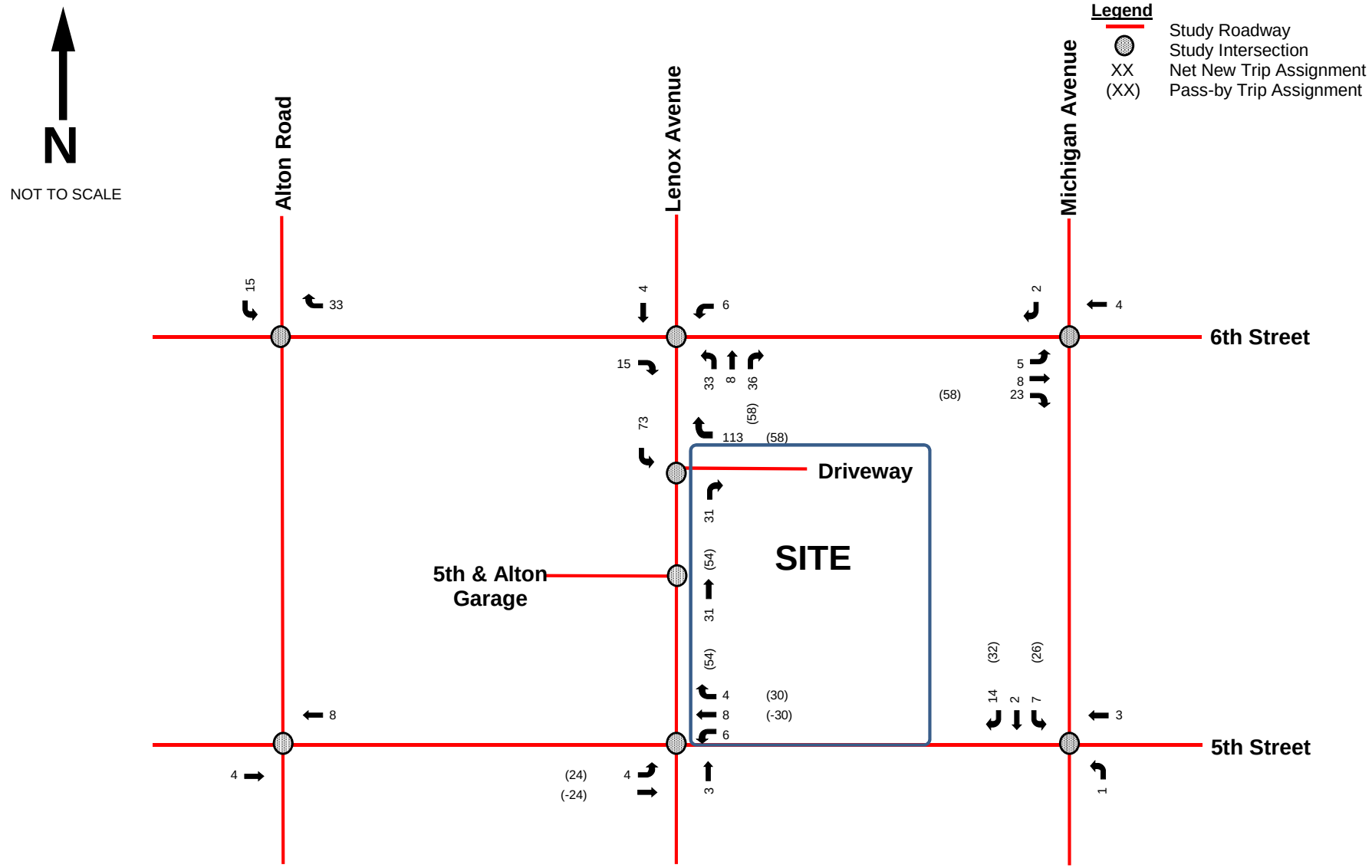


Figure 6
Peak Hour Pass-By Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

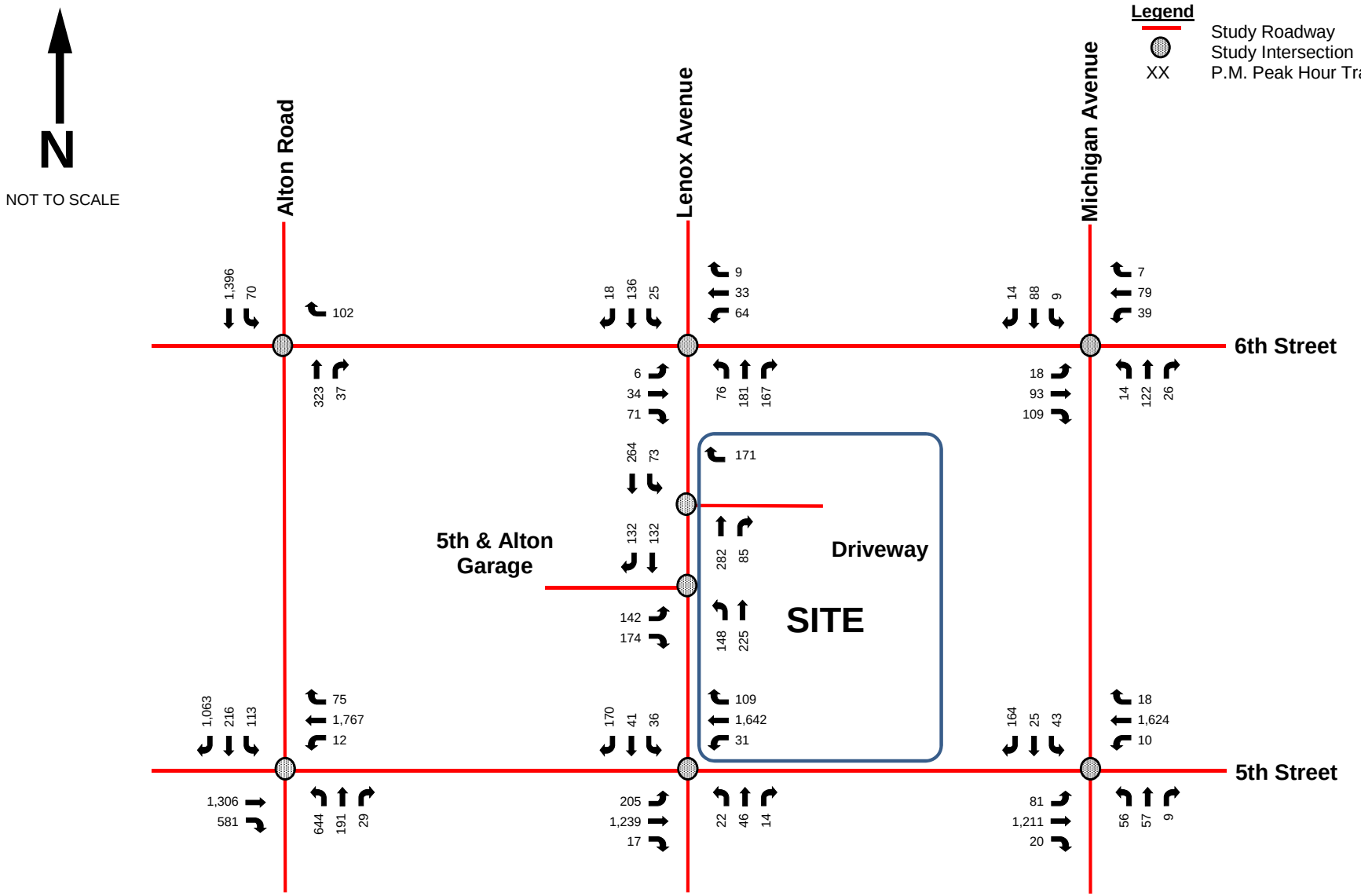
Kimley»Horn



* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 7
Peak Hour Project Trip Assignment
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn



* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 8
Future Total Peak Hour Traffic Volumes
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			1,171	523		11	1,582	67		579	143	26		62	161	943
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS			**1,288**	**575**		**12**	**1,740**	**74**		**637**	**157**	**29**		**68**	**177**	**1,037**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road														44	25	15
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road											1				1	
TOTAL "VESTED" TRAFFIC											32			44	37	15
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH			14	6		0	19	1		7	2	0		1	2	11
PM NON-PROJECT TRAFFIC			**1,302**	**581**		**12**	**1,759**	**75**		**644**	**191**	**29**		**113**	**216**	**1,063**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering			10.0%													
Distribution	Exiting							10.0%									

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New			4				8									
PM TOTAL PROJECT TRAFFIC				**4**				**8**				**0**				**0**	
PM TOTAL TRAFFIC				**1,306**	**581**		**12**	**1,767**	**75**		**644**	**191**	**29**		**113**	**216**	**1,063**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		159	1,096	15		23	1,496	67		20	39	13		33	37	153
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**175**	**1,206**	**17**		**25**	**1,646**	**74**		**22**	**43**	**14**		**36**	**41**	**168**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2	13	0		0	18	1		0	0	0		0	0	2
PM NON-PROJECT TRAFFIC		**177**	**1,263**	**17**		**25**	**1,664**	**75**		**22**	**43**	**14**		**36**	**41**	**170**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		45.0%	-45.0%				-55.0%	55.0%								
Distribution	Exiting																
Net New	Entering		10.0%						12.0%			8.0%					
Distribution	Exiting						8.0%	10.0%									

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By		24	-24				-30	30								
Trips	Net New		4				6	8	4			3					
PM TOTAL PROJECT TRAFFIC			**28**	**-24**			**6**	**-22**	**34**			**3**					
PM TOTAL TRAFFIC			**205**	**1,239**	**17**		**31**	**1,642**	**109**		**22**	**46**	**14**		**36**	**41**	**170**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.96

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		73	1,049	18		9	1,457	16		49	51	8		9	21	106
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**80**	**1,154**	**20**		**10**	**1,603**	**18**		**54**	**56**	**9**		**10**	**23**	**117**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		1	13	0		0	18	0		1	1	0		0	0	1
PM NON-PROJECT TRAFFIC		**81**	**1,211**	**20**		**10**	**1,621**	**18**		**55**	**57**	**9**		**10**	**23**	**118**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting														45.0%		55.0%
Net New	Entering							10.0%			2.0%						
Distribution	Exiting														10.0%	2.0%	18.0%

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By														26		32
Trips	Net New							3			1				7	2	14
PM TOTAL PROJECT TRAFFIC								**3**			**1**				**33**	**2**	**46**
PM TOTAL TRAFFIC			**81**	**1,211**	**20**		**10**	**1,624**	**18**		**56**	**57**	**9**		**43**	**25**	**164**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.97

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements								62		0	190	34		49	1,172	
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS								**68**		**0**	**209**	**37**		**54**	**1,289**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road											79				80	
Urban Box Self Storage - 633 Alton Road											2				2	
TOTAL "VESTED" TRAFFIC											112				93	
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH								1		0	2	0		1	14	
PM NON-PROJECT TRAFFIC								**69**		**0**	**323**	**37**		**55**	**1,396**	

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering														43.0%		
Distribution	Exiting								43.0%								

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New								33						15		
PM TOTAL PROJECT TRAFFIC									**33**			**0**			**15**	**0**	
PM TOTAL TRAFFIC									**102**		**0**	**323**	**37**		**70**	**1,396**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.93

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		5	31	50		52	30	8		39	155	65		23	119	16
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**6**	**34**	**55**		**57**	**33**	**9**		**43**	**171**	**72**		**25**	**131**	**18**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	0	1		1	0	0		0	2	1		0	1	0
PM NON-PROJECT TRAFFIC		**6**	**34**	**56**		**58**	**33**	**9**		**43**	**173**	**73**		**25**	**132**	**18**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting												100.0%				
Net New	Entering				43.0%		17.0%									10.0%	
Distribution	Exiting										43.0%	10.0%	47.0%				

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By												58				
Trips	Net New				15		6				33	8	36			4	
PM TOTAL PROJECT TRAFFIC					**15**		**6**				**33**	**8**	**94**			**4**	

PM TOTAL TRAFFIC																
	6	**34**	**71**		**64**	**33**	**9**		**76**	**181**	**167**		**25**	**136**	**18**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.88

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		12	76	25		35	67	6		13	110	24		8	79	11
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**13**	**84**	**28**		**39**	**74**	**7**		**14**	**121**	**26**		**9**	**87**	**12**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	1	0		0	1	0		0	1	0		0	1	0
PM NON-PROJECT TRAFFIC		**13**	**85**	**28**		**39**	**75**	**7**		**14**	**122**	**26**		**9**	**88**	**12**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting				100.0%												
Net New	Entering							10.0%									7.0%
Distribution	Exiting		7.0%	10.0%	30.0%												

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By				58												
Trips	Net New		5	8	23			4									2
PM TOTAL PROJECT TRAFFIC			**5**	**8**	**81**			**4**									**2**
PM TOTAL TRAFFIC			**18**	**93**	**109**		**39**	**79**	**7**		**14**	**122**	**26**		**9**	**88**	**14**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Lenox Avenue and Fifth & Alton Garage
COUNT DATE: September 28, 2016
PM PEAK HOUR FACTOR: 0.91

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		117		143						122	115				109	109
Peak Season Correction Factor	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200
PM EXISTING CONDITIONS		**140**		**172**						**146**	**138**				**131**	**131**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2		2						2	2				1	1
PM NON-PROJECT TRAFFIC		**142**		**174**						**148**	**140**				**132**	**132**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering											100.0%					
Distribution	Exiting																
Net New	Entering											30.0%					
Distribution	Exiting																

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By											54					
Trips	Net New											31					
PM TOTAL PROJECT TRAFFIC												**85**					
PM TOTAL TRAFFIC			**142**		**174**						**148**	**225**				**132**	**132**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Lenox Avenue and Proposed Retail Development
COUNT DATE: September 28, 2016
PM PEAK HOUR FACTOR: 0.91

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements											232				218	
Peak Season Correction Factor	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200
PM EXISTING CONDITIONS											**278**				**262**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH											3				3	
PM NON-PROJECT TRAFFIC											**281**				**265**	

"PROJECT DISTRUBUTION" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering												100.0%				
Distribution	Exiting								100.0%								
Net New	Entering												30.0%		70.0%		
Distribution	Exiting								100.0%								

"PM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By								58				54				
Trips	Net New								113				31		73		
PM TOTAL PROJECT TRAFFIC									**171**				**85**		**73**		
PM TOTAL TRAFFIC									**171**			**281**	**85**		**73**	**265**	

Attachment C:

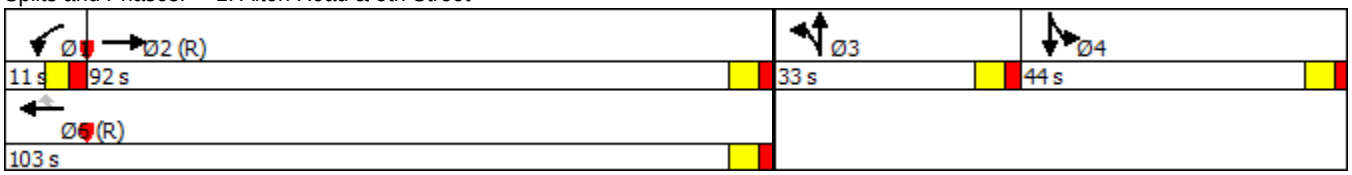
Future Total Conditions Analysis

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1306	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1306	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1306	581	12	1767	75	644	191	29	113	216	1063
Future Volume (vph)	0	1306	581	12	1767	75	644	191	29	113	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1389	618	13	1880	80	685	203	31	120	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1389	618	13	1880	55	685	231	0	0	350	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Effective Green, g (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.55	0.55	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1716	1539	51	1930	848	514	264			374	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.97	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.3	0.0	85.5	39.7	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.36	0.70	0.20	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.2	0.8	0.8	13.4	0.1	162.6	25.7			30.7	3.0
Delay (s)		43.5	0.8	116.8	41.3	4.0	239.1	100.5			101.1	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.4			40.3			203.8			26.2	
Approach LOS		C			D			F			C	

Intersection Summary

HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

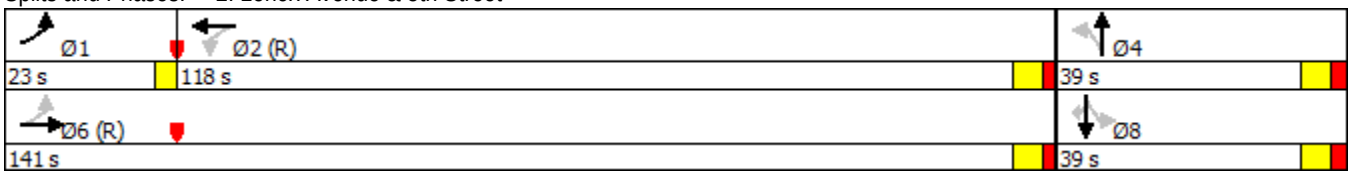
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	205	1239	31	1642	22	46	36	41	170
Future Volume (vph)	205	1239	31	1642	22	46	36	41	170
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1239	17	31	1642	109	22	46	14	36	41	170
Future Volume (veh/h)	205	1239	17	31	1642	109	22	46	14	36	41	170
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.94	0.90		0.82	0.88		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	218	1318	18	33	1747	116	23	49	15	38	44	181
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	3887	53	317	3336	221	71	141	39	129	140	231
Arrive On Green	0.06	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4852	321	257	794	219	563	787	1299
Grp Volume(v), veh/h	218	866	470	33	1220	643	87	0	0	82	0	181
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1783	1270	0	0	1350	0	1299
Q Serve(g_s), s	6.6	0.0	0.0	1.4	10.6	10.7	3.1	0.0	0.0	0.0	0.0	24.0
Cycle Q Clear(g_c), s	6.6	0.0	0.0	1.4	10.6	10.7	13.7	0.0	0.0	10.6	0.0	24.0
Prop In Lane	1.00		0.04	1.00		0.18	0.26		0.17	0.46		1.00
Lane Grp Cap(c), veh/h	281	2553	1387	317	2331	1226	251	0	0	269	0	231
V/C Ratio(X)	0.78	0.34	0.34	0.10	0.52	0.52	0.35	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	391	2553	1387	317	2331	1226	255	0	0	273	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.85	0.85	0.85	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	2.5	2.9	2.9	65.5	0.0	0.0	64.7	0.0	70.7
Incr Delay (d2), s/veh	2.0	0.2	0.3	0.6	0.7	1.4	0.6	0.0	0.0	0.5	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.1	0.1	0.2	5.0	5.5	3.9	0.0	0.0	3.6	0.0	9.6
LnGrp Delay(d),s/veh	11.9	0.2	0.3	3.0	3.6	4.2	66.1	0.0	0.0	65.2	0.0	85.9
LnGrp LOS	B	A	A	A	A	A	E			E		F
Approach Vol, veh/h		1554			1896			87			263	
Approach Delay, s/veh		1.9			3.8			66.1			79.4	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.7		38.5		141.5		38.5
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	12.7		15.7		2.0		26.0
Green Ext Time (p_c), s	0.2	15.0		1.3		15.0		0.8

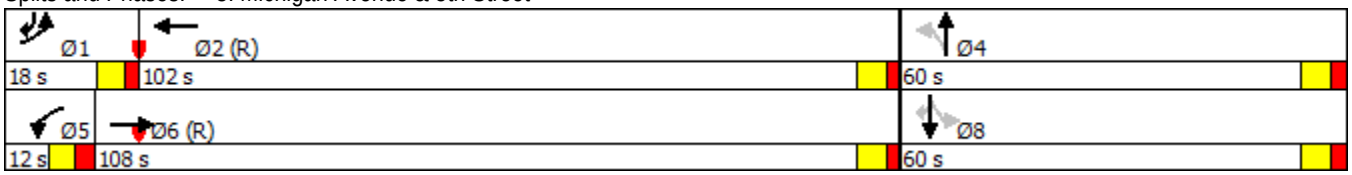
Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1211	10	1624	56	57	43	25	164
Future Volume (vph)	81	1211	10	1624	56	57	43	25	164
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1211	20	10	1624	18	56	57	9	43	25	164
Future Volume (veh/h)	81	1211	20	10	1624	18	56	57	9	43	25	164
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.96		0.92	0.96		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1261	21	10	1692	19	58	59	9	45	26	171
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3526	59	49	3413	38	113	107	15	166	89	354
Arrive On Green	0.08	0.91	0.91	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5141	86	1774	5176	58	460	589	81	730	488	1445
Grp Volume(v), veh/h	84	832	450	10	1108	603	126	0	0	71	0	171
Grp Sat Flow(s),veh/h/ln	1774	1695	1836	1774	1695	1844	1129	0	0	1218	0	1445
Q Serve(g_s), s	8.4	5.8	5.8	1.0	12.8	12.8	12.0	0.0	0.0	0.0	0.0	18.4
Cycle Q Clear(g_c), s	8.4	5.8	5.8	1.0	12.8	12.8	21.7	0.0	0.0	9.6	0.0	18.4
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.63		1.00
Lane Grp Cap(c), veh/h	101	2325	1259	49	2235	1216	235	0	0	255	0	354
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.50	0.50	0.54	0.00	0.00	0.28	0.00	0.48
Avail Cap(c_a), veh/h	121	2325	1259	57	2235	1216	397	0	0	420	0	520
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.7	2.7	84.7	4.6	4.6	70.8	0.0	0.0	63.8	0.0	59.0
Incr Delay (d2), s/veh	26.6	0.4	0.8	0.7	0.8	1.4	1.4	0.0	0.0	0.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.6	3.0	0.5	6.0	6.8	6.0	0.0	0.0	3.1	0.0	7.4
LnGrp Delay(d),s/veh	108.9	3.1	3.5	85.5	5.3	6.0	72.2	0.0	0.0	64.2	0.0	59.8
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1366			1721			126			242	
Approach Delay, s/veh		9.8			6.0			72.2			61.1	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	124.7		39.4	11.2	129.4		39.4
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.8		23.7	3.0	7.8		20.4
Green Ext Time (p_c), s	0.0	11.8		1.5	0.0	11.8		1.5

Intersection Summary		
HCM 2010 Ctrl Delay		13.8
HCM 2010 LOS		B

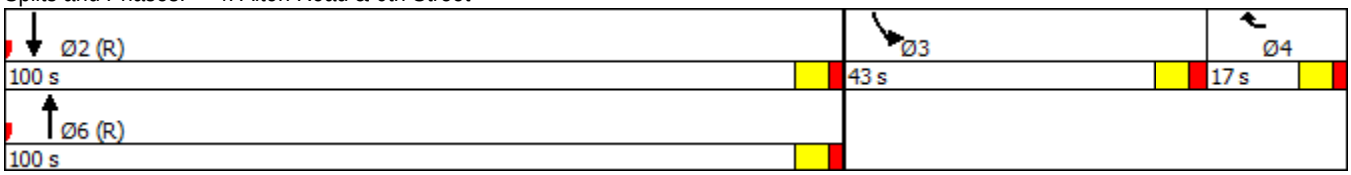
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	102	323	70	1396
Future Volume (vph)	102	323	70	1396
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	102	323	37	70	1396
Future Volume (vph)	0	102	323	37	70	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	105	333	38	72	1439
RTOR Reduction (vph)	0	100	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	72	1439
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.6		11.4	123.6
Effective Green, g (s)		7.0	123.6		11.4	123.6
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2619		126	2733
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.07	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		71.9	7.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		5.0	0.7
Delay (s)		73.5	4.8		77.0	7.7
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.8			11.0
Approach LOS	E		A			B

Intersection Summary

HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	34	71	0	64	33	9	0	76	181	167
Future Vol, veh/h	0	6	34	71	0	64	33	9	0	76	181	167
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	37	76	0	69	35	10	0	82	195	180
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	9.5	10	11
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	0%	5%	60%	14%
Vol Thru, %	70%	0%	31%	31%	76%
Vol Right, %	0%	100%	64%	8%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	167	111	106	179
LT Vol	76	0	6	64	25
Through Vol	181	0	34	33	136
RT Vol	0	167	71	9	18
Lane Flow Rate	276	180	119	114	192
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.421	0.231	0.176	0.182	0.281
Departure Headway (Hd)	5.594	4.738	5.304	5.744	5.248
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	647	763	678	627	689
Service Time	3.294	2.438	3.321	3.762	3.248
HCM Lane V/C Ratio	0.427	0.236	0.176	0.182	0.279
HCM Control Delay	12.3	8.9	9.5	10	10.3
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	2.1	0.9	0.6	0.7	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	136	18
Future Vol, veh/h	0	25	136	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	146	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.3
HCM LOS	B

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	18	93	109	0	39	79	7	0	14	122	26
Future Vol, veh/h	0	18	93	109	0	39	79	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	20	106	124	0	44	90	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

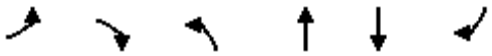
Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.9	9.4	9.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	8%	31%	8%
Vol Thru, %	75%	42%	63%	79%
Vol Right, %	16%	50%	6%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	220	125	111
LT Vol	14	18	39	9
Through Vol	122	93	79	88
RT Vol	26	109	7	14
Lane Flow Rate	184	250	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.253	0.32	0.199	0.177
Departure Headway (Hd)	4.948	4.606	5.037	5.047
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	720	775	706	704
Service Time	3.026	2.674	3.116	3.131
HCM Lane V/C Ratio	0.256	0.323	0.201	0.179
HCM Control Delay	9.7	9.9	9.4	9.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	1.4	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	9	88	14
Future Vol, veh/h	0	9	88	14
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	100	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.2
HCM LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	174	148	225	132	132
Future Volume (Veh/h)	142	174	148	225	132	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	191	163	247	145	145
Pedestrians	84			7	7	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	8			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				279		
pX, platoon unblocked						
vC, conflicting volume	758	308	374			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	758	308	374			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	41	70	85			
cM capacity (veh/h)	266	628	1087			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1
Volume Total	156	191	163	124	124	290
Volume Left	156	0	163	0	0	0
Volume Right	0	191	0	0	0	145
cSH	266	628	1087	1700	1700	1700
Volume to Capacity	0.59	0.30	0.15	0.07	0.07	0.17
Queue Length 95th (ft)	85	32	13	0	0	0
Control Delay (s)	36.0	13.2	8.9	0.0	0.0	0.0
Lane LOS	E	B	A			
Approach Delay (s)	23.4		3.5			0.0
Approach LOS	C					

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	171	282	85	73	264
Future Volume (Veh/h)	0	171	282	85	73	264
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	188	310	93	80	290
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			352			
pX, platoon unblocked						
vC, conflicting volume	806	202			403	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	806	202			403	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	77			93	
cM capacity (veh/h)	297	806			1152	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	188	207	196	80	290
Volume Left	0	0	0	80	0
Volume Right	188	0	93	0	0
cSH	806	1700	1700	1152	1700
Volume to Capacity	0.23	0.12	0.12	0.07	0.17
Queue Length 95th (ft)	23	0	0	6	0
Control Delay (s)	10.8	0.0	0.0	8.4	0.0
Lane LOS	B			A	
Approach Delay (s)	10.8	0.0		1.8	
Approach LOS	B				

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

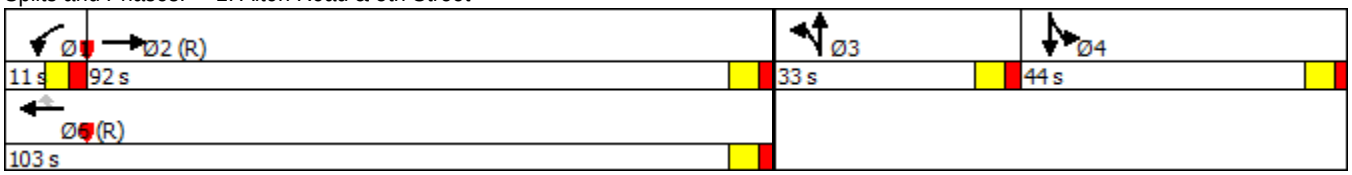
Future Total Conditions Analysis with One (1) Through Lane Northbound

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1306	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1306	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1306	581	12	1767	75	644	191	29	113	216	1063
Future Volume (vph)	0	1306	581	12	1767	75	644	191	29	113	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1389	618	13	1880	80	685	203	31	120	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1389	618	13	1880	55	685	231	0	0	350	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Effective Green, g (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.55	0.55	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1716	1539	51	1930	848	514	264			374	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.97	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.3	0.0	85.5	39.7	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.36	0.70	0.20	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.2	0.8	0.8	13.4	0.1	162.6	25.7			30.7	3.0
Delay (s)		43.5	0.8	116.8	41.3	4.0	239.1	100.5			101.1	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.4			40.3			203.8			26.2	
Approach LOS		C			D			F			C	

Intersection Summary

HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

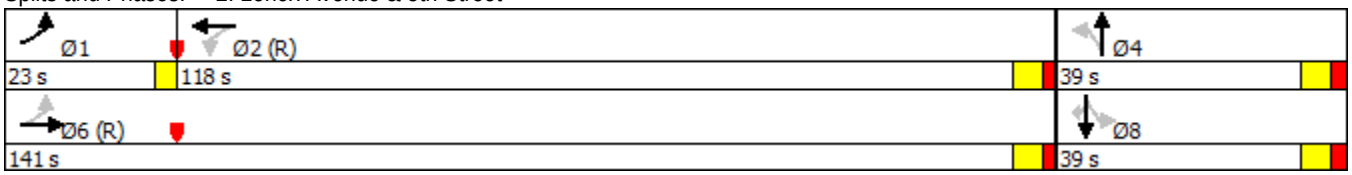
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	205	1239	31	1642	22	45	36	41	170
Future Volume (vph)	205	1239	31	1642	22	45	36	41	170
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1239	17	31	1642	109	22	45	14	36	41	170
Future Volume (veh/h)	205	1239	17	31	1642	109	22	45	14	36	41	170
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.90	0.90		0.82	0.88		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	218	1318	18	33	1747	116	23	48	15	38	44	181
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	3887	53	317	3325	220	71	139	39	129	140	231
Arrive On Green	0.06	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4836	320	259	784	220	564	788	1299
Grp Volume(v), veh/h	218	866	470	33	1223	640	86	0	0	82	0	181
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1766	1264	0	0	1352	0	1299
Q Serve(g_s), s	6.6	0.0	0.0	1.4	10.7	10.8	3.1	0.0	0.0	0.0	0.0	24.0
Cycle Q Clear(g_c), s	6.6	0.0	0.0	1.4	10.7	10.8	13.6	0.0	0.0	10.5	0.0	24.0
Prop In Lane	1.00		0.04	1.00		0.18	0.27		0.17	0.46		1.00
Lane Grp Cap(c), veh/h	280	2553	1387	317	2331	1214	250	0	0	269	0	231
V/C Ratio(X)	0.78	0.34	0.34	0.10	0.52	0.53	0.34	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	391	2553	1387	317	2331	1214	254	0	0	274	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.85	0.85	0.85	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	2.5	2.9	2.9	65.5	0.0	0.0	64.7	0.0	70.7
Incr Delay (d2), s/veh	2.0	0.2	0.3	0.6	0.7	1.4	0.6	0.0	0.0	0.5	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.1	0.1	0.2	5.0	5.5	3.9	0.0	0.0	3.6	0.0	9.6
LnGrp Delay(d),s/veh	12.0	0.2	0.3	3.0	3.6	4.3	66.1	0.0	0.0	65.2	0.0	85.9
LnGrp LOS	B	A	A	A	A	A	E			E		F
Approach Vol, veh/h		1554			1896			86			263	
Approach Delay, s/veh		1.9			3.8			66.1			79.4	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.7		38.5		141.5		38.5
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	12.8		15.6		2.0		26.0
Green Ext Time (p_c), s	0.2	15.0		1.3		15.1		0.8

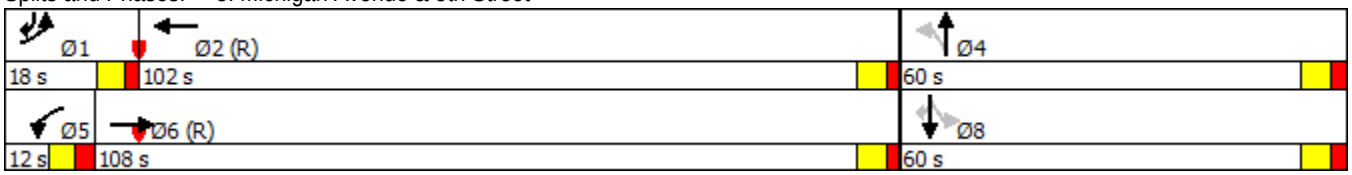
Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1211	10	1624	56	57	43	25	164
Future Volume (vph)	81	1211	10	1624	56	57	43	25	164
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1211	20	10	1624	18	56	57	9	43	25	164
Future Volume (veh/h)	81	1211	20	10	1624	18	56	57	9	43	25	164
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.96		0.92	0.96		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1261	21	10	1692	19	58	59	9	45	26	171
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3526	59	49	3413	38	113	107	15	166	89	354
Arrive On Green	0.08	0.91	0.91	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5141	86	1774	5176	58	460	589	81	730	488	1445
Grp Volume(v), veh/h	84	832	450	10	1108	603	126	0	0	71	0	171
Grp Sat Flow(s),veh/h/ln	1774	1695	1836	1774	1695	1844	1129	0	0	1218	0	1445
Q Serve(g_s), s	8.4	5.8	5.8	1.0	12.8	12.8	12.0	0.0	0.0	0.0	0.0	18.4
Cycle Q Clear(g_c), s	8.4	5.8	5.8	1.0	12.8	12.8	21.7	0.0	0.0	9.6	0.0	18.4
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.63		1.00
Lane Grp Cap(c), veh/h	101	2325	1259	49	2235	1216	235	0	0	255	0	354
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.50	0.50	0.54	0.00	0.00	0.28	0.00	0.48
Avail Cap(c_a), veh/h	121	2325	1259	57	2235	1216	397	0	0	420	0	520
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.7	2.7	84.7	4.6	4.6	70.8	0.0	0.0	63.8	0.0	59.0
Incr Delay (d2), s/veh	26.6	0.4	0.8	0.7	0.8	1.4	1.4	0.0	0.0	0.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.6	3.0	0.5	6.0	6.8	6.0	0.0	0.0	3.1	0.0	7.4
LnGrp Delay(d),s/veh	108.9	3.1	3.5	85.5	5.3	6.0	72.2	0.0	0.0	64.2	0.0	59.8
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1366			1721			126			242	
Approach Delay, s/veh		9.8			6.0			72.2			61.1	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	124.7		39.4	11.2	129.4		39.4
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.8		23.7	3.0	7.8		20.4
Green Ext Time (p_c), s	0.0	11.8		1.5	0.0	11.8		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

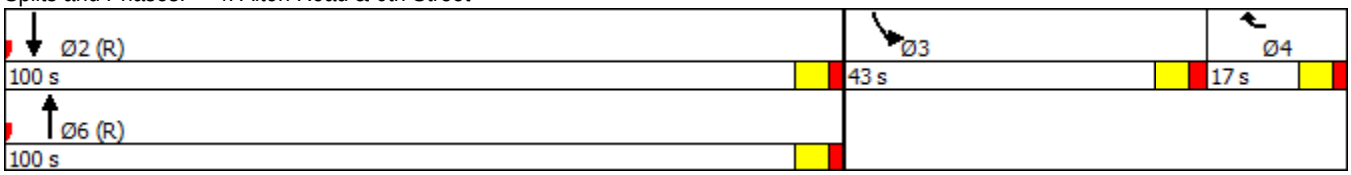
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	102	323	70	1396
Future Volume (vph)	102	323	70	1396
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	102	323	37	70	1396
Future Volume (vph)	0	102	323	37	70	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	105	333	38	72	1439
RTOR Reduction (vph)	0	100	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	72	1439
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.6		11.4	123.6
Effective Green, g (s)		7.0	123.6		11.4	123.6
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2619		126	2733
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.07	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		71.9	7.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		5.0	0.7
Delay (s)		73.5	4.8		77.0	7.7
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.8			11.0
Approach LOS	E		A			B

Intersection Summary

HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	34	71	0	64	33	9	0	76	181	167
Future Vol, veh/h	0	6	34	71	0	64	33	9	0	76	181	167
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	37	76	0	69	35	10	0	82	195	180
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.6	10.2	14.4
HCM LOS	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	5%	60%	14%
Vol Thru, %	43%	31%	31%	76%
Vol Right, %	39%	64%	8%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	424	111	106	179
LT Vol	76	6	64	25
Through Vol	181	34	33	136
RT Vol	167	71	9	18
Lane Flow Rate	456	119	114	192
Geometry Grp	1	1	1	1
Degree of Util (X)	0.595	0.178	0.184	0.276
Departure Headway (Hd)	4.701	5.361	5.801	5.164
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	770	668	618	695
Service Time	2.701	3.401	3.843	3.197
HCM Lane V/C Ratio	0.592	0.178	0.184	0.276
HCM Control Delay	14.4	9.6	10.2	10.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	4	0.6	0.7	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	136	18
Future Vol, veh/h	0	25	136	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	146	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	18	93	109	0	39	79	7	0	14	122	26
Future Vol, veh/h	0	18	93	109	0	39	79	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	20	106	124	0	44	90	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.9	9.4	9.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	8%	31%	8%
Vol Thru, %	75%	42%	63%	79%
Vol Right, %	16%	50%	6%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	220	125	111
LT Vol	14	18	39	9
Through Vol	122	93	79	88
RT Vol	26	109	7	14
Lane Flow Rate	184	250	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.253	0.32	0.199	0.177
Departure Headway (Hd)	4.948	4.606	5.037	5.047
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	720	775	706	704
Service Time	3.026	2.674	3.116	3.131
HCM Lane V/C Ratio	0.256	0.323	0.201	0.179
HCM Control Delay	9.7	9.9	9.4	9.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	1.4	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	88	14
Future Vol, veh/h	0	9	88	14
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	100	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.2
HCM LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	174	148	225	132	132
Future Volume (Veh/h)	142	174	148	225	132	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	191	163	247	145	145
Pedestrians	84			7	7	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	8			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				279		
pX, platoon unblocked						
vC, conflicting volume	882	308	374			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	882	308	374			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	37	71	85			
cM capacity (veh/h)	246	669	1090			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	156	191	163	247	290
Volume Left	156	0	163	0	0
Volume Right	0	191	0	0	145
cSH	246	669	1090	1700	1700
Volume to Capacity	0.63	0.29	0.15	0.15	0.17
Queue Length 95th (ft)	97	29	13	0	0
Control Delay (s)	41.9	12.5	8.9	0.0	0.0
Lane LOS	E	B	A		
Approach Delay (s)	25.7		3.5		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	171	282	85	73	264
Future Volume (Veh/h)	0	171	282	85	73	264
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	188	310	93	80	290
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			352			
pX, platoon unblocked						
vC, conflicting volume	806	356			403	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	806	356			403	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	73			93	
cM capacity (veh/h)	327	688			1156	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	188	403	80	290
Volume Left	0	0	80	0
Volume Right	188	93	0	0
cSH	688	1700	1156	1700
Volume to Capacity	0.27	0.24	0.07	0.17
Queue Length 95th (ft)	28	0	6	0
Control Delay (s)	12.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	1.8	
Approach LOS	B			

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Dabkowski, Adrian

From: Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>
Sent: Friday, March 31, 2017 5:01 PM
To: Dabkowski, Adrian
Cc: michael@comrascompany.com; jweislow@amicon.us; suria@zyscovich.com; Dorman, Cory; Martinez, Dayanes; Akcay, Firat; Buell, Roger
Subject: RE: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Follow Up Flag: Follow up
Flag Status: Flagged

Adrian,

I have reviewed the traffic impact study and I have not comments on the traffic operations; however, the design is not acceptable from a safety and movement separation. According to the FDOT Intersection Design Guidelines should be 8' separated from edge of travel path to edge of travel path. The design provided offers between 0 and 4 feet of movement separation. I have no objection with the left turns in; however, given the conditions and high activity in the area, it would be safer if one of these two driveways remained a right turn out only. Let me know if you have additional questions.

Respectfully,

MIAMIBEACH

Josiel Ferrer-Diaz, E.I. *Transportation Manager*
TRANSPORTATION DEPARTMENT
1700 Convention Center Drive, Miami Beach, Florida 33139
305-673-7514 www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.

From: Adrian.Dabkowski@Kimley-horn.com [mailto:Adrian.Dabkowski@Kimley-horn.com]
Sent: Friday, March 31, 2017 8:35 AM
To: Ferrer, Josiel
Cc: michael@comrascompany.com; jweislow@amicon.us; suria@zyscovich.com; cory.dorman@kimley-horn.com
Subject: RE: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Good morning Josiel:

Sorry to be a pest, but I need to follow up with you and see if the City has any comments on the attached analysis.

Thank you
Adrian

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

From: Dabkowski, Adrian
Sent: Thursday, March 23, 2017 1:37 PM
To: 'Ferrer, Josiel' <JOSIELFERRER@miamibeachfl.gov>; Dorman, Cory <cory.dorman@kimley-horn.com>
Cc: michael@comrascompany.com; jweislow@amicon.us; suria@zyscovich.com
Subject: RE: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Good afternoon Josiel:

Great to you see you yesterday. I just wanted to follow up and see if the City had any comments on the attached analysis.

Thank you
Adrian

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

From: Ferrer, Josiel [mailto:JOSIELFERRER@miamibeachfl.gov]
Sent: Monday, March 20, 2017 9:31 AM
To: Dorman, Cory <cory.dorman@kimley-horn.com>
Cc: michael@comrascompany.com; jweislow@amicon.us; suria@zyscovich.com; Dabkowski, Adrian <Adrian.Dabkowski@Kimley-horn.com>
Subject: RE: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Cory,

I began my review last week and I am expecting to get comments to you by tomorrow afternoon.

Respectfully,

MIAMIBEACH

Josiel Ferrer-Diaz, E.I. *Transportation Manager*
TRANSPORTATION DEPARTMENT
1700 Convention Center Drive, Miami Beach, Florida 33139
305-673-7514 www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic community.

From: cory.dorman@kimley-horn.com [mailto:cory.dorman@kimley-horn.com]
Sent: Monday, March 20, 2017 9:29 AM
To: Ferrer, Josiel
Cc: michael@comrascompany.com; jweislow@amicon.us; suria@zyscovich.com; Adrian.Dabkowski@Kimley-horn.com
Subject: RE: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Good morning Josiel,

Just wanted to follow-up to see if you've had a chance to review the additional access alternative analysis for the 5th Street and Lenox Avenue retail development. Please let us know if you have any questions or comments.

Thanks,

Kimley»Horn
Cory D. Dorman, E.I.
Kimley-Horn | 600 North Pine Island Road, Plantation, FL 33324
Direct: (954) 535-5114 | Office: (954) 535-5100

From: Dabkowski, Adrian
Sent: Friday, March 10, 2017 3:13 PM
To: JOSIELFERRER@miamibeachfl.gov
Cc: Michael Comras <michael@comrascompany.com>; Jon Weislow <jweislow@amicon.us>; Suria Yaffar <suria@zyscovich.com>; Dorman, Cory <cory.dorman@kimley-horn.com>
Subject: 5th Street and Lenox Avenue Retail Development Additional Access Analysis

Good afternoon Josiel:

As discussed at our meeting last week, the additional access alternative analysis for the 5th Street and Lenox Avenue retail development was updated to include several additional analyses. These additional analyses include:

- Providing pavement guide markings for the eastbound and westbound left-turns from the Fifth & Alton garage and 5th Street and Lenox Avenue retail development onto Lenox Avenue to emphasize driveway separation and spacing.
- Examining the internal queues for the Fifth & Alton garage and comparing to proposed conditions.
- Reanalyze Lenox Avenue with one (1) northbound through lane between 5th Street and 6th Street.
- Examining one (1) shared left/right-turn exit lane (westbound approach) from the 5th Street and Lenox Avenue retail development compared to the one (1) exclusive left-turn exit lane and one (1) exclusive right-turn exit lane currently proposed.

The additional analysis is attached. The analysis determined that reducing a northbound through lane on Lenox Avenue does not significantly nor adversely impact the operation of the Fifth & Lenox garage driveway, 5th Street and Lenox Avenue retail development garage driveway, nor the northbound approach at the intersection of 6th Street. Please let us know if the City has any comments.

Thank you
Adrian

Kimley»Horn
Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Main: 954-535-5100

Kimley»Horn

March 9, 2017

Mr. Josiel Ferrer-Diaz, E.I.
City of Miami Beach
Transportation Department
1700 Convention Center Drive
Miami Beach, Florida 33139

Re: 5th Street and Lenox Avenue Retail Development
Driveway Configurations Analysis
Additional Access Alternative Analysis

Dear Mr. Ferrer-Diaz:

This document serves as a supplement to the March 1, 2017 analysis based on the discussion at the March 2, 2017 meeting. The following items were discussed at the March 2, 2017 meeting and were incorporated in this analysis:

- Provide pavement guide markings for the eastbound and westbound left-turns from the Fifth & Alton garage and 1045 5th Street garage onto Lenox Avenue to emphasize driveway separation and spacing.
- Determine existing internal queues for the Fifth & Alton garage and compare to proposed conditions.
- Reanalyze Lenox Avenue with one (1) northbound through lane between 5th Street and 6th Street.
- Examine one (1) shared left/right-turn exit lane (westbound approach) from the 1045 5th Street development compared to the one (1) exclusive left-turn exit lane and one (1) exclusive right-turn exit lane currently proposed.

The proposed development was approved with a right-in/right-out access configuration. The additional access alternative creates two (2) stop-controlled full access intersections (offset) between the proposed development and the Fifth & Alton development. The additional access alternative was analyzed under three (3) scenarios that maximize the separation between the Fifth & Alton Garage driveway and proposed retail development driveway to minimize the impact between the two (2) driveways. The proposed access alternative modifies the existing Fifth & Alton garage driveway from one (1) entry lane and three (3) undesignated exit lanes to one (1) entry lane, one (1) exclusive left-turn exit lane, and one (1) exclusive right-turn exit lane. Please note that the three (3) existing undesignated exit lanes do not prohibit any movements out of each lane (a left or right-turn movement can be made from any lane) and create additional congestion at the intersection of Lenox Avenue and the Fifth & Alton garage as depicted in Photograph 1. Further note that as a result of the exclusive exit lanes, a cashier booth is required to service both exit lanes and can either be placed at each lane or located more internal to the Fifth & Alton Garage driveway to service left-turning and right-turning vehicles and maximize the spacing between the Fifth & Alton Garage driveway and the 1045 5th Street garage driveway.

Photograph 1: Fifth & Alton Garage

The additional access alternative will also require modification to the landscaped median and designation of the southbound lanes to include one (1) southbound through lane and one (1) southbound left-turn lane. Site access plans of the full access alternative driveway configurations under each scenario are provided in Attachment A.

The additional access alternative was analyzed under the following three (3) scenarios:

- Full access with existing Lenox Avenue laneage
- Full access with northbound Lenox Avenue lane reduction
- Full access with northbound Lenox Avenue lane reduction and one (1) project driveway exit lane

Full Access

This scenario maintains the existing geometry along northbound Lenox Avenue and provides the following lane configurations:

- One (1) exclusive westbound left-turn lane and one (1) exclusive westbound right-turn lane at the proposed 1045 5th Street retail development driveway
- Two (2) northbound through lanes
- One (1) exclusive northbound left-turn lane entering the Fifth & Alton Garage
- One (1) shared northbound left/through lane and one (1) exclusive northbound right-turn lane at the intersection of 6th Street and Lenox Avenue

Full Access with Northbound Lenox Avenue Lane Reduction

This scenario proposes to remove the northbound curb lane located along the east side of Lenox Avenue between 5th Street and 6th Street to improve safety conditions between the proposed retail development driveway and the Fifth & Alton garage and provide an enhanced pedestrian experience along Lenox Avenue by providing wider sidewalks and additional landscaping. The following lane configurations are proposed:

- One (1) exclusive westbound left-turn lane and one (1) exclusive westbound right-turn lane at the proposed 1045 5th Street retail development driveway
- One (1) northbound through lane
- One (1) exclusive northbound left-turn lane entering the Fifth & Alton Garage
- One (1) shared northbound left/through/right-turn lane at the intersection of 6th Street and Lenox Avenue.

Full Access with Northbound Lenox Avenue Lane Reduction and One (1) Project Driveway Exit Lane

This scenario includes the identical geometry as the full access with northbound lane reduction scenario, however, the westbound approach at the proposed retail development driveway is to be reconfigured to provide one (1) shared left/right-turn exit lane from one (1) exclusive left-turn exit lane and one (1) exclusive right-turn exit lane to further maximize the driveway spacing.

FUTURE TOTAL CONDITIONS

Future background conditions, growth rates, trip generation, and project access for the approved right-in/right-out driveway configuration were gathered from the approved *5th Street and Lenox Avenue Retail Development Traffic Impact Analysis*, July 2016. Please note that the trip distribution and assignment for the approved right-in/right-out driveway configuration and the full access alternative driveway configuration were gathered from the *5th Street and Lenox Avenue Retail Development Supplemental Future Total Conditions Analysis,* October 2016. Volume development worksheets, trip distribution figures, and trip assignment figures are contained in Attachment B.

VEHICLE CIRCULATION

The type of access provided at the proposed retail development driveway is expected to impact traffic circulation in trip distribution. The approved right-in/right-out configuration circulates inbound traffic originating from the north and outbound traffic originating from the south circuitously to Michigan Avenue to access the redevelopment. The full access alternative driveway circulates inbound traffic originating from the north and outbound traffic originating from the south directly to the development along Lenox Avenue as full access is provided and does not require project traffic to travel along Michigan Avenue. Graphics illustrating the vehicle circulation patterns are included in Attachment C.

INTERSECTION CAPACITY ANALYSIS

The project driveway and study area intersections were analyzed for the approved right-in/right-out configuration and the full access alternative configuration for future total conditions during the weekday P.M. peak hour using Trafficware's *Synchro 9.0* software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual* (HCM), 2000/2010 Editions. Synchro worksheets for the study intersections are included in Attachment D. A summary of the intersection capacity analysis results is presented in Table 1 for the weekday P.M. peak hour.

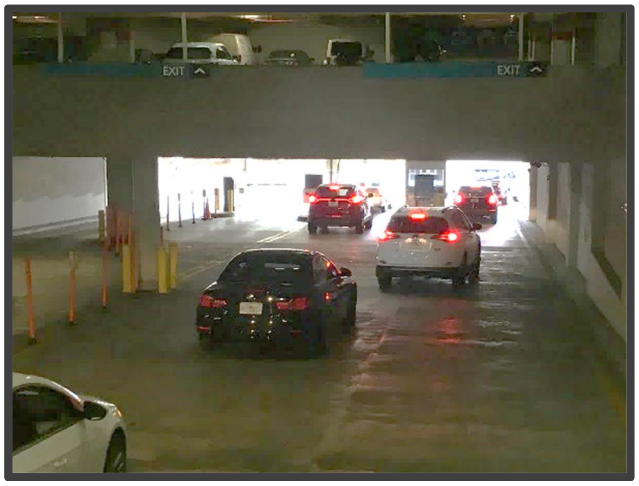
As Table 1 indicates, the project driveway and study area intersections are expected to operate at adopted levels of service (LOS D+20 or better) under the approved right-in/right-out and proposed alternative full access configurations during the weekday P.M. peak hour with the exception of the eastbound approach at the intersection of Lenox Avenue and the proposed retail development driveway/Fifth & Alton garage which is expected to operate at LOS F under the approved right-in/right-out driveway configuration during the weekday P.M. peak hour.

Table 1: P.M. Peak Hour Future Total Intersection Capacity Analysis						
Intersection	**Traffic Control**	**Overall LOS/Delay (sec)**	**Approach LOS**			
			EB	**WB**	**NB**	**SB**
Approved Right-in/Right-out Access						
5th Street and Alton Road(1)	Signalized	D+20/57.3	C	D	F	C
5th Street and Lenox Avenue	Signalized	A/9.7	A	A	E	E
5th Street and Michigan Avenue	Signalized	B/14.2	A	A	E	E
6th Street and Alton Road(1)	Signalized	B/12.9	(4)	E	A	B
6th Street and Lenox Avenue	All-Way, Stop-Controlled	B/10.4	A	A	B	B
6th Street and Michigan Avenue	All-Way, Stop-Controlled	A/9.7	B	A	A	A
Lenox Avenue and Proposed Retail Parking Garage/Fifth & Alton Garage	Two-Way, Stop-Controlled	(2)	F	B	(3)	(3)
Full Access *(Full Access with Northbound Lane Reduction)* *[Full Access with Northbound Lane Reduction and Project Driveway Modification]*						
5th Street and Alton Road(1)	Signalized	D+20/56.8 (D+20/56.8) [D+20/56.8]	C (C) [C]	D (D) [D]	F (F) [F]	C (C) [C]
5th Street and Lenox Avenue	Signalized	B/14.5 (B/14.5) [B/14.5]	A (A) [A]	A (A) [A]	F (F) [F]	F (F) [F]
5th Street and Michigan Avenue	Signalized	B/12.0 (B/12.0) [B/12.0]	A (A) [A]	A (A) [A]	E (E) [E]	E (E) [E]
6th Street and Alton Road(1)	Signalized	B/13.0 (B/13.0) [B/13.0]	(4)	E (E) [E]	A (A) [A]	B (B) [B]
6th Street and Lenox Avenue	All-Way, Stop-Controlled	B/10.4 (B/10.8) [B/10.8]	A (A) [A]	A (A) [A]	B (B) [B]	A (A) [A]
6th Street and Michigan Avenue	All-Way, Stop-Controlled	A/9.1 (A/9.1) [A/9.1]	A (A) [A]	A (A) [A]	A (A) [A]	A (A) [A]
Lenox Avenue and Fifth & Alton Garage	One-Way, Stop-Controlled	(2)	D (D) [D]	(4)	(3)	(3)
Lenox Avenue and Proposed Retail Parking Garage	One-Way, Stop-Controlled	(2)	(4)	C (C) [C]	(3)	(3)

Notes:
(1) Intersection cannot be analyzed in HCM 2010; therefore HCM 2000 was used.
(2) Overall intersection LOS is not defined, as intersection operates under stop-control conditions.
(3) Approach operates under free-flow conditions. LOS is not defined.
(4) Approach does not exist.

QUEUING ANALYSIS

A field review was conducted on Thursday, March 2, 2017 during the weekday P.M. peak period (2:00 P.M. – 4:00 P.M.) to observe vehicle queues at the existing Fifth & Alton Garage driveway to compare vehicle queues to the existing conditions analysis. Photograph 2 illustrates the typical vehicle queues observed during the peak period at the Fifth & Alton Garage driveway.



Photograph 2: Field-Observed Fifth & Alton Garage Queues

Table 2 summarizes the comparison of the field-observed vehicle queues and expected vehicle queues at the intersection of Lenox Avenue and the Fifth & Alton Garage driveway under existing conditions. As the table indicates, expected vehicle queues are generally consistent with the field-observed queues. Please note that the existing configuration of the exit lanes at the Fifth & Alton Garage driveway cannot be analyzed in the transportation software that applies methodologies outlined in the HCM 2000/2010 as the eastbound approach provides three (3) undesignated lanes that permit left-turn or right-turn movements from each lane. As a result, the Fifth & Alton Garage driveway was analyzed with an exclusive left-turn lane and an exclusive right-turn lane. Field-observed queues and existing conditions Synchro outputs are included in Attachment D.

Table 2: Fifth & Alton Garage Driveway Queue Comparison		
Intersection	**Location**	**Peak Period Queue[1]**
Field-Observed Queue		
Lenox Avenue and Fifth & Alton Garage	Eastbound North Lane	13 feet/0.6 vehicles
	Eastbound Center Lane	30 feet/1.3 vehicles
	Eastbound South Lane	36 feet/1.6 vehicles
Existing Conditions Analysis[3]		
Lenox Avenue and Fifth & Alton Garage	Eastbound North Lane	67 feet/3.0 vehicles
	Eastbound Center Lane	[2]
	Eastbound South Lane	30 feet/1.4 vehicles

Note: [1]Vehicle length of 22 feet assumed for this analysis.
[2]Lane not modeled as this driveway configuration cannot be analyzed in Synchro.
[3]Existing condition results represent 95th percentile queues.

A 95th percentile queuing analysis was conducted using the weekday P.M. peak hour volumes collected at the intersection of Lenox Avenue and the Fifth & Alton Garage driveway to determine if the expected queues at the Fifth & Alton Garage driveway and proposed retail development driveway can be accommodated with the approved right-in/right-out configuration and the full access alternative configurations under future total conditions. The 95th percentile queue lengths were calculated using Trafficware's *Synchro 9.0* software, which applies methodologies outlined in the HCM, 2000/2010 Editions.

As summarized in Table 3, expected vehicle queue lengths are not anticipated to extend beyond the provided storage lengths onto public right-of-way. As the proposed 5th Street and Lenox retail development driveway is located to the north of the Fifth & Alton garage under the proposed alternative full access configuration, the proposed southbound left-turn movement into the 5th Street and Lenox Avenue driveway does not conflict with the northbound left-turn movement into the Fifth & Alton garage and the proposed westbound left-turn movement out of the 5th Street and Lenox Avenue driveway does not conflict with the eastbound left-turn movement out of the Fifth & Alton garage. Therefore, the 95th percentile queue lengths are expected to reduce under the proposed alternative full access configurations a result of the offset intersections. Synchro worksheets for the proposed driveway queues are included in Attachment D.

Table 3: Future Total Peak Hour Queuing Analysis Summary			
Intersection	**Location**	**Storage Length**	**Weekend P.M. Peak Period 95th Percentile Queue**
Approved Right-in/Right-out Access			
Lenox Avenue and Proposed Retail Parking Garage/Fifth & Alton Garage	Eastbound Left-turn Lane	-	239 feet
	Eastbound Right-turn Lane	-	32 feet
	Westbound Left-turn Lane	-	N/A
	Westbound Right-turn Lane	-	25 feet
	Northbound Left-turn Lane(1)	75 feet	<25 feet
	Southbound Left-turn Lane	110 feet	N/A
Full Access *(Full Access with Northbound Lane Reduction)* *[Full Access with Northbound Lane Reduction and Project Driveway Modification]*			
Lenox Avenue and Fifth & Alton Garage	Eastbound Left-turn Lane	-	97 feet (106 feet) [106 feet]
	Eastbound Right-turn Lane	-	37 feet (37 feet) [37 feet]
	Northbound Left-turn Lane(1)	75 feet	<25 feet (<25 feet) [<25 feet]
Lenox Avenue and Proposed Retail Parking Garage	Westbound Left-turn Lane	-	46 feet (40 feet) [N/A]
	Westbound Right-turn Lane	-	<25 feet (<25 feet) [N/A]
	Westbound Shared Left/Right-turn Lane	-	N/A (N/A) [68 feet]
	Southbound Left-turn Lane	75 feet	<25 feet (<25 feet) [<25 feet]

Note: (1)95th percentile queue does not account for queues from the entry gate at the Fifth & Alton garage.

CONCLUSION

The proposed development was approved with a right-in/right-out access configuration. The additional access alternative creates two (2) stop-controlled full access intersections (offset) between the proposed development and the Fifth & Alton development. The additional access alternative was analyzed under three (3) scenarios that maximize the separation between the Fifth & Alton Garage driveway and proposed retail development driveway to minimize the impact between the two (2) driveways.

Intersection capacity analyses indicate that all intersections are expected to operate at adopted levels of service (LOS D+20 or better) under all scenarios with the exception of the eastbound approach at the intersection of Lenox Avenue and the proposed retail development driveway/Fifth & Alton garage which operates at LOS F under the approved right-in/right-out access configuration during the weekday P.M. peak hour. Furthermore, the queuing analysis for the intersection of Lenox Avenue and the proposed retail development driveway indicate that the expected vehicle queue lengths are not anticipated to extend beyond the provided storage lengths onto public right-of-way and the 95th percentile queue lengths are expected to reduce under the proposed alternative full access configurations a result of the offset intersections.

Based on the vehicle circulation, intersection capacity analysis, and queuing analysis, the alternative full access driveway configuration with the reduction of the northbound curb lane along Lenox Avenue is recommended for implementation. Although the reduction of the westbound approach at the proposed retail development driveway does not adversely impact the study area intersections, it is preferred to provide exclusive left-turn and right-turn exit lanes to prevent vehicle queuing and to prevent right-turn movements being blocked by left-turn movements on-site. A site access plan of the full access with northbound lane reduction alternative driveway configuration is provided in Attachment A.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Adrian K. Dabkowski, P.E., PTOE
Associate

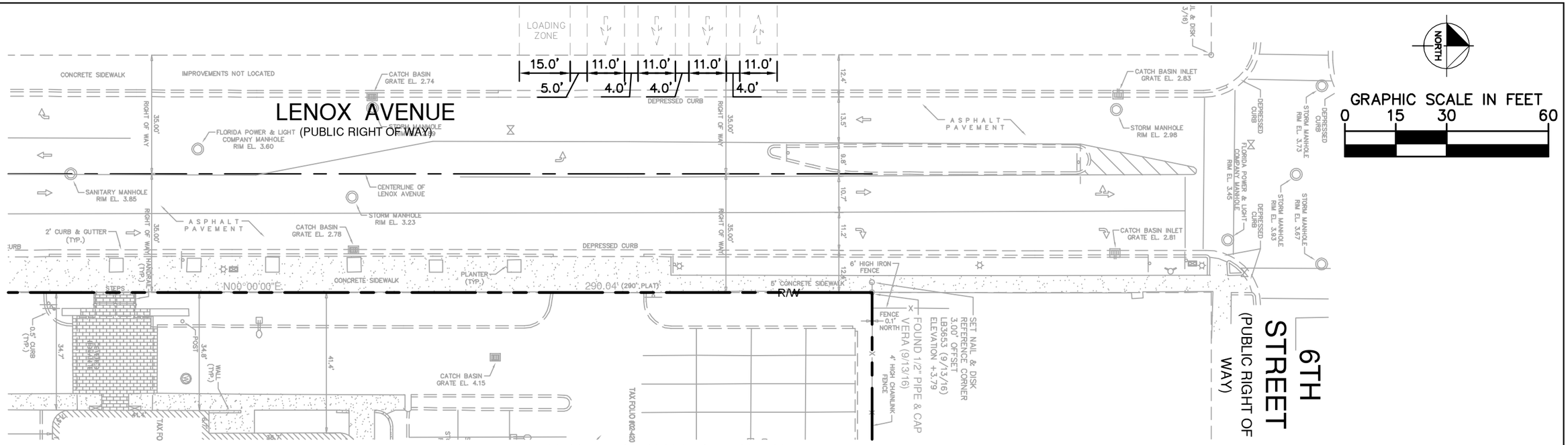
Attachments

ADRIAN K. DABKOWSKI
LICENSE
No. 78828
STATE OF FLORIDA
PROFESSIONAL ENGINEER

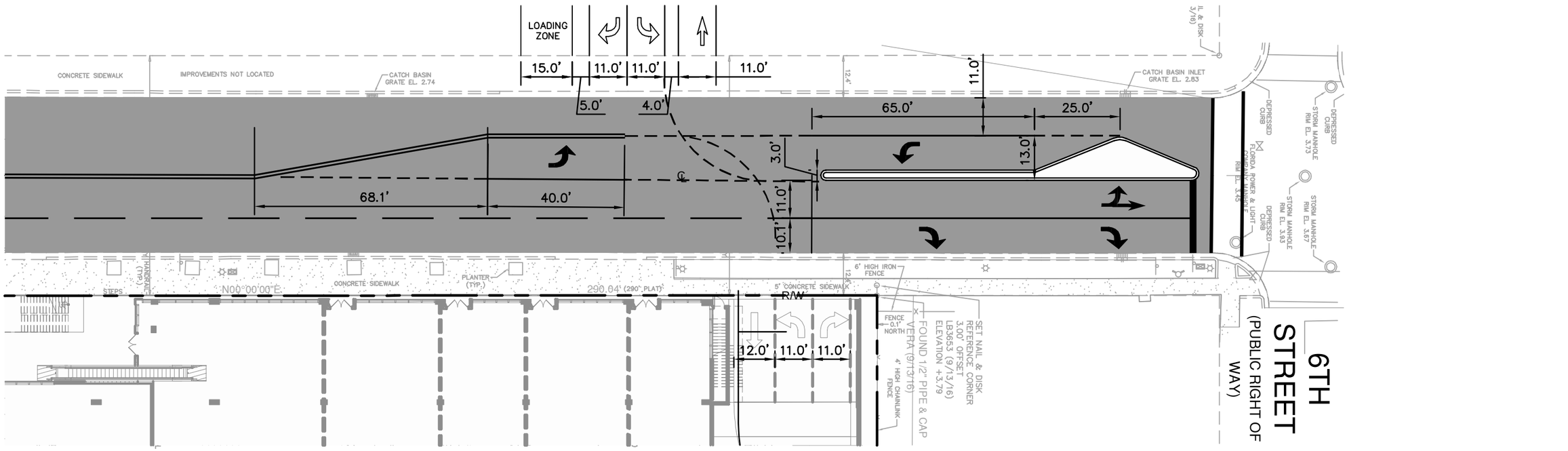
3/9/17

Adrian K. Dabkowski, P.E., PTOE
Florida Registration Number 78828
Kimley-Horn and Associates, Inc.
600 North Pine Island Road, Suite 450
Plantation, Florida 33324
CA # 00000696

Attachment A



EXISTING CONDITIONS



PROPOSED CONDITIONS

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2017 KIMLEY-HORN AND ASSOCIATES, INC.
600 NORTH PINE ISLAND ROAD, SUITE 450, PLANTATION, FL 33324
PHONE: 954-535-5100 FAX: 954-739-2247
WWW.KIMLEY-HORN.COM CA 00000696

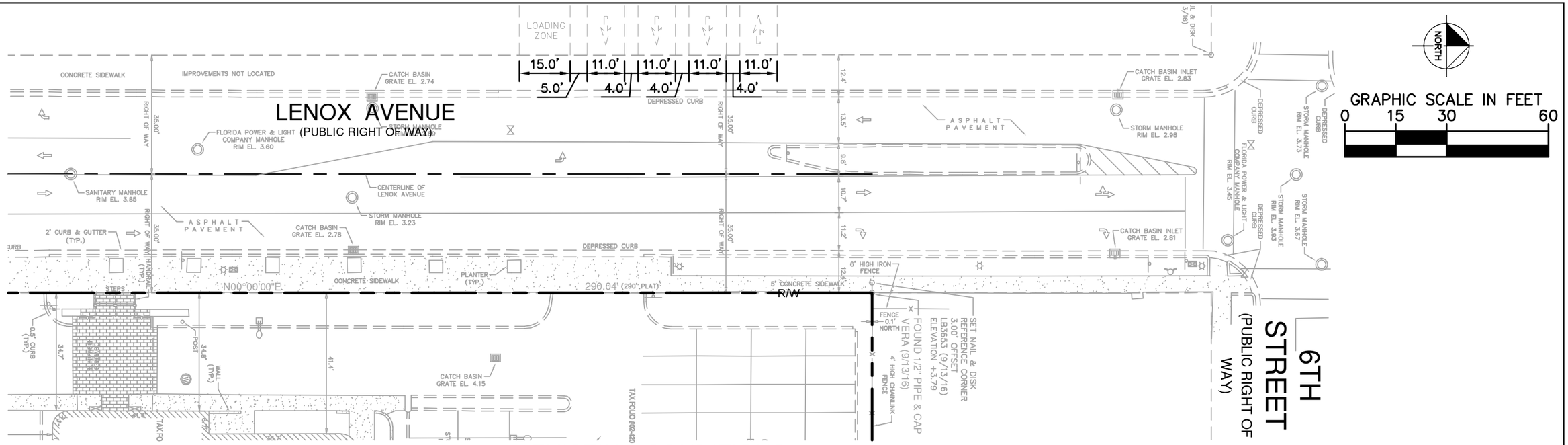
KHA PROJECT	043770000
DATE	3/9/17
SCALE	AS SHOWN
DESIGNED BY	
DRAWN BY	
CHECKED BY	

5TH AND LENOX
PREPARED FOR
MAC 1045 5TH STREET, LLC
MIAMI BEACH FL

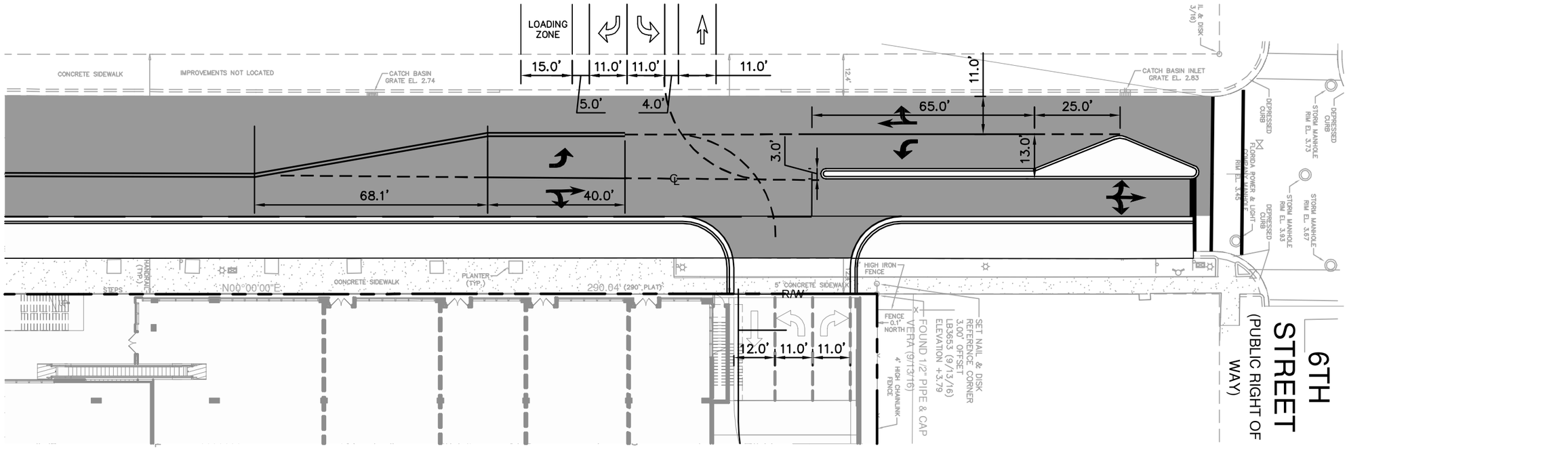
LICENSED PROFESSIONAL
DATE:

SITE ACCESS EXHIBIT

SHEET NUMBER



EXISTING CONDITIONS



PROPOSED CONDITIONS

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

No.	REVISIONS	DATE	BY

Kimley»Horn

600 NORTH PINE ISLAND ROAD, SUITE 450, PLANTATION, FL 33324
PHONE: 954-535-5100 FAX: 954-739-2247
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	043770000
DATE	3/10/17
SCALE	AS SHOWN
DESIGNED BY	
DRAWN BY	
CHECKED BY	

5TH AND LENOX

PREPARED FOR

MAC 1045 5TH STREET, LLC

MIAMI BEACH FL

LICENSED PROFESSIONAL

DATE:

SITE ACCESS EXHIBIT

SHEET NUMBER

Attachment B

Approved Right-in/Right-out Access

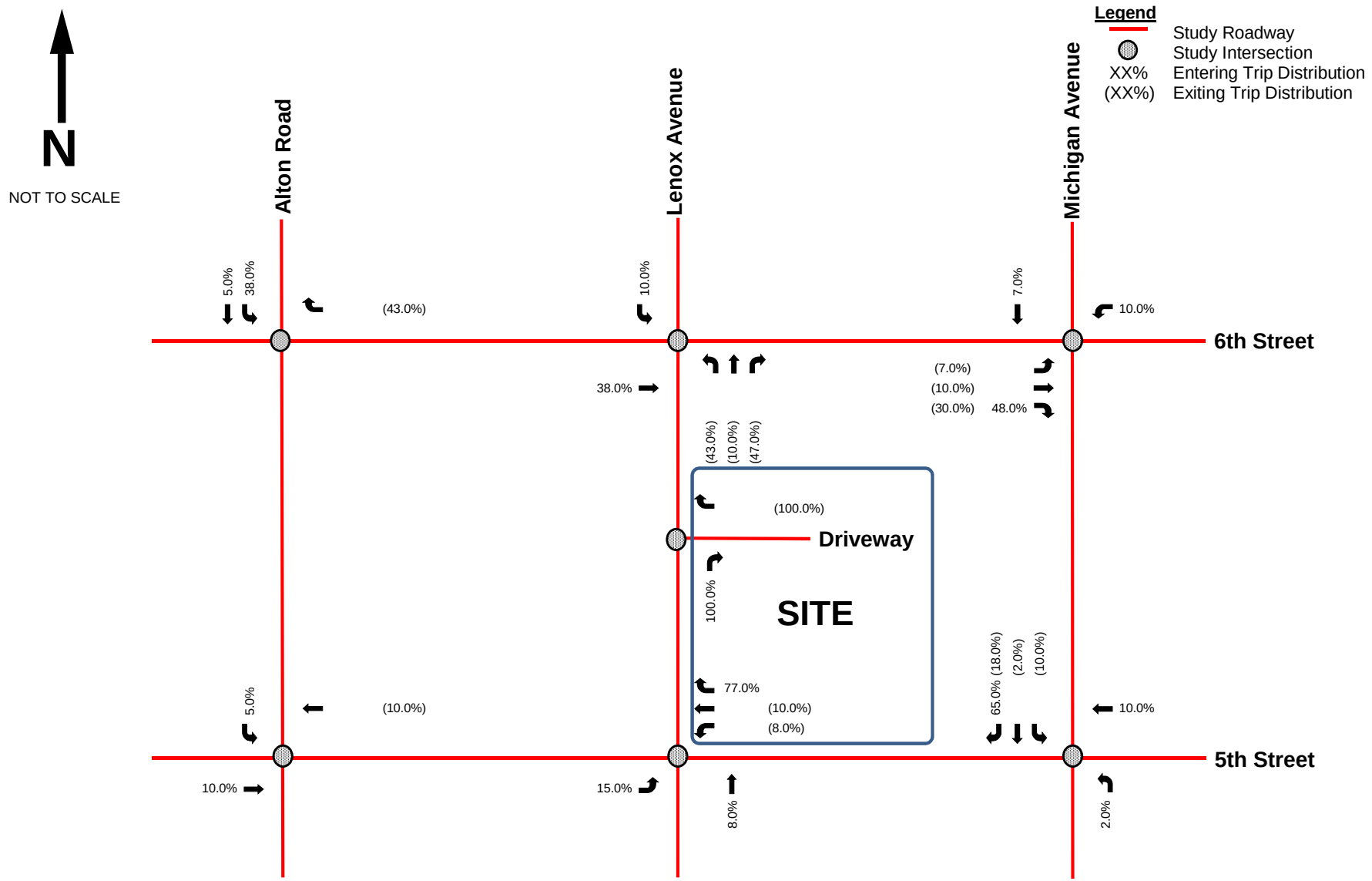


Figure 1
Peak Hour Net New Trip Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn

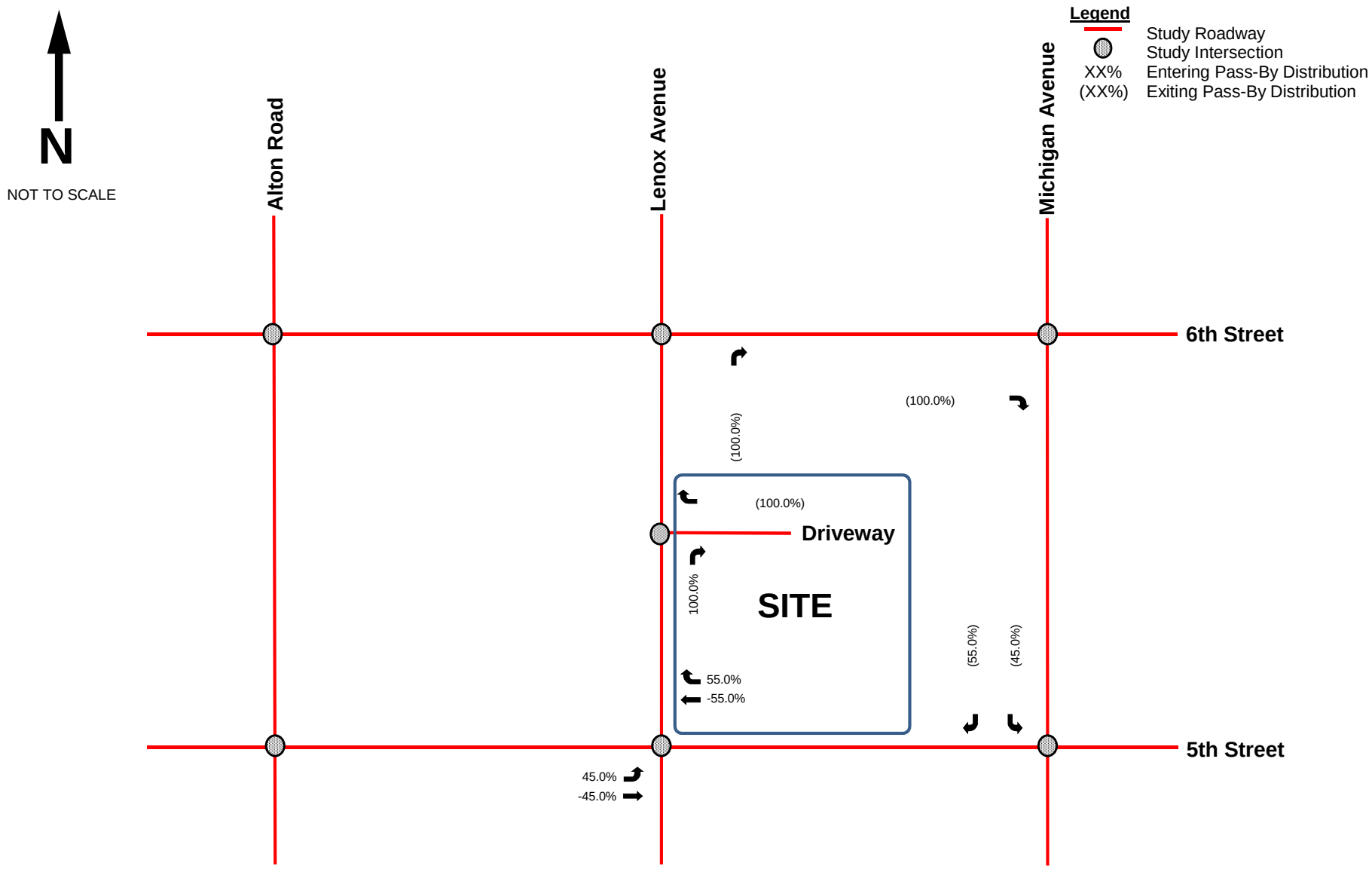
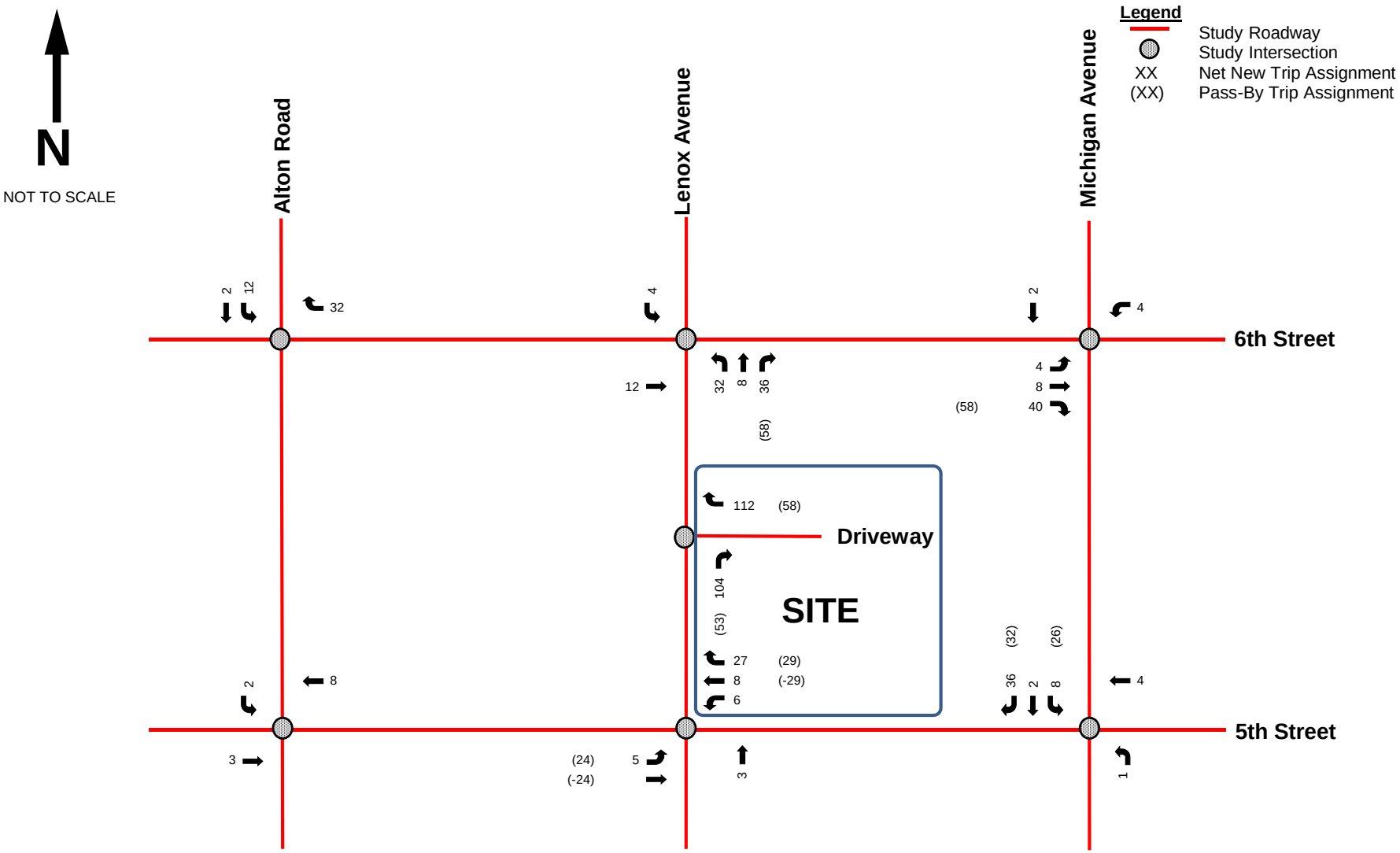


Figure 2
Peak Hour Pass-By Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

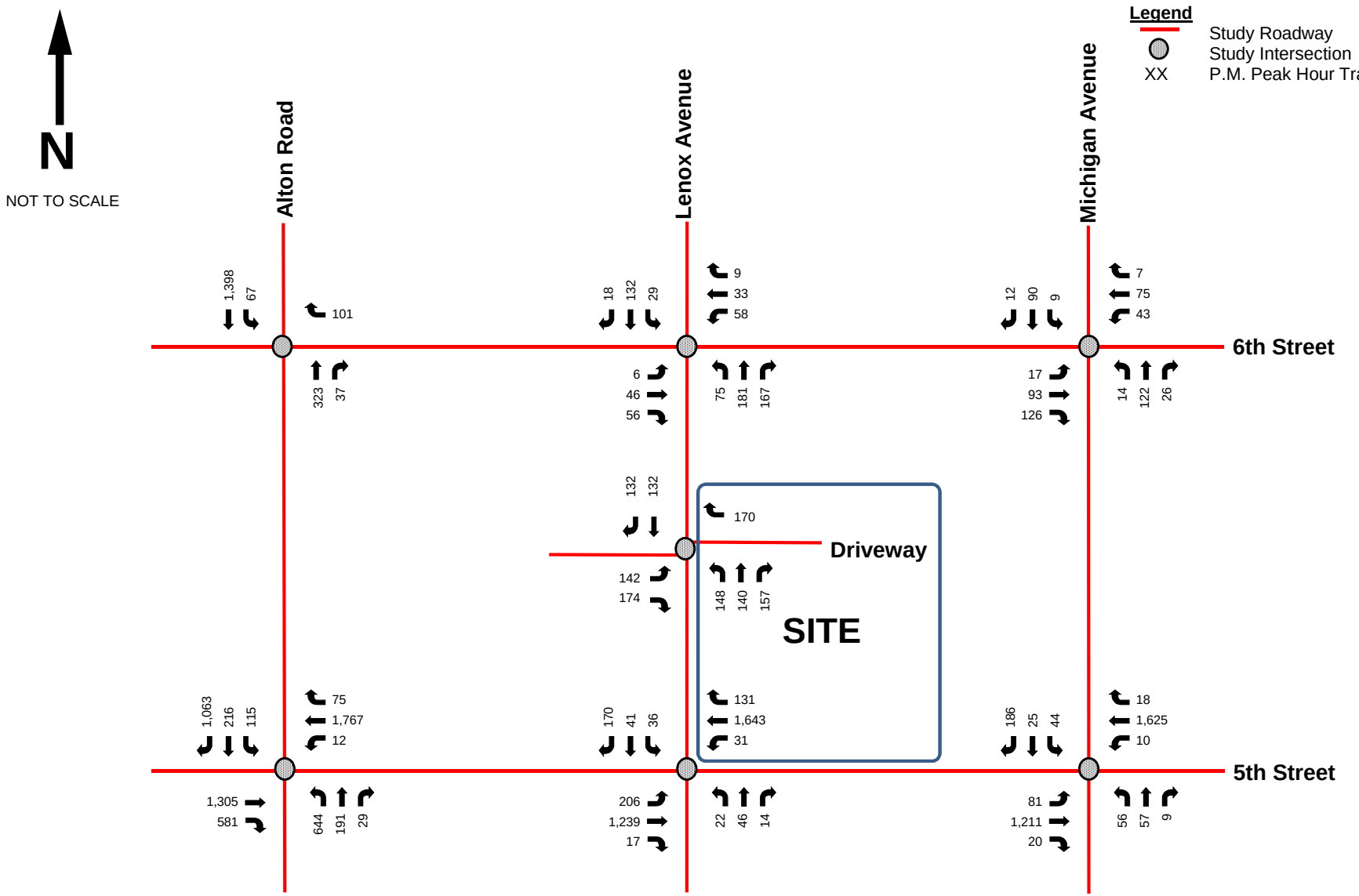
Kimley»Horn



Kimley»Horn

* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 3
Peak Hour Project Trip Assignment
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida



* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 4
Future Total Peak Hour Traffic Volumes
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			1,171	523		11	1,582	67		579	143	26		62	161	943
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS			**1,288**	**575**		**12**	**1,740**	**74**		**637**	**157**	**29**		**68**	**177**	**1,037**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road														44	25	15
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road											1				1	
TOTAL "VESTED" TRAFFIC											32			44	37	15
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH			14	6		0	19	1		7	2	0		1	2	11
PM NON-PROJECT TRAFFIC			**1,302**	**581**		**12**	**1,759**	**75**		**644**	**191**	**29**		**113**	**216**	**1,063**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																
	Exiting																
Net New Distribution	Entering			10.0%											5.0%		
	Exiting							10.0%									

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																
	Net New			3				8							2		
PM TOTAL PROJECT TRAFFIC				**3**				**8**				**0**			**2**	**0**	
PM TOTAL TRAFFIC				**1,305**	**581**		**12**	**1,767**	**75**		**644**	**191**	**29**		**115**	**216**	**1,063**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		159	1,096	15		23	1,496	67		20	39	13		33	37	153
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**175**	**1,206**	**17**		**25**	**1,646**	**74**		**22**	**43**	**14**		**36**	**41**	**168**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2	13	0		0	18	1		0	0	0		0	0	2
PM NON-PROJECT TRAFFIC		**177**	**1,263**	**17**		**25**	**1,664**	**75**		**22**	**43**	**14**		**36**	**41**	**170**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		45.0%	-45.0%				-55.0%	55.0%								
Distribution	Exiting																
Net New	Entering		15.0%						77.0%			8.0%					
Distribution	Exiting						8.0%	10.0%									

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By		24	-24				-29	29								
Trips	Net New		5				6	8	27			3					
PM TOTAL PROJECT TRAFFIC			**29**	**-24**			**6**	**-21**	**56**			**3**					
PM TOTAL TRAFFIC			**206**	**1,239**	**17**		**31**	**1,643**	**131**		**22**	**46**	**14**		**36**	**41**	**170**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.96

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		73	1,049	18		9	1,457	16		49	51	8		9	21	106
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**80**	**1,154**	**20**		**10**	**1,603**	**18**		**54**	**56**	**9**		**10**	**23**	**117**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		1	13	0		0	18	0		1	1	0		0	0	1
PM NON-PROJECT TRAFFIC		**81**	**1,211**	**20**		**10**	**1,621**	**18**		**55**	**57**	**9**		**10**	**23**	**118**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting														45.0%		55.0%
Net New	Entering							10.0%			2.0%						65.0%
Distribution	Exiting														10.0%	2.0%	18.0%

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By														26		32
Trips	Net New							4			1				8	2	36
PM TOTAL PROJECT TRAFFIC								**4**			**1**				**34**	**2**	**68**
PM TOTAL TRAFFIC			**81**	**1,211**	**20**		**10**	**1,625**	**18**		**56**	**57**	**9**		**44**	**25**	**186**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.97

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements								62		0	190	34		49	1,172	
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS								**68**		**0**	**209**	**37**		**54**	**1,289**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road											79				80	
Urban Box Self Storage - 633 Alton Road											2				2	
TOTAL "VESTED" TRAFFIC											112				93	
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH								1		0	2	0		1	14	
PM NON-PROJECT TRAFFIC								**69**		**0**	**323**	**37**		**55**	**1,396**	

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering														38.0%	5.0%	
Distribution	Exiting								43.0%								

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New								32						12	2	
PM TOTAL PROJECT TRAFFIC									**32**			**0**			**12**	**2**	
PM TOTAL TRAFFIC									**101**		**0**	**323**	**37**		**67**	**1,398**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.93

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		5	31	50		52	30	8		39	155	65		23	119	16
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**6**	**34**	**55**		**57**	**33**	**9**		**43**	**171**	**72**		**25**	**131**	**18**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	0	1		1	0	0		0	2	1		0	1	0
PM NON-PROJECT TRAFFIC		**6**	**34**	**56**		**58**	**33**	**9**		**43**	**173**	**73**		**25**	**132**	**18**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting												100.0%				
Net New	Entering			38.0%											10.0%		
Distribution	Exiting										43.0%	10.0%	47.0%				

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By												58				
Trips	Net New			12							32	8	36		4		
PM TOTAL PROJECT TRAFFIC				**12**							**32**	**8**	**94**		**4**		
PM TOTAL TRAFFIC			**6**	**46**	**56**		**58**	**33**	**9**		**75**	**181**	**167**		**29**	**132**	**18**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.88

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		12	76	25		35	67	6		13	110	24		8	79	11
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**13**	**84**	**28**		**39**	**74**	**7**		**14**	**121**	**26**		**9**	**87**	**12**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	1	0		0	1	0		0	1	0		0	1	0
PM NON-PROJECT TRAFFIC		**13**	**85**	**28**		**39**	**75**	**7**		**14**	**122**	**26**		**9**	**88**	**12**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting				100.0%												
Net New	Entering				48.0%		10.0%									7.0%	
Distribution	Exiting		7.0%	10.0%	30.0%												

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By				58												
Trips	Net New		4	8	40		4									2	
PM TOTAL PROJECT TRAFFIC			**4**	**8**	**98**		**4**									**2**	
PM TOTAL TRAFFIC			**17**	**93**	**126**		**43**	**75**	**7**		**14**	**122**	**26**		**9**	**90**	**12**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Garage Access and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.91

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		117		143						122	115				109	109
Peak Season Correction Factor	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200
PM EXISTING CONDITIONS		**140**		**172**						**146**	**138**				**131**	**131**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2		2						2	2				1	1
PM NON-PROJECT TRAFFIC		**142**		**174**						**148**	**140**				**132**	**132**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering												100.0%				
Distribution	Exiting								100.0%								
Net New	Entering												100.0%				
Distribution	Exiting								100.0%								

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By								58				53				
Trips	Net New								112				104				
PM TOTAL PROJECT TRAFFIC									**170**				**157**				
PM TOTAL TRAFFIC			**142**		**174**				**170**		**148**	**140**	**157**			**132**	**132**

Full Access Alternative

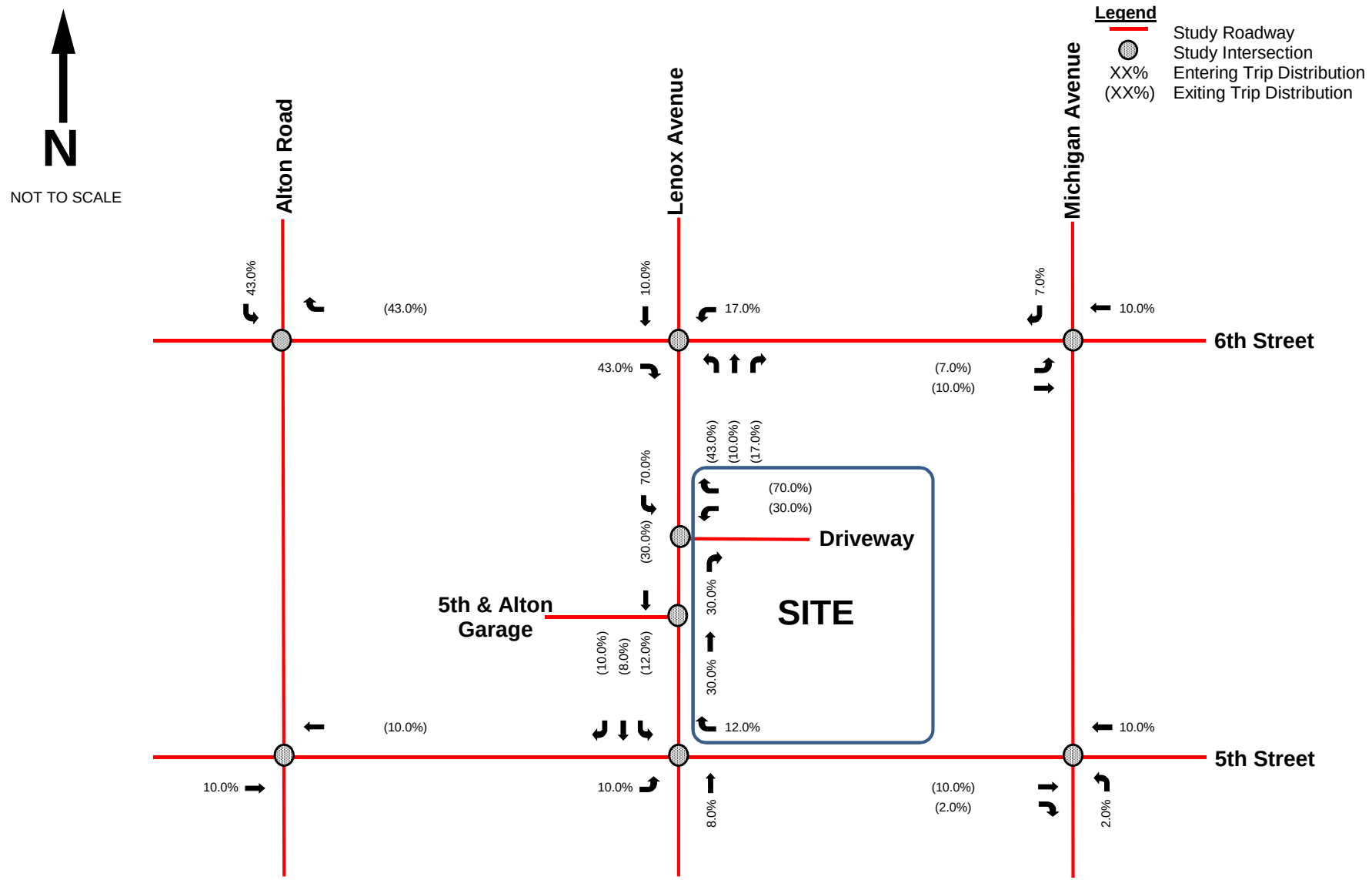


Figure 5
Peak Hour Net New Trip Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn

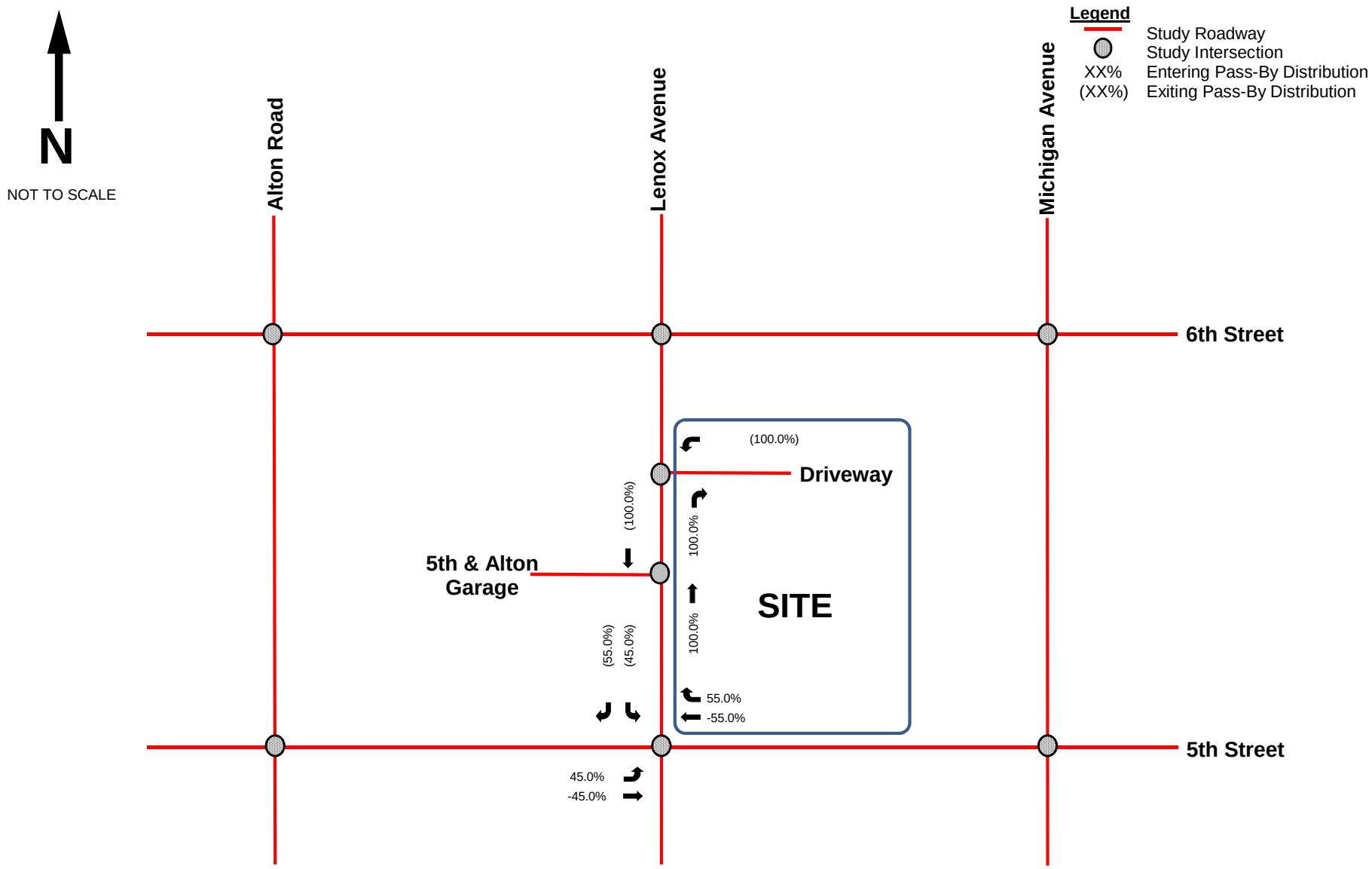
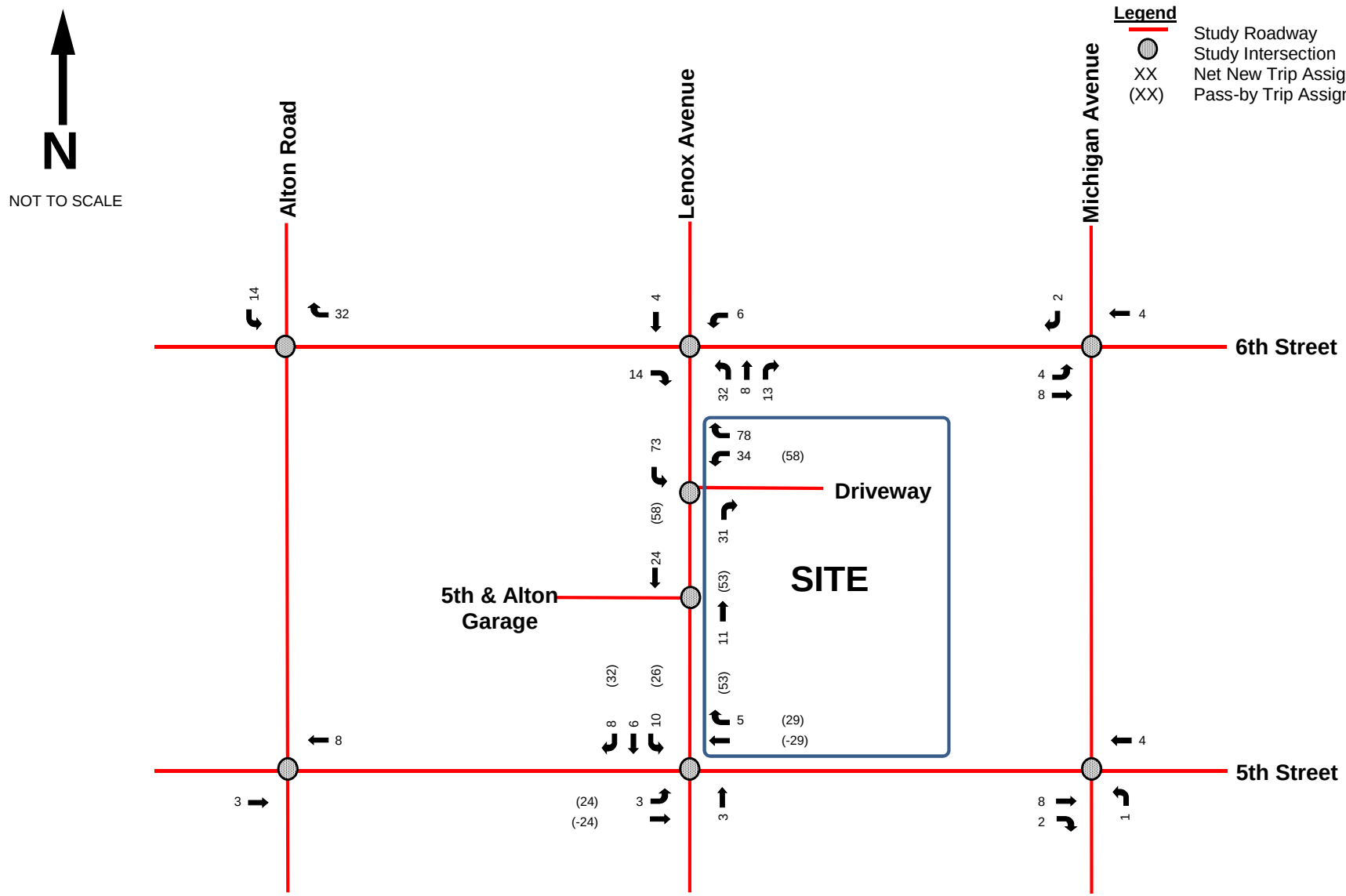


Figure 6
Peak Hour Pass-By Distribution
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

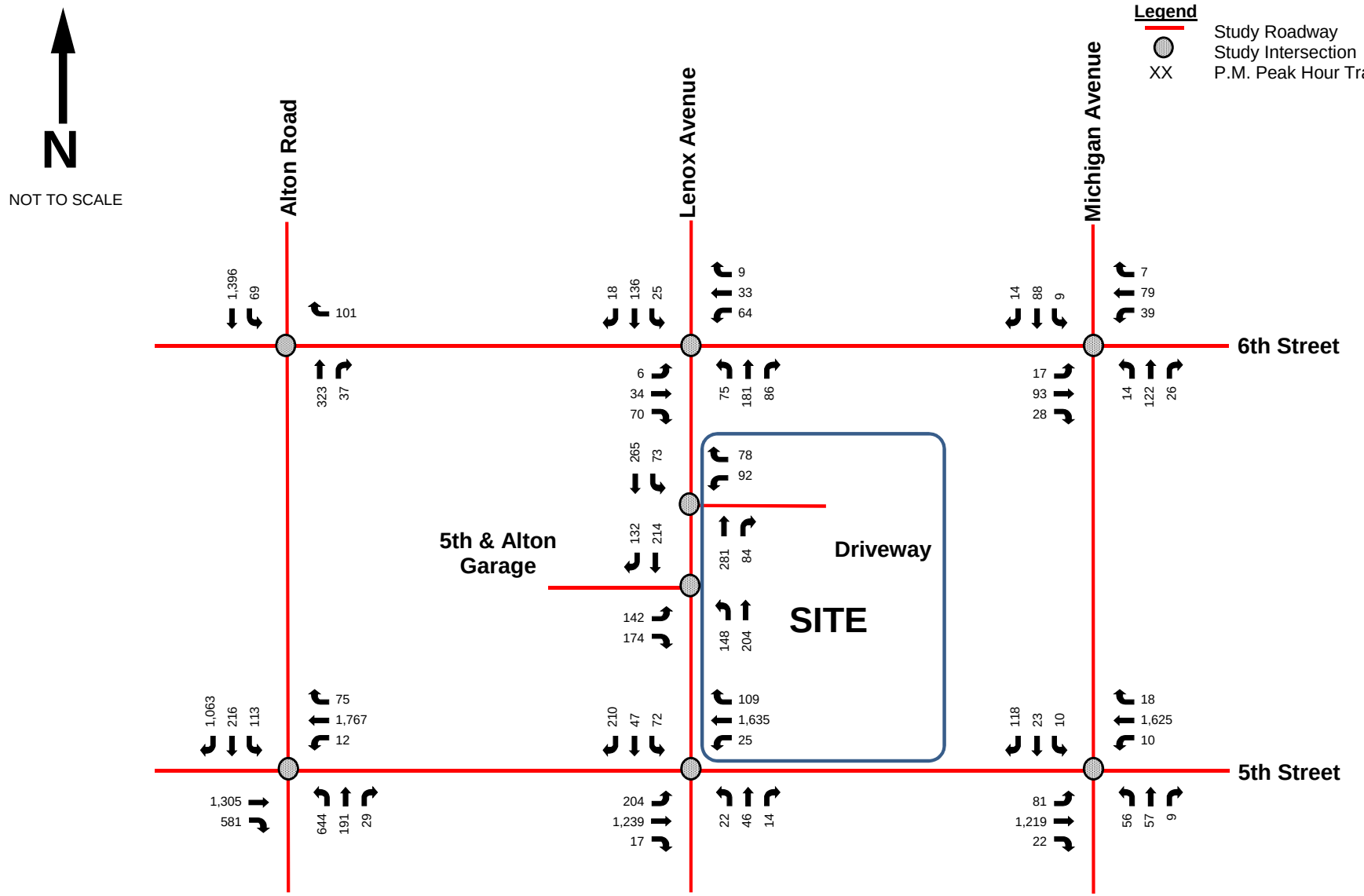
Kimley»Horn



* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 7
Peak Hour Project Trip Assignment
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn



Kimley»Horn

* The traffic volumes at the project driveway are total project volumes, while traffic volumes at external intersections are net new trips accounting for existing development.

Figure 8
Future Total Peak Hour Traffic Volumes
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements			1,171	523		11	1,582	67		579	143	26		62	161	943
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS			**1,288**	**575**		**12**	**1,740**	**74**		**637**	**157**	**29**		**68**	**177**	**1,037**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road														44	25	15
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road											1				1	
TOTAL "VESTED" TRAFFIC											32			44	37	15
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH			14	6		0	19	1		7	2	0		1	2	11
PM NON-PROJECT TRAFFIC			**1,302**	**581**		**12**	**1,759**	**75**		**644**	**191**	**29**		**113**	**216**	**1,063**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering			10.0%													
Distribution	Exiting							10.0%									

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New			3				8									
PM TOTAL PROJECT TRAFFIC				**3**				**8**				**0**				**0**	
PM TOTAL TRAFFIC				**1,305**	**581**		**12**	**1,767**	**75**		**644**	**191**	**29**		**113**	**216**	**1,063**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.94

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		159	1,096	15		23	1,496	67		20	39	13		33	37	153
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**175**	**1,206**	**17**		**25**	**1,646**	**74**		**22**	**43**	**14**		**36**	**41**	**168**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2	13	0		0	18	1		0	0	0		0	0	2
PM NON-PROJECT TRAFFIC		**177**	**1,263**	**17**		**25**	**1,664**	**75**		**22**	**43**	**14**		**36**	**41**	**170**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering		45.0%	-45.0%				-55.0%	55.0%								
Distribution	Exiting														45.0%		55.0%
Net New	Entering		10.0%						12.0%			8.0%					
Distribution	Exiting														12.0%	8.0%	10.0%

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By		24	-24				-29	29						26		32
Trips	Net New		3						5			3			10	6	8
PM TOTAL PROJECT TRAFFIC			**27**	**-24**				**-29**	**34**			**3**			**36**	**6**	**40**
PM TOTAL TRAFFIC			**204**	**1,239**	**17**		**25**	**1,635**	**109**		**22**	**46**	**14**		**72**	**47**	**210**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 5th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.96

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		73	1,049	18		9	1,457	16		49	51	8		9	21	106
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**80**	**1,154**	**20**		**10**	**1,603**	**18**		**54**	**56**	**9**		**10**	**23**	**117**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road			44													
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC			44													
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		1	13	0		0	18	0		1	1	0		0	0	1
PM NON-PROJECT TRAFFIC		**81**	**1,211**	**20**		**10**	**1,621**	**18**		**55**	**57**	**9**		**10**	**23**	**118**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering							10.0%			2.0%						
Distribution	Exiting			10.0%	2.0%												

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New			8	2			4			1						
PM TOTAL PROJECT TRAFFIC				**8**	**2**			**4**			**1**						
PM TOTAL TRAFFIC			**81**	**1,219**	**22**		**10**	**1,625**	**18**		**56**	**57**	**9**		**10**	**23**	**118**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Alton Road
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.97

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements								62		0	190	34		49	1,172	
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS								**68**		**0**	**209**	**37**		**54**	**1,289**	

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road											31				11	
Coco Bambu - 955 Alton Road											79				80	
Urban Box Self Storage - 633 Alton Road											2				2	
TOTAL "VESTED" TRAFFIC											112				93	
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH								1		0	2	0		1	14	
PM NON-PROJECT TRAFFIC								**69**		**0**	**323**	**37**		**55**	**1,396**	

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering														43.0%		
Distribution	Exiting								43.0%								

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New								32						14		
PM TOTAL PROJECT TRAFFIC									**32**			**0**			**14**	**0**	
PM TOTAL TRAFFIC									**101**		**0**	**323**	**37**		**69**	**1,396**	

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Lenox Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.93

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		5	31	50		52	30	8		39	155	65		23	119	16
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**6**	**34**	**55**		**57**	**33**	**9**		**43**	**171**	**72**		**25**	**131**	**18**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	0	1		1	0	0		0	2	1		0	1	0
PM NON-PROJECT TRAFFIC		**6**	**34**	**56**		**58**	**33**	**9**		**43**	**173**	**73**		**25**	**132**	**18**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering				43.0%		17.0%									10.0%	
Distribution	Exiting										43.0%	10.0%	17.0%				

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New				14		6				32	8	13			4	
PM TOTAL PROJECT TRAFFIC					**14**		**6**				**32**	**8**	**13**			**4**	
PM TOTAL TRAFFIC			**6**	**34**	**70**		**64**	**33**	**9**		**75**	**181**	**86**		**25**	**136**	**18**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: 6th Street and Michigan Avenue
COUNT DATE: February 18, 2016
PM PEAK HOUR FACTOR: 0.88

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		12	76	25		35	67	6		13	110	24		8	79	11
Peak Season Correction Factor	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
PM EXISTING CONDITIONS		**13**	**84**	**28**		**39**	**74**	**7**		**14**	**121**	**26**		**9**	**87**	**12**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		0	1	0		0	1	0		0	1	0		0	1	0
PM NON-PROJECT TRAFFIC		**13**	**85**	**28**		**39**	**75**	**7**		**14**	**122**	**26**		**9**	**88**	**12**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Net New	Entering							10.0%									7.0%
Distribution	Exiting		7.0%	10.0%													

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By																
Trips	Net New		4	8				4									2
PM TOTAL PROJECT TRAFFIC			**4**	**8**				**4**									**2**
PM TOTAL TRAFFIC			**17**	**93**	**28**		**39**	**79**	**7**		**14**	**122**	**26**		**9**	**88**	**14**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Lenox Avenue and Fifth & Alton Garage
COUNT DATE: September 28, 2016
PM PEAK HOUR FACTOR: 0.91

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		117		143						122	115				109	109
Peak Season Correction Factor	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200
PM EXISTING CONDITIONS		**140**		**172**						**146**	**138**				**131**	**131**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH		2		2						2	2				1	1
PM NON-PROJECT TRAFFIC		**142**		**174**						**148**	**140**				**132**	**132**

"PROJECT DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering											100.0%					
Distribution	Exiting															100.0%	
Net New	Entering											30.0%					
Distribution	Exiting															30.0%	

"PM PROJECT TRAFFIC"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By											53				58	
Trips	Net New											11				24	
PM TOTAL PROJECT TRAFFIC												**64**				**82**	
PM TOTAL TRAFFIC			**142**		**174**						**148**	**204**				**214**	**132**

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: Lenox Avenue and Proposed Retail Development
COUNT DATE: September 28, 2016
PM PEAK HOUR FACTOR: 0.91

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements											232				218	
Peak Season Correction Factor	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200
PM EXISTING CONDITIONS											**278**				**262**	

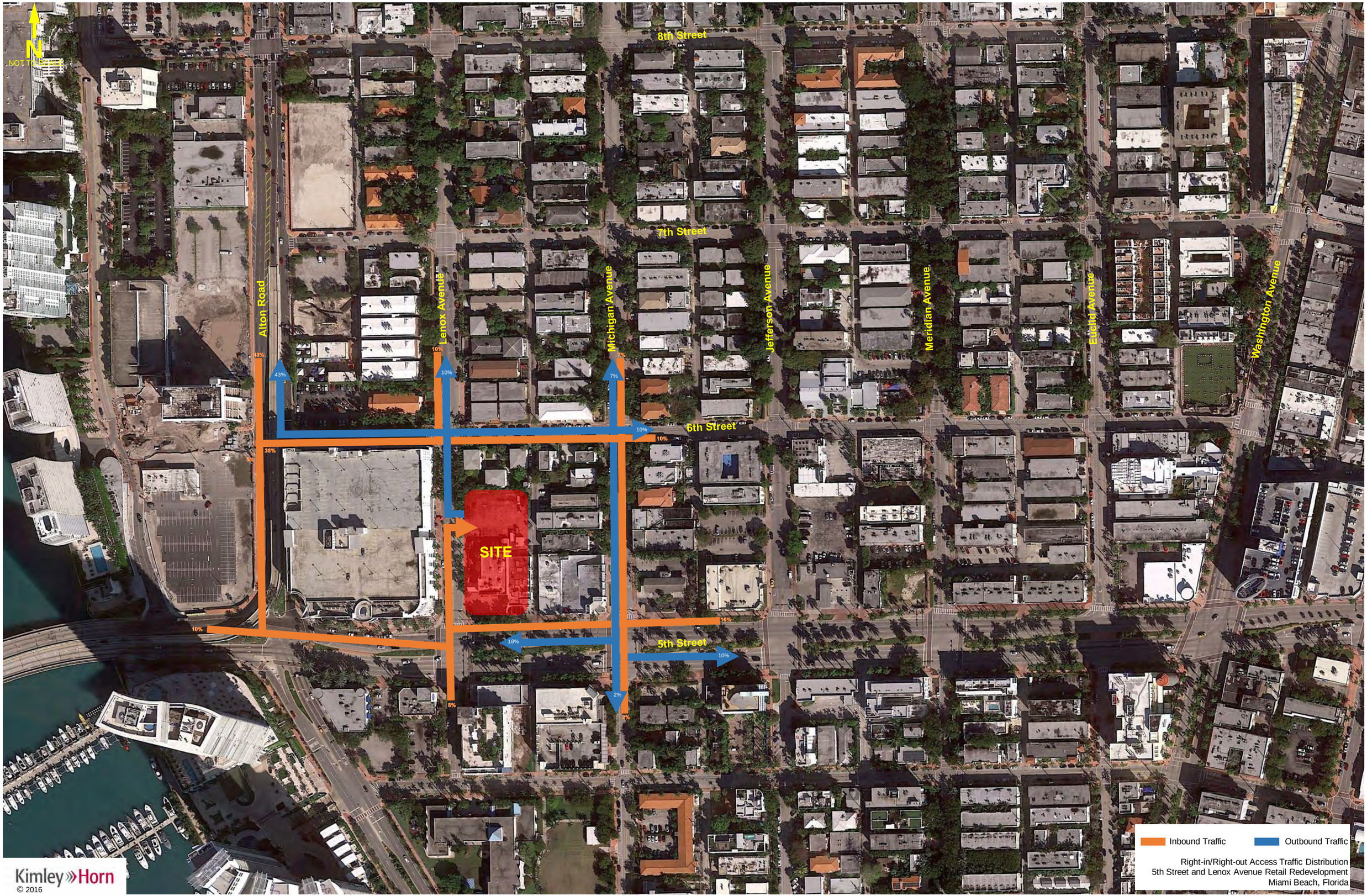
"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
600 Alton Road																
Baptist Health Urgent Care - 709 Alton Road																
Coco Bambu - 955 Alton Road																
Urban Box Self Storage - 633 Alton Road																
TOTAL "VESTED" TRAFFIC																
Years To Buildout	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yearly Growth Rate	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
PM BACKGROUND TRAFFIC GROWTH											3				3	
PM NON-PROJECT TRAFFIC											**281**				**265**	

"PROJECT DISTRUBUTION" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering												100.0%				
Distribution	Exiting						100.0%										
Net New	Entering												30.0%		70.0%		
Distribution	Exiting						30.0%		70.0%								

"PM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project	Pass - By						58						53				
Trips	Net New						34		78				31		73		
PM TOTAL PROJECT TRAFFIC							**92**		**78**				**84**		**73**		
PM TOTAL TRAFFIC							**92**		**78**			**281**	**84**		**73**	**265**	

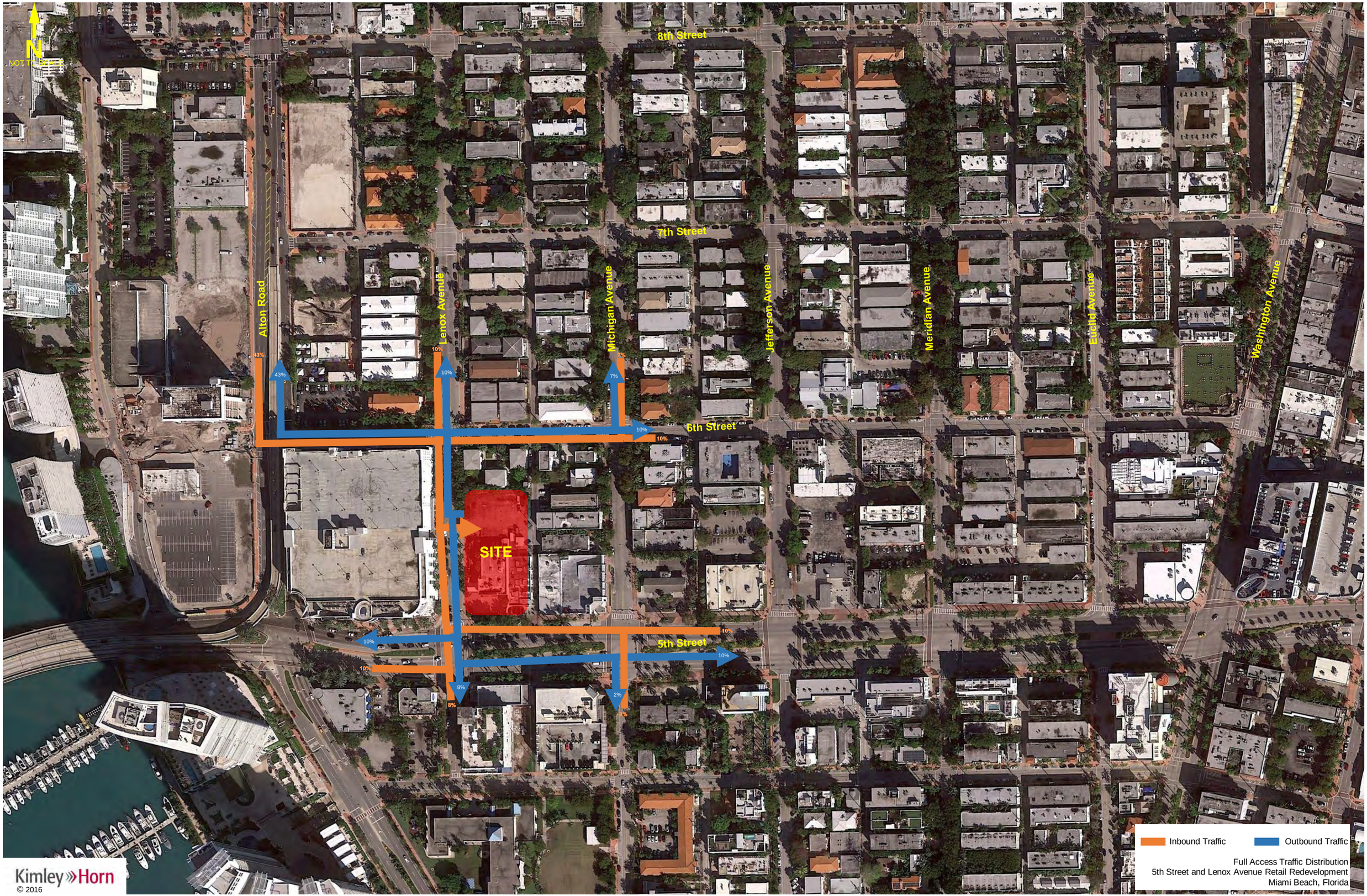
Attachment C

Approved Right-in/Right-out Access



Kimley»Horn

Full Access Alternative



Attachment D

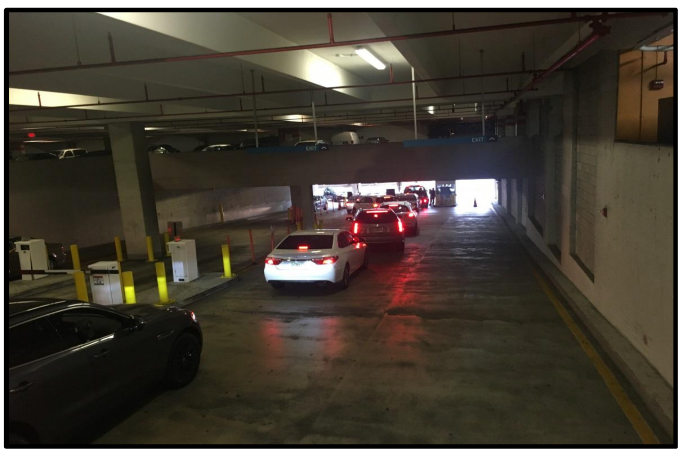
Field-Observed Queues

Intersection: Lenox Avenue and Fifth & Alton Garage Driveway
Date: 3/2/17

Time	Vehicle Queue				
	Lane 1	Lane 2	Lane 3	Total Veh	Total Veh/hr
2:00 PM	1	0	1	2	-
2:01 PM	0	1	0	1	-
2:02 PM	0	0	2	2	-
2:03 PM	0	1	1	2	-
2:04 PM	2	2	1	5	-
2:05 PM	1	0	0	1	-
2:06 PM	0	0	2	2	-
2:07 PM	0	0	1	1	-
2:08 PM	0	1	0	1	-
2:09 PM	0	0	1	1	-
2:10 PM	1	0	2	3	-
2:11 PM	0	2	1	3	-
2:12 PM	0	0	2	2	-
2:13 PM	2	0	0	2	-
2:14 PM	1	0	1	2	-
2:15 PM	0	3	1	4	-
2:16 PM	0	1	2	3	-
2:17 PM	0	0	1	1	-
2:18 PM	1	0	0	1	-
2:19 PM	1	1	0	2	-
2:20 PM	0	0	2	2	-
2:21 PM	0	0	1	1	-
2:22 PM	1	1	1	3	-
2:23 PM	0	0	0	0	-
2:24 PM	0	0	0	0	-
2:25 PM	0	1	1	2	-
2:26 PM	0	0	0	0	-
2:27 PM	2	0	0	2	-
2:28 PM	1	2	1	4	-
2:29 PM	0	0	2	2	-
2:30 PM	0	1	1	2	-
2:31 PM	0	0	2	2	-
2:32 PM	1	1	2	4	133
2:33 PM	0	1	3	4	134
2:34 PM	1	1	2	4	137
2:35 PM	2	2	2	6	140
2:36 PM	0	3	3	6	139
2:37 PM	0	1	1	2	146
2:38 PM	0	2	1	3	153
2:39 PM	1	0	0	1	158
2:40 PM	0	0	0	0	164
2:41 PM	0	2	2	4	167
2:42 PM	0	0	0	0	167
2:43 PM	0	0	1	1	165
2:44 PM	1	0	1	2	163
2:45 PM	1	1	1	3	162
2:46 PM	1	1	1	3	161
2:47 PM	0	0	0	0	161
2:48 PM	1	1	0	2	158
2:49 PM	0	3	2	5	157
2:50 PM	1	3	0	4	158
2:51 PM	0	1	1	2	161
2:52 PM	0	0	1	1	161
2:53 PM	0	2	2	4	164
2:54 PM	0	1	1	2	166
2:55 PM	0	2	3	5	168
2:56 PM	0	0	2	2	175
2:57 PM	0	0	1	1	179
2:58 PM	0	0	0	0	183
2:59 PM	0	1	0	1	187
3:00 PM	1	1	1	3	189
3:01 PM	0	2	2	4	192
3:02 PM	0	2	3	5	199
3:03 PM	0	0	1	1	206
CASHIER LANE CLOSED					
3:19 PM	3	5	4	12	212
3:20 PM	2	2	4	8	212
3:21 PM	1	3	3	7	211
3:22 PM	1	2	4	7	211
3:23 PM	1	2	1	4	207
3:24 PM	0	0	1	1	203
3:25 PM	0	1	0	1	205
3:26 PM	0	1	0	1	205
3:27 PM	0	0	1	1	208
3:28 PM	1	0	0	1	210
3:29 PM	1	0	1	2	209
3:30 PM	0	0	1	1	210
3:31 PM	0	1	1	2	209
3:32 PM	1	1	0	2	208
3:33 PM	1	1	2	4	-
3:34 PM	0	1	1	2	-
3:35 PM	0	3	2	5	-
3:36 PM	0	1	2	3	-
3:37 PM	0	3	2	5	-
3:38 PM	1	4	2	7	-
3:39 PM	1	1	2	4	-
3:40 PM	2	1	3	6	-
3:41 PM	0	2	2	4	-
3:42 PM	0	3	1	4	-
3:43 PM	1	3	3	7	-
3:44 PM	2	3	4	9	-
3:45 PM	3	2	4	9	-
3:46 PM	3	1	4	8	-
3:47 PM	0	0	4	4	-
3:48 PM	0	2	1	3	-
3:49 PM	1	1	2	4	-
3:50 PM	1	0	1	2	-
3:51 PM	1	1	0	2	-
3:52 PM	1	1	2	4	-
3:53 PM	0	2	1	3	-
3:54 PM	2	1	1	4	-
3:55 PM	0	1	1	2	-
3:56 PM	1	2	0	3	-
3:57 PM	0	1	0	1	-
3:58 PM	0	0	0	0	-
3:59 PM	0	1	0	1	-
Peak Hour Total	35	80	97		
Average Queue (veh)	0.58	1.33	1.62		
Average Queue (feet)	12.83	29.33	35.57		

(1)

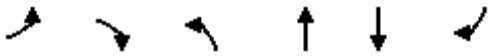
Data Collected During Cashier Lane Closure				
3:04 PM	0	0	0	0
3:05 PM	0	1	0	1
3:06 PM	1	1	0	2
3:07 PM	0	2	0	2
3:08 PM	2	2	0	4
3:09 PM	3	3	0	6
3:10 PM	3	3	0	6
3:11 PM	3	3	0	6
3:12 PM	1	4	0	5
3:13 PM	0	9	0	9
3:14 PM	0	8	0	8
3:15 PM	3	9	0	12
3:16 PM	4	16	0	20
3:17 PM	3	13	0	16
3:18 PM	4	11	0	15



Cashier Lane Closure

Note: (1)Excluding Cashier Lane Closure

Existing Conditions Capacity Analysis



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	140	172	146	138	131	131
Future Volume (Veh/h)	140	172	146	138	131	131
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	154	189	160	152	144	144
Pedestrians	72			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	7			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				321		
pX, platoon unblocked						
vC, conflicting volume	684	294	360			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	684	294	360			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	50	71	86			
cM capacity (veh/h)	305	650	1113			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1
Volume Total	154	189	160	76	76	288
Volume Left	154	0	160	0	0	0
Volume Right	0	189	0	0	0	144
cSH	305	650	1113	1700	1700	1700
Volume to Capacity	0.50	0.29	0.14	0.04	0.04	0.17
Queue Length 95th (ft)	67	30	13	0	0	0
Control Delay (s)	28.3	12.8	8.8	0.0	0.0	0.0
Lane LOS	D	B	A			
Approach Delay (s)	19.7		4.5			0.0
Approach LOS	C					

Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

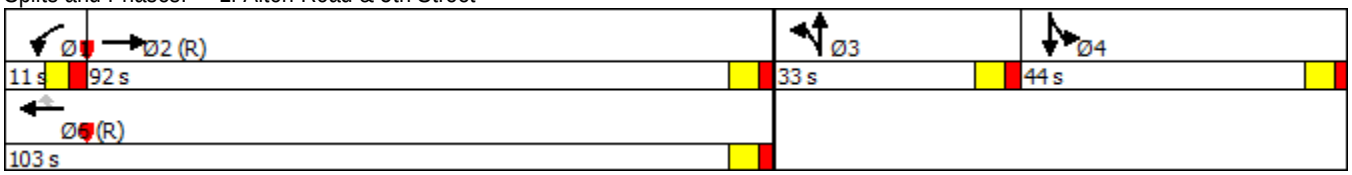
Approved Right-in/Right-out Access

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	581	12	1767	75	644	191	29	115	216	1063
Future Volume (vph)	0	1305	581	12	1767	75	644	191	29	115	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1388	618	13	1880	80	685	203	31	122	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1388	618	13	1880	55	685	231	0	0	352	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.2	180.0	5.2	98.1	98.1	27.0	27.0			36.9	180.0
Effective Green, g (s)		87.2	180.0	5.2	98.1	98.1	27.0	27.0			36.9	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.54	0.54	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1714	1539	51	1928	848	514	264			375	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.98	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.4	0.0	85.5	39.8	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.38	0.68	0.18	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.3	0.8	0.8	13.5	0.1	162.6	25.7			31.1	3.0
Delay (s)		43.6	0.8	118.9	40.7	3.6	239.1	100.5			101.6	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.4			39.7			203.8			26.4	
Approach LOS		C			D			F			C	

Intersection Summary

HCM 2000 Control Delay	57.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

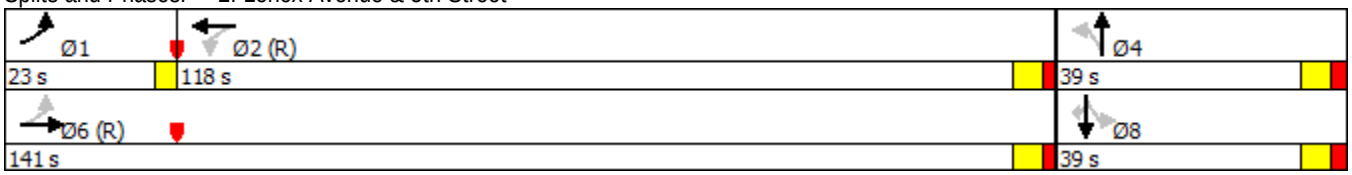
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	206	1239	31	1643	22	46	36	41	170
Future Volume (vph)	206	1239	31	1643	22	46	36	41	170
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	1239	17	31	1643	131	22	46	14	36	41	170
Future Volume (veh/h)	206	1239	17	31	1643	131	22	46	14	36	41	170
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.94	0.90		0.82	0.88		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	219	1318	18	33	1748	139	23	49	15	38	44	181
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	3887	53	317	3285	260	71	141	39	129	140	231
Arrive On Green	0.07	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4780	379	257	794	219	563	787	1299
Grp Volume(v), veh/h	219	866	470	33	1238	649	87	0	0	82	0	181
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1769	1270	0	0	1350	0	1299
Q Serve(g_s), s	6.6	0.0	0.0	1.4	11.0	11.1	3.1	0.0	0.0	0.0	0.0	24.0
Cycle Q Clear(g_c), s	6.6	0.0	0.0	1.4	11.0	11.1	13.7	0.0	0.0	10.6	0.0	24.0
Prop In Lane	1.00		0.04	1.00		0.21	0.26		0.17	0.46		1.00
Lane Grp Cap(c), veh/h	277	2553	1387	317	2330	1216	251	0	0	269	0	231
V/C Ratio(X)	0.79	0.34	0.34	0.10	0.53	0.53	0.35	0.00	0.00	0.30	0.00	0.78
Avail Cap(c_a), veh/h	387	2553	1387	317	2330	1216	255	0	0	273	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.85	0.85	0.85	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.1	0.0	0.0	2.5	2.9	2.9	65.5	0.0	0.0	64.7	0.0	70.7
Incr Delay (d2), s/veh	2.3	0.2	0.3	0.6	0.7	1.4	0.6	0.0	0.0	0.5	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.1	0.1	0.2	5.1	5.6	3.9	0.0	0.0	3.6	0.0	9.6
LnGrp Delay(d),s/veh	13.4	0.2	0.3	3.0	3.6	4.3	66.1	0.0	0.0	65.2	0.0	85.9
LnGrp LOS	B	A	A	A	A	A	E			E		F
Approach Vol, veh/h		1555			1920			87			263	
Approach Delay, s/veh		2.1			3.9			66.1			79.4	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.7		38.5		141.5		38.5
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	13.1		15.7		2.0		26.0
Green Ext Time (p_c), s	0.2	15.3		1.3		15.3		0.8

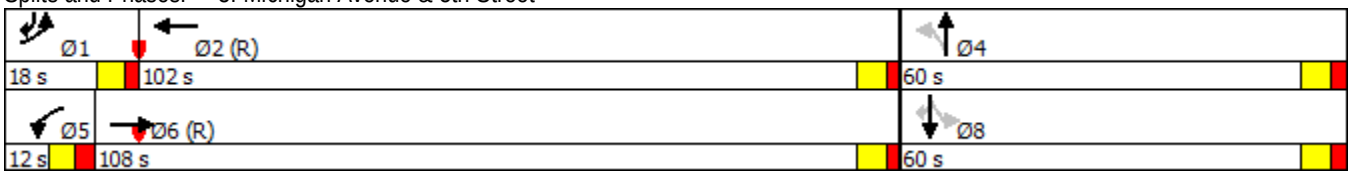
Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1211	10	1625	56	57	44	25	186
Future Volume (vph)	81	1211	10	1625	56	57	44	25	186
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1211	20	10	1625	18	56	57	9	44	25	186
Future Volume (veh/h)	81	1211	20	10	1625	18	56	57	9	44	25	186
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.96		0.92	0.96		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1261	21	10	1693	19	58	59	9	46	26	194
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3524	59	49	3411	38	112	106	14	167	87	355
Arrive On Green	0.08	0.91	0.91	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5141	86	1774	5176	58	451	579	79	732	478	1445
Grp Volume(v), veh/h	84	832	450	10	1109	603	126	0	0	72	0	194
Grp Sat Flow(s),veh/h/ln	1774	1695	1836	1774	1695	1844	1109	0	0	1209	0	1445
Q Serve(g_s), s	8.4	5.8	5.8	1.0	12.9	12.9	12.2	0.0	0.0	0.0	0.0	21.2
Cycle Q Clear(g_c), s	8.4	5.8	5.8	1.0	12.9	12.9	22.0	0.0	0.0	9.8	0.0	21.2
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.64		1.00
Lane Grp Cap(c), veh/h	101	2324	1259	49	2234	1215	232	0	0	254	0	355
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.50	0.50	0.54	0.00	0.00	0.28	0.00	0.55
Avail Cap(c_a), veh/h	121	2324	1259	57	2234	1215	392	0	0	418	0	520
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.8	2.8	84.7	4.6	4.6	70.9	0.0	0.0	63.8	0.0	60.1
Incr Delay (d2), s/veh	26.6	0.4	0.8	0.7	0.8	1.5	1.5	0.0	0.0	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.8	3.1	0.5	6.0	6.8	6.0	0.0	0.0	3.2	0.0	8.6
LnGrp Delay(d),s/veh	108.9	3.2	3.5	85.5	5.4	6.0	72.4	0.0	0.0	64.3	0.0	61.0
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1366			1722			126			266	
Approach Delay, s/veh		9.8			6.1			72.4			61.9	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	124.6		39.4	11.2	129.4		39.4
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.9		24.0	3.0	7.8		23.2
Green Ext Time (p_c), s	0.0	11.8		1.6	0.0	11.8		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

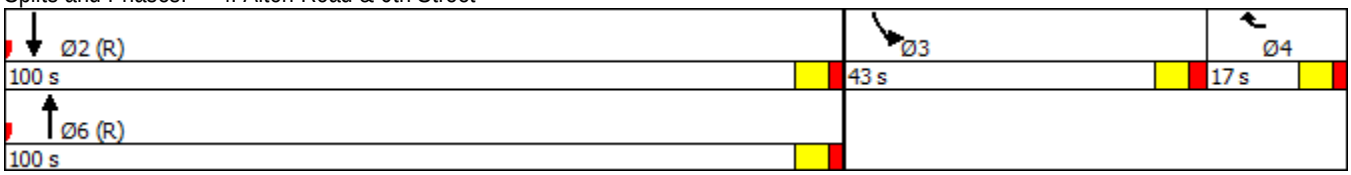
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	101	323	67	1398
Future Volume (vph)	101	323	67	1398
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	101	323	37	67	1398
Future Volume (vph)	0	101	323	37	67	1398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	104	333	38	69	1441
RTOR Reduction (vph)	0	99	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	69	1441
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.9		11.1	123.9
Effective Green, g (s)		7.0	123.9		11.1	123.9
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2625		122	2740
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.06	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		72.1	6.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		4.8	0.7
Delay (s)		73.5	4.7		76.9	7.6
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.7			10.8
Approach LOS	E		A			B

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	46	56	0	58	33	9	0	75	181	167
Future Vol, veh/h	0	6	46	56	0	58	33	9	0	75	181	167
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	49	60	0	62	35	10	0	81	195	180
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	9.5	9.9	10.9
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	0%	6%	58%	16%
Vol Thru, %	71%	0%	43%	33%	74%
Vol Right, %	0%	100%	52%	9%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	167	108	100	179
LT Vol	75	0	6	58	29
Through Vol	181	0	46	33	132
RT Vol	0	167	56	9	18
Lane Flow Rate	275	180	116	108	192
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.418	0.23	0.173	0.171	0.279
Departure Headway (Hd)	5.463	4.61	5.356	5.725	5.219
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	767	672	629	693
Service Time	3.262	2.408	3.371	3.741	3.219
HCM Lane V/C Ratio	0.422	0.235	0.173	0.172	0.277
HCM Control Delay	12.2	8.8	9.5	9.9	10.2
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	2.1	0.9	0.6	0.6	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	29	132	18
Future Vol, veh/h	0	29	132	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	31	142	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	17	93	126	0	43	75	7	0	14	122	26
Future Vol, veh/h	0	17	93	126	0	43	75	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	106	143	0	49	85	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	10.1	9.4	9.8
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	7%	34%	8%
Vol Thru, %	75%	39%	60%	81%
Vol Right, %	16%	53%	6%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	236	125	111
LT Vol	14	17	43	9
Through Vol	122	93	75	90
RT Vol	26	126	7	12
Lane Flow Rate	184	268	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.255	0.342	0.2	0.179
Departure Headway (Hd)	4.989	4.586	5.068	5.1
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	712	778	700	695
Service Time	3.073	2.658	3.154	3.19
HCM Lane V/C Ratio	0.258	0.344	0.203	0.181
HCM Control Delay	9.8	10.1	9.4	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	1	1.5	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	9	90	12
Future Vol, veh/h	0	9	90	12
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	102	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.3
HCM LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	0	174	0	0	170	148	140	157	0	132	132
Future Volume (Veh/h)	142	0	174	0	0	170	148	140	157	0	132	132
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	0	191	0	0	187	163	154	173	0	145	145
Pedestrians		84			49			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		8			5			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								302				
pX, platoon unblocked												
vC, conflicting volume	898	1004	308	1031	990	220	374			376		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	1004	308	1031	990	220	374			376		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	70	100	100	75	85			100		
cM capacity (veh/h)	129	179	628	99	183	743	1087			1124		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	NB 3	SB 1
Volume Total	156	191	187	163	103	224	290
Volume Left	156	0	0	163	0	0	0
Volume Right	0	191	187	0	0	173	145
cSH	129	628	743	1087	1700	1700	1700
Volume to Capacity	1.21	0.30	0.25	0.15	0.06	0.13	0.17
Queue Length 95th (ft)	239	32	25	13	0	0	0
Control Delay (s)	213.4	13.2	11.5	8.9	0.0	0.0	0.0
Lane LOS	F	B	B	A			
Approach Delay (s)	103.2		11.5	3.0			0.0
Approach LOS	F		B				

Intersection Summary			
Average Delay	30.0		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

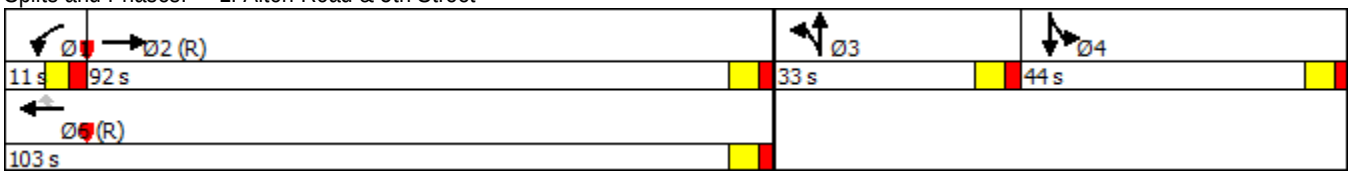
Full Access Alternative

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Future Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1388	618	13	1880	80	685	203	31	120	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1388	618	13	1880	55	685	231	0	0	350	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Effective Green, g (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.55	0.55	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1716	1539	51	1930	848	514	264			374	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.97	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.3	0.0	85.5	39.7	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.37	0.65	0.14	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.2	0.8	0.8	13.2	0.1	162.6	25.7			30.7	3.0
Delay (s)		43.5	0.8	117.9	39.2	2.7	239.1	100.5			101.1	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.3			38.2			203.8			26.2	
Approach LOS		C			D			F			C	

Intersection Summary

HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

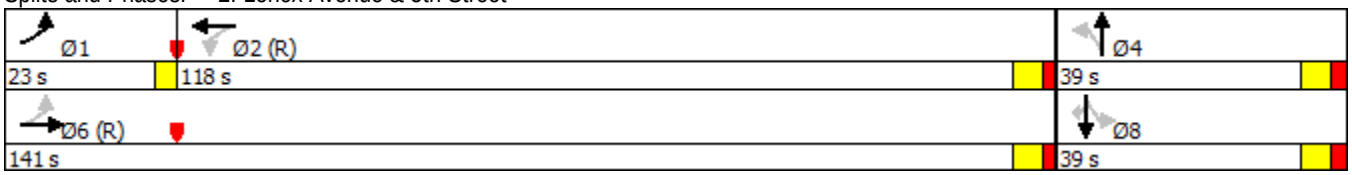
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	204	1239	25	1635	22	46	72	47	210
Future Volume (vph)	204	1239	25	1635	22	46	72	47	210
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Future Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.90	0.95		0.82	1.00		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	217	1318	18	27	1739	116	23	49	15	77	50	223
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	3871	53	316	3308	220	34	62	15	110	63	235
Arrive On Green	0.07	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4834	322	47	344	82	430	348	1304
Grp Volume(v), veh/h	217	866	470	27	1218	637	87	0	0	127	0	223
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1766	473	0	0	778	0	1304
Q Serve(g_s), s	6.6	0.2	0.2	1.2	11.1	11.2	4.0	0.0	0.0	0.0	0.0	30.4
Cycle Q Clear(g_c), s	6.6	0.2	0.2	1.2	11.1	11.2	32.5	0.0	0.0	28.5	0.0	30.4
Prop In Lane	1.00		0.04	1.00		0.18	0.26		0.17	0.61		1.00
Lane Grp Cap(c), veh/h	281	2543	1381	316	2320	1208	111	0	0	173	0	235
V/C Ratio(X)	0.77	0.34	0.34	0.09	0.53	0.53	0.79	0.00	0.00	0.74	0.00	0.95
Avail Cap(c_a), veh/h	391	2543	1381	316	2320	1208	111	0	0	173	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.1	0.1	2.6	3.1	3.1	71.1	0.0	0.0	71.3	0.0	72.9
Incr Delay (d2), s/veh	1.9	0.2	0.3	0.5	0.7	1.4	29.3	0.0	0.0	14.4	0.0	44.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.1	0.2	0.2	5.3	5.7	5.2	0.0	0.0	6.9	0.0	13.9
LnGrp Delay(d),s/veh	12.0	0.2	0.4	3.1	3.8	4.5	100.3	0.0	0.0	85.7	0.0	116.9
LnGrp LOS	B	A	A	A	A	A	F			F		F
Approach Vol, veh/h		1553			1882			87			350	
Approach Delay, s/veh		1.9			4.0			100.3			105.6	
Approach LOS		A			A			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.2		39.0		141.0		39.0
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	13.2		34.5		2.2		32.4
Green Ext Time (p_c), s	0.2	14.8		0.0		14.8		0.0

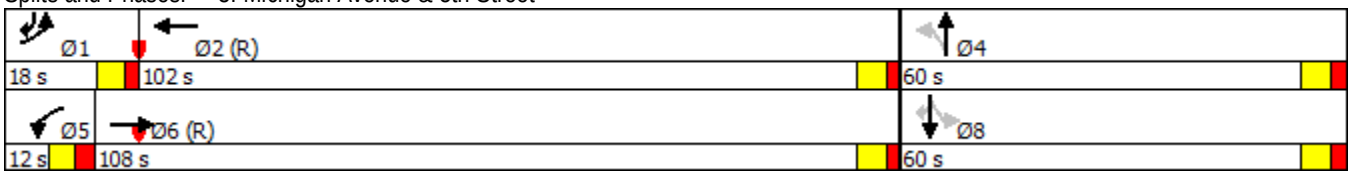
Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1219	10	1625	56	57	10	23	118
Future Volume (vph)	81	1219	10	1625	56	57	10	23	118
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Future Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.95		0.91	0.95		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1270	23	10	1693	19	58	59	9	10	24	123
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3549	64	49	3443	39	136	131	18	96	218	345
Arrive On Green	0.08	0.92	0.92	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5131	93	1774	5176	58	606	741	104	397	1234	1441
Grp Volume(v), veh/h	84	839	454	10	1109	603	126	0	0	34	0	123
Grp Sat Flow(s),veh/h/ln	1774	1695	1834	1774	1695	1844	1451	0	0	1631	0	1441
Q Serve(g_s), s	8.4	5.3	5.3	1.0	12.0	12.0	11.2	0.0	0.0	0.0	0.0	12.9
Cycle Q Clear(g_c), s	8.4	5.3	5.3	1.0	12.0	12.0	14.0	0.0	0.0	2.8	0.0	12.9
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.29		1.00
Lane Grp Cap(c), veh/h	101	2345	1268	49	2255	1227	286	0	0	314	0	345
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.49	0.49	0.44	0.00	0.00	0.11	0.00	0.36
Avail Cap(c_a), veh/h	121	2345	1268	57	2255	1227	459	0	0	511	0	519
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.4	2.4	84.7	4.2	4.2	66.6	0.0	0.0	62.1	0.0	57.8
Incr Delay (d2), s/veh	26.6	0.4	0.7	0.7	0.8	1.4	0.8	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.5	2.8	0.5	5.6	6.3	5.7	0.0	0.0	1.4	0.0	5.2
LnGrp Delay(d),s/veh	108.9	2.8	3.2	85.5	4.9	5.6	67.4	0.0	0.0	62.2	0.0	58.2
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1377			1722			126			157	
Approach Delay, s/veh		9.4			5.6			67.4			59.1	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	125.7		38.3	11.2	130.5		38.3
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.0		16.0	3.0	7.3		14.9
Green Ext Time (p_c), s	0.0	11.9		1.2	0.0	11.9		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

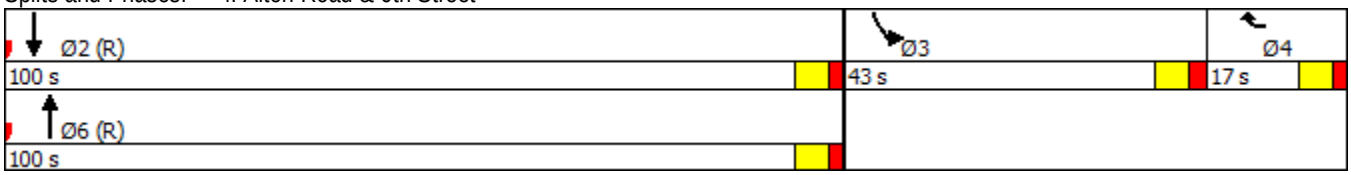
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	101	323	69	1396
Future Volume (vph)	101	323	69	1396
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	101	323	37	69	1396
Future Volume (vph)	0	101	323	37	69	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	104	333	38	71	1439
RTOR Reduction (vph)	0	99	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	71	1439
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.7		11.3	123.7
Effective Green, g (s)		7.0	123.7		11.3	123.7
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2621		125	2736
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.06	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		72.0	6.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		4.7	0.7
Delay (s)		73.5	4.7		76.7	7.7
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.7			10.9
Approach LOS	E		A			B

Intersection Summary

HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Future Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	37	75	0	69	35	10	0	81	195	92
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	1	1
HCM Control Delay	9.2	9.8	11.1
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	0%	5%	60%	14%
Vol Thru, %	71%	0%	31%	31%	76%
Vol Right, %	0%	100%	64%	8%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	86	110	106	179
LT Vol	75	0	6	64	25
Through Vol	181	0	34	33	136
RT Vol	0	86	70	9	18
Lane Flow Rate	275	92	118	114	192
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.418	0.119	0.167	0.174	0.27
Departure Headway (Hd)	5.467	4.614	5.069	5.503	5.052
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	768	699	644	703
Service Time	3.248	2.394	3.166	3.603	3.143
HCM Lane V/C Ratio	0.422	0.12	0.169	0.177	0.273
HCM Control Delay	12.2	8	9.2	9.8	10
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	2.1	0.4	0.6	0.6	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	136	18
Future Vol, veh/h	0	25	136	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	146	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10
HCM LOS	A

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Future Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	106	32	0	44	90	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

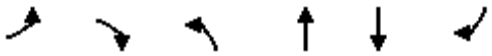
Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.1	9.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	12%	31%	8%
Vol Thru, %	75%	67%	63%	79%
Vol Right, %	16%	20%	6%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	138	125	111
LT Vol	14	17	39	9
Through Vol	122	93	79	88
RT Vol	26	28	7	14
Lane Flow Rate	184	157	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.242	0.207	0.193	0.169
Departure Headway (Hd)	4.735	4.761	4.901	4.827
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	750	729	739
Service Time	2.788	2.817	2.958	2.884
HCM Lane V/C Ratio	0.244	0.209	0.195	0.171
HCM Control Delay	9.3	9.1	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.8	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	9	88	14
Future Vol, veh/h	0	9	88	14
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	100	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.9
HCM LOS	A



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	174	148	204	214	132
Future Volume (Veh/h)	142	174	148	204	214	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	191	163	224	235	145
Pedestrians	72			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	7			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				273		
pX, platoon unblocked						
vC, conflicting volume	818	386	452			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	818	386	452			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	37	66	84			
cM capacity (veh/h)	246	568	1029			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1
Volume Total	156	191	163	112	112	380
Volume Left	156	0	163	0	0	0
Volume Right	0	191	0	0	0	145
cSH	246	568	1029	1700	1700	1700
Volume to Capacity	0.63	0.34	0.16	0.07	0.07	0.22
Queue Length 95th (ft)	97	37	14	0	0	0
Control Delay (s)	41.9	14.5	9.2	0.0	0.0	0.0
Lane LOS	E	B	A			
Approach Delay (s)	26.8		3.9			0.0
Approach LOS	D					

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	92	78	281	84	73	265
Future Volume (Veh/h)	92	78	281	84	73	265
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	101	86	309	92	80	291
Pedestrians	63					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	6					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			349			
pX, platoon unblocked						
vC, conflicting volume	869	264			464	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	869	264			464	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	88			92	
cM capacity (veh/h)	252	691			1028	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	101	86	206	195	80	291
Volume Left	101	0	0	0	80	0
Volume Right	0	86	0	92	0	0
cSH	252	691	1700	1700	1028	1700
Volume to Capacity	0.40	0.12	0.12	0.11	0.08	0.17
Queue Length 95th (ft)	46	11	0	0	6	0
Control Delay (s)	28.5	11.0	0.0	0.0	8.8	0.0
Lane LOS	D	B			A	
Approach Delay (s)	20.4		0.0		1.9	
Approach LOS	C					

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

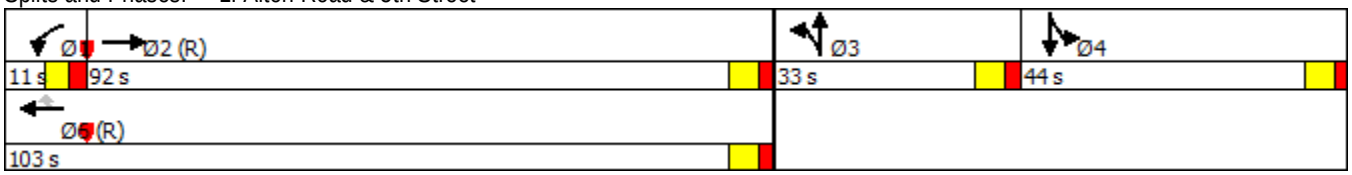
Full Access Alternative with Northbound Lane Reduction

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Future Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1388	618	13	1880	80	685	203	31	120	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1388	618	13	1880	55	685	231	0	0	350	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Effective Green, g (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.55	0.55	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1716	1539	51	1930	848	514	264			374	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.97	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.3	0.0	85.5	39.7	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.37	0.65	0.14	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.2	0.8	0.8	13.2	0.1	162.6	25.7			30.7	3.0
Delay (s)		43.5	0.8	117.9	39.2	2.7	239.1	100.5			101.1	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.3			38.2			203.8			26.2	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

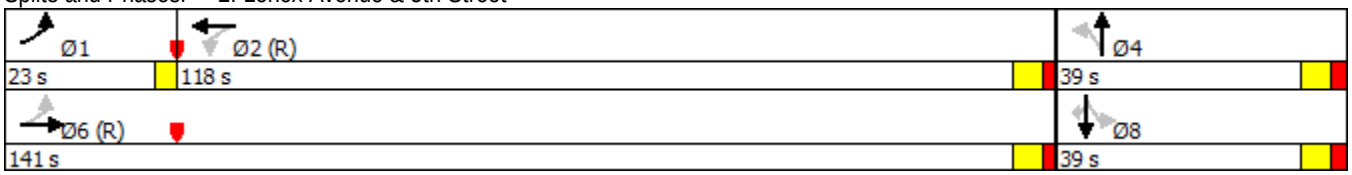
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	204	1239	25	1635	22	46	72	47	210
Future Volume (vph)	204	1239	25	1635	22	46	72	47	210
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Future Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.90	0.95		0.82	1.00		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	217	1318	18	27	1739	116	23	49	15	77	50	223
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	3871	53	316	3308	220	34	62	15	110	63	235
Arrive On Green	0.07	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4834	322	47	344	82	430	348	1304
Grp Volume(v), veh/h	217	866	470	27	1218	637	87	0	0	127	0	223
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1766	473	0	0	778	0	1304
Q Serve(g_s), s	6.6	0.2	0.2	1.2	11.1	11.2	4.0	0.0	0.0	0.0	0.0	30.4
Cycle Q Clear(g_c), s	6.6	0.2	0.2	1.2	11.1	11.2	32.5	0.0	0.0	28.5	0.0	30.4
Prop In Lane	1.00		0.04	1.00		0.18	0.26		0.17	0.61		1.00
Lane Grp Cap(c), veh/h	281	2543	1381	316	2320	1208	111	0	0	173	0	235
V/C Ratio(X)	0.77	0.34	0.34	0.09	0.53	0.53	0.79	0.00	0.00	0.74	0.00	0.95
Avail Cap(c_a), veh/h	391	2543	1381	316	2320	1208	111	0	0	173	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.1	0.1	2.6	3.1	3.1	71.1	0.0	0.0	71.3	0.0	72.9
Incr Delay (d2), s/veh	1.9	0.2	0.3	0.5	0.7	1.4	29.3	0.0	0.0	14.4	0.0	44.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.1	0.2	0.2	5.3	5.7	5.2	0.0	0.0	6.9	0.0	13.9
LnGrp Delay(d),s/veh	12.0	0.2	0.4	3.1	3.8	4.5	100.3	0.0	0.0	85.7	0.0	116.9
LnGrp LOS	B	A	A	A	A	A	F			F		F
Approach Vol, veh/h		1553			1882			87			350	
Approach Delay, s/veh		1.9			4.0			100.3			105.6	
Approach LOS		A			A			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.2		39.0		141.0		39.0
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	13.2		34.5		2.2		32.4
Green Ext Time (p_c), s	0.2	14.8		0.0		14.8		0.0

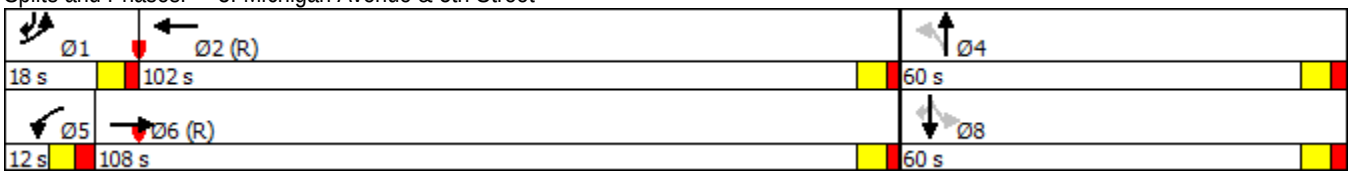
Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1219	10	1625	56	57	10	23	118
Future Volume (vph)	81	1219	10	1625	56	57	10	23	118
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Future Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.95		0.91	0.95		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1270	23	10	1693	19	58	59	9	10	24	123
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3549	64	49	3443	39	136	131	18	96	218	345
Arrive On Green	0.08	0.92	0.92	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5131	93	1774	5176	58	606	741	104	397	1234	1441
Grp Volume(v), veh/h	84	839	454	10	1109	603	126	0	0	34	0	123
Grp Sat Flow(s),veh/h/ln	1774	1695	1834	1774	1695	1844	1451	0	0	1631	0	1441
Q Serve(g_s), s	8.4	5.3	5.3	1.0	12.0	12.0	11.2	0.0	0.0	0.0	0.0	12.9
Cycle Q Clear(g_c), s	8.4	5.3	5.3	1.0	12.0	12.0	14.0	0.0	0.0	2.8	0.0	12.9
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.29		1.00
Lane Grp Cap(c), veh/h	101	2345	1268	49	2255	1227	286	0	0	314	0	345
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.49	0.49	0.44	0.00	0.00	0.11	0.00	0.36
Avail Cap(c_a), veh/h	121	2345	1268	57	2255	1227	459	0	0	511	0	519
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.4	2.4	84.7	4.2	4.2	66.6	0.0	0.0	62.1	0.0	57.8
Incr Delay (d2), s/veh	26.6	0.4	0.7	0.7	0.8	1.4	0.8	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.5	2.8	0.5	5.6	6.3	5.7	0.0	0.0	1.4	0.0	5.2
LnGrp Delay(d),s/veh	108.9	2.8	3.2	85.5	4.9	5.6	67.4	0.0	0.0	62.2	0.0	58.2
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1377			1722			126			157	
Approach Delay, s/veh		9.4			5.6			67.4			59.1	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	125.7		38.3	11.2	130.5		38.3
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.0		16.0	3.0	7.3		14.9
Green Ext Time (p_c), s	0.0	11.9		1.2	0.0	11.9		1.2

Intersection Summary		
HCM 2010 Ctrl Delay		12.0
HCM 2010 LOS		B

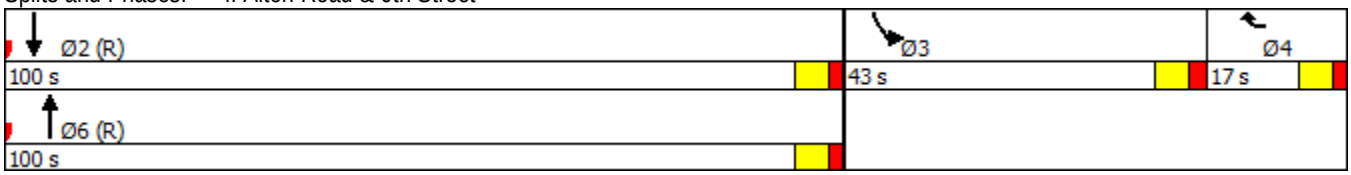
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	101	323	69	1396
Future Volume (vph)	101	323	69	1396
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	101	323	37	69	1396
Future Volume (vph)	0	101	323	37	69	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	104	333	38	71	1439
RTOR Reduction (vph)	0	99	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	71	1439
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.7		11.3	123.7
Effective Green, g (s)		7.0	123.7		11.3	123.7
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2621		125	2736
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.06	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		72.0	6.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		4.7	0.7
Delay (s)		73.5	4.7		76.7	7.7
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.7			10.9
Approach LOS	E		A			B

Intersection Summary

HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Future Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	37	75	0	69	35	10	0	81	195	92
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	9.8	12
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	5%	60%	14%
Vol Thru, %	53%	31%	31%	76%
Vol Right, %	25%	64%	8%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	110	106	179
LT Vol	75	6	64	25
Through Vol	181	34	33	136
RT Vol	86	70	9	18
Lane Flow Rate	368	118	114	192
Geometry Grp	1	1	1	1
Degree of Util (X)	0.476	0.169	0.177	0.27
Departure Headway (Hd)	4.663	5.143	5.581	5.041
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	761	700	645	718
Service Time	2.757	3.158	3.595	3.041
HCM Lane V/C Ratio	0.484	0.169	0.177	0.267
HCM Control Delay	12	9.2	9.8	9.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.6	0.6	0.6	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	136	18
Future Vol, veh/h	0	25	136	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	146	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.9
HCM LOS	A

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Future Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	106	32	0	44	90	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.1	9.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	12%	31%	8%
Vol Thru, %	75%	67%	63%	79%
Vol Right, %	16%	20%	6%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	138	125	111
LT Vol	14	17	39	9
Through Vol	122	93	79	88
RT Vol	26	28	7	14
Lane Flow Rate	184	157	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.242	0.207	0.193	0.169
Departure Headway (Hd)	4.735	4.761	4.901	4.827
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	750	729	739
Service Time	2.788	2.817	2.958	2.884
HCM Lane V/C Ratio	0.244	0.209	0.195	0.171
HCM Control Delay	9.3	9.1	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.8	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	88	14
Future Vol, veh/h	0	9	88	14
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	100	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.9
HCM LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	174	148	204	214	132
Future Volume (Veh/h)	142	174	148	204	214	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	191	163	224	235	145
Pedestrians	72			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	7			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				273		
pX, platoon unblocked						
vC, conflicting volume	930	386	452			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	386	452			
tC, single (s)	6.4	*6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	33	67	84			
cM capacity (veh/h)	233	570	1033			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	156	191	163	224	380
Volume Left	156	0	163	0	0
Volume Right	0	191	0	0	145
cSH	233	570	1033	1700	1700
Volume to Capacity	0.67	0.33	0.16	0.13	0.22
Queue Length 95th (ft)	106	37	14	0	0
Control Delay (s)	47.1	14.5	9.1	0.0	0.0
Lane LOS	E	B	A		
Approach Delay (s)	29.1		3.8		0.0
Approach LOS	D				

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	92	78	281	84	73	265
Future Volume (Veh/h)	92	78	281	84	73	265
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	101	86	309	92	80	291
Pedestrians	63					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	6					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			349			
pX, platoon unblocked						
vC, conflicting volume	869	418			464	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	869	418			464	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	86			92	
cM capacity (veh/h)	280	597			1031	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	101	86	401	80	291
Volume Left	101	0	0	80	0
Volume Right	0	86	92	0	0
cSH	280	597	1700	1031	1700
Volume to Capacity	0.36	0.14	0.24	0.08	0.17
Queue Length 95th (ft)	40	13	0	6	0
Control Delay (s)	25.0	12.0	0.0	8.8	0.0
Lane LOS	C	B		A	
Approach Delay (s)	19.0		0.0	1.9	
Approach LOS	C				

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

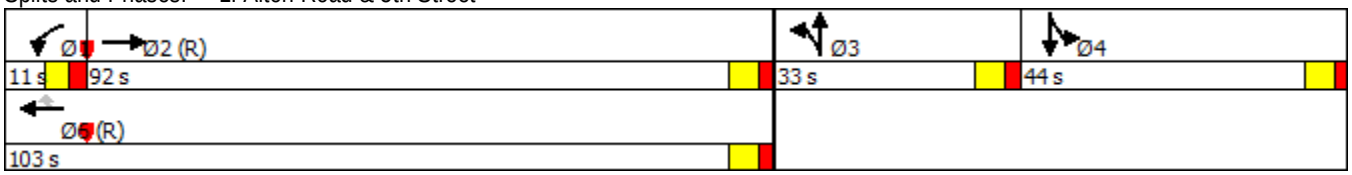
Full Access Alternative with Northbound Lane Reduction and Project Driveway Modification

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Future Volume (vph)	1305	581	12	1767	75	644	191	216	1063
Turn Type	NA	Free	Prot	NA	Perm	Split	NA	NA	Free
Protected Phases	2		1	6		3	3	4	
Permitted Phases		Free			6				Free
Detector Phase	2		1	6	6	3	3	4	
Switch Phase									
Minimum Initial (s)	5.0		5.0	5.0	5.0	7.0	7.0	7.0	
Minimum Split (s)	33.0		10.7	33.0	33.0	22.5	22.5	29.0	
Total Split (s)	92.0		11.0	103.0	103.0	33.0	33.0	44.0	
Total Split (%)	51.1%		6.1%	57.2%	57.2%	18.3%	18.3%	24.4%	
Yellow Time (s)	4.0		3.4	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0		2.3	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0		5.7	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag		Lead			Lead	Lead	Lag	
Lead-Lag Optimize?	Yes		Yes			Yes	Yes	Yes	
Recall Mode	C-Min		Min	C-Min	C-Min	None	None	None	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 114 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Alton Road & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Future Volume (vph)	0	1305	581	12	1767	75	644	191	29	113	216	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	5.7	6.0	6.0	6.0	6.0			6.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	1.00
Frpb, ped/bikes		1.00	0.97	1.00	1.00	0.98	1.00	0.97			1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (prot)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	1.00
Satd. Flow (perm)		3539	1539	1770	3539	1556	3433	1764			1831	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1388	618	13	1880	80	685	203	31	120	230	1131
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	0
Lane Group Flow (vph)	0	1388	618	13	1880	55	685	231	0	0	350	1131
Confl. Peds. (#/hr)			46	46					67	67		
Confl. Bikes (#/hr)			11			13			8			7
Turn Type		NA	Free	Prot	NA	Perm	Split	NA		Split	NA	Free
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases			Free			6						Free
Actuated Green, G (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Effective Green, g (s)		87.3	180.0	5.2	98.2	98.2	27.0	27.0			36.8	180.0
Actuated g/C Ratio		0.48	1.00	0.03	0.55	0.55	0.15	0.15			0.20	1.00
Clearance Time (s)		6.0		5.7	6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)		1.0		2.0	1.0	1.0	3.0	3.0			3.5	
Lane Grp Cap (vph)		1716	1539	51	1930	848	514	264			374	1562
v/s Ratio Prot		0.39		0.01	c0.53		c0.20	0.13			c0.19	
v/s Ratio Perm			0.40			0.04						0.72
v/c Ratio		0.81	0.40	0.25	0.97	0.06	1.33	0.87			0.94	0.72
Uniform Delay, d1		39.3	0.0	85.5	39.7	19.3	76.5	74.8			70.4	0.0
Progression Factor		1.00	1.00	1.37	0.65	0.14	1.00	1.00			1.00	1.00
Incremental Delay, d2		4.2	0.8	0.8	13.2	0.1	162.6	25.7			30.7	3.0
Delay (s)		43.5	0.8	117.9	39.2	2.7	239.1	100.5			101.1	3.0
Level of Service		D	A	F	D	A	F	F			F	A
Approach Delay (s)		30.3			38.2			203.8			26.2	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	23.7
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

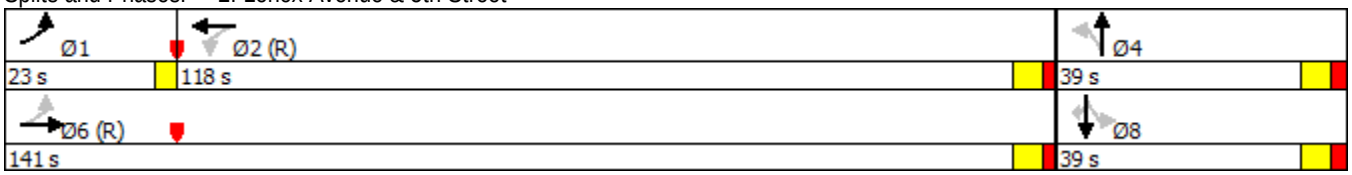
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	204	1239	25	1635	22	46	72	47	210
Future Volume (vph)	204	1239	25	1635	22	46	72	47	210
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6		2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	2	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	23.0	23.0	23.0	38.5	38.5	38.5	38.5	38.5
Total Split (s)	23.0	141.0	118.0	118.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	12.8%	78.3%	65.6%	65.6%	21.7%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0		6.5		6.5	6.5
Lead/Lag	Lead		Lag	Lag					
Lead-Lag Optimize?	Yes		Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 137 (76%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Lenox Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Future Volume (veh/h)	204	1239	17	25	1635	109	22	46	14	72	47	210
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.90	0.95		0.82	1.00		0.82
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	217	1318	18	27	1739	116	23	49	15	77	50	223
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	3871	53	316	3308	220	34	62	15	110	63	235
Arrive On Green	0.07	1.00	1.00	0.91	0.91	0.91	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5162	70	403	4834	322	47	344	82	430	348	1304
Grp Volume(v), veh/h	217	866	470	27	1218	637	87	0	0	127	0	223
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	403	1695	1766	473	0	0	778	0	1304
Q Serve(g_s), s	6.6	0.2	0.2	1.2	11.1	11.2	4.0	0.0	0.0	0.0	0.0	30.4
Cycle Q Clear(g_c), s	6.6	0.2	0.2	1.2	11.1	11.2	32.5	0.0	0.0	28.5	0.0	30.4
Prop In Lane	1.00		0.04	1.00		0.18	0.26		0.17	0.61		1.00
Lane Grp Cap(c), veh/h	281	2543	1381	316	2320	1208	111	0	0	173	0	235
V/C Ratio(X)	0.77	0.34	0.34	0.09	0.53	0.53	0.79	0.00	0.00	0.74	0.00	0.95
Avail Cap(c_a), veh/h	391	2543	1381	316	2320	1208	111	0	0	173	0	235
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.1	0.1	2.6	3.1	3.1	71.1	0.0	0.0	71.3	0.0	72.9
Incr Delay (d2), s/veh	1.9	0.2	0.3	0.5	0.7	1.4	29.3	0.0	0.0	14.4	0.0	44.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.1	0.2	0.2	5.3	5.7	5.2	0.0	0.0	6.9	0.0	13.9
LnGrp Delay(d),s/veh	12.0	0.2	0.4	3.1	3.8	4.5	100.3	0.0	0.0	85.7	0.0	116.9
LnGrp LOS	B	A	A	A	A	A	F			F		F
Approach Vol, veh/h		1553			1882			87			350	
Approach Delay, s/veh		1.9			4.0			100.3			105.6	
Approach LOS		A			A			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	129.2		39.0		141.0		39.0
Change Period (Y+Rc), s	3.0	6.0		6.5		6.0		6.5
Max Green Setting (Gmax), s	20.0	112.0		32.5		135.0		32.5
Max Q Clear Time (g_c+I1), s	8.6	13.2		34.5		2.2		32.4
Green Ext Time (p_c), s	0.2	14.8		0.0		14.8		0.0

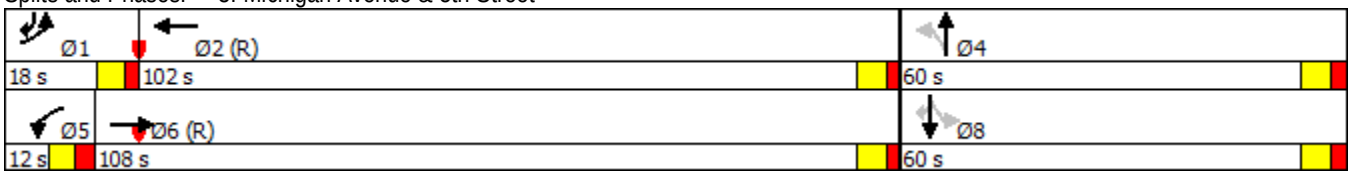
Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	81	1219	10	1625	56	57	10	23	118
Future Volume (vph)	81	1219	10	1625	56	57	10	23	118
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	10.7	23.0	11.2	23.0	40.5	40.5	40.5	40.5	10.7
Total Split (s)	18.0	108.0	12.0	102.0	60.0	60.0	60.0	60.0	18.0
Total Split (%)	10.0%	60.0%	6.7%	56.7%	33.3%	33.3%	33.3%	33.3%	10.0%
Yellow Time (s)	3.7	4.0	3.7	4.0	4.0	4.0	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.7	6.0	6.2	6.0		6.5		6.5	5.7
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 128 (71%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Michigan Avenue & 5th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Future Volume (veh/h)	81	1219	22	10	1625	18	56	57	9	10	23	118
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	0.95		0.91	0.95		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	84	1270	23	10	1693	19	58	59	9	10	24	123
Adj No. of Lanes	1	3	0	1	3	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	3549	64	49	3443	39	136	131	18	96	218	345
Arrive On Green	0.08	0.92	0.92	0.04	0.88	0.88	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	5131	93	1774	5176	58	606	741	104	397	1234	1441
Grp Volume(v), veh/h	84	839	454	10	1109	603	126	0	0	34	0	123
Grp Sat Flow(s),veh/h/ln	1774	1695	1834	1774	1695	1844	1451	0	0	1631	0	1441
Q Serve(g_s), s	8.4	5.3	5.3	1.0	12.0	12.0	11.2	0.0	0.0	0.0	0.0	12.9
Cycle Q Clear(g_c), s	8.4	5.3	5.3	1.0	12.0	12.0	14.0	0.0	0.0	2.8	0.0	12.9
Prop In Lane	1.00		0.05	1.00		0.03	0.46		0.07	0.29		1.00
Lane Grp Cap(c), veh/h	101	2345	1268	49	2255	1227	286	0	0	314	0	345
V/C Ratio(X)	0.83	0.36	0.36	0.20	0.49	0.49	0.44	0.00	0.00	0.11	0.00	0.36
Avail Cap(c_a), veh/h	121	2345	1268	57	2255	1227	459	0	0	511	0	519
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.3	2.4	2.4	84.7	4.2	4.2	66.6	0.0	0.0	62.1	0.0	57.8
Incr Delay (d2), s/veh	26.6	0.4	0.7	0.7	0.8	1.4	0.8	0.0	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.5	2.8	0.5	5.6	6.3	5.7	0.0	0.0	1.4	0.0	5.2
LnGrp Delay(d),s/veh	108.9	2.8	3.2	85.5	4.9	5.6	67.4	0.0	0.0	62.2	0.0	58.2
LnGrp LOS	F	A	A	F	A	A	E			E		E
Approach Vol, veh/h		1377			1722			126			157	
Approach Delay, s/veh		9.4			5.6			67.4			59.1	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.0	125.7		38.3	11.2	130.5		38.3
Change Period (Y+Rc), s	* 5.7	6.0		6.5	* 6.2	6.0		6.5
Max Green Setting (Gmax), s	* 12	96.0		53.5	* 5.8	102.0		53.5
Max Q Clear Time (g_c+I1), s	10.4	14.0		16.0	3.0	7.3		14.9
Green Ext Time (p_c), s	0.0	11.9		1.2	0.0	11.9		1.2

Intersection Summary			
HCM 2010 Ctrl Delay		12.0	
HCM 2010 LOS		B	

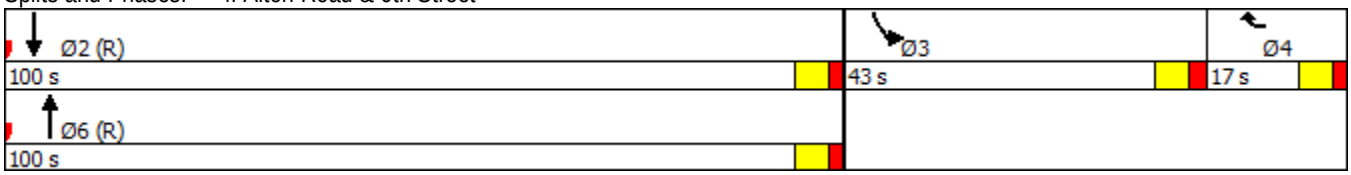
Notes

Lane Group	WBR	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	101	323	69	1396
Future Volume (vph)	101	323	69	1396
Turn Type	Prot	NA	Prot	NA
Protected Phases	4	6	3	2
Permitted Phases				
Detector Phase	4	6	3	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	5.0	7.0
Minimum Split (s)	13.0	27.0	40.0	27.0
Total Split (s)	17.0	100.0	43.0	100.0
Total Split (%)	10.6%	62.5%	26.9%	62.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Alton Road & 6th Street



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	101	323	37	69	1396
Future Volume (vph)	0	101	323	37	69	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00	0.97		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		0.86	0.98		1.00	1.00
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		1611	3391		1770	3539
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		1611	3391		1770	3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	104	333	38	71	1439
RTOR Reduction (vph)	0	99	3	0	0	0
Lane Group Flow (vph)	0	5	368	0	71	1439
Confl. Peds. (#/hr)	108	16		64	64	
Confl. Bikes (#/hr)		4		12		
Turn Type		Prot	NA		Prot	NA
Protected Phases		4	6		3	2
Permitted Phases						
Actuated Green, G (s)		7.0	123.7		11.3	123.7
Effective Green, g (s)		7.0	123.7		11.3	123.7
Actuated g/C Ratio		0.04	0.77		0.07	0.77
Clearance Time (s)		6.0	6.0		6.0	6.0
Vehicle Extension (s)		2.0	1.0		2.5	1.0
Lane Grp Cap (vph)		70	2621		125	2736
v/s Ratio Prot		c0.00	0.11		c0.04	c0.41
v/s Ratio Perm						
v/c Ratio		0.06	0.14		0.57	0.53
Uniform Delay, d1		73.4	4.6		72.0	6.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		4.7	0.7
Delay (s)		73.5	4.7		76.7	7.7
Level of Service		E	A		E	A
Approach Delay (s)	73.5		4.7			10.9
Approach LOS	E		A			B

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Future Vol, veh/h	0	6	34	70	0	64	33	9	0	75	181	86
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	37	75	0	69	35	10	0	81	195	92
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	9.8	12
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	5%	60%	14%
Vol Thru, %	53%	31%	31%	76%
Vol Right, %	25%	64%	8%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	110	106	179
LT Vol	75	6	64	25
Through Vol	181	34	33	136
RT Vol	86	70	9	18
Lane Flow Rate	368	118	114	192
Geometry Grp	1	1	1	1
Degree of Util (X)	0.476	0.169	0.177	0.27
Departure Headway (Hd)	4.663	5.143	5.581	5.041
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	761	700	645	718
Service Time	2.757	3.158	3.595	3.041
HCM Lane V/C Ratio	0.484	0.169	0.177	0.267
HCM Control Delay	12	9.2	9.8	9.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.6	0.6	0.6	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	25	136	18
Future Vol, veh/h	0	25	136	18
Peak Hour Factor	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	146	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.9
HCM LOS	A

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Future Vol, veh/h	0	17	93	28	0	39	79	7	0	14	122	26
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	19	106	32	0	44	90	8	0	16	139	30
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.1	9.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	12%	31%	8%
Vol Thru, %	75%	67%	63%	79%
Vol Right, %	16%	20%	6%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	138	125	111
LT Vol	14	17	39	9
Through Vol	122	93	79	88
RT Vol	26	28	7	14
Lane Flow Rate	184	157	142	126
Geometry Grp	1	1	1	1
Degree of Util (X)	0.242	0.207	0.193	0.169
Departure Headway (Hd)	4.735	4.761	4.901	4.827
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	750	729	739
Service Time	2.788	2.817	2.958	2.884
HCM Lane V/C Ratio	0.244	0.209	0.195	0.171
HCM Control Delay	9.3	9.1	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.8	0.7	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	9	88	14
Future Vol, veh/h	0	9	88	14
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	100	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.9
HCM LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	142	174	148	204	214	132
Future Volume (Veh/h)	142	174	148	204	214	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	156	191	163	224	235	145
Pedestrians	72			6		
Lane Width (ft)	12.0			12.0		
Walking Speed (ft/s)	3.5			3.5		
Percent Blockage	7			1		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				273		
pX, platoon unblocked						
vC, conflicting volume	930	386	452			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	386	452			
tC, single (s)	6.4	*6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	33	67	84			
cM capacity (veh/h)	233	570	1033			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	156	191	163	224	380
Volume Left	156	0	163	0	0
Volume Right	0	191	0	0	145
cSH	233	570	1033	1700	1700
Volume to Capacity	0.67	0.33	0.16	0.13	0.22
Queue Length 95th (ft)	106	37	14	0	0
Control Delay (s)	47.1	14.5	9.1	0.0	0.0
Lane LOS	E	B	A		
Approach Delay (s)	29.1		3.8		0.0
Approach LOS	D				

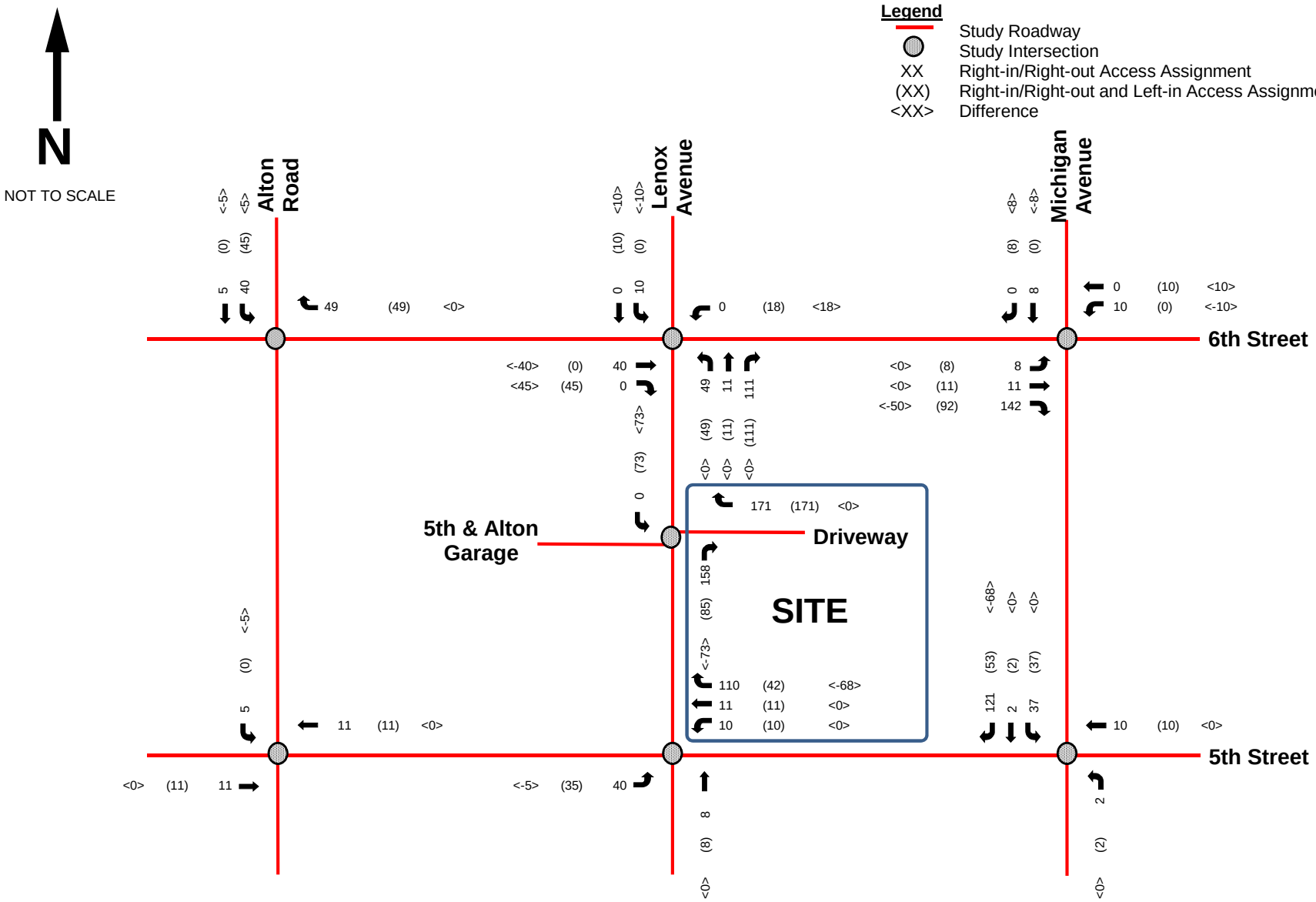
Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	92	78	281	84	73	265
Future Volume (Veh/h)	92	78	281	84	73	265
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	101	86	309	92	80	291
Pedestrians	63					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	6					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			349			
pX, platoon unblocked						
vC, conflicting volume	869	418			464	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	869	418			464	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	86			92	
cM capacity (veh/h)	280	597			1031	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	187	401	80	291
Volume Left	101	0	80	0
Volume Right	86	92	0	0
cSH	370	1700	1031	1700
Volume to Capacity	0.51	0.24	0.08	0.17
Queue Length 95th (ft)	68	0	6	0
Control Delay (s)	24.3	0.0	8.8	0.0
Lane LOS	C		A	
Approach Delay (s)	24.3	0.0	1.9	
Approach LOS	C			

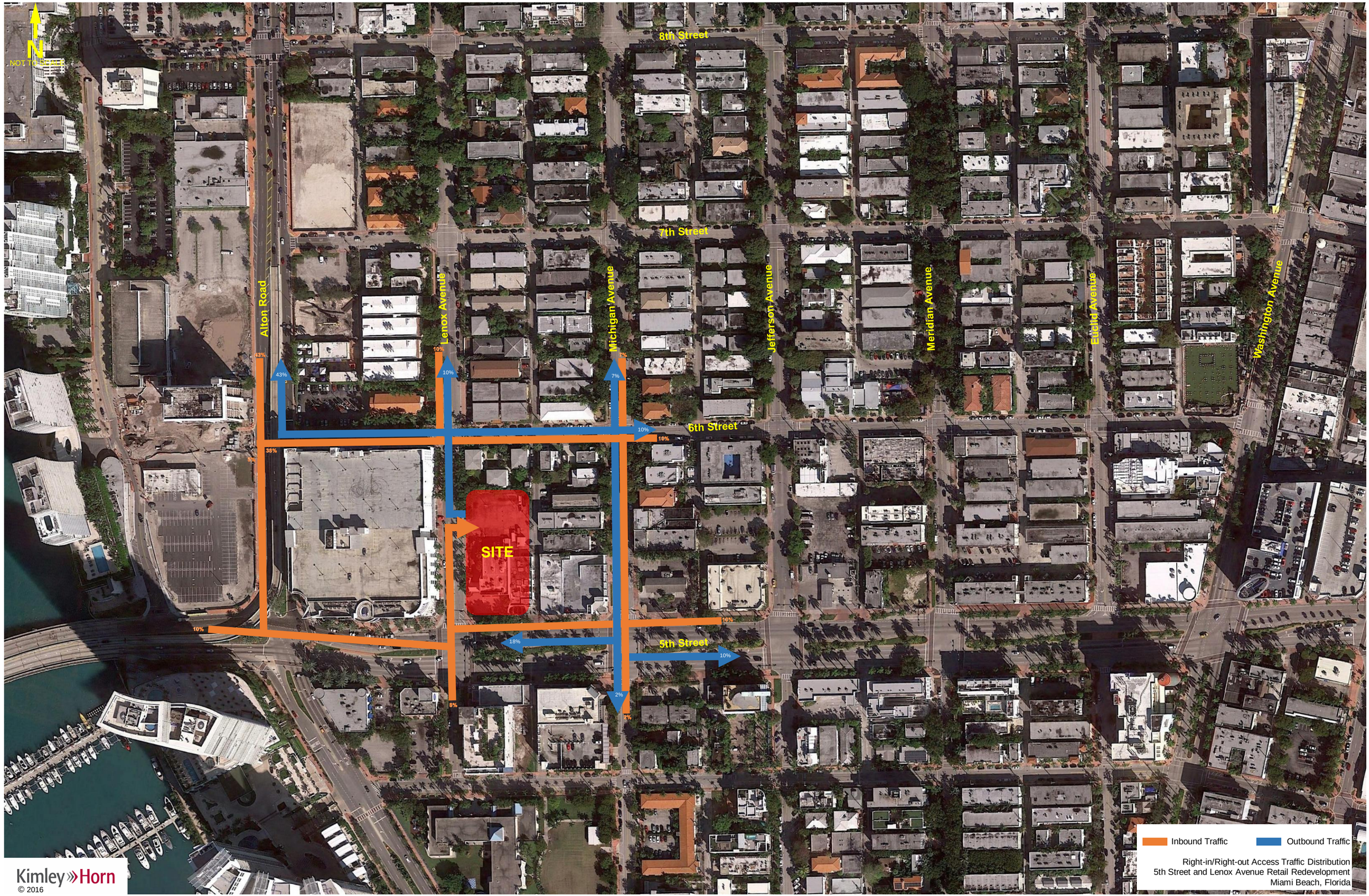
Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		



* The traffic volumes on the roadway network are total project driveway volumes and do not represent net new traffic volumes at external intersections.

Peak Hour Total Project Driveway Volume Assignment
5th Street and Lenox Avenue Retail Redevelopment
Miami Beach, Florida

Kimley»Horn



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