MuV Dispensary

North Miami Beach, Florida

Traffic Impact Analysis

Prepared for:
Hunt Real Estate Services, LLC

Prepared by:
Vala Group, Inc.
3 Bentwood Road
Palm Beach Gardens, FL 33418

Project No.: 2021100026

Prepared:
May 18, 2022

Digitally signed by John P. Kim
Date: 2022.05.19 14:28:11-04'00'

JOHN P. KIM LICENSE No 62400 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by John P. Kim, PE on the date adjacent to the seal.

Printed Copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

John P. Kim, P.E.
Professional Engineer
FL Registration No. 68400

VALA GROUP Inc.

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EXECUTIVE SUMMARY

Vala Group, Inc. prepared a traffic-impact analysis for the proposed medical cannabis dispensary that will replace an existing medical office expected to be completed by 2023. Our analysis determined the following results for the morning and afternoon peak hours of the 2023 conditions with the proposed development's impacts.

- The three signalized study intersections on NE 19th Avenue are expected to operate within their adopted LOS.
- NE 19th Avenue is expected to operate within its adopted LOS.
- The site's driveway connection to NE 19th Avenue will operate at LOS B during the morning and afternoon peak hours.
- The expected volumes from the proposed development do not warrant the need for an exclusive right-turn lane on NE 19th Avenue at the existing driveway connection.

The proposed development is at 16635 NE 19th Avenue in North Miami Beach, Florida and is expected to generate 837 daily, 32 morning peak-hour, and 65 afternoon net-new peak-hour trips after accounting for the medical office it is replacing. The study analyzed three signalized intersections for existing, no-build (future without proposed development), and build (future with proposed development) conditions during the morning and afternoon peak hours and two roadway segments for the build conditions.

INTRODUCTION

Hunt Real Estate Services, LLC retained Vala Group, Inc. to prepare this traffic-impact study for a proposed medical cannabis dispensary that will replace an existing medical office at 16635 NE 19th Avenue in North Miami Beach, Florida. The analysis shows that the traffic impacts of the proposed development will not cause NE 19th Avenue to operate beyond its roadway capacity. Figure 1 shows an aerial photograph of the site location. The proposed development is expected to be completed by 2023. We analyzed NE 19th Avenue between NE 163rd and NE 167th streets and three signalized intersections on NE 19th Avenue for morning and afternoon peak-hour conditions for existing, no-build (future without propose development), and build (future with proposed development) conditions. We determined that the three study intersections and NE 19th Avenue will operate within their adopted Level of Service (LOS D) with the impacts of the proposed development. This report presents the methodology, data and traffic-impact analysis for this proposed development.

Figure 1 – Site Aerial Photograph

Project Description

The proposed development will comprise a 4,337 square-foot medical dispensary that will replace an existing 4,337 square-foot medical-office. The existing building and site improvements will remain. The existing building occupies 0.26-acres (Folio No.: 07-2216-001-0280) which is within the county-designated Urban Infill Area. The proposed development will not increase the size of

the existing building and will maintain one two-way driveway connection to NE 19th Avenue as well as parking at the rear of the building accessible via an abutting alley. NE 19th Avenue is a city-maintained roadway, with three lanes for southbound traffic, two lanes for northbound traffic and has a 30 MPH posted speed limit. **Appendix A** contains the site survey and property appraiser data.

Analysis Methodology

The traffic-impact analysis methodology, summarized below is consistent with typical city and county traffic methodologies.

- Collect peak-hour (7-9 AM &4-6 PM) intersection volumes at the following intersections:
    - NE 19th Avenue and NE 163rd Street (signalized)
    - NE 19th Avenue and NE 164th Street (signalized)
    - NE 19th Avenue and NE 167th Street (signalized)
- Use Institute of Transportation Engineers (ITE) trip-generation equations to estimate site-traffic generation.
- Calculate an annual-growth rate for background traffic using Florida Department of Transportation historical data from traffic-count stations near the project.
- Develop trip-distribution estimates for the proposed development based on the cardinal distribution for the corresponding Traffic Analysis Zone of the Miami-Dade County 2045 Long Range Transportation Plan model.
- Use Synchro software to prepare morning and afternoon peak-hour capacity analysis for the study intersections for the 2022 existing, 2023 future no-build, and 2023 future build conditions.
- Prepare morning and afternoon peak-hour bidirectional capacity analysis for the build conditions for NE 19th Avenue between NE 163rd and NE 167th streets.
- Use Synchro software to analyze the site's private driveway connection during morning and afternoon peak-hour build conditions.

EXISTING CONDITIONS ANALYSIS

We visited the site and study area to verify the intersection conditions and traffic control shown in **Figure 2**. **Appendix B** contains the county's signal-timing data.

Roadway Inventory

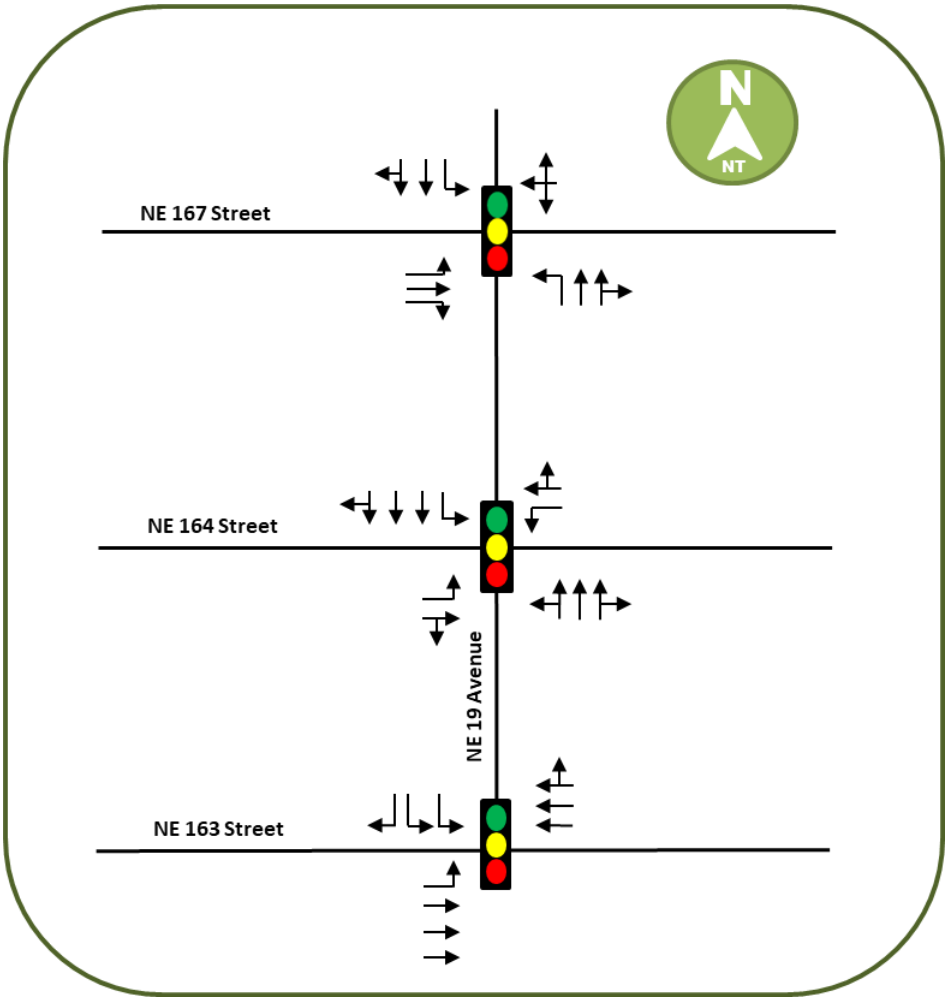
NE 163rd Street/SR 826 is a state-maintained, six-lane divided, arterial roadway with a 35 MPH posted speed limit.

NE 19th Avenue is a city-maintained, four-lane divided, collector roadway with a 30 MPH posted speed limit between NE 163rd and NE 165th streets and a four-lane divided road north of NE 165th Street.

NE 167th Street is a city-maintained, two-lane, undivided local roadway with a 30 MPH posted speed limit.

NE 164th Street is a city-maintained, two-lane, divided local roadway with a 30 MPH posted speed limit.

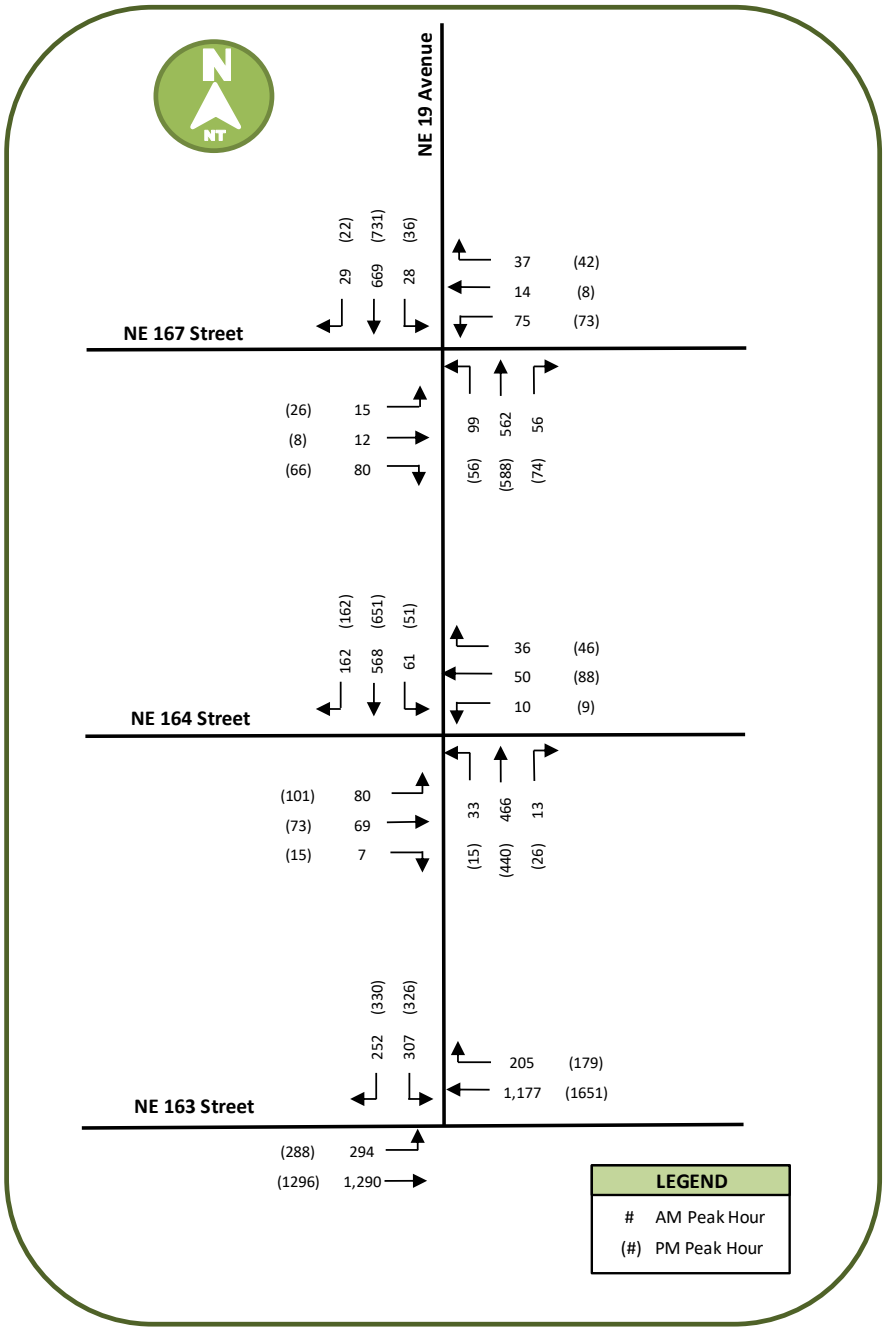
Figure 2 – Intersection Lane Configurations



Existing Traffic Volumes

We collected peak hour (7-9 AM & 4-6 PM) intersection traffic volumes on Wednesday, May 11, 2022. We developed peak-hour peak-season volumes by applying an FDOT adjustment factor to the traffic data. **Figure 3** shows the existing weekday morning and afternoon peak-hour traffic volumes. Appendix B contains the traffic data.

Figure 3 – Existing Traffic Volumes



Intersection Capacity Analysis

We prepared 2022 existing-conditions capacity analyses for the study intersections using Synchro software and found that all of the intersections are operating within their adopted LOS. **Table 1** summarizes the results of the existing-conditions intersection-capacity analysis. **Appendix C** contains intersection-volume tables; **Appendix D** contains the capacity-analyses worksheets. The adopted maximum LOS for county and state intersections and roadways is LOS D.

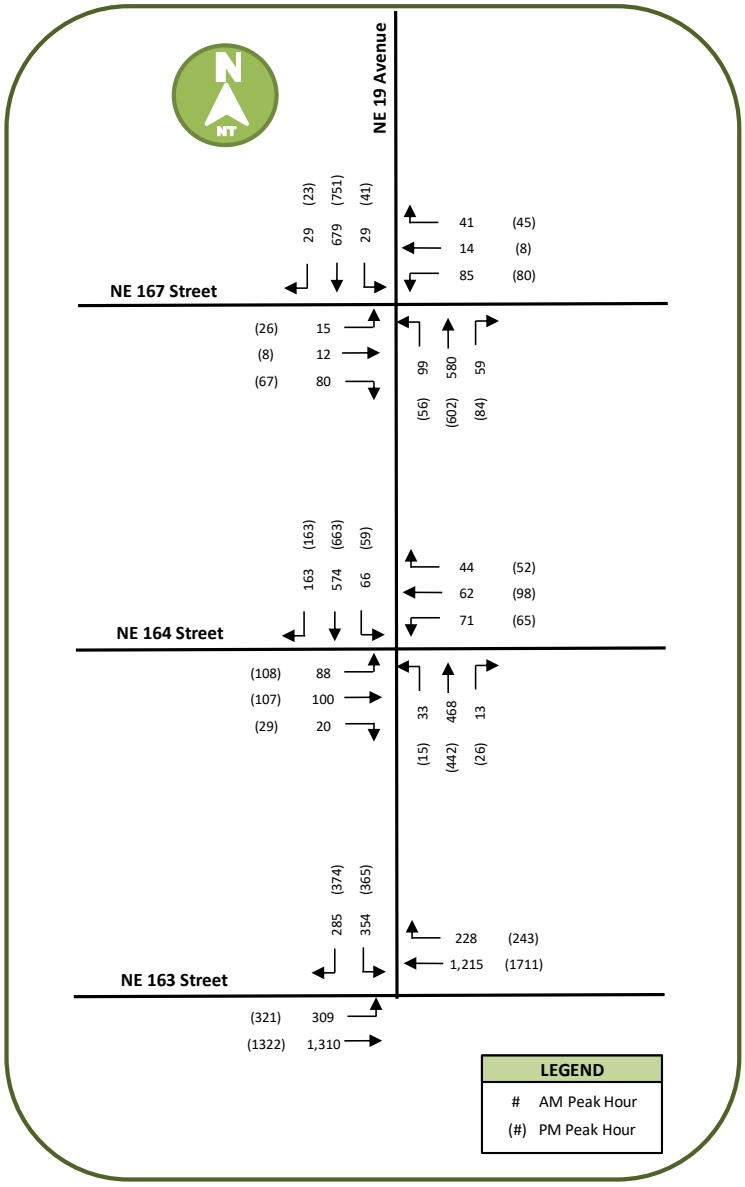
Table 1 – 2022 Existing Intersection Capacity Analysis Summary

Location	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
NE 19 Avenue & NE 167 Street	B	12.9	B	12.1
NE 19 Avenue & NE 164 Street	B	15.2	B	17.0
NE 19 Avenue & NE 163 Street	C	24.0	D	39.4

FUTURE NO BUILD CONDITIONS

This section of the report covers background traffic growth and the intersection-capacity analysis for the no-build conditions (future without proposed development). The project should be completed by the end of 2023. We applied a 0.5 percent compounded annual-growth rate to the 2022 traffic data to develop 2023 volumes using FDOT historical data. **Figure 4** shows the 2023 no-build volumes. We added traffic from three committed developments including Skygarden Miami, Bali Residential, and North Miami Beach Mixed Use. Appendix B contains the traffic data, committed development data, and growth rate calculations.

Figure 4 – Future No Build Volumes



Planned Roadway Improvements

We reviewed the Transportation Planning Organization's 2022 Transportation Improvement Program (2022 through 2026), county Long Range Transportation Plan (2045) and the FDOT Five Year Work Program (2022 through 2026) and found no planned improvements near the proposed development.

Intersection Capacity Analysis

We prepared 2023 no-build conditions capacity analyses for the study intersections using Synchro software and found all of the intersections are expected to operate within their adopted LOS. **Table 2** summarizes the results of the no-build conditions intersection-capacity analysis. Appendix C contains intersection-volume tables; Appendix D contains the capacity-analyses worksheets.

Table 2 - 2023 No Build Intersection Capacity Analysis Summary

Location	AM Peak Hour		PM Peak Hour	
	LOS	**Delay** (sec/veh)	**LOS**	**Delay** (sec/veh)
NE 19 Avenue & NE 167 Street	B	13.4	B	12.3
NE 19 Avenue & NE 164 Street	B	19.6	B	15.6
NE 19 Avenue & NE 163 Street	C	30.8	D	51.3

FUTURE BUILD CONDITIONS

This section of the report covers site-generated trips, trip distribution, and future traffic volumes including traffic from the proposed development.

Site-Generated Traffic

We used equations from the 11th Edition of the ITE *Trip Generation Manual* and determined that the proposed development is expected to generate 837 daily, 32 morning peak-hour, and 65 afternoon net-new peak-hour trips. We used ITE trip generation rates, as requested by the city, for the proposed medical cannabis dispensary, but noted that the ITE trip generation data was comprised primarily from states where recreational sales of cannabis are allowed. We believe the traffic generated by the dispensary will be significantly lower than the values based on the ITE calculations because Florida only allows medical cannabis sales by prescription. Therefore, the analysis should be considered conservative. **Table 3** summarizes the trip-generation estimates for the proposed development. **Appendix E** contains the trip-generation data.

Table 3 – Traffic Generation Summary

DAILY

Land Use		ITE Code	Size	Trip Generation Rate	In	Out	Total Trips		
							In	Out	Total
Existing	Medical-Dental Office	720	4,337 SF	T = 38.42 (X) - 87.62	50%	50%	40	39	79
Proposed	Marijuana Dispensary	882	4,337 SF	T = 211.12 (X)	50%	50%	458	458	916
Net New Trips (Proposed less Existing)							**418**	**419**	**837**

MORNING PEAK HOUR

Land Use		ITE Code	Size	Trip Generation Rate	In	Out	Total Trips		
							In	Out	Total
Existing	Medical-Dental Office	720	4,337 SF	Ln (T) = 0.89 Ln(X) + 1.31	78%	22%	11	3	14
Proposed	Marijuana Dispensary	882	4,337 SF	T = 10.54 (X)	50%	50%	23	23	46
Net New Trips (Proposed less Existing)							**12**	**20**	**32**

AFTERNOON PEAK HOUR

Land Use		ITE Code	Size	Trip Generation Rate	In	Out	Total Trips		
							In	Out	Total
Existing	Medical-Dental Office	720	4,337 SF	Ln (T) = 3.39 Ln(X) + 2.02	28%	72%	5	12	17
Proposed	Marijuana Dispensary	882	4,337 SF	T = 18.92 (X)	50%	50%	41	41	82
Net New Trips (Proposed less Existing)							**36**	**29**	**65**

Development Traffic Distribution

We estimated the directional distribution of site-generated trips based on the cardinal distribution data for TAZ 95 from the Miami-Dade County 2045 Transportation Model (see Appendix B) and

from the development's access to the surrounding roadway network. We interpolated the 2015 and 2045 directional-distribution values from the model data to develop percentages for 2023. **Table 4** summarizes the 2023 trip-distributions percentages. **Figure 5** shows the proposed development's traffic distributions at the study intersections. **Figure 6** shows the morning and afternoon peak-hour development-traffic assignments at the study intersections**. Figure 7** shows the 2023 build volumes. We developed 2023 build volumes by adding the development-traffic assignments, based on the development distribution, to the 2023 no-build traffic volumes.

Table 4 – Development Traffic Distribution Summary

Year	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW
2015	23.40%	5.10%	2.30%	8.30%	19.00%	15.80%	13.20%	13.00%
2045	22.80%	3.10%	2.00%	8.10%	22.70%	16.60%	12.70%	12.10%
2023	**23.24%**	**4.57%**	**2.22%**	**8.25%**	**19.99%**	**16.01%**	**13.07%**	**12.76%**

Figure 5 – Development Traffic Distribution

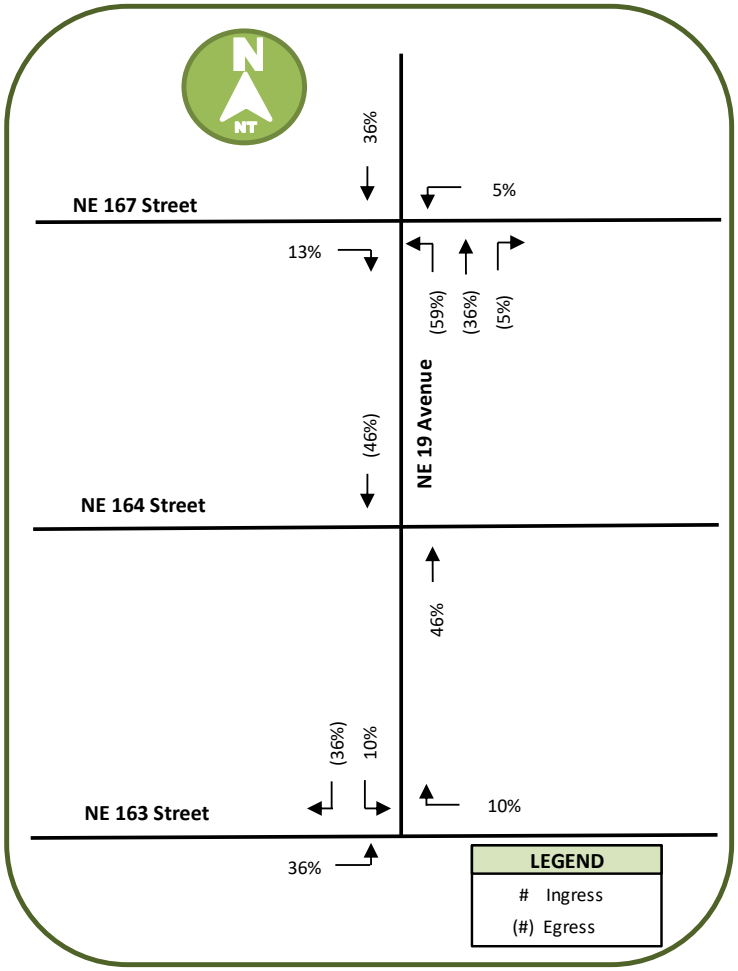
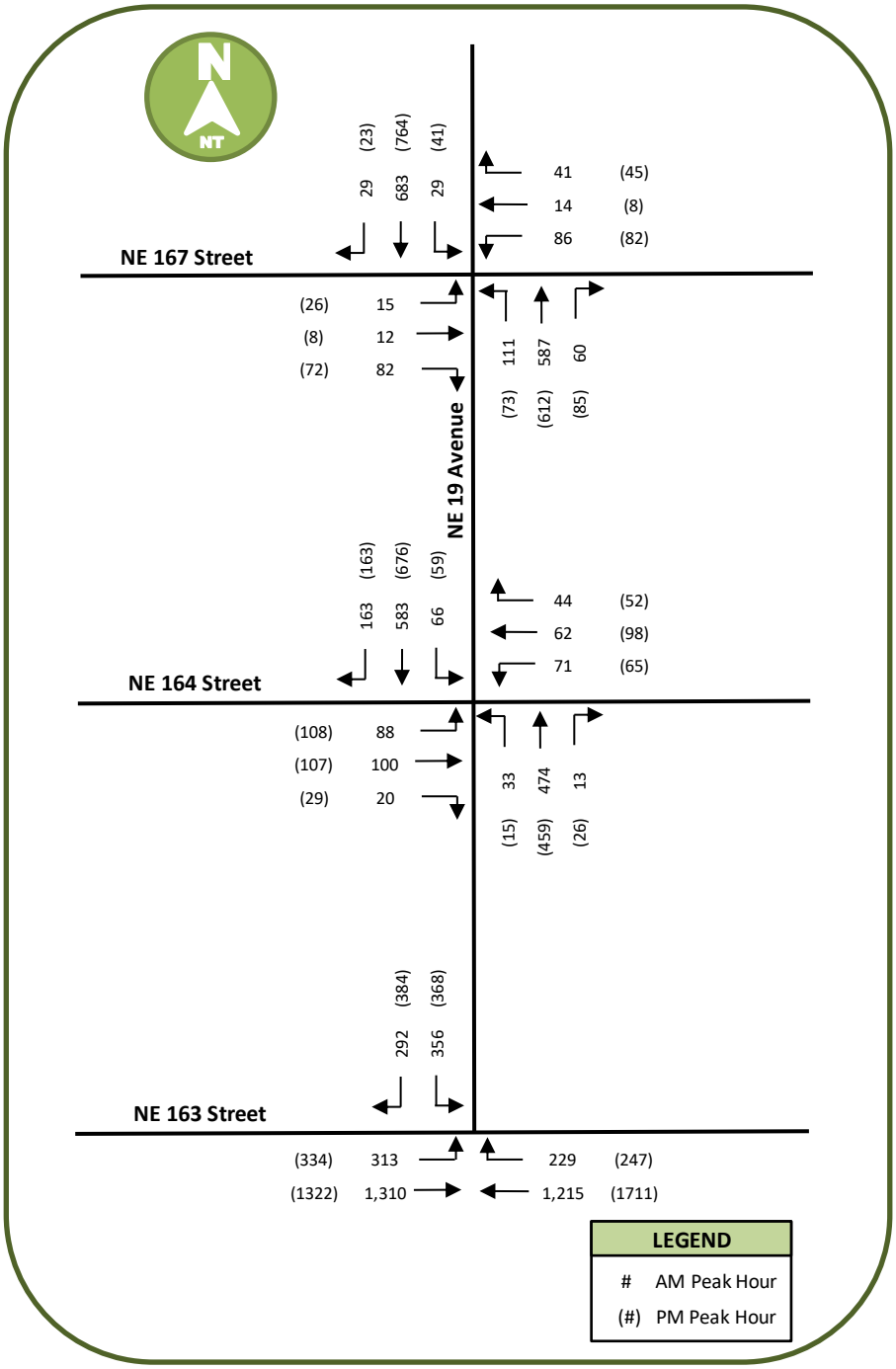


Figure 6 – Development Traffic Assignment

Figure 7 – Future Build Volumes



Intersection Capacity Analysis

We prepared 2023 build conditions capacity analyses for the study intersections using Synchro software and found that all of the intersections are expected to operate within their adopted LOS. **Table 5** summarizes the results of the build-conditions intersection-capacity analysis. Appendix D contains intersection-volume tables; Appendix D contains the capacity-analyses worksheets.

Table 5 – 2023 Build Intersection Capacity Analysis Summary

Location	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
NE 19 Avenue & NE 167 Street	B	13.4	B	12.5
NE 19 Avenue & NE 164 Street	B	19.5	B	15.5
NE 19 Avenue & NE 163 Street	C	31.3	B	53.2

Roadway Capacity Analysis

We used the intersection data and FDOT generalized tables to prepare morning and afternoon peak-hour roadway-capacity analysis and found that NE 19th Avenue will operate within its adopted LOS with the impacts of the proposed development. **Table 6** summarizes the results of the analysis. Appendix B contains the traffic data and FDOT tables.

Table 6 – Roadway Capacity Analysis Summary

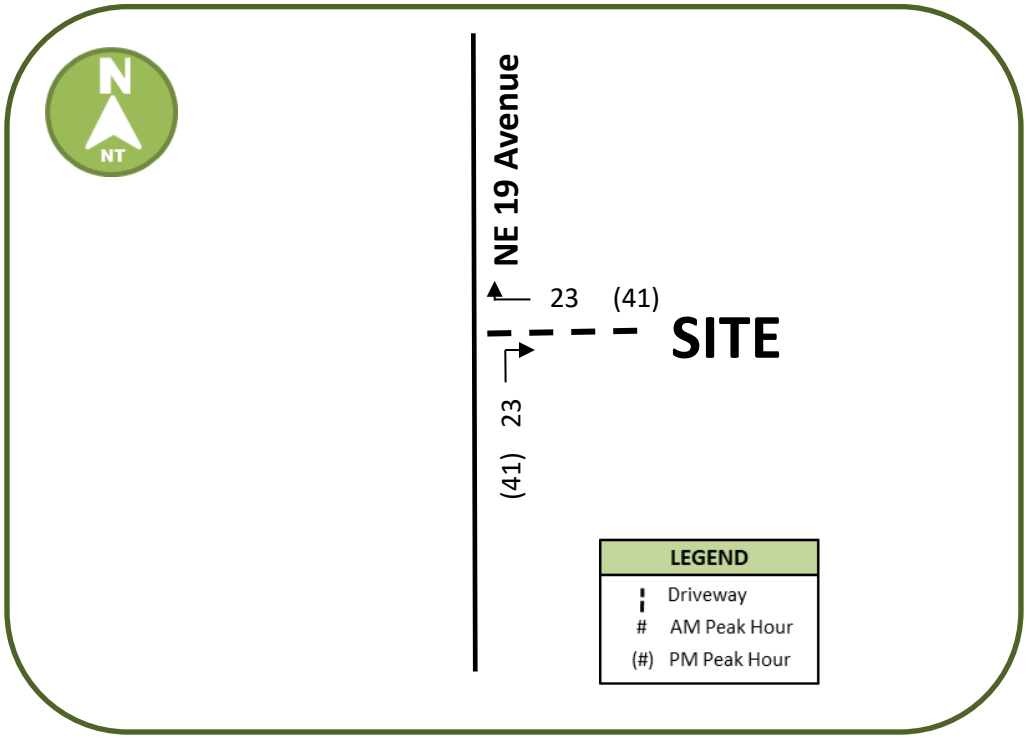
Roadway	From	To	Facility Type	LOS D Capacity	Peak Hour	2023 Volume	Project Distribution	Project Trips	2023 Total Traffic	Volume to Capacity Ratio	Meets Capacity
NE 19 Avenue	NE 163 Street	NE 165 Street	6 LD	4,131	AM	1,179	46%	15	1,194	0.29	Yes
				4,131	PM	1,303	46%	30	1,333	0.32	Yes
NE 19 Avenue	NE 165 Street	NE 167 Street	4 LD	2,736	AM	1,582	100%	32	1,614	0.59	Yes
				2,736	PM	1,640	100%	65	1,705	0.62	Yes

* 2023 Volume Includes 0.5% Growth Rate and Committed Development Trips

Driveway Volumes & Stacking Distance

We analyzed the development's driveway connection to NE 19th Avenue for the morning and afternoon peak-hour build conditions and found that it is expected to operate within its adopted LOS for the build conditions. The number of expected right turns into the existing site driveway will not warrant the need for an exclusive northbound right-turn lane on NE 19th Avenue. **Figure 8** shows the peak-hour driveway volumes. We used the site survey to estimate the stacking distance between the first parking space and driveway approach which is approximately 21 feet. **Appendix F** contains the stacking exhibit.

Figure 8 – Site Driveway Volumes



CONCLUSIONS

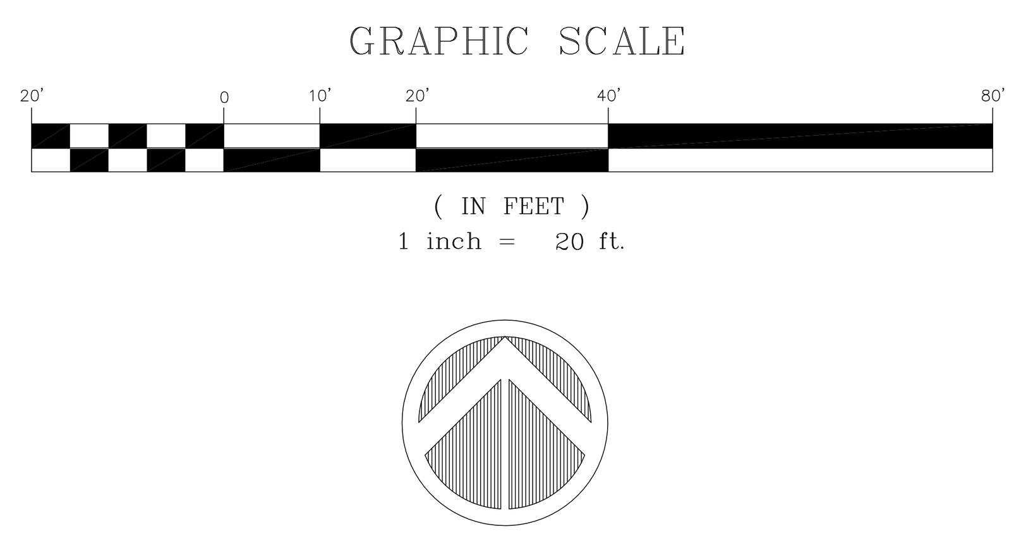
Vala Group, Inc. prepared a traffic-impact analysis for the proposed medical cannabis dispensary that will replace an existing medical office expected to be completed by 2023. Our analysis determined the following results for the morning and afternoon peak hours of the 2023 conditions with the proposed development's impacts.

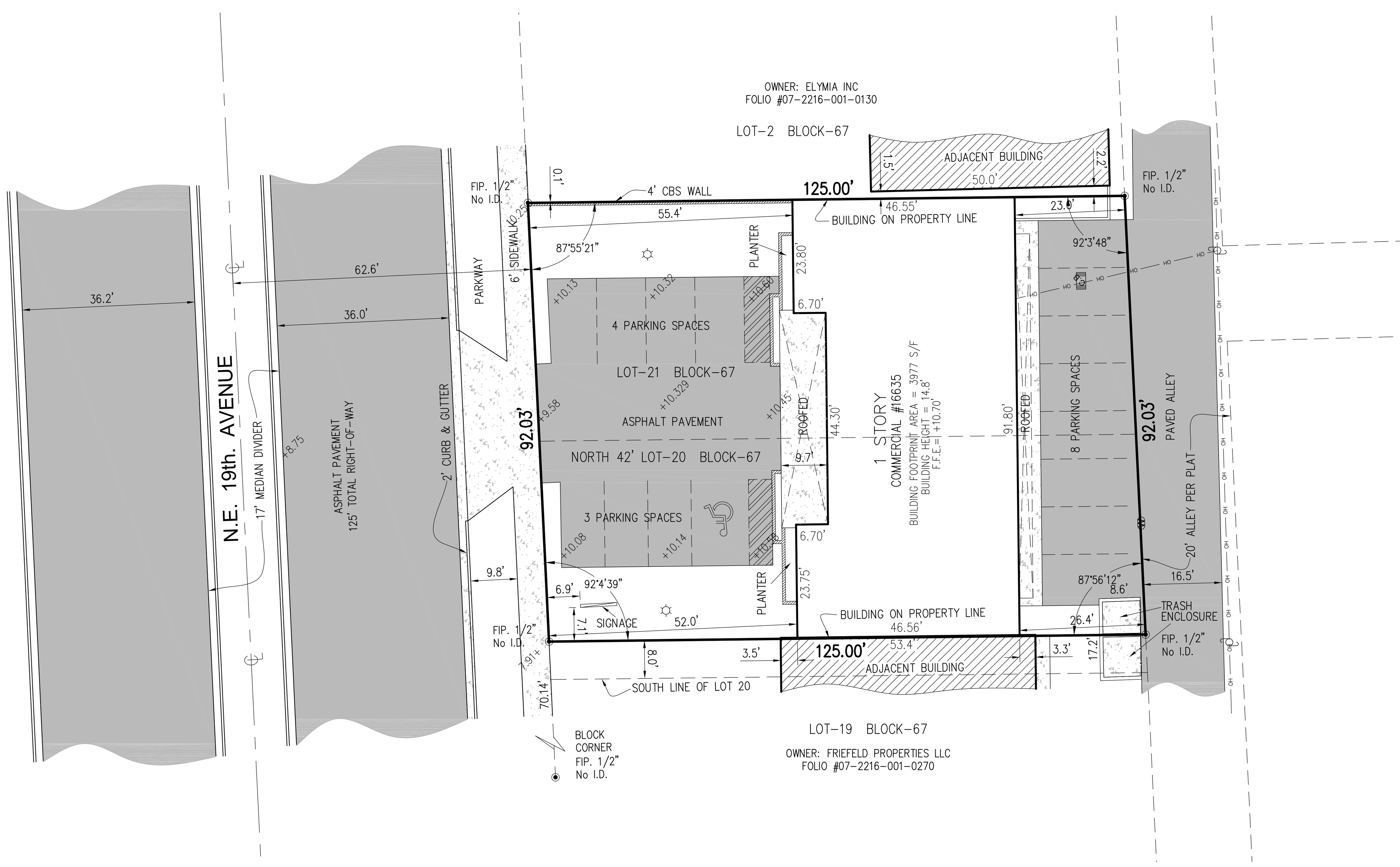
- The three signalized study intersections on NE 19th Avenue are expected to operate within their adopted LOS.
- NE 19th Avenue is expected to operate within its adopted LOS.
- The site's driveway connection to NE 19th Avenue will operate at LOS B during the morning and afternoon peak hours.
- The expected volumes from the proposed development do not warrant the need for an exclusive right-turn lane on NE 19th Avenue at the existing driveway connection.

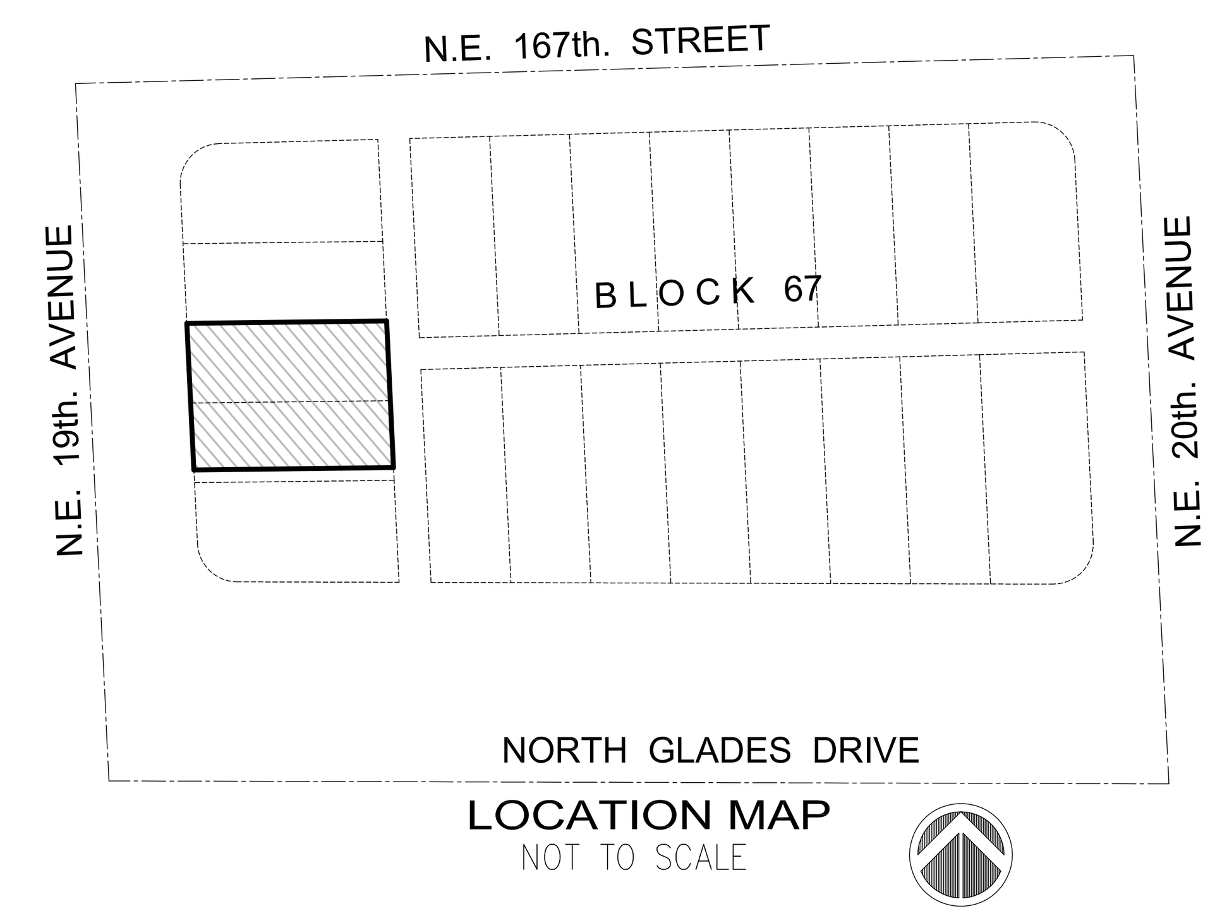
The analysis should be considered conservative because it uses ITE trip generation rates that are based on data collected in states where recreational cannabis sales are allowed. Florida only allows medical cannabis sales with a prescription so traffic generated by the proposed dispensary is expected to be lower compared to ITE trip generation estimates.

Appendix A
Site Survey & Property Data

ALTA / NSPS LAND TITLE SURVEY







LOCATION MAP
NOT TO SCALE

SURVEYOR'S NOTES:

1- The Legal Description was obtained from OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, Commitment for Title Insurance.
2- This is not a Certification of Title, Zoning, Easements, or Freedom of Encumbrances. ABSTRACT NOT REVIEWED.
3- An examination of Commitment issued by OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, File No.: 21156930 ALH, effective date: September 21, 2021 @ 8:00 AM, was made to determine recorded instruments, if any affecting this property. However, there may be additional restrictions not shown on this survey that may be found in the Public Records of this County.
4- No attempt was made by this firm to locate underground utilities, foundations and/or footings of buildings, walls or fences, except as shown hereon, if any.
5- Underground utilities are not depicted hereon, contact the appropriate authority prior to any design work or construction on the property herein described. Surveyor shall be notified as to any deviation from utilities shown hereon.
6- Contact the appropriate authority prior to any design work on the herein - described parcel for Building and Zoning information.
7- The surveyor does not determine fence and/or wall ownership.
8- Accuracy:
The Horizontal positional accuracy of well-defined improvement on this survey is +/-0.2'.
The Vertical accuracy of elevations of well-defined improvement on this survey is +/-0.1'
9- All measurements shown hereon are made in accordance with the United States Standard Feet.
10- Type of survey ALTA/ NSPS LAND TITLE SURVEY
11- The North arrow shown hereon based on recorded plat of "FULFORD BY THE SEA SECTION F", according to the Plat thereof, as recorded in Plat Book 8, Page 64, of the Public Records of Miami-Dade County, Florida.
12- Elevations shown hereon are relative to National Geodetic Vertical Datum (1929 Mean Sea Level).
13- Benchmark Used: Miami-Dade County Benchmark.
14- Flood Zone Data: Community/ Panel #120656/0141/L Dated: 9/11/2009
Flood Zone: "X" Base Flood Elevation = N/A
15- Total Available Parking: 15 standard parking spaces & 1 handicap spaces
16- Legal Description shown hereon as per above noted title commitment.
17- The Subject Site is contiguous with and has direct physical access to N.E. 19 Avenue, public dedicated right-of-way, and there are no gaps or gores.
18- All visible above ground utilities noted on survey sketch.
19- There was no observed evidence of current earth work, building construction or building additions as of the date of the survey.
20- There are no proposed changes in street right-of-way lines or observed evidence of recent street or sidewalk construction or repairs.
21- There was no observed evidence of the site being used as a solid waste dump, sump or sanitary landfill.
22- All utilities (water, sewer, electrical, telephone, cable and gas lines) serving the Subject Sites are being provided along all of the adjacent right-of-way lines.
23- Present Zoning: MU-TC (Fulford Mixed Use Town Center District)
24- Building Setbacks (as per City of North Miami Beach Code):
Front = 0 feet / Side = 0 feet / Rear = 0 feet
Maximum Building Height = 3 stories (existing 2)
25- Area of Site = 11,497 square feet (0.26+/- Acres)
26- This SURVEY has been prepared for the exclusive use of the entities named hereon. The Certificate does not extend to any unnamed party:

- HUNT RE ACQUISITIONS, LLC, A FLORIDA LIMITED LIABILITY COMPANY
- OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
- GARDNER BREWER MARTINEZ-MONFORT, P.A.

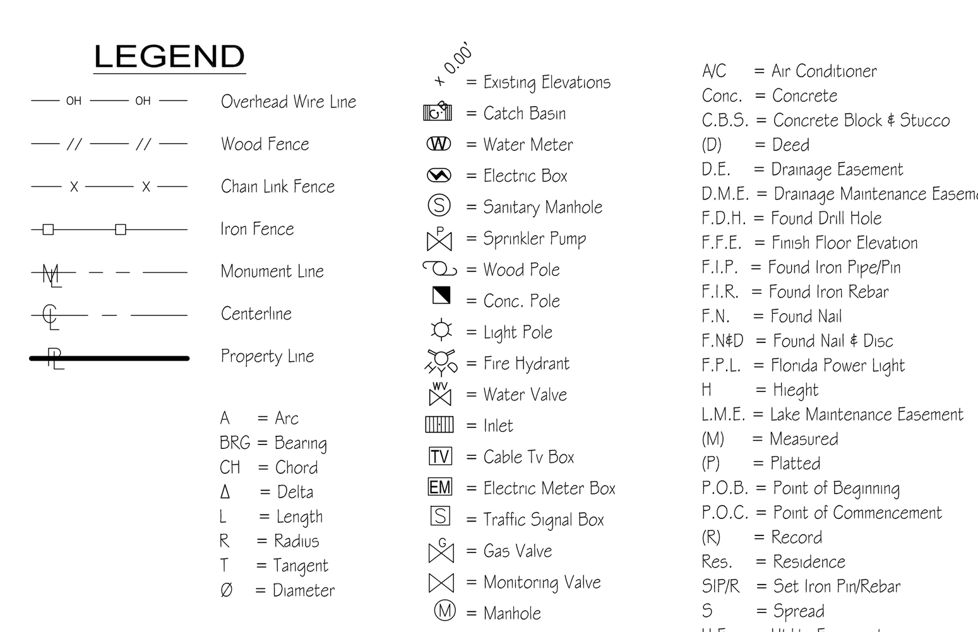
TITLE REVIEW NOTES:

SCHEDULE B – SECTION II

TITLE COMMITMENT PROVIDED BY:
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY,
File No.: 21156930 ALH, effective date: September 21, 2021 @ 8:00 AM
Items 1 through 7: "Standard Exceptions".

8. Matters shown on Fulford by the Sea Section "F" according to the plat thereof recorded in Plat Book 8, Page 64 of the Public Records of Miami-Dade County, Florida. (Does affect Subject Property - Record Plat)

9. Matters shown on 3rd Revised Plat of Sections - A, B, D, E, F - and the Amended Plats of Sections - C, G, H, I and J, of Fulford by the Sea, according to the plat there as recorded June 3, 1931 in Plat Book 34, Page 20, of the Public Records of Miami-Dade County, Florida. (Does affect Subject Property - Record Plat)



PROPERTY ADDRESS:

16635 NE 19 AVENUE, NORTH MIAMI BEACH, FLORIDA 33162
FOLIO #07-2216-001-0280

LEGAL DESCRIPTION:

Tract "C" LESS AND EXCEPT the South 8 feet thereof, Block 67 of the 3rd Revised Plat of Sections A, B, D, E, F and the Amended Plats of Section C, G, H, I and J, of Fulford by the Sea, according to the plat there as recorded in Plat Book 34, Page 20, of the Public Records of Miami-Dade County, Florida;

formerly known as:

Lot 20 LESS AND EXCEPT the South 8 feet thereof and all of Lot 21, Block 67, of Fulford by the Sea Section "F" according to the plat thereof recorded in Plat Book 8, Page 64 of the Public Records of Miami-Dade County, Florida.

SURVEYOR'S CERTIFICATE:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA / NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items:
1 thru 4, 7a, 7b1, 7c, 8, 9, 13, 14, 16, 17, and 20 of Table A thereof.
I further certify That this Survey meets the intent of the required Standards of Practice as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

Not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to this survey by other than the signing party are prohibited without written consent of the signing party.

____
For the Firm Royal Point Land Surveyors, Inc LB# 7282

☐ JACOB GOMIS, PROFESSIONAL SURVEYOR AND MAPPER LS# 6231 STATE OF FLORIDA
☐ PABLO J. ALFONSO, PROFESSIONAL SURVEYOR AND MAPPER LS# 5880 STATE OF FLORIDA

NO. | DATE | DESCRIPTION | BY | APP.
RECORD OF REVISION

ROYAL POINT LAND SURVEYORS, INC. L.B.# 7282
info@RoyalPointLS.com
6175 NW 153rd STREET, SUITE 321, MIAMI LAKES, FL. 33014 *** TEL: 305-822-6062 *** FAX.305-827-9669

TYPE OF SURVEY: ALTA/ NSPS LAND TITLE SURVEY

PREPARED FOR: HUNT RE ACQUISITIONS, LLC
16635 NE 19 AVENUE, NORTH MIAMI BEACH, FLORIDA

DRAWN:	J.G.
CHECKED:	P.J.A.
SCALE:	1" = 20'
FIELD DATE:	10/01/2021
JOB No.:	RP21-1513
SHEET:	1 OF 1 SHEET

OFFICE OF THE PROPERTY APPRAISER

Summary Report

Generated On : 10/13/2021

Property Information	
Folio:	07-2216-001-0280
Property Address:	16635 NE 19 AVE North Miami Beach, FL 33162-3149
Owner	MIRI 38 LLC
Mailing Address	15901 COLLINS AVE APT 1806 SUNNY ISLES BEACH, FL 33160 USA
PA Primary Zone	6300 COMMERCIAL - RESTRICTED
Primary Land Use	1713 OFFICE BUILDING - ONE STORY : OFFICE BUILDING
Beds / Baths / Half	0 / 0 / 0
Floors	1
Living Units	0
Actual Area	Sq.Ft
Living Area	Sq.Ft
Adjusted Area	4,337 Sq.Ft
Lot Size	11,500 Sq.Ft
Year Built	1981

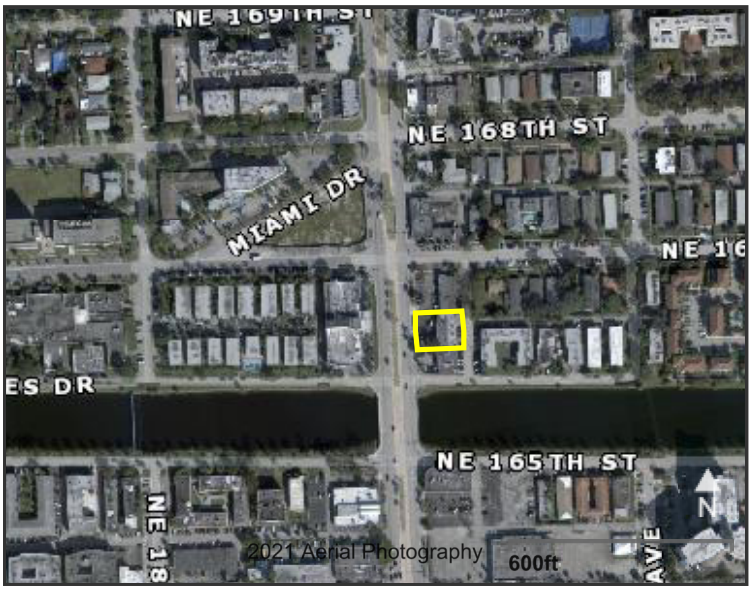
Assessment Information			
Year	2021	2020	2019
Land Value	$345,000	$253,000	$253,000
Building Value	$205,000	$297,000	$297,000
XF Value	$0	$0	$0
Market Value	$550,000	$550,000	$550,000
Assessed Value	$550,000	$550,000	$550,000

Benefits Information				
Benefit	Type	2021	2020	2019

Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).

Short Legal Description

16 52 42
FULFORD BY THE SEA SEC F PB 8-64
N42FT LOT 20 & ALL LOT 21 BLK 67
LOT SIZE 11500 SQ FT
OR 20292-3762 0202 4



Taxable Value Information			
	2021	2020	2019
County			
Exemption Value	$0	$0	$0
Taxable Value	$550,000	$550,000	$550,000
School Board			
Exemption Value	$0	$0	$0
Taxable Value	$550,000	$550,000	$550,000
City			
Exemption Value	$0	$0	$0
Taxable Value	$550,000	$550,000	$550,000
Regional			
Exemption Value	$0	$0	$0
Taxable Value	$550,000	$550,000	$550,000

Sales Information

Previous Sale	Price	OR Book-Page	Qualification Description
11/15/2016	$670,000	30322-2310	Qual by exam of deed
02/01/2013	$500,000	28476-0725	Qual by exam of deed
02/01/2002	$313,000	20221-4024	Sales which are qualified
02/01/2002	$0	20292-3762	Sales which are disqualified as a result of examination of the deed

Version:

Appendix B
Traffic, FDOT and County Data

National Data & Surveying Services Intersection Turning Movement Count

Location: NE 19th Ave & SR 826/NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 22-140228-003
Date: 5/11/2022

Data - Total

NS/EW Streets:	NE 19th Ave				NE 19th Ave				SR 826/NE 163rd St				SR 826/NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	6	0	73	6	51	0	34	241	7	1	0	201	39	0	661
7:15 AM	0	0	3	0	69	4	49	0	34	317	3	0	0	180	31	0	690
7:30 AM	0	1	7	0	74	1	62	0	60	347	4	0	0	217	34	0	807
7:45 AM	0	0	8	0	72	1	54	1	67	351	3	0	0	284	38	0	879
8:00 AM	0	0	6	0	80	6	55	0	72	306	1	0	0	334	40	0	900
8:15 AM	0	0	4	0	71	1	78	1	85	323	1	0	0	291	56	0	911
8:30 AM	0	2	6	0	76	2	60	0	64	285	4	0	0	245	67	0	811
8:45 AM	0	0	10	0	79	8	61	0	59	303	1	0	0	306	48	0	875
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	50	0	594	29	470	2	475	2473	24	1	0	2058	353	0	6534
APPROACH %'s :	0.00%	9.09%	90.91%	0.00%	54.25%	2.65%	42.92%	0.18%	15.98%	83.18%	0.81%	0.03%	0.00%	85.36%	14.64%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	2	24	0	299	10	247	2	288	1265	9	0	0	1154	201	0	3501
PEAK HR FACTOR :	0.000	0.250	0.750	0.000	0.934	0.417	0.792	0.500	0.847	0.901	0.563	0.000	0.000	0.864	0.750	0.000	0.961
	0.813				0.924				0.928				0.906				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	9	0	60	3	65	0	56	324	0	0	0	452	46	0	1015
4:15 PM	0	0	6	0	51	3	67	0	59	304	1	3	0	350	46	0	890
4:30 PM	0	0	7	0	70	5	98	0	68	300	0	0	0	391	56	0	995
4:45 PM	1	0	6	0	67	4	79	0	75	327	0	2	0	394	51	0	1006
5:00 PM	0	0	3	0	77	6	102	0	70	308	1	1	0	401	36	0	1005
5:15 PM	0	0	7	0	82	4	71	0	65	324	1	1	0	407	44	0	1006
5:30 PM	0	0	7	0	81	3	67	0	68	284	1	0	0	426	53	0	990
5:45 PM	0	1	6	0	80	2	84	0	77	355	2	0	0	385	42	0	1034
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	51	0	568	30	633	0	538	2526	6	7	0	3206	374	0	7941
APPROACH %'s :	1.89%	1.89%	96.23%	0.00%	46.14%	2.44%	51.42%	0.00%	17.48%	82.09%	0.19%	0.23%	0.00%	89.55%	10.45%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1	23	0	320	15	324	0	280	1271	5	2	0	1619	175	0	4035
PEAK HR FACTOR :	0.000	0.250	0.821	0.000	0.976	0.625	0.794	0.000	0.909	0.895	0.625	0.500	0.000	0.950	0.825	0.000	0.976
	0.857				0.891				0.897				0.936				

National Data & Surveying Services Intersection Turning Movement Count

Location: NE 19th Ave & NE 164th St
City: North Miami Beach
Control: Signalized

Project ID: 22-140228-002
Date: 5/11/2022

Data - Total

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	69	1	0	6	123	26	0	7	5	0	0	1	8	8	0	255
7:15 AM	0	68	1	0	7	125	22	0	9	5	2	0	3	2	5	0	249
7:30 AM	0	92	4	0	10	132	29	1	12	9	1	0	2	5	5	0	302
7:45 AM	1	107	2	1	11	133	41	0	21	10	0	0	1	2	7	0	337
8:00 AM	4	107	2	0	12	131	37	0	20	29	1	0	4	7	11	0	365
8:15 AM	12	129	6	0	10	151	45	0	22	12	2	0	0	10	2	0	401
8:30 AM	12	119	0	0	14	131	34	0	23	16	3	0	1	16	9	0	378
8:45 AM	4	102	5	0	24	144	43	0	13	11	1	0	5	16	13	0	381
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	34	793	21	1	94	1070	277	1	127	97	10	0	17	66	60	0	2668
APPROACH %'s :	4.00%	93.40%	2.47%	0.12%	6.52%	74.20%	19.21%	0.07%	54.27%	41.45%	4.27%	0.00%	11.89%	46.15%	41.96%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	32	457	13	0	60	557	159	0	78	68	7	0	10	49	35	0	1525
PEAK HR FACTOR :	0.667	0.886	0.542	0.000	0.625	0.922	0.883	0.000	0.848	0.586	0.583	0.000	0.500	0.766	0.673	0.000	0.951
	0.854				0.919				0.765				0.691				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	93	3	3	12	123	27	0	40	20	0	0	0	15	12	0	351
4:15 PM	6	95	2	0	9	117	29	0	33	22	7	2	2	21	15	0	360
4:30 PM	4	108	7	0	13	157	32	0	26	20	4	0	7	28	10	0	416
4:45 PM	1	125	2	1	13	150	39	0	26	23	4	0	0	19	14	0	417
5:00 PM	4	95	8	0	13	180	44	1	22	18	3	1	0	15	12	0	416
5:15 PM	3	103	8	2	10	151	44	0	24	11	4	0	2	24	9	0	395
5:30 PM	2	110	12	1	7	147	42	1	27	19	4	0	2	23	10	0	407
5:45 PM	5	114	7	1	15	150	30	1	33	18	4	0	3	12	14	0	407
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	28	843	49	8	92	1175	287	3	231	151	30	3	16	157	96	0	3169
APPROACH %'s :	3.02%	90.84%	5.28%	0.86%	5.91%	75.47%	18.43%	0.19%	55.66%	36.39%	7.23%	0.72%	5.95%	58.36%	35.69%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	12	431	25	3	49	638	159	1	98	72	15	1	9	86	45	0	1644
PEAK HR FACTOR :	0.750	0.862	0.781	0.375	0.942	0.886	0.903	0.250	0.942	0.783	0.938	0.250	0.321	0.768	0.804	0.000	0.986
	0.913				0.890				0.877				0.778				

National Data & Surveying Services Intersection Turning Movement Count

Location: NE 19th Ave & NE 167th St
City: North Miami Beach
Control: Signalized

Project ID: 22-140228-001
Date: 5/11/2022

Data - Total

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 167th St				NE 167th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	79	9	5	6	125	1	1	0	2	14	0	15	0	8	0	273
7:15 AM	6	83	7	1	12	127	3	0	1	2	17	0	15	1	10	0	285
7:30 AM	11	96	6	1	9	148	7	0	3	2	11	0	19	2	4	0	319
7:45 AM	18	111	17	5	4	157	9	0	3	4	14	0	12	5	8	0	367
8:00 AM	19	144	11	4	9	159	8	0	6	2	22	0	21	2	13	0	420
8:15 AM	23	138	19	1	5	178	3	1	5	2	15	0	21	5	5	0	421
8:30 AM	21	141	15	2	7	149	9	0	3	5	19	0	17	4	7	0	399
8:45 AM	22	128	10	5	5	170	8	0	1	3	22	0	15	3	11	0	403
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	128	920	94	24	57	1213	48	2	22	22	134	0	135	22	66	0	2887
APPROACH %'s :	10.98%	78.90%	8.06%	2.06%	4.32%	91.89%	3.64%	0.15%	12.36%	12.36%	75.28%	0.00%	60.54%	9.87%	29.60%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	85	551	55	12	26	656	28	1	15	12	78	0	74	14	36	0	1643
PEAK HR FACTOR :	0.924	0.957	0.724	0.600	0.722	0.921	0.778	0.250	0.625	0.600	0.886	0.000	0.881	0.700	0.692	0.000	0.976
	0.971				0.951				0.875				0.861				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	130	24	1	5	139	1	0	3	2	14	0	22	1	4	0	350
4:15 PM	13	140	10	1	4	121	3	0	4	3	12	0	29	2	10	0	352
4:30 PM	10	149	13	2	5	170	8	0	5	4	17	1	15	0	10	0	409
4:45 PM	10	154	17	1	4	175	8	1	8	3	19	0	16	3	8	0	427
5:00 PM	13	145	16	1	11	194	2	0	8	2	21	0	24	2	13	0	452
5:15 PM	6	141	15	1	8	180	5	0	6	1	13	0	21	1	9	0	407
5:30 PM	14	140	19	1	5	176	9	1	6	3	18	0	9	2	7	0	410
5:45 PM	13	150	23	6	9	167	6	1	5	2	13	0	18	3	12	0	428
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	83	1149	137	14	51	1322	42	3	45	20	127	1	154	14	73	0	3235
APPROACH %'s :	6.00%	83.08%	9.91%	1.01%	3.60%	93.23%	2.96%	0.21%	23.32%	10.36%	65.80%	0.52%	63.90%	5.81%	30.29%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	46	576	73	9	33	717	22	2	25	8	65	0	72	8	41	0	1697
PEAK HR FACTOR :	0.821	0.960	0.793	0.375	0.750	0.924	0.611	0.500	0.781	0.667	0.774	0.000	0.750	0.667	0.788	0.000	0.939
	0.917				0.935				0.790				0.776				

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8273 - NE 19TH AVE, 200' NORTH OF 175TH STREET

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	20400 F	N 9400	S 11000	9.00	54.20	10.40
2019	21300 C	N 9800	S 11500	9.00	54.60	11.00
2018	19000 S	N 9000	S 10000	9.00	54.30	12.10
2017	18900 F	N 8900	S 10000	9.00	55.00	12.60
2016	18300 C	N 8600	S 9700	9.00	54.50	13.50
2015	15300 T	N 6200	S 9100	9.00	54.70	13.70
2014	14800 S	N 6000	S 8800	9.00	54.50	17.40
2013	14600 F	N 5900	S 8700	9.00	52.40	16.20
2012	14900 C	N 6000	S 8900	9.00	55.70	16.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5225 - SR 826/NE 163 ST, 100' E OF NE 20 AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	43500 C	E 23000	W 20500	9.00	54.20	3.10
2019	51000 C	E 27500	W 23500	9.00	54.60	3.90
2018	49500 C	E 26500	W 23000	9.00	54.30	4.20
2017	58000 C	E 29000	W 29000	9.00	55.00	9.40
2016	49000 C	E 26500	W 22500	9.00	54.50	5.30
2015	56000 C	E 29500	W 26500	9.00	54.70	4.50
2014	50000 C	E 27000	W 23000	9.00	54.50	3.70
2013	50000 C	E 27500	W 22500	9.00	52.40	3.30
2012	54000 C	E 29500	W 24500	9.00	55.70	2.80
2011	55000 C	E 27500	W 27500	9.00	55.10	2.80
2010	52500 C	E 26500	W 26000	8.98	54.08	2.80
2009	58000 C	E 29500	W 28500	8.99	53.24	4.10
2008	53500 C	E 27500	W 26000	9.09	55.75	4.20
2007	54000 C	E 27500	W 26500	8.01	54.34	3.20
2006	51000 C	E 25500	W 25500	7.97	54.22	5.10
2005	51000 C	E 26000	W 25000	8.80	53.80	5.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8700 MIAMI-DADE NORTH

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.03	1.06
2	01/06/2019 - 01/12/2019	1.02	1.05
3	01/13/2019 - 01/19/2019	1.01	1.04
4	01/20/2019 - 01/26/2019	1.00	1.03
* 5	01/27/2019 - 02/02/2019	0.98	1.01
* 6	02/03/2019 - 02/09/2019	0.97	1.00
* 7	02/10/2019 - 02/16/2019	0.96	0.99
* 8	02/17/2019 - 02/23/2019	0.96	0.99
* 9	02/24/2019 - 03/02/2019	0.96	0.99
*10	03/03/2019 - 03/09/2019	0.96	0.99
*11	03/10/2019 - 03/16/2019	0.97	1.00
*12	03/17/2019 - 03/23/2019	0.97	1.00
*13	03/24/2019 - 03/30/2019	0.97	1.00
*14	03/31/2019 - 04/06/2019	0.97	1.00
*15	04/07/2019 - 04/13/2019	0.98	1.01
*16	04/14/2019 - 04/20/2019	0.98	1.01
*17	04/21/2019 - 04/27/2019	0.98	1.01
18	04/28/2019 - 05/04/2019	0.99	1.02
19	05/05/2019 - 05/11/2019	0.99	1.02
20	05/12/2019 - 05/18/2019	1.00	1.03
21	05/19/2019 - 05/25/2019	1.00	1.03
22	05/26/2019 - 06/01/2019	1.01	1.04
23	06/02/2019 - 06/08/2019	1.01	1.04
24	06/09/2019 - 06/15/2019	1.02	1.05
25	06/16/2019 - 06/22/2019	1.02	1.05
26	06/23/2019 - 06/29/2019	1.02	1.05
27	06/30/2019 - 07/06/2019	1.02	1.05
28	07/07/2019 - 07/13/2019	1.03	1.06
29	07/14/2019 - 07/20/2019	1.03	1.06
30	07/21/2019 - 07/27/2019	1.03	1.06
31	07/28/2019 - 08/03/2019	1.02	1.05
32	08/04/2019 - 08/10/2019	1.02	1.05
33	08/11/2019 - 08/17/2019	1.02	1.05
34	08/18/2019 - 08/24/2019	1.02	1.05
35	08/25/2019 - 08/31/2019	1.02	1.05
36	09/01/2019 - 09/07/2019	1.03	1.06
37	09/08/2019 - 09/14/2019	1.03	1.06
38	09/15/2019 - 09/21/2019	1.03	1.06
39	09/22/2019 - 09/28/2019	1.02	1.05
40	09/29/2019 - 10/05/2019	1.01	1.04
41	10/06/2019 - 10/12/2019	1.00	1.03
42	10/13/2019 - 10/19/2019	0.99	1.02
43	10/20/2019 - 10/26/2019	1.00	1.03
44	10/27/2019 - 11/02/2019	1.00	1.03
45	11/03/2019 - 11/09/2019	1.01	1.04
46	11/10/2019 - 11/16/2019	1.01	1.04
47	11/17/2019 - 11/23/2019	1.02	1.05
48	11/24/2019 - 11/30/2019	1.02	1.05
49	12/01/2019 - 12/07/2019	1.02	1.05
50	12/08/2019 - 12/14/2019	1.03	1.06
51	12/15/2019 - 12/21/2019	1.03	1.06
52	12/22/2019 - 12/28/2019	1.02	1.05
53	12/29/2019 - 12/31/2019	1.01	1.04

* PEAK SEASON

GROWTH RATE CALCULATION
16635 NE 19 AVENUE

Roadway	FDOT Site	2019	2015
NE 163 Street E/O NE 20 Avenue	5225	51,000	56,000
NE 19 Avenue N/O NE 175 Street	8273	21,300	15,300
Total		**74,319**	**73,315**
Average Annual Growth Rate			**0.34%**

Used 0.5% Growth Rate

Miami-Dade 2015 Base Year Direction Trip Distribution Summary											
TAZ of Origin		Trips / Percent	Cardinal Directions								Total Trips
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
79	2979	Trips	191	104	78	284	397	273	195	326	1,875
79	2979	Percent	10.4	5.6	4.3	15.4	21.5	14.8	10.6	17.6	
80	2980	Trips	8,681	2,809	1,368	5,932	13,818	10,867	8,744	14,261	73,625
80	2980	Percent	13.1	4.2	2.1	8.9	20.8	16.4	13.2	21.5	
81	2981	Trips	1,647	1,897	537	1,291	2,397	1,683	1,326	1,826	13,373
81	2981	Percent	13.1	15.1	4.3	10.2	19.0	13.4	10.5	14.5	
82	2982	Trips	4	8	0	8	11	5	14	3	54
82	2982	Percent	7.7	14.8	0.0	14.8	21.1	9.3	26.2	5.9	
83	2983	Trips	273	57	13	127	235	168	102	126	1,111
83	2983	Percent	24.8	5.2	1.2	11.6	21.4	15.3	9.3	11.4	
84	2984	Trips	432	452	108	276	747	592	444	462	3,632
84	2984	Percent	12.3	12.9	3.1	7.9	21.3	16.8	12.6	13.1	
85	2985	Trips	261	89	194	118	388	325	270	362	2,042
85	2985	Percent	13.0	4.4	9.7	5.9	19.3	16.2	13.5	18.0	
86	2986	Trips	771	180	89	332	764	741	432	552	3,920
86	2986	Percent	20.0	4.7	2.3	8.6	19.8	19.2	11.2	14.3	
87	2987	Trips	570	56	151	125	505	344	317	381	2,512
87	2987	Percent	23.3	2.3	6.2	5.1	20.6	14.0	13.0	15.6	
88	2988	Trips	474	50	21	119	300	208	162	216	1,570
88	2988	Percent	30.6	3.2	1.3	7.7	19.4	13.4	10.5	13.9	
89	2989	Trips	331	79	39	34	347	282	145	213	1,495
89	2989	Percent	22.5	5.4	2.6	2.3	23.6	19.2	9.9	14.5	
90	2990	Trips	4,146	286	429	825	3,640	2,975	2,072	3,514	19,467
90	2990	Percent	23.2	1.6	2.4	4.6	20.4	16.6	11.6	19.6	
91	2991	Trips	259	269	65	347	858	1,335	524	1,228	5,195
91	2991	Percent	5.3	5.5	1.3	7.1	17.6	27.3	10.7	25.1	
92	2992	Trips	349	364	45	275	580	901	348	802	3,879
92	2992	Percent	9.5	9.9	1.2	7.5	15.8	24.6	9.5	21.9	
93	2993	Trips	195	74	12	52	224	221	153	156	1,098
93	2993	Percent	18.0	6.8	1.1	4.8	20.6	20.3	14.0	14.4	
94	2994	Trips	701	165	38	164	564	493	412	394	2,980
94	2994	Percent	23.9	5.6	1.3	5.6	19.2	16.8	14.1	13.5	
95	2995	Trips	1,157	251	112	411	943	782	652	644	5,051
95	2995	Percent	23.4	5.1	2.3	8.3	19.0	15.8	13.2	13.0	
96	2996	Trips	334	88	58	100	222	229	226	189	1,480
96	2996	Percent	23.1	6.1	4.0	6.9	15.4	15.9	15.6	13.1	
97	2997	Trips	364	65	29	103	330	278	294	257	1,751
97	2997	Percent	21.2	3.8	1.7	6.0	19.2	16.1	17.1	14.9	
98	2998	Trips	388	202	52	214	475	336	344	343	2,414
98	2998	Percent	16.5	8.6	2.2	9.1	20.2	14.3	14.6	14.6	
99	2999	Trips	3,253	1,254	599	1,888	3,041	2,026	1,990	2,271	16,984
99	2999	Percent	19.9	7.7	3.7	11.6	18.6	12.4	12.2	13.9	
100	3000	Trips	1,054	1,070	420	946	1,241	1,166	758	737	7,600
100	3000	Percent	14.3	14.5	5.7	12.8	16.8	15.8	10.3	10.0	
101	3001	Trips	1,050	272	61	208	446	420	463	772	3,735
101	3001	Percent	28.4	7.4	1.7	5.6	12.1	11.4	12.5	20.9	
102	3002	Trips	1,000	1,037	351	727	1,353	1,013	956	831	7,620
102	3002	Percent	13.8	14.3	4.8	10.0	18.6	13.9	13.2	11.4	
103	3003	Trips	535	384	275	305	768	438	327	391	3,487
103	3003	Percent	15.6	11.2	8.0	8.9	22.4	12.8	9.6	11.4	
104	3004	Trips	817	817	333	688	1,488	854	412	712	6,219
104	3004	Percent	13.4	13.3	5.4	11.2	24.3	14.0	6.7	11.6	

Miami-Dade 2045 Cost Feasible Plan Direction Trip Distribution Summary											
TAZ of Origin		Trips / Percent	Cardinal Directions								Total Trips
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
79	2979	Trips	432	111	79	570	940	474	311	510	3,577
79	2979	Percent	12.6	3.3	2.3	16.6	27.4	13.8	9.1	14.9	
80	2980	Trips	9,844	1,997	1,773	7,477	20,304	14,012	10,711	17,394	92,886
80	2980	Percent	11.8	2.4	2.1	9.0	24.3	16.8	12.8	20.8	
81	2981	Trips	1,842	1,762	455	1,081	3,190	2,037	1,539	1,744	14,144
81	2981	Percent	13.5	12.9	3.3	7.9	23.4	14.9	11.3	12.8	
82	2982	Trips	83	40	16	29	96	76	43	67	449
82	2982	Percent	18.5	8.8	3.5	6.4	21.3	16.9	9.7	15.0	
83	2983	Trips	377	47	26	111	348	272	152	160	1,501
83	2983	Percent	25.3	3.2	1.7	7.5	23.3	18.2	10.2	10.7	
84	2984	Trips	735	496	111	444	1,156	923	572	670	5,268
84	2984	Percent	14.4	9.7	2.2	8.7	22.6	18.1	11.2	13.1	
85	2985	Trips	290	76	195	158	538	388	266	307	2,249
85	2985	Percent	13.1	3.4	8.8	7.1	24.3	17.5	12.0	13.8	
86	2986	Trips	983	178	103	371	1,133	1,011	480	563	4,931
86	2986	Percent	20.4	3.7	2.1	7.7	23.5	21.0	10.0	11.7	
87	2987	Trips	890	81	242	222	904	629	429	529	4,032
87	2987	Percent	22.7	2.1	6.2	5.7	23.0	16.0	10.9	13.5	
88	2988	Trips	474	33	38	179	497	307	206	277	2,062
88	2988	Percent	23.6	1.6	1.9	8.9	24.7	15.3	10.2	13.8	
89	2989	Trips	359	73	61	68	402	399	199	286	1,883
89	2989	Percent	19.4	4.0	3.3	3.7	21.7	21.6	10.8	15.5	
90	2990	Trips	3,842	246	298	943	5,243	4,449	2,670	3,717	22,961
90	2990	Percent	18.0	1.2	1.4	4.4	24.5	20.8	12.5	17.4	
91	2991	Trips	311	248	41	363	1,180	1,730	706	1,403	6,349
91	2991	Percent	5.2	4.2	0.7	6.1	19.7	28.9	11.8	23.5	
92	2992	Trips	279	279	37	350	745	927	488	802	4,303
92	2992	Percent	7.1	7.1	1.0	9.0	19.1	23.7	12.5	20.5	
93	2993	Trips	197	19	2	75	255	244	176	174	1,145
93	2993	Percent	17.3	1.6	0.2	6.6	22.3	21.4	15.4	15.3	
94	2994	Trips	1,520	252	35	456	1,425	1,197	1,012	860	7,203
94	2994	Percent	22.5	3.7	0.5	6.8	21.1	17.7	15.0	12.7	
95	2995	Trips	1,340	181	119	476	1,334	974	745	709	6,013
95	2995	Percent	22.8	3.1	2.0	8.1	22.7	16.6	12.7	12.1	
96	2996	Trips	659	143	83	236	701	501	494	380	3,367
96	2996	Percent	20.6	4.5	2.6	7.4	21.9	15.7	15.5	11.9	
97	2997	Trips	674	92	48	196	724	476	461	424	3,226
97	2997	Percent	21.8	3.0	1.6	6.3	23.4	15.4	14.9	13.7	
98	2998	Trips	584	205	53	311	657	444	446	391	3,171
98	2998	Percent	18.9	6.6	1.7	10.1	21.3	14.4	14.4	12.7	
99	2999	Trips	3,843	1,448	804	1,816	3,592	2,286	2,527	2,624	19,836
99	2999	Percent	20.3	7.6	4.3	9.6	19.0	12.1	13.3	13.9	
100	3000	Trips	1,170	1,188	470	1,050	1,554	1,358	947	778	8,796
100	3000	Percent	13.7	14.0	5.5	12.3	18.3	15.9	11.1	9.1	
101	3001	Trips	1,373	134	82	208	663	517	510	941	4,546
101	3001	Percent	31.0	3.0	1.9	4.7	15.0	11.7	11.5	21.3	
102	3002	Trips	1,239	1,159	383	1,201	2,090	1,709	989	1,160	10,403
102	3002	Percent	12.5	11.7	3.9	12.1	21.1	17.2	10.0	11.7	
103	3003	Trips	566	483	242	390	1,115	701	423	486	4,574
103	3003	Percent	12.9	11.0	5.5	8.9	25.3	15.9	9.6	11.0	
104	3004	Trips	995	756	259	694	1,848	1,526	568	907	7,641
104	3004	Percent	13.2	10.0	3.4	9.2	24.5	20.2	7.5	12.0	


N
NTS
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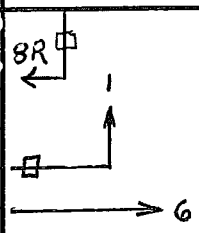
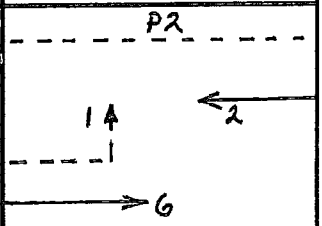
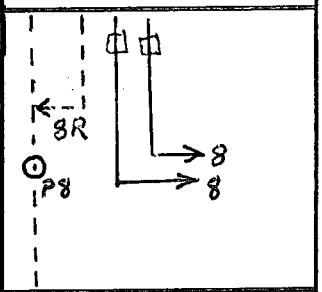
OGRGeoJSON:SHAPE_Area 568162.334795

SIGNAL OPERATING PLAN

N

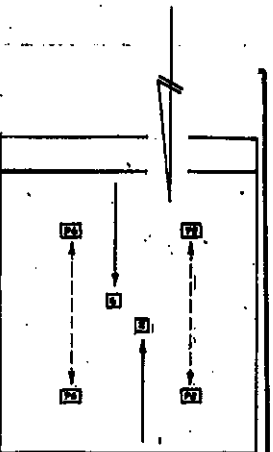
Timing Phases	Direction	E		W		S				Ped Heads				Movements/Display/Actuation
	Head No.	1	6		2	8	8R				P2	P8		
	Dwell													
	Clear to													
(1+6)	Dwell	<G/G	G		R	R	R/G>				DW	DW		
EBLT	(2+6)	<Y/G	G		R	R	R/Y>				DW	DW		
	Clear to													
(ACTUATED)														
(2+6)	Dwell	G	G		G	R	R				W/F	DW		
E-W	(8)	Y	Y		Y	R	R				DW	DW		
	Clear to													
(Recall)														
	Dwell													
	Clear to													
	Dwell													
	Clear to													
(8)	Dwell	R	R		R	<G/G	G				DW	W/F		
	(1+6)	R	R		R	Y	Y				DW	DW		
S'BND	(2+6)	R	R		R	Y	Y				DW	DW		
	Clear to													
(ACTUATED)														
Flashing Operation		FY	FY		FY	FR	FR							Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date			
F. PRATS	1/22/13	SR 826 & NE 19 AV		
Checked	Date	Placed in Service	Phasing No.	Asset Number
H. HERNANDEZ	1/24/13	Date 3/5/13 By CONTRACTOR	6	2013

SIGNAL OPERATING PLAN

PHASE	INT	SIGNAL HEAD NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	PEDESTRIAN HEAD NUMBER P2	P4*	P6	P8*
Ø2+6 NE 19 AVE	R/W		G	R	R		G	R	R					W	DW	W	DW
	PED CLEAR		G	R	R		G	R	R					FDW	DW	FDW	DW
	TO CLEAR Ø3+7		Y	R	R		Y	R	R					DW	DW	DW	DW
	TO CLEAR Ø3+8		Y	R	R		Y	R	R					DW	DW	DW	DW
	TO CLEAR Ø4+7		Y	R	R		Y	R	R					DW	DW	DW	DW
	TO CLEAR Ø4+8		Y	R	R		Y	R	R					DW	DW	DW	DW
(RECALL)																	
Ø3+7 NE 164 ST	R/W		R	R	R		R	R	R					DW	DW	DW	DW
	TO CLEAR Ø3+8		R	R	R		R	R	R					DW	DW	DW	DW
	TO CLEAR Ø4+7		R	R	R		R	R	R					DW	DW	DW	DW
	TO CLEAR Ø4+8		R	R	R		R	R	R					DW	DW	DW	DW
	TO CLEAR Ø2+6		R	R	R		R	R	R					DW	DW	DW	DW
(ACTUATED)																	
Ø3+8 NE 164 ST	R/W		R	G	R		R	R	G					DW	DW	DW	DW
	TO CLEAR Ø4+8		R	G	R		R	R	G					DW	DW	DW	DW
	TO CLEAR Ø2+6		R	Y	R		R	R	Y					DW	DW	DW	DW
(ACTUATED)																	
Ø4+7 NE 164 ST	R/W		R	R	G		R	G	R					DW	DW	DW	DW
	TO CLEAR Ø4+8		R	R	G		R	G	R					DW	DW	DW	DW
	TO CLEAR Ø2+6		R	R	Y		R	Y	R					DW	DW	DW	DW
(ACTUATED)																	
Ø4+8 NE 164 ST	R/W		R	G	G		R	G	G					DW	W	DW	W
	PED CLEAR		R	G	G		R	G	G					DW	FDW	DW	FDW
	TO CLEAR Ø2+6		R	Y	Y		R	Y	Y					DW	DW	DW	DW
(ACTUATED)																	
FLASHING OPERATION			FY	FR	FR		FY	FR	FR								



RECEIPT OF THE SKIP PULSE FROM THE TRAFFIC CONTROL SYSTEM WILL CAUSE PHASES 3&7 TO BE OMITTED.

*PEDESTRIAN SEQUENCE SHALL BE DISPLAYED UPON ACTUATION ONLY.

Drawn: F. PRATS	Date: 1/16/98	METROPOLITAN DADE COUNTY DEPARTMENT OF PUBLIC WORKS
Check: H. HERNANDEZ	Date: 1/20/98	ASSET NO: 32016
Division Engineer	Date	NE 19 AVENUE & NE 164 STREET
Placed in Service: Date: 2/25/98 By: CONTRACTOR		Phasing Number: 5

TOD Schedule Report

for 2016: NE 19 Av&NE 164 St

Print Date: 10/4/2021

Print Time: 1:49 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2016	NE 19 Av&NE 164 St	DOW-2	TOD	[04] HEAVY AM PEAK	120	31	N/A	1	Max 2

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	EBL	WBT	-	NBT	WBL	EBT
0	33	38	32	0	33	38	32

Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
Phase Bank	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 SBT	7 - 7 - 7	22 - 22 - 22	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 0 - 0	4	2
3 EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	7 - 7 - 7	17 - 17 - 17	3.4	2
4 WBT	5 - 5 - 5	27 - 27 - 27	7 - 7 - 7	3.5 - 2.5 - 2.5	20 - 20 - 20	32 - 32 - 32	4	2
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 NBT	7 - 7 - 7	22 - 22 - 22	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 0 - 0	4	2
7 WBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	7 - 7 - 7	17 - 17 - 17	3.4	2
8 EBT	5 - 5 - 5	27 - 27 - 27	7 - 7 - 7	3.5 - 2.5 - 2.5	20 - 20 - 20	32 - 32 - 32	4	2

Last In Service Date: unknown

Permitted Phases

	12345678
Default	-234-678
External Permit 0	--------
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 EBL	4 WBT	5 -	6 NBT	7 WBL	8 EBT	Ring Offset	Offset
	1	90	0	11	30	32	0	11	30	32	0	1
	2	120	0	43	28	32	0	43	28	32	0	28
	3	110	0	28	33	32	0	28	33	32	0	26
	4	120	0	33	38	32	0	33	38	32	0	31

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th F S
0630	2	Su M T W Th F S
1000	3	Su M T W Th F S
1330	4	Su M T W Th F S
2000	3	Su M T W Th F S

TOD Schedule Report

for 2016: NE 19 Av&NE 164 St

Print Date: 10/4/2021

Print Time: 1:49 PM

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

Local Time of Day Function

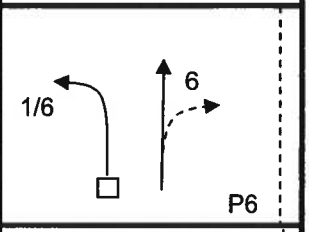
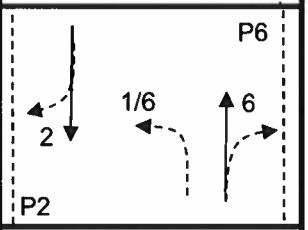
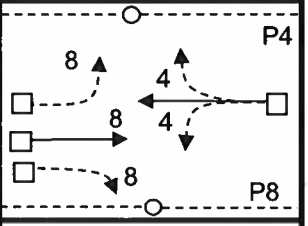
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

	Direction	NB		SB	EB	WB	Ped Heads				N
Timing Phases	Head No.	1/6	6	2	8	4	P6	P2	P8	P4	Movements/Display/Actuation
(1+6) NBL + NBT NE 19 AV (ACTUATED)	Dwell	<G/G	G	R	R	R	W/F	DW	DW	DW	
	2+6	<Y/G	G	R	R	R	W/F	DW	DW	DW	
	Clear										
(2+6) SBT + NBT NE 19 AV (RECALL)	Dwell	G	G	G	R	R	W/F	W/F	DW	DW	
	4+8	Y	Y	Y	R	R	DW	DW	DW	DW	
	Clear										
(4+8) WBT + EBT NE 167 ST (ACTUATED)	Dwell		R	R	G	G	DW	DW	W/F	W/F	
	1+6		R	R	Y	Y	DW	DW	DW	DW	
	2+6		R	R	Y	Y	DW	DW	DW	DW	
	Clear										
	Dwell										
	Clear to										
	Dwell										
	Clear to										
	Dwell										
	Clear										
Flashing Operation		FY		FY	FR	FR					Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date	NE 19 AV & NE 167 ST		
E. Zapata E.Z.	7/20/2021			
Checked	Date	Placed in Service	Phasing No.	Asset Number
H. Llamas	7/22/21	Date / By	3	4835

TOD Schedule Report

for 4835: NE 19 Av&NE 167 St

Print Date: 10/4/2021

Print Time: 7:20 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
4835	NE 19 Av&NE 167 St	DOW-2	TOD	[03] AM PEAK	90	88	N/A	1	Max 2

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
NBL	SBT	-	WBT	-	NBT	-	EBT
6	40	0	26	0	52	0	26

Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
Phase Bank	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1 NBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 7 - 10	10 - 7 - 0	3.7	2
2 SBT	7 - 7 - 7	19 - 19 - 19	7 - 7 - 7	1 - 1 - 1	40 - 30 - 40	0 - 30 - 0	4	2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 WBT	4 - 4 - 4	30 - 30 - 30	7 - 7 - 7	2.5 - 2.5 - 2.5	30 - 25 - 30	37 - 25 - 0	4	2
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 NBT	7 - 7 - 7	19 - 19 - 19	7 - 7 - 7	1 - 1 - 1	40 - 30 - 40	0 - 30 - 0	4	2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 EBT	4 - 4 - 4	30 - 30 - 30	7 - 7 - 7	2.5 - 2.5 - 2.5	30 - 25 - 30	37 - 25 - 0	4	2

Last In Service Date: unknown

Permitted Phases

	12345678
Default	12-4-6-8
External Permit 0	--------
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

Current TOD Schedule	Plan	Cycle	Green Time 1 NBL	2 SBT	3 -	4 WBT	5 -	6 NBT	7 -	8 EBT	Ring Offset	Offset
	1	110	9	47	0	36	0	62	0	36	0	28
	2	110	6	52	0	34	0	64	0	34	0	43
	3	90	6	40	0	26	0	52	0	26	0	88
	4	120	9	59	0	34	0	74	0	34	0	54

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S
0530	3	Su M T W Th F S
0700	1	M T W Th F
0900	3	M T W Th F
1000	2	Su S
1130	2	M T W Th F
1330	3	M T W Th F
1600	3	Su S
1600	4	M T W Th F
1900	3	M T W Th F

TOD Schedule Report

for 4835: NE 19 Av&NE 167 St

Print Date: 10/4/2021

Print Time: 7:20 PM

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	SuM T W ThF S
0530	TOD OUTPUTS	--------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	SuM T W ThF S
0530	TOD OUTPUTS	--------	SuM T W ThF S

*** Settings**

Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's Urbanized Areas[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,700	>1,770	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	4,050	5,640	6,800	7,420
6	5,960	8,310	10,220	11,150
8	7,840	10,960	13,620	14,850
10	9,800	13,510	17,040	18,580
12	11,600	16,350	20,930	23,200

Urbanized

Lanes	B	C	D	E
4	4,130	5,640	7,070	7,690
6	6,200	8,450	10,510	11,530
8	8,270	11,270	13,960	15,380
10	10,350	14,110	17,310	19,220

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	1,050	1,620	2,180	2,930
4	Divided	3,270	4,730	5,960	6,780
6	Divided	4,910	7,090	8,950	10,180

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

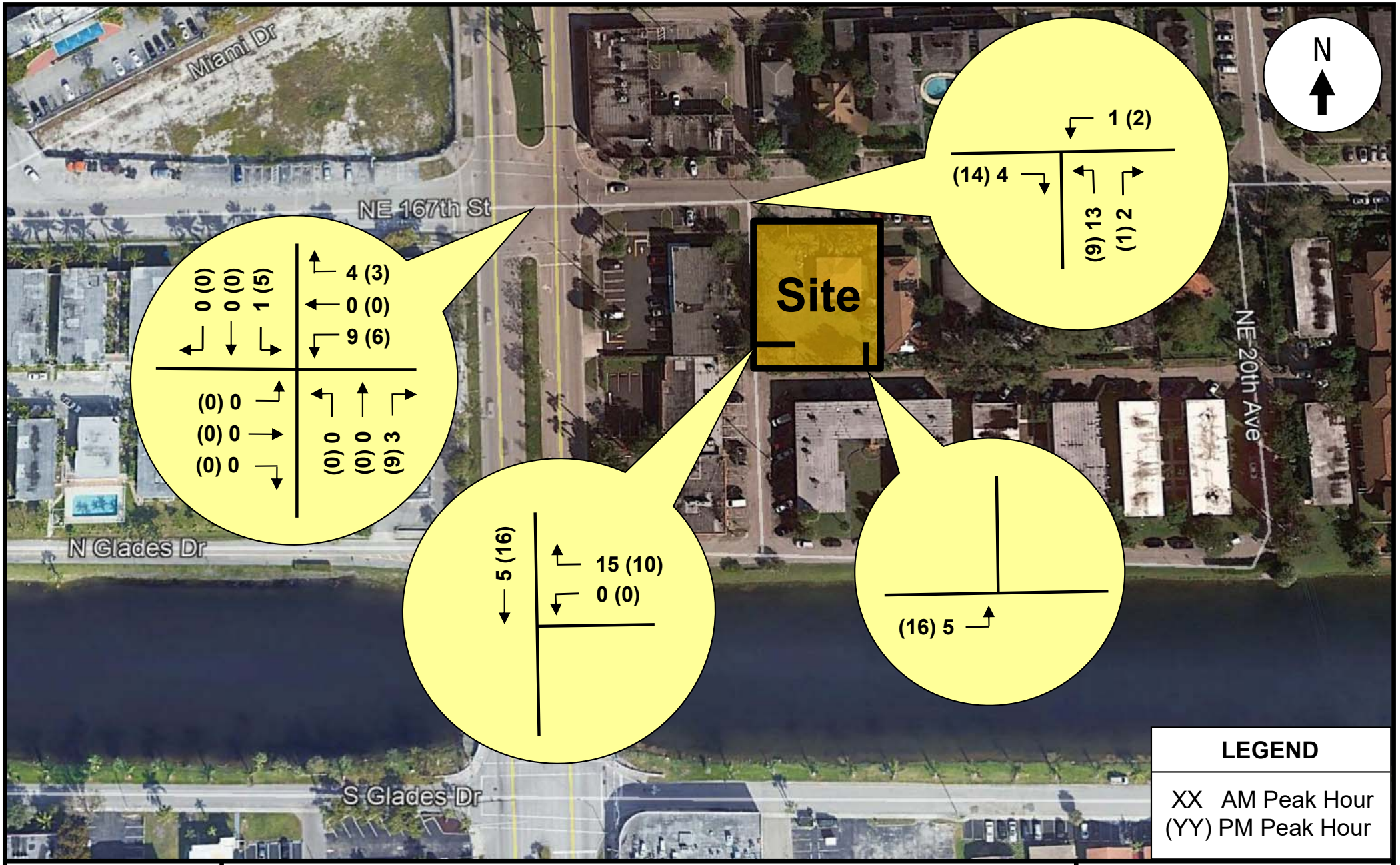
[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

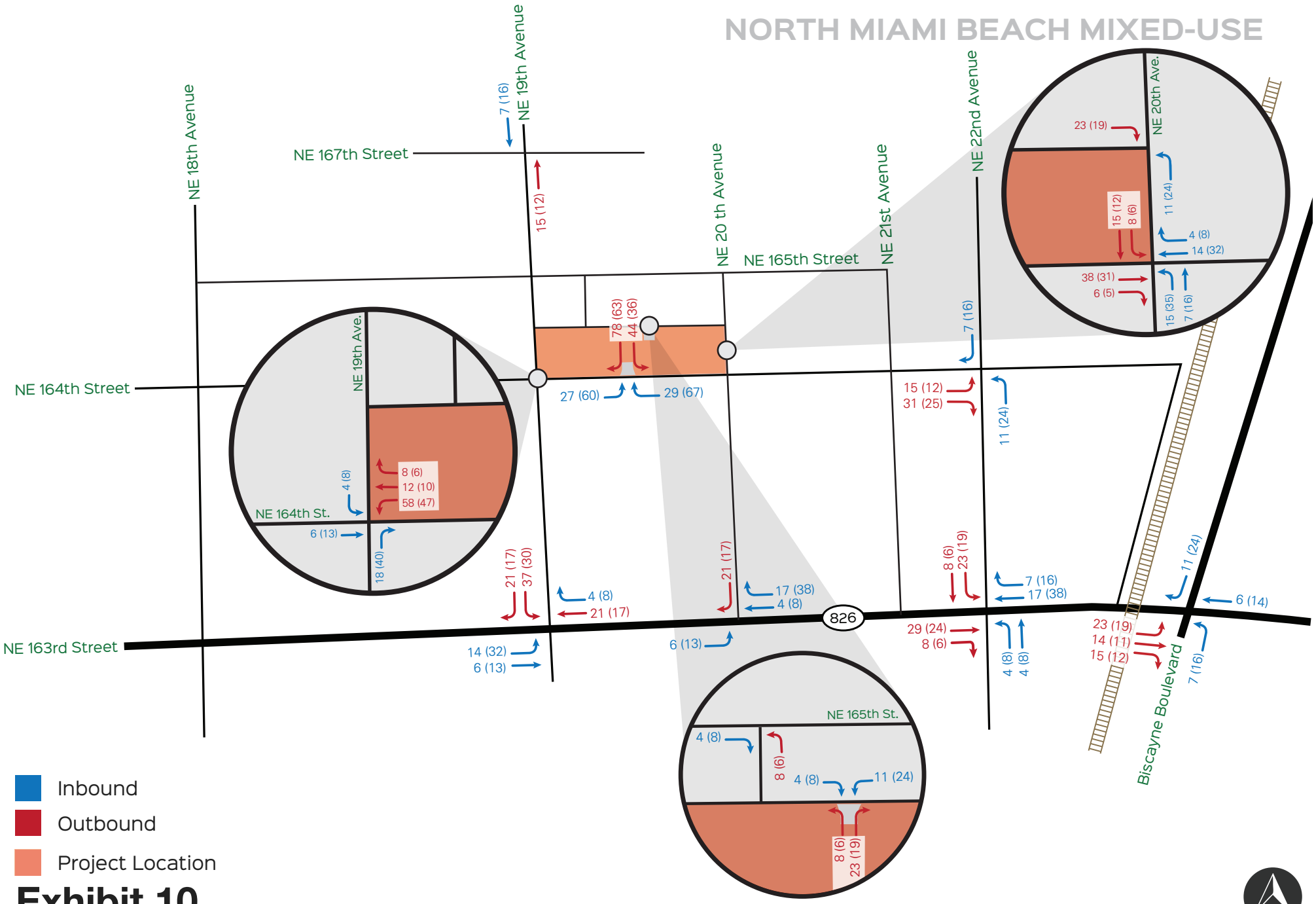
Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems/



KBP
CONSULTING, INC.

Driveway & Intersection Traffic Assignment

FIGURE 2
Bali Residential
North Miami Beach, Florida



Inbound

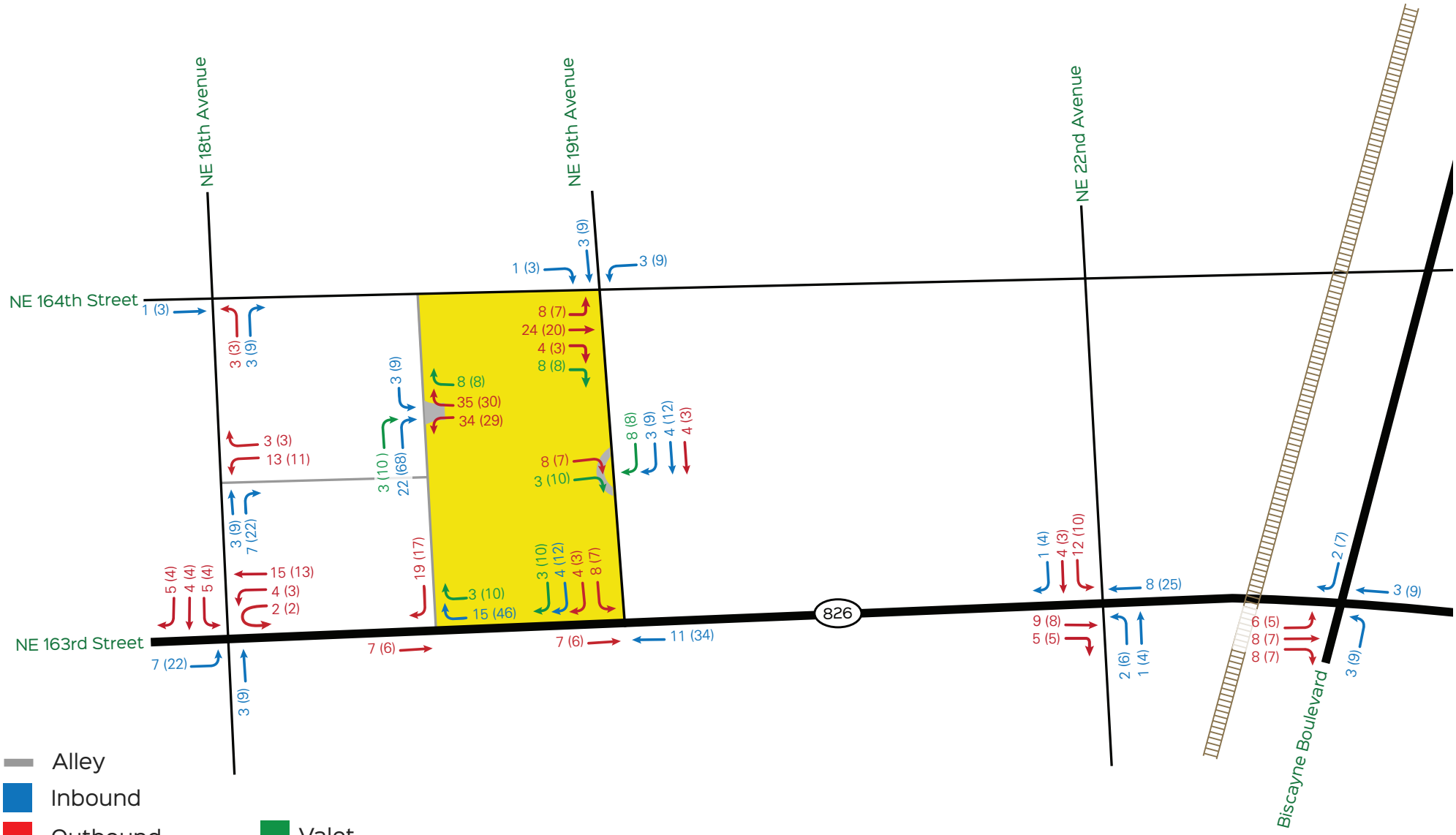
Outbound

Project Location

Exhibit 10

Project Trip Assignment

NORTH
MAP NOT TO SCALE



Alley
Inbound
Outbound
Project Location
Valet
Valet Station

Exhibit 10

Project Trip Assignment

NORTH
MAP NOT TO SCALE

Appendix C
Traffic Volume Development Tables

AM PEAK HOUR TRAFFIC VOLUME CALCULATIONS

16635 NE 19 AVENUE

Intersection	Scenario	Traffic Volumes											
		EBLT	EBT	EBRT	WBLT	WBT	WBRT	NBLT	NBT	NBRT	SBLT	SBT	SBRT
NE 19 Avenue & NE 167 Street	Traffic Count	15	12	78	74	14	36	97	551	55	27	656	28
	Peak Season Conversion Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	2022 Peak Season Traffic	**15**	**12**	**80**	**75**	**14**	**37**	**99**	**562**	**56**	**28**	**669**	**29**
	Compound Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
	Existing plus Background Growth	15	12	80	76	14	37	99	565	56	28	672	29
	Committed Development Trips				9		4		15	3	1	7	
	2023 Background Traffic	**15**	**12**	**80**	**85**	**14**	**41**	**99**	**580**	**59**	**29**	**679**	**29**
	In/Out			In	In			Out	Out	Out		In	
	Project Assignment			13%	5%			59%	36%	5%		36%	
	Net New Project Trips	0	0	2	1	0	0	12	7	1	0	4	0
	2023 Total Traffic	**15**	**12**	**82**	**86**	**14**	**41**	**111**	**587**	**60**	**29**	**683**	**29**
NE 19 Avenue & NE 164 Street	Traffic Count	78	68	7	10	49	35	32	457	13	60	557	159
	Peak Season Conversion Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	2022 Peak Season Traffic	**80**	**69**	**7**	**10**	**50**	**36**	**33**	**466**	**13**	**61**	**568**	**162**
	Compound Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
	Existing plus Background Growth	80	70	7	10	50	36	33	468	13	62	571	163
	Committed Development Trips	8	30	13	61	12	8				4	3	
	2023 Background Traffic	**88**	**100**	**20**	**71**	**62**	**44**	**33**	**468**	**13**	**66**	**574**	**163**
	In/Out								In			Out	
	Project Assignment								46%			46%	
	Net New Project Trips	0	0	0	0	0	0	0	6	0	0	9	0
	2023 Total Traffic	**88**	**100**	**20**	**71**	**62**	**44**	**33**	**474**	**13**	**66**	**583**	**163**
NE 19 Avenue & NE 163 Street	Traffic Count	288	1,265			1,154	201				301		247
	Peak Season Conversion Factor	1.02	1.02			1.02	1.02				1.02		1.02
	2022 Peak Season Traffic	**294**	**1,290**			**1,177**	**205**				**307**		**252**
	Compound Growth Rate	0.50%	0.50%			0.50%	0.50%				0.50%		0.50%
	Existing plus Background Growth	295	1,297			1,183	206				309		253
	Committed Development Trips	14	13			32	22				45		32
	2023 Background Traffic	**309**	**1,310**			**1,215**	**228**				**354**		**285**
	In/Out	In					In				Out		Out
	Project Assignment	36%					10%				10%		36%
	Net New Project Trips	4	0			0	1				2		7
	2023 Total Traffic	**313**	**1,310**			**1,215**	**229**				**356**		**292**

PM PEAK HOUR TRAFFIC VOLUME CALCULATIONS

16635 NE 19 AVENUE

Intersection	Scenario	Traffic Volumes											
		EBLT	EBT	EBRT	WBLT	WBT	WBRT	NBLT	NBT	NBRT	SBLT	SBT	SBRT
NE 19 Avenue & NE 167 Street	Traffic Count	25	8	65	72	8	41	55	576	73	35	717	22
	Peak Season Conversion Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	2022 Peak Season Traffic	**26**	**8**	**66**	**73**	**8**	**42**	**56**	**588**	**74**	**36**	**731**	**22**
	Compound Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
	Existing plus Background Growth	26	8	67	74	8	42	56	590	75	36	735	23
	Committed Development Trips				6		3		12	9	5	16	
	2023 Background Traffic	**26**	**8**	**67**	**80**	**8**	**45**	**56**	**602**	**84**	**41**	**751**	**23**
	In/Out			In	In			Out	Out	Out		In	
	Project Assignment			13%	5%			59%	36%	5%		36%	
	Net New Project Trips	0	0	5	2	0	0	17	10	1	0	13	0
	2023 Total Traffic	**26**	**8**	**72**	**82**	**8**	**45**	**73**	**612**	**85**	**41**	**764**	**23**
NE 19 Avenue & NE 164 Street	Traffic Count	99	72	15	9	86	45	15	431	25	50	638	159
	Peak Season Conversion Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	2022 Peak Season Traffic	**101**	**73**	**15**	**9**	**88**	**46**	**15**	**440**	**26**	**51**	**651**	**162**
	Compound Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
	Existing plus Background Growth	101	74	15	9	88	46	15	442	26	51	654	163
	Committed Development Trips	7	33	14	56	10	6				8	9	
	2023 Background Traffic	**108**	**107**	**29**	**65**	**98**	**52**	**15**	**442**	**26**	**59**	**663**	**163**
	In/Out								In			Out	
	Project Assignment								46%			46%	
	Net New Project Trips	0	0	0	0	0	0	0	17	0	0	13	0
	2023 Total Traffic	**108**	**107**	**29**	**65**	**98**	**52**	**15**	**459**	**26**	**59**	**676**	**163**
NE 19 Avenue & NE 163 Street	Traffic Count	282	1,271			1,619	175				320		324
	Peak Season Conversion Factor	1.02	1.02			1.02	1.02				1.02		1.02
	2022 Peak Season Traffic	**288**	**1,296**			**1,651**	**179**				**326**		**330**
	Compound Growth Rate	0.50%	0.50%			0.50%	0.50%				0.50%		0.50%
	Existing plus Background Growth	289	1,303			1,660	179				328		332
	Committed Development Trips	32	19			51	64				37		42
	2023 Background Traffic	**321**	**1,322**			**1,711**	**243**				**365**		**374**
	In/Out	In					In				Out		Out
	Project Assignment	36%					10%				10%		36%
	Net New Project Trips	13	0			0	4				3		10
	2023 Total Traffic	**334**	**1,322**			**1,711**	**247**				**368**		**384**

Appendix D
Intersection Capacity Reports

Existing Conditions

Existing Intersection Capacity Analysis Summary

Location	Time	Level of Service[1]									
		EB		WB		NB		SB		Overall	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NE 19 Avenue & NE 167 Street	AM	D	45.5	D	49.7	A	4.2	A	9.0	B	12.9
	PM	D	43.3	E	58.4	A	7.5	A	8.5	B	12.1
NE 19 Avenue & NE 164 Street	AM	D	46.5	E	60.0	A	6.3	A	6.8	B	15.2
	PM	D	48.3	D	54.1	A	0.8	A	9.1	B	17.0
NE 19 Avenue & NE 163 Street	AM	B	12.1	B	17.5	E	73.2			C	24.0
	PM	B	15.7	C	21.4	F	143.3			D	39.4

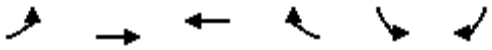
[1] Delay is average delay per vehicle in seconds

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	294	1290	1177	307	252
Future Volume (vph)	294	1290	1177	307	252
Lane Group Flow (vph)	316	1387	1518	334	274
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	30.0	99.0	69.0	31.0	31.0
Total Split (%)	23.1%	76.2%	53.1%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.85	0.38	0.59	0.98	0.36
Control Delay	47.1	7.6	22.9	96.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	7.6	22.9	96.8	6.4
Queue Length 50th (ft)	163	150	316	283	0
Queue Length 95th (ft)	271	173	380	#478	40
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	423	3637	2587	340	757
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.38	0.59	0.98	0.36

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	294	1290	1177	205	307	252
Future Volume (veh/h)	294	1290	1177	205	307	252
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	316	1387	1293	225	334	274
Peak Hour Factor	0.93	0.93	0.91	0.91	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	354	3653	2537	441	343	536
Arrive On Green	0.09	0.72	0.58	0.58	0.19	0.19
Sat Flow, veh/h	1781	5274	4544	761	1781	2790
Grp Volume(v), veh/h	316	1387	1006	512	334	274
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1733	1781	1395
Q Serve(g_s), s	8.8	13.8	22.9	22.9	24.2	11.4
Cycle Q Clear(g_c), s	8.8	13.8	22.9	22.9	24.2	11.4
Prop In Lane	1.00			0.44	1.00	1.00
Lane Grp Cap(c), veh/h	354	3653	1974	1005	343	536
V/C Ratio(X)	0.89	0.38	0.51	0.51	0.98	0.51
Avail Cap(c_a), veh/h	523	3653	1974	1005	343	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	7.2	16.3	16.3	52.2	47.0
Incr Delay (d2), s/veh	12.8	0.3	0.9	1.8	41.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	4.8	9.0	9.5	14.8	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.2	7.5	17.2	18.1	94.0	47.8
LnGrp LOS	C	A	B	B	F	D
Approach Vol, veh/h		1703	1518		608	
Approach Delay, s/veh		12.1	17.5		73.2	
Approach LOS		B	B		E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.6	81.4				99.0	31.0
Change Period (Y+Rc), s	6.0	6.0				6.0	6.0
Max Green Setting (Gmax), s	24.0	63.0				93.0	25.0
Max Q Clear Time (g_c+I1), s	10.8	24.9				15.8	26.2
Green Ext Time (p_c), s	0.8	15.0				15.9	0.0

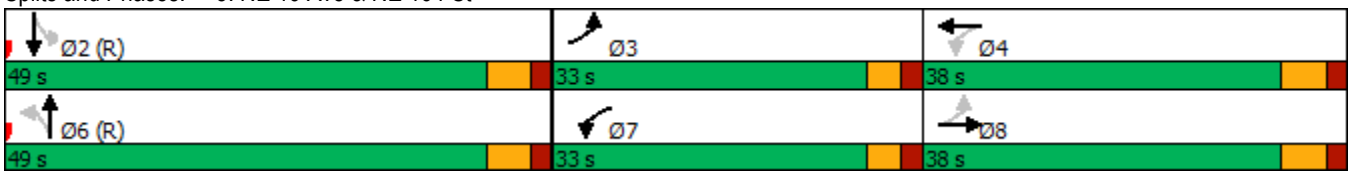
Intersection Summary			
HCM 6th Ctrl Delay		24.0	
HCM 6th LOS		C	

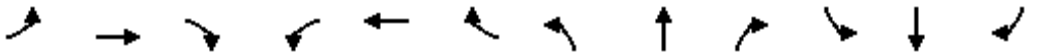
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	80	69	10	50	33	466	61	568
Future Volume (vph)	80	69	10	50	33	466	61	568
Lane Group Flow (vph)	104	99	14	124	0	602	66	793
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	33.0	38.0	33.0	38.0	49.0	49.0	49.0	49.0
Total Split (%)	27.5%	31.7%	27.5%	31.7%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.36	0.28	0.06	0.61		0.21	0.13	0.24
Control Delay	38.5	41.7	32.3	51.4		8.6	9.6	8.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	38.5	41.7	32.3	51.4		8.6	9.6	8.0
Queue Length 50th (ft)	65	60	8	70		60	17	73
Queue Length 95th (ft)	88	96	18	91		90	44	116
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	434	492	445	487		2840	513	3303
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.24	0.20	0.03	0.25		0.21	0.13	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	69	7	10	50	36	33	466	13	61	568	162
Future Volume (veh/h)	80	69	7	10	50	36	33	466	13	61	568	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	90	9	14	72	52	39	548	15	66	617	176
Peak Hour Factor	0.77	0.77	0.77	0.69	0.69	0.69	0.85	0.85	0.85	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	240	24	206	92	67	210	3006	83	616	2773	776
Arrive On Green	0.07	0.14	0.14	0.02	0.09	0.09	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	1781	1673	167	1781	1010	729	249	4299	119	847	3965	1109
Grp Volume(v), veh/h	104	0	99	14	0	124	197	194	211	66	528	265
Grp Sat Flow(s),veh/h/ln	1781	0	1840	1781	0	1739	1438	1549	1681	847	1702	1671
Q Serve(g_s), s	6.1	0.0	5.8	0.8	0.0	8.4	0.0	5.2	5.2	3.5	6.6	6.8
Cycle Q Clear(g_c), s	6.1	0.0	5.8	0.8	0.0	8.4	4.2	5.2	5.2	8.7	6.6	6.8
Prop In Lane	1.00		0.09	1.00		0.42	0.20		0.07	1.00		0.66
Lane Grp Cap(c), veh/h	208	0	264	206	0	159	1041	1083	1175	616	2381	1168
V/C Ratio(X)	0.50	0.00	0.37	0.07	0.00	0.78	0.19	0.18	0.18	0.11	0.22	0.23
Avail Cap(c_a), veh/h	503	0	491	594	0	464	1041	1083	1175	616	2381	1168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.41	0.41	0.41	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	46.5	48.2	0.0	53.3	6.1	6.2	6.2	7.7	6.4	6.4
Incr Delay (d2), s/veh	1.9	0.0	0.9	0.1	0.0	8.0	0.2	0.1	0.1	0.4	0.2	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	2.8	0.0	2.7	0.4	0.0	4.0	1.6	1.6	1.8	0.7	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	0.0	47.4	48.4	0.0	61.3	6.2	6.4	6.3	8.0	6.6	6.9
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		203			138			602			859	
Approach Delay, s/veh		46.5			60.0			6.3			6.8	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		89.9	13.1	17.0		89.9	6.9	23.2				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		43.0	28.0	32.0		43.0	28.0	32.0				
Max Q Clear Time (g_c+I1), s		10.7	8.1	10.4		7.2	2.8	7.8				
Green Ext Time (p_c), s		6.6	0.2	0.6		4.2	0.0	0.5				

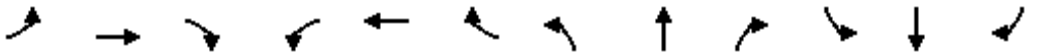
Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	12	80	75	14	99	562	28	669
Future Volume (vph)	15	12	80	75	14	99	562	28	669
Lane Group Flow (vph)	17	14	91	0	146	102	637	29	735
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	15.0	68.0	53.0	53.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	13.6%	61.8%	48.2%	48.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.10	0.06	0.31		0.68	0.19	0.24	0.06	0.33
Control Delay	40.0	38.6	10.9		53.9	5.1	4.7	10.1	10.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	38.6	10.9		53.9	5.1	4.7	10.1	10.7
Queue Length 50th (ft)	11	9	0		86	16	57	7	114
Queue Length 95th (ft)	29	25	41		137	38	101	24	186
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	392	609	579		487	543	2636	481	2219
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.16		0.30	0.19	0.24	0.06	0.33

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 18.5 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	80	75	14	37	99	562	56	28	669	29
Future Volume (veh/h)	15	12	80	75	14	37	99	562	56	28	669	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	91	87	16	43	102	579	58	29	704	31
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	232	197	151	27	53	580	2501	250	581	2258	99
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.77	0.77	0.65	0.65	0.65
Sat Flow, veh/h	1344	1870	1585	795	218	423	1781	3262	326	791	3467	153
Grp Volume(v), veh/h	17	14	91	146	0	0	102	315	322	29	361	374
Grp Sat Flow(s),veh/h/ln	1344	1870	1585	1436	0	0	1781	1777	1812	791	1777	1843
Q Serve(g_s), s	0.0	0.7	5.9	10.1	0.0	0.0	1.8	5.5	5.6	1.5	9.8	9.8
Cycle Q Clear(g_c), s	1.4	0.7	5.9	10.9	0.0	0.0	1.8	5.5	5.6	1.5	9.8	9.8
Prop In Lane	1.00		1.00	0.60		0.29	1.00		0.18	1.00		0.08
Lane Grp Cap(c), veh/h	217	232	197	231	0	0	580	1362	1389	581	1157	1200
V/C Ratio(X)	0.08	0.06	0.46	0.63	0.00	0.00	0.18	0.23	0.23	0.05	0.31	0.31
Avail Cap(c_a), veh/h	490	612	519	518	0	0	617	1362	1389	581	1157	1200
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	42.5	44.8	46.9	0.0	0.0	5.0	3.6	3.6	6.9	8.4	8.4
Incr Delay (d2), s/veh	0.2	0.1	1.7	2.9	0.0	0.0	0.1	0.4	0.4	0.2	0.7	0.7
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	0.4	0.3	0.1	4.1	0.0	0.0	0.6	1.8	1.8	0.3	3.7	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	42.6	46.4	49.7	0.0	0.0	5.1	4.0	4.0	7.1	9.1	9.1
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		122			146			739			764	
Approach Delay, s/veh		45.5			49.7			4.2			9.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.7	77.6		19.7		90.3		19.7				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	47.0		36.0		62.0		36.0				
Max Q Clear Time (g_c+I1), s	3.8	11.8		12.9		7.6		7.9				
Green Ext Time (p_c), s	0.1	5.5		0.8		4.5		0.4				

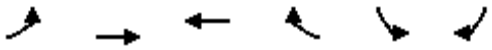
Intersection Summary												
HCM 6th Ctrl Delay			12.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	288	1296	1651	326	330
Future Volume (vph)	288	1296	1651	326	330
Lane Group Flow (vph)	320	1440	1946	366	371
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	35.0	120.0	85.0	30.0	30.0
Total Split (%)	23.3%	80.0%	56.7%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.89	0.37	0.71	1.29	0.52
Control Delay	70.4	6.3	27.2	203.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	6.3	27.2	203.7	12.6
Queue Length 50th (ft)	246	153	517	~455	25
Queue Length 95th (ft)	#393	173	578	#652	75
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	394	3864	2746	283	713
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.37	0.71	1.29	0.52

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 92 (61%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	288	1296	1651	179	326	330
Future Volume (veh/h)	288	1296	1651	179	326	330
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	1440	1756	190	366	371
Peak Hour Factor	0.90	0.90	0.94	0.94	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	347	3881	2795	301	285	446
Arrive On Green	0.12	0.76	0.60	0.60	0.16	0.16
Sat Flow, veh/h	1781	5274	4848	504	1781	2790
Grp Volume(v), veh/h	320	1440	1276	670	366	371
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1780	1781	1395
Q Serve(g_s), s	15.6	14.1	36.2	36.5	24.0	19.3
Cycle Q Clear(g_c), s	15.6	14.1	36.2	36.5	24.0	19.3
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	347	3881	2033	1063	285	446
V/C Ratio(X)	0.92	0.37	0.63	0.63	1.28	0.83
Avail Cap(c_a), veh/h	473	3881	2033	1063	285	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	38.7	6.0	19.4	19.5	63.0	61.0
Incr Delay (d2), s/veh	19.6	0.3	1.5	2.8	151.3	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	4.8	14.6	15.8	22.9	7.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.3	6.3	20.9	22.4	214.3	73.2
LnGrp LOS	E	A	C	C	F	E
Approach Vol, veh/h		1760	1946		737	
Approach Delay, s/veh		15.7	21.4		143.3	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	24.4	95.6			120.0	30.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	29.0	79.0			114.0	24.0
Max Q Clear Time (g_c+I1), s	17.6	38.5			16.1	26.0
Green Ext Time (p_c), s	0.8	22.1			17.2	0.0

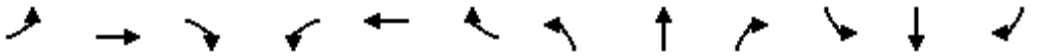
Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	73	9	88	15	440	51	651
Future Volume (vph)	101	73	9	88	15	440	51	651
Lane Group Flow (vph)	115	100	12	172	0	529	57	913
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	43.0	38.0	43.0	38.0	39.0	39.0	39.0	39.0
Total Split (%)	35.8%	31.7%	35.8%	31.7%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.39	0.24	0.04	0.69		0.18	0.11	0.29
Control Delay	36.0	36.1	28.8	57.4		10.0	11.3	10.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	36.0	36.1	28.8	57.4		10.0	11.3	10.3
Queue Length 50th (ft)	69	55	7	113		56	16	101
Queue Length 95th (ft)	104	102	17	149		93	43	154
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	566	489	570	486		2879	526	3151
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.20	0.20	0.02	0.35		0.18	0.11	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	73	15	9	88	46	15	440	26	51	651	162
Future Volume (veh/h)	101	73	15	9	88	46	15	440	26	51	651	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	83	17	12	113	59	16	484	29	57	731	182
Peak Hour Factor	0.88	0.88	0.88	0.78	0.78	0.78	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	268	55	239	138	72	100	2997	179	616	2726	671
Arrive On Green	0.07	0.18	0.18	0.01	0.12	0.12	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1781	1506	309	1781	1157	604	102	4493	269	887	4087	1006
Grp Volume(v), veh/h	115	0	100	12	0	172	186	165	178	57	607	306
Grp Sat Flow(s),veh/h/ln	1781	0	1815	1781	0	1762	1661	1549	1654	887	1702	1689
Q Serve(g_s), s	6.6	0.0	5.8	0.7	0.0	11.4	0.0	4.8	4.8	3.1	8.7	8.8
Cycle Q Clear(g_c), s	6.6	0.0	5.8	0.7	0.0	11.4	4.4	4.8	4.8	7.9	8.7	8.8
Prop In Lane	1.00		0.17	1.00		0.34	0.09		0.16	1.00		0.60
Lane Grp Cap(c), veh/h	218	0	322	239	0	210	1141	1033	1103	616	2270	1127
V/C Ratio(X)	0.53	0.00	0.31	0.05	0.00	0.82	0.16	0.16	0.16	0.09	0.27	0.27
Avail Cap(c_a), veh/h	653	0	484	778	0	470	1141	1033	1103	616	2270	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.34	0.34	0.34	0.95	0.95	0.95
Uniform Delay (d), s/veh	41.1	0.0	42.9	45.4	0.0	51.6	7.4	7.4	7.5	8.9	8.1	8.1
Incr Delay (d2), s/veh	2.0	0.0	0.5	0.1	0.0	7.7	0.1	0.1	0.1	0.3	0.3	0.6
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	3.0	0.0	2.6	0.3	0.0	5.5	1.7	1.5	1.7	0.6	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	43.5	45.5	0.0	59.3	7.5	7.6	7.6	9.2	8.4	8.7
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		215			184			529			970	
Approach Delay, s/veh		43.3			58.4			7.5			8.5	
Approach LOS		D			E			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		86.0	13.7	20.3		86.0	6.6	27.3				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		33.0	38.0	32.0		33.0	38.0	32.0				
Max Q Clear Time (g_c+I1), s		10.8	8.6	13.4		6.8	2.7	7.8				
Green Ext Time (p_c), s		6.9	0.3	0.9		3.4	0.0	0.5				

Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	8	66	73	8	56	588	36	731
Future Volume (vph)	26	8	66	73	8	56	588	36	731
Lane Group Flow (vph)	33	10	84	0	158	61	719	38	801
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	15.0	80.0	65.0	65.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	12.5%	66.7%	54.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.20	0.04	0.29		0.71	0.12	0.27	0.08	0.34
Control Delay	45.8	41.1	11.1		59.2	4.5	4.5	10.1	10.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	41.1	11.1		59.2	4.5	4.5	10.1	10.1
Queue Length 50th (ft)	23	7	0		102	10	71	10	134
Queue Length 95th (ft)	44	19	31		137	19	84	30	209
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	332	527	508		424	512	2647	472	2367
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.10	0.02	0.17		0.37	0.12	0.27	0.08	0.34

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 18.5 (15%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	8	66	73	8	42	56	588	74	36	731	22
Future Volume (veh/h)	26	8	66	73	8	42	56	588	74	36	731	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	10	84	94	10	54	61	639	80	38	778	23
Peak Hour Factor	0.79	0.79	0.79	0.78	0.78	0.78	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	245	208	153	18	64	540	2444	306	550	2355	70
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.10	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	1338	1870	1585	805	137	489	1781	3178	397	733	3524	104
Grp Volume(v), veh/h	33	10	84	158	0	0	61	357	362	38	392	409
Grp Sat Flow(s),veh/h/ln	1338	1870	1585	1431	0	0	1781	1777	1799	733	1777	1852
Q Serve(g_s), s	0.0	0.6	5.8	12.2	0.0	0.0	1.1	0.0	0.0	2.2	11.3	11.3
Cycle Q Clear(g_c), s	3.1	0.6	5.8	12.9	0.0	0.0	1.1	0.0	0.0	2.2	11.3	11.3
Prop In Lane	1.00		1.00	0.59		0.34	1.00		0.22	1.00		0.06
Lane Grp Cap(c), veh/h	216	245	208	235	0	0	540	1366	1383	550	1187	1237
V/C Ratio(X)	0.15	0.04	0.40	0.67	0.00	0.00	0.11	0.26	0.26	0.07	0.33	0.33
Avail Cap(c_a), veh/h	420	530	449	451	0	0	584	1366	1383	550	1187	1237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	45.5	47.8	50.8	0.0	0.0	4.9	0.0	0.0	7.0	8.5	8.5
Incr Delay (d2), s/veh	0.3	0.1	1.3	3.3	0.0	0.0	0.1	0.5	0.5	0.2	0.7	0.7
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	0.9	0.3	0.1	4.8	0.0	0.0	0.4	0.2	0.2	0.4	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	45.6	49.1	54.1	0.0	0.0	5.0	0.5	0.5	7.2	9.2	9.2
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		127			158			780			839	
Approach Delay, s/veh		48.3			54.1			0.8			9.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.1	86.2		21.7		98.3		21.7				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	59.0		34.0		74.0		34.0				
Max Q Clear Time (g_c+I1), s	3.1	13.3		14.9		2.0		7.8				
Green Ext Time (p_c), s	0.0	6.4		0.8		5.3		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		12.1	
HCM 6th LOS		B	

No Build Conditions

No Build Intersection Capacity Analysis Summary

Location	Time	Level of Service[1]									
		EB		WB		NB		SB		Overall	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NE 19 Avenue & NE 167 Street	AM	D	43.9	D	49.0	A	4.7	A	9.7	B	13.4
	PM	D	47.1	D	53.6	A	0.9	A	9.7	B	12.3
NE 19 Avenue & NE 164 Street	AM	D	51.7	D	54.1	A	7.3	A	7.9	B	19.6
	PM	D	46.3	D	53.7	A	8.3	A	0.4	B	15.6
NE 19 Avenue & NE 163 Street	AM	B	14.0	B	19.5			F	98.7	C	30.8
	PM	B	18.8	C	27.2			F	183.2	D	51.3

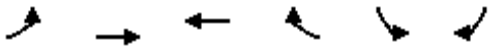
[1] Delay is average delay per vehicle in seconds

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	309	1310	1215	354	285
Future Volume (vph)	309	1310	1215	354	285
Lane Group Flow (vph)	332	1409	1586	385	310
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	30.0	99.0	69.0	31.0	31.0
Total Split (%)	23.1%	76.2%	53.1%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.88	0.39	0.63	1.13	0.40
Control Delay	55.0	7.6	24.5	136.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	7.6	24.5	136.7	6.8
Queue Length 50th (ft)	190	153	351	~376	2
Queue Length 95th (ft)	#338	177	404	#577	45
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	410	3637	2524	340	781
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.39	0.63	1.13	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	309	1310	1215	228	354	285
Future Volume (veh/h)	309	1310	1215	228	354	285
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	332	1409	1335	251	385	310
Peak Hour Factor	0.93	0.93	0.91	0.91	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	363	3653	2430	457	343	536
Arrive On Green	0.11	0.72	0.56	0.56	0.19	0.19
Sat Flow, veh/h	1781	5274	4485	811	1781	2790
Grp Volume(v), veh/h	332	1409	1053	533	385	310
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1724	1781	1395
Q Serve(g_s), s	11.0	14.1	25.4	25.5	25.0	13.1
Cycle Q Clear(g_c), s	11.0	14.1	25.4	25.5	25.0	13.1
Prop In Lane	1.00			0.47	1.00	1.00
Lane Grp Cap(c), veh/h	363	3653	1916	971	343	536
V/C Ratio(X)	0.91	0.39	0.55	0.55	1.12	0.58
Avail Cap(c_a), veh/h	503	3653	1916	971	343	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	24.0	7.3	18.0	18.0	52.5	47.7
Incr Delay (d2), s/veh	17.2	0.3	1.1	2.2	86.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.9	10.1	10.6	19.3	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	7.6	19.1	20.2	138.5	49.2
LnGrp LOS	D	A	B	C	F	D
Approach Vol, veh/h		1741	1586		695	
Approach Delay, s/veh		14.0	19.5		98.7	
Approach LOS		B	B		F	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.8	79.2			99.0	31.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	24.0	63.0			93.0	25.0
Max Q Clear Time (g_c+I1), s	13.0	27.5			16.1	27.0
Green Ext Time (p_c), s	0.8	15.6			16.3	0.0

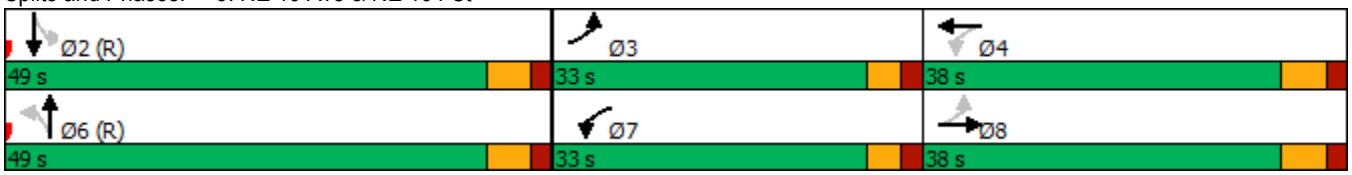
Intersection Summary	
HCM 6th Ctrl Delay	30.8
HCM 6th LOS	C

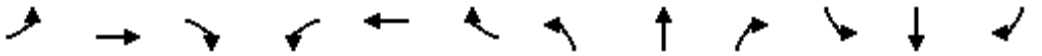
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	88	100	71	62	33	468	66	574
Future Volume (vph)	88	100	71	62	33	468	66	574
Lane Group Flow (vph)	114	156	103	154	0	605	72	801
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	33.0	38.0	33.0	38.0	49.0	49.0	49.0	49.0
Total Split (%)	27.5%	31.7%	27.5%	31.7%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.40	0.66	0.37	0.64		0.22	0.15	0.25
Control Delay	37.1	60.0	36.2	52.2		10.0	11.2	9.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	37.1	60.0	36.2	52.2		10.0	11.2	9.3
Queue Length 50th (ft)	69	111	62	93		66	20	81
Queue Length 95th (ft)	90	145	73	111		98	52	127
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	450	490	452	487		2726	491	3178
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.25	0.32	0.23	0.32		0.22	0.15	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	100	20	71	62	44	33	468	13	66	574	163
Future Volume (veh/h)	88	100	20	71	62	44	33	468	13	66	574	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	130	26	103	90	64	39	551	15	72	624	177
Peak Hour Factor	0.77	0.77	0.77	0.69	0.69	0.69	0.85	0.85	0.85	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	175	35	219	111	79	203	2907	80	591	2683	747
Arrive On Green	0.07	0.12	0.12	0.07	0.11	0.11	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1781	1513	303	1781	1017	723	247	4301	119	845	3970	1105
Grp Volume(v), veh/h	114	0	156	103	0	154	198	195	213	72	533	268
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1781	0	1740	1437	1549	1681	845	1702	1671
Q Serve(g_s), s	6.7	0.0	10.0	6.1	0.0	10.4	0.0	5.6	5.6	4.1	7.2	7.4
Cycle Q Clear(g_c), s	6.7	0.0	10.0	6.1	0.0	10.4	4.6	5.6	5.6	9.8	7.2	7.4
Prop In Lane	1.00		0.17	1.00		0.42	0.20		0.07	1.00		0.66
Lane Grp Cap(c), veh/h	219	0	210	219	0	191	1007	1047	1136	591	2300	1129
V/C Ratio(X)	0.52	0.00	0.74	0.47	0.00	0.81	0.20	0.19	0.19	0.12	0.23	0.24
Avail Cap(c_a), veh/h	504	0	484	516	0	464	1007	1047	1136	591	2300	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.36	0.36	0.36	0.95	0.95	0.95
Uniform Delay (d), s/veh	43.3	0.0	51.3	43.6	0.0	52.2	7.1	7.2	7.2	9.0	7.5	7.5
Incr Delay (d2), s/veh	1.9	0.0	5.1	1.6	0.0	7.9	0.2	0.1	0.1	0.4	0.2	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	3.1	0.0	4.8	2.8	0.0	4.9	1.8	1.8	2.0	0.8	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	56.4	45.1	0.0	60.0	7.2	7.4	7.4	9.4	7.7	8.0
LnGrp LOS	D	A	E	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		270			257			605			873	
Approach Delay, s/veh		51.7			54.1			7.3			7.9	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		87.1	13.8	19.1		87.1	13.0	19.9				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		43.0	28.0	32.0		43.0	28.0	32.0				
Max Q Clear Time (g_c+I1), s		11.8	8.7	12.4		7.6	8.1	12.0				
Green Ext Time (p_c), s		6.7	0.3	0.8		4.3	0.2	0.8				

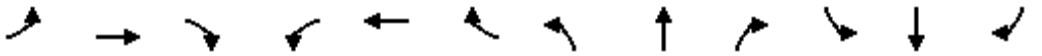
Intersection Summary												
HCM 6th Ctrl Delay			19.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	12	80	85	14	99	580	29	679
Future Volume (vph)	15	12	80	85	14	99	580	29	679
Lane Group Flow (vph)	17	14	91	0	163	102	659	31	746
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	15.0	68.0	53.0	53.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	13.6%	61.8%	48.2%	48.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.10	0.05	0.29		0.70	0.20	0.25	0.07	0.34
Control Delay	38.4	37.1	10.2		54.1	5.7	5.2	11.1	11.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	37.1	10.2		54.1	5.7	5.2	11.1	11.6
Queue Length 50th (ft)	11	9	0		97	17	64	8	122
Queue Length 95th (ft)	28	25	40		148	41	112	26	199
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	388	609	579		485	526	2591	460	2170
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.16		0.34	0.19	0.25	0.07	0.34

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 18.5 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	80	85	14	41	99	580	59	29	679	29
Future Volume (veh/h)	15	12	80	85	14	41	99	580	59	29	679	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	91	99	16	48	102	598	61	31	715	31
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	257	218	165	26	58	563	2453	250	560	2214	96
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.75	0.75	0.64	0.64	0.64
Sat Flow, veh/h	1338	1870	1585	816	189	419	1781	3256	332	775	3470	150
Grp Volume(v), veh/h	17	14	91	163	0	0	102	326	333	31	366	380
Grp Sat Flow(s),veh/h/ln	1338	1870	1585	1424	0	0	1781	1777	1811	775	1777	1843
Q Serve(g_s), s	0.0	0.7	5.8	11.5	0.0	0.0	1.9	6.1	6.1	1.7	10.3	10.3
Cycle Q Clear(g_c), s	1.4	0.7	5.8	12.2	0.0	0.0	1.9	6.1	6.1	1.7	10.3	10.3
Prop In Lane	1.00		1.00	0.61		0.29	1.00		0.18	1.00		0.08
Lane Grp Cap(c), veh/h	233	257	218	248	0	0	563	1339	1364	560	1134	1176
V/C Ratio(X)	0.07	0.05	0.42	0.66	0.00	0.00	0.18	0.24	0.24	0.06	0.32	0.32
Avail Cap(c_a), veh/h	486	612	519	516	0	0	600	1339	1364	560	1134	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	41.2	43.4	46.1	0.0	0.0	5.5	4.1	4.1	7.5	9.1	9.1
Incr Delay (d2), s/veh	0.1	0.1	1.3	2.9	0.0	0.0	0.1	0.4	0.4	0.2	0.8	0.7
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	0.4	0.3	2.3	4.5	0.0	0.0	0.6	2.0	2.1	0.3	4.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	41.3	44.7	49.0	0.0	0.0	5.6	4.5	4.5	7.7	9.8	9.8
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		122			163			761			777	
Approach Delay, s/veh		43.9			49.0			4.7			9.7	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.7	76.2		21.1		88.9		21.1				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	47.0		36.0		62.0		36.0				
Max Q Clear Time (g_c+I1), s	3.9	12.3		14.2		8.1		7.8				
Green Ext Time (p_c), s	0.1	5.6		0.9		4.7		0.4				

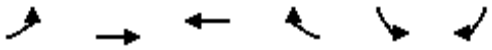
Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	321	1322	1711	365	374
Future Volume (vph)	321	1322	1711	365	374
Lane Group Flow (vph)	357	1469	2079	410	420
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	35.0	120.0	85.0	30.0	30.0
Total Split (%)	23.3%	80.0%	56.7%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.94	0.38	0.78	1.45	0.59
Control Delay	81.3	6.4	30.2	263.6	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	6.4	30.2	263.6	17.6
Queue Length 50th (ft)	294	157	581	~544	48
Queue Length 95th (ft)	#484	178	642	#747	106
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	390	3864	2676	283	716
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.38	0.78	1.45	0.59

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 92 (61%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	321	1322	1711	243	365	374
Future Volume (veh/h)	321	1322	1711	243	365	374
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	357	1469	1820	259	410	420
Peak Hour Factor	0.90	0.90	0.94	0.94	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	382	3881	2542	359	285	446
Arrive On Green	0.16	0.76	0.56	0.56	0.16	0.16
Sat Flow, veh/h	1781	5274	4690	638	1781	2790
Grp Volume(v), veh/h	357	1469	1366	713	410	420
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1756	1781	1395
Q Serve(g_s), s	21.1	14.5	44.0	44.9	24.0	22.3
Cycle Q Clear(g_c), s	21.1	14.5	44.0	44.9	24.0	22.3
Prop In Lane	1.00			0.36	1.00	1.00
Lane Grp Cap(c), veh/h	382	3881	1913	987	285	446
V/C Ratio(X)	0.94	0.38	0.71	0.72	1.44	0.94
Avail Cap(c_a), veh/h	445	3881	1913	987	285	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	45.0	6.1	24.0	24.2	63.0	62.3
Incr Delay (d2), s/veh	25.2	0.3	2.3	4.6	215.7	27.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	5.0	18.1	19.7	28.0	9.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	70.2	6.3	26.3	28.8	278.7	90.0
LnGrp LOS	E	A	C	C	F	F
Approach Vol, veh/h		1826	2079		830	
Approach Delay, s/veh		18.8	27.2		183.2	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	29.7	90.3			120.0	30.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	29.0	79.0			114.0	24.0
Max Q Clear Time (g_c+I1), s	23.1	46.9			16.5	26.0
Green Ext Time (p_c), s	0.6	21.1			17.9	0.0

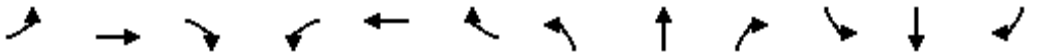
Intersection Summary	
HCM 6th Ctrl Delay	51.3
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	107	65	98	15	442	59	663
Future Volume (vph)	108	107	65	98	15	442	59	663
Lane Group Flow (vph)	123	155	83	193	0	531	66	928
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	43.0	38.0	43.0	38.0	39.0	39.0	39.0	39.0
Total Split (%)	35.8%	31.7%	35.8%	31.7%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.44	0.47	0.26	0.71		0.19	0.13	0.30
Control Delay	35.7	45.8	31.8	57.5		10.8	10.9	9.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	35.7	45.8	31.8	57.5		10.8	10.9	9.7
Queue Length 50th (ft)	73	104	48	128		59	18	97
Queue Length 95th (ft)	106	155	67	164		98	40	132
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	568	488	576	487		2809	513	3078
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.22	0.32	0.14	0.40		0.19	0.13	0.30

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	107	29	65	98	52	15	442	26	59	663	163
Future Volume (veh/h)	108	107	29	65	98	52	15	442	26	59	663	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	122	33	83	126	67	16	486	29	66	745	183
Peak Hour Factor	0.88	0.88	0.88	0.78	0.78	0.78	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	218	59	249	151	80	98	2921	174	598	2664	647
Arrive On Green	0.08	0.15	0.15	0.05	0.13	0.13	0.65	0.65	0.65	1.00	1.00	1.00
Sat Flow, veh/h	1781	1418	384	1781	1149	611	100	4495	268	886	4099	996
Grp Volume(v), veh/h	123	0	155	83	0	193	186	166	179	66	617	311
Grp Sat Flow(s),veh/h/ln	1781	0	1801	1781	0	1760	1660	1549	1654	886	1702	1691
Q Serve(g_s), s	7.0	0.0	9.6	4.8	0.0	12.8	0.0	5.0	5.1	0.7	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	9.6	4.8	0.0	12.8	4.6	5.0	5.1	5.8	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.35	0.09		0.16	1.00		0.59
Lane Grp Cap(c), veh/h	226	0	277	249	0	232	1112	1007	1075	598	2212	1099
V/C Ratio(X)	0.54	0.00	0.56	0.33	0.00	0.83	0.17	0.16	0.17	0.11	0.28	0.28
Avail Cap(c_a), veh/h	653	0	480	715	0	469	1112	1007	1075	598	2212	1099
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.22	0.22	0.22	0.95	0.95	0.95
Uniform Delay (d), s/veh	41.2	0.0	47.0	41.9	0.0	50.8	8.2	8.2	8.2	0.2	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	1.8	0.8	0.0	7.6	0.1	0.1	0.1	0.4	0.3	0.6
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	3.2	0.0	4.4	2.2	0.0	6.1	1.8	1.7	1.8	0.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	0.0	48.8	42.7	0.0	58.4	8.2	8.3	8.3	0.5	0.3	0.6
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		278			276			531			994	
Approach Delay, s/veh		46.3			53.7			8.3			0.4	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		84.0	14.2	21.8		84.0	11.5	24.5				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		33.0	38.0	32.0		33.0	38.0	32.0				
Max Q Clear Time (g_c+I1), s		7.8	9.0	14.8		7.1	6.8	11.6				
Green Ext Time (p_c), s		7.4	0.3	1.0		3.4	0.2	0.8				

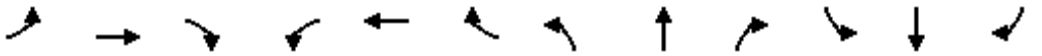
Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	8	67	80	8	56	602	41	751
Future Volume (vph)	26	8	67	80	8	56	602	41	751
Lane Group Flow (vph)	33	10	85	0	171	61	745	44	823
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	15.0	80.0	65.0	65.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	12.5%	66.7%	54.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.19	0.04	0.27		0.73	0.13	0.29	0.10	0.35
Control Delay	44.3	40.0	10.7		59.8	4.9	4.9	10.9	10.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	40.0	10.7		59.8	4.9	4.9	10.9	10.9
Queue Length 50th (ft)	23	7	0		112	10	78	12	144
Queue Length 95th (ft)	44	19	30		147	21	92	35	224
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	331	527	509		422	494	2611	454	2330
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.10	0.02	0.17		0.41	0.12	0.29	0.10	0.35

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 18.5 (15%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	8	67	80	8	45	56	602	84	41	751	23
Future Volume (veh/h)	26	8	67	80	8	45	56	602	84	41	751	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	10	85	103	10	58	61	654	91	44	799	24
Peak Hour Factor	0.79	0.79	0.79	0.78	0.78	0.78	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	264	223	164	17	68	522	2378	331	531	2319	70
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.10	1.00	1.00	0.66	0.66	0.66
Sat Flow, veh/h	1333	1870	1585	820	122	483	1781	3133	435	715	3522	106
Grp Volume(v), veh/h	33	10	85	171	0	0	61	370	375	44	403	420
Grp Sat Flow(s),veh/h/ln	1333	1870	1585	1424	0	0	1781	1777	1792	715	1777	1851
Q Serve(g_s), s	0.0	0.6	5.8	13.4	0.0	0.0	1.1	0.0	0.0	2.7	12.0	12.0
Cycle Q Clear(g_c), s	3.0	0.6	5.8	14.0	0.0	0.0	1.1	0.0	0.0	2.7	12.0	12.0
Prop In Lane	1.00		1.00	0.60		0.34	1.00		0.24	1.00		0.06
Lane Grp Cap(c), veh/h	227	264	223	249	0	0	522	1349	1360	531	1170	1219
V/C Ratio(X)	0.15	0.04	0.38	0.69	0.00	0.00	0.12	0.27	0.28	0.08	0.34	0.34
Avail Cap(c_a), veh/h	417	530	449	450	0	0	565	1349	1360	531	1170	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	44.5	46.8	50.2	0.0	0.0	5.3	0.0	0.0	7.5	9.1	9.1
Incr Delay (d2), s/veh	0.3	0.1	1.1	3.4	0.0	0.0	0.1	0.5	0.5	0.3	0.8	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	0.9	0.3	0.1	5.2	0.0	0.0	0.4	0.2	0.2	0.4	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	44.6	47.9	53.6	0.0	0.0	5.4	0.5	0.5	7.8	9.9	9.8
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		128			171			806			867	
Approach Delay, s/veh		47.1			53.6			0.9			9.7	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.1	85.0		22.9		97.1		22.9				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	59.0		34.0		74.0		34.0				
Max Q Clear Time (g_c+I1), s	3.1	14.0		16.0		2.0		7.8				
Green Ext Time (p_c), s	0.0	6.7		0.9		5.6		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.3									
HCM 6th LOS			B									

Build Conditions

Build Intersection Capacity Analysis Summary

Location	Time	Level of Service[1]									
		EB		WB		NB		SB		Overall	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NE 19 Avenue & NE 167 Street	AM	D	43.8	D	49.0	A	4.7	A	9.9	B	13.4
	PM	D	47.1	D	53.5	A	1.0	A	10.1	B	12.5
NE 19 Avenue & NE 164 Street	AM	D	51.7	D	54.1	A	7.3	A	8.0	B	19.5
	PM	D	46.3	D	53.7	A	8.3	A	0.4	B	15.5
NE 19 Avenue & NE 163 Street	AM	B	14.3	B	19.8			F	99.5	C	31.3
	PM	B	19.7	C	28.5			F	187.3	B	53.2

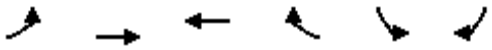
[1] Delay is average delay per vehicle in seconds

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	313	1310	1215	356	292
Future Volume (vph)	313	1310	1215	356	292
Lane Group Flow (vph)	337	1409	1587	387	317
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	30.0	99.0	69.0	31.0	31.0
Total Split (%)	23.1%	76.2%	53.1%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.89	0.39	0.63	1.14	0.40
Control Delay	56.9	7.6	24.6	138.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	7.6	24.6	138.6	6.9
Queue Length 50th (ft)	197	153	351	~380	3
Queue Length 95th (ft)	#349	177	404	#579	47
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	409	3637	2517	340	785
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.39	0.63	1.14	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	313	1310	1215	229	356	292
Future Volume (veh/h)	313	1310	1215	229	356	292
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	337	1409	1335	252	387	317
Peak Hour Factor	0.93	0.93	0.91	0.91	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	368	3653	2412	455	343	536
Arrive On Green	0.11	0.72	0.56	0.56	0.19	0.19
Sat Flow, veh/h	1781	5274	4482	814	1781	2790
Grp Volume(v), veh/h	337	1409	1053	534	387	317
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1724	1781	1395
Q Serve(g_s), s	11.5	14.1	25.7	25.7	25.0	13.5
Cycle Q Clear(g_c), s	11.5	14.1	25.7	25.7	25.0	13.5
Prop In Lane	1.00			0.47	1.00	1.00
Lane Grp Cap(c), veh/h	368	3653	1903	964	343	536
V/C Ratio(X)	0.92	0.39	0.55	0.55	1.13	0.59
Avail Cap(c_a), veh/h	501	3653	1903	964	343	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	24.7	7.3	18.3	18.3	52.5	47.8
Incr Delay (d2), s/veh	17.7	0.3	1.2	2.3	87.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	4.9	10.3	10.7	19.5	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.4	7.6	19.5	20.6	140.4	49.5
LnGrp LOS	D	A	B	C	F	D
Approach Vol, veh/h		1746	1587		704	
Approach Delay, s/veh		14.3	19.8		99.5	
Approach LOS		B	B		F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	20.3	78.7				99.0	31.0
Change Period (Y+Rc), s	6.0	6.0				6.0	6.0
Max Green Setting (Gmax), s	24.0	63.0				93.0	25.0
Max Q Clear Time (g_c+I1), s	13.5	27.7				16.1	27.0
Green Ext Time (p_c), s	0.8	15.6				16.3	0.0

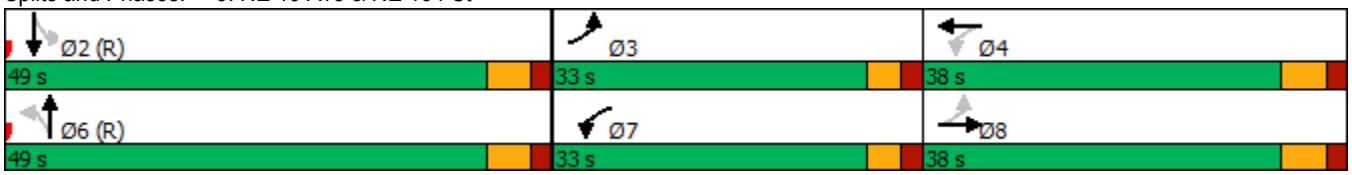
Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

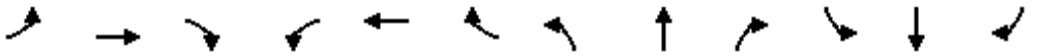
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	88	100	71	62	33	474	66	583
Future Volume (vph)	88	100	71	62	33	474	66	583
Lane Group Flow (vph)	114	156	103	154	0	612	72	811
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	33.0	38.0	33.0	38.0	49.0	49.0	49.0	49.0
Total Split (%)	27.5%	31.7%	27.5%	31.7%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.40	0.66	0.37	0.64		0.22	0.15	0.26
Control Delay	37.1	60.0	36.2	52.2		10.0	11.2	9.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	37.1	60.0	36.2	52.2		10.0	11.2	9.3
Queue Length 50th (ft)	69	111	62	93		67	20	83
Queue Length 95th (ft)	90	145	73	111		99	52	129
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	450	490	452	487		2726	489	3177
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.25	0.32	0.23	0.32		0.22	0.15	0.26

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	100	20	71	62	44	33	474	13	66	583	163
Future Volume (veh/h)	88	100	20	71	62	44	33	474	13	66	583	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	130	26	103	90	64	39	558	15	72	634	177
Peak Hour Factor	0.77	0.77	0.77	0.69	0.69	0.69	0.85	0.85	0.85	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	175	35	219	111	79	201	2909	79	587	2693	738
Arrive On Green	0.07	0.12	0.12	0.07	0.11	0.11	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1781	1513	303	1781	1017	723	244	4305	117	839	3985	1093
Grp Volume(v), veh/h	114	0	156	103	0	154	200	197	215	72	540	271
Grp Sat Flow(s),veh/h/ln	1781	0	1816	1781	0	1740	1437	1549	1681	839	1702	1674
Q Serve(g_s), s	6.7	0.0	10.0	6.1	0.0	10.4	0.0	5.7	5.7	4.2	7.3	7.5
Cycle Q Clear(g_c), s	6.7	0.0	10.0	6.1	0.0	10.4	4.6	5.7	5.7	9.9	7.3	7.5
Prop In Lane	1.00		0.17	1.00		0.42	0.20		0.07	1.00		0.65
Lane Grp Cap(c), veh/h	219	0	210	219	0	191	1007	1047	1136	587	2300	1131
V/C Ratio(X)	0.52	0.00	0.74	0.47	0.00	0.81	0.20	0.19	0.19	0.12	0.23	0.24
Avail Cap(c_a), veh/h	504	0	484	516	0	464	1007	1047	1136	587	2300	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.34	0.34	0.34	0.95	0.95	0.95
Uniform Delay (d), s/veh	43.3	0.0	51.3	43.6	0.0	52.2	7.1	7.2	7.2	9.1	7.5	7.5
Incr Delay (d2), s/veh	1.9	0.0	5.1	1.6	0.0	7.9	0.2	0.1	0.1	0.4	0.2	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	3.1	0.0	4.8	2.8	0.0	4.9	1.8	1.8	2.0	0.8	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	56.4	45.1	0.0	60.0	7.2	7.4	7.4	9.5	7.7	8.0
LnGrp LOS	D	A	E	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		270			257			612			883	
Approach Delay, s/veh		51.7			54.1			7.3			8.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		87.1	13.8	19.1		87.1	13.0	19.9				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		43.0	28.0	32.0		43.0	28.0	32.0				
Max Q Clear Time (g_c+I1), s		11.9	8.7	12.4		7.7	8.1	12.0				
Green Ext Time (p_c), s		6.8	0.3	0.8		4.3	0.2	0.8				

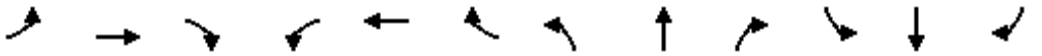
Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	15	12	82	86	14	111	587	29	683
Future Volume (vph)	15	12	82	86	14	111	587	29	683
Lane Group Flow (vph)	17	14	93	0	164	114	667	31	750
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	15.0	68.0	53.0	53.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	13.6%	61.8%	48.2%	48.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.10	0.05	0.29		0.70	0.22	0.26	0.07	0.35
Control Delay	38.3	37.0	10.1		54.1	5.8	5.3	11.3	11.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	37.0	10.1		54.1	5.8	5.3	11.3	11.8
Queue Length 50th (ft)	10	9	0		98	19	65	8	124
Queue Length 95th (ft)	28	24	40		150	45	114	27	202
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	388	609	580		485	524	2588	454	2162
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.16		0.34	0.22	0.26	0.07	0.35

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 18.5 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	12	82	86	14	41	111	587	60	29	683	29
Future Volume (veh/h)	15	12	82	86	14	41	111	587	60	29	683	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	14	93	100	16	48	114	605	62	31	719	31
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.97	0.97	0.97	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	259	220	166	26	58	561	2448	250	555	2208	95
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.75	0.75	0.64	0.64	0.64
Sat Flow, veh/h	1338	1870	1585	818	187	416	1781	3254	333	769	3471	150
Grp Volume(v), veh/h	17	14	93	164	0	0	114	330	337	31	368	382
Grp Sat Flow(s),veh/h/ln	1338	1870	1585	1421	0	0	1781	1777	1810	769	1777	1843
Q Serve(g_s), s	0.0	0.7	5.9	11.6	0.0	0.0	2.1	6.2	6.2	1.7	10.5	10.5
Cycle Q Clear(g_c), s	1.4	0.7	5.9	12.3	0.0	0.0	2.1	6.2	6.2	1.7	10.5	10.5
Prop In Lane	1.00		1.00	0.61		0.29	1.00		0.18	1.00		0.08
Lane Grp Cap(c), veh/h	234	259	220	250	0	0	561	1337	1362	555	1130	1173
V/C Ratio(X)	0.07	0.05	0.42	0.66	0.00	0.00	0.20	0.25	0.25	0.06	0.33	0.33
Avail Cap(c_a), veh/h	486	612	519	515	0	0	596	1337	1362	555	1130	1173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	41.1	43.4	46.1	0.0	0.0	5.6	4.1	4.1	7.6	9.2	9.2
Incr Delay (d2), s/veh	0.1	0.1	1.3	2.9	0.0	0.0	0.2	0.4	0.4	0.2	0.8	0.7
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	0.4	0.3	0.1	4.5	0.0	0.0	0.7	2.1	2.1	0.3	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	41.2	44.7	49.0	0.0	0.0	5.8	4.6	4.6	7.8	10.0	9.9
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		124			164			781			781	
Approach Delay, s/veh		43.8			49.0			4.7			9.9	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.8	76.0		21.2		88.8		21.2				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	47.0		36.0		62.0		36.0				
Max Q Clear Time (g_c+I1), s	4.1	12.5		14.3		8.2		7.9				
Green Ext Time (p_c), s	0.1	5.6		0.9		4.8		0.4				

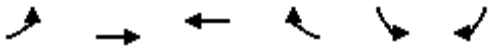
Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	334	1322	1711	368	384
Future Volume (vph)	334	1322	1711	368	384
Lane Group Flow (vph)	371	1469	2083	413	431
Turn Type	pm+pt	NA	NA	Prot	Prot
Protected Phases	1	6	2	8	8
Permitted Phases	6				
Detector Phase	1	6	2	8	8
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	5.0	5.0
Minimum Split (s)	11.0	45.0	44.0	11.0	11.0
Total Split (s)	35.0	120.0	85.0	30.0	30.0
Total Split (%)	23.3%	80.0%	56.7%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Min	None	None
v/c Ratio	0.96	0.38	0.78	1.46	0.60
Control Delay	84.1	6.4	30.7	267.8	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.1	6.4	30.7	267.8	17.9
Queue Length 50th (ft)	309	157	583	~551	50
Queue Length 95th (ft)	#512	178	645	#755	109
Internal Link Dist (ft)		1807	1446	326	
Turn Bay Length (ft)	230			270	270
Base Capacity (vph)	392	3864	2658	283	721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.38	0.78	1.46	0.60

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 92 (61%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: NE 163 St & NE 19 Ave



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	334	1322	1711	247	368	384
Future Volume (veh/h)	334	1322	1711	247	368	384
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	371	1469	1820	263	413	431
Peak Hour Factor	0.90	0.90	0.94	0.94	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	395	3881	2494	357	285	446
Arrive On Green	0.17	0.76	0.55	0.55	0.16	0.16
Sat Flow, veh/h	1781	5274	4680	646	1781	2790
Grp Volume(v), veh/h	371	1469	1369	714	413	431
Grp Sat Flow(s),veh/h/ln	1781	1702	1702	1754	1781	1395
Q Serve(g_s), s	22.6	14.5	45.1	46.0	24.0	23.0
Cycle Q Clear(g_c), s	22.6	14.5	45.1	46.0	24.0	23.0
Prop In Lane	1.00			0.37	1.00	1.00
Lane Grp Cap(c), veh/h	395	3881	1882	970	285	446
V/C Ratio(X)	0.94	0.38	0.73	0.74	1.45	0.97
Avail Cap(c_a), veh/h	441	3881	1882	970	285	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.96	0.96
Uniform Delay (d), s/veh	45.6	6.1	25.1	25.3	63.0	62.6
Incr Delay (d2), s/veh	26.9	0.3	2.5	5.0	220.1	32.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.8	5.0	18.7	20.3	28.3	10.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.5	6.3	27.6	30.3	283.1	95.5
LnGrp LOS	E	A	C	C	F	F
Approach Vol, veh/h		1840	2083		844	
Approach Delay, s/veh		19.7	28.5		187.3	
Approach LOS		B	C		F	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	31.1	88.9			120.0	30.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	29.0	79.0			114.0	24.0
Max Q Clear Time (g_c+I1), s	24.6	48.0			16.5	26.0
Green Ext Time (p_c), s	0.5	20.6			17.9	0.0

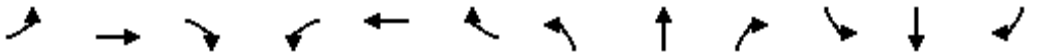
Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	107	65	98	15	459	59	676
Future Volume (vph)	108	107	65	98	15	459	59	676
Lane Group Flow (vph)	123	155	83	193	0	549	66	943
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	3	8	7	4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	38.0	10.0	38.0	35.0	35.0	35.0	35.0
Total Split (s)	43.0	38.0	43.0	38.0	39.0	39.0	39.0	39.0
Total Split (%)	35.8%	31.7%	35.8%	31.7%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	5.0	6.0	5.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.44	0.47	0.26	0.71		0.20	0.13	0.31
Control Delay	35.7	45.8	31.8	57.5		10.9	11.8	10.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	35.7	45.8	31.8	57.5		10.9	11.8	10.3
Queue Length 50th (ft)	73	104	48	128		61	18	98
Queue Length 95th (ft)	106	155	67	164		101	45	147
Internal Link Dist (ft)		706		893		326		1185
Turn Bay Length (ft)	50		60				70	
Base Capacity (vph)	568	488	576	487		2812	503	3081
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.22	0.32	0.14	0.40		0.20	0.13	0.31

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 5: NE 19 Ave & NE 164 St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	107	29	65	98	52	15	459	26	59	676	163
Future Volume (veh/h)	108	107	29	65	98	52	15	459	26	59	676	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	122	33	83	126	67	16	504	29	66	760	183
Peak Hour Factor	0.88	0.88	0.88	0.78	0.78	0.78	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	218	59	249	151	80	95	2934	169	588	2675	638
Arrive On Green	0.08	0.15	0.15	0.05	0.13	0.13	0.65	0.65	0.65	1.00	1.00	1.00
Sat Flow, veh/h	1781	1418	384	1781	1149	611	96	4514	259	871	4116	981
Grp Volume(v), veh/h	123	0	155	83	0	193	193	171	185	66	627	316
Grp Sat Flow(s),veh/h/ln	1781	0	1801	1781	0	1760	1665	1549	1655	871	1702	1694
Q Serve(g_s), s	7.0	0.0	9.6	4.8	0.0	12.8	0.0	5.2	5.3	0.7	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	9.6	4.8	0.0	12.8	4.8	5.2	5.3	6.0	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.35	0.08		0.16	1.00		0.58
Lane Grp Cap(c), veh/h	226	0	277	249	0	232	1114	1007	1076	588	2212	1101
V/C Ratio(X)	0.54	0.00	0.56	0.33	0.00	0.83	0.17	0.17	0.17	0.11	0.28	0.29
Avail Cap(c_a), veh/h	653	0	480	715	0	469	1114	1007	1076	588	2212	1101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.18	0.18	0.18	0.95	0.95	0.95
Uniform Delay (d), s/veh	41.2	0.0	47.0	41.9	0.0	50.8	8.2	8.3	8.3	0.2	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	1.8	0.8	0.0	7.6	0.1	0.1	0.1	0.4	0.3	0.6
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	3.2	0.0	4.4	2.2	0.0	6.1	1.9	1.7	1.8	0.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	0.0	48.8	42.7	0.0	58.4	8.3	8.3	8.3	0.6	0.3	0.6
LnGrp LOS	D	A	D	D	A	E	A	A	A	A	A	A
Approach Vol, veh/h		278			276			549			1009	
Approach Delay, s/veh		46.3			53.7			8.3			0.4	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		84.0	14.2	21.8		84.0	11.5	24.5				
Change Period (Y+Rc), s		6.0	5.0	6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		33.0	38.0	32.0		33.0	38.0	32.0				
Max Q Clear Time (g_c+I1), s		8.0	9.0	14.8		7.3	6.8	11.6				
Green Ext Time (p_c), s		7.5	0.3	1.0		3.5	0.2	0.8				

Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	8	72	82	8	73	612	41	764
Future Volume (vph)	26	8	72	82	8	73	612	41	764
Lane Group Flow (vph)	33	10	91	0	173	79	757	44	837
Turn Type	Perm	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		8			4	1	6		2
Permitted Phases	8		8	4		6		2	
Detector Phase	8	8	8	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	7.0	7.0	7.0	7.0
Minimum Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	32.0	32.0	32.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	15.0	80.0	65.0	65.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	12.5%	66.7%	54.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.19	0.04	0.29		0.73	0.17	0.29	0.10	0.36
Control Delay	44.1	39.9	10.4		59.8	5.0	4.8	11.2	11.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	39.9	10.4		59.8	5.0	4.8	11.2	11.2
Queue Length 50th (ft)	23	7	0		114	12	74	12	148
Queue Length 95th (ft)	43	19	31		149	25	93	35	233
Internal Link Dist (ft)		1137			1281		1185		407
Turn Bay Length (ft)	125		125			420		35	
Base Capacity (vph)	332	527	513		422	486	2607	446	2320
Starvation Cap Reductn	0	0	0		0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.10	0.02	0.18		0.41	0.16	0.29	0.10	0.36

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 18.5 (15%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated

Splits and Phases: 8: NE 19 Ave & NE 167 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	8	72	82	8	45	73	612	85	41	764	23
Future Volume (veh/h)	26	8	72	82	8	45	73	612	85	41	764	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	10	91	105	10	58	79	665	92	44	813	24
Peak Hour Factor	0.79	0.79	0.79	0.78	0.78	0.78	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	267	227	166	17	68	517	2374	328	522	2301	68
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	1.00	1.00	0.65	0.65	0.65
Sat Flow, veh/h	1333	1870	1585	824	119	475	1781	3136	433	708	3524	104
Grp Volume(v), veh/h	33	10	91	173	0	0	79	376	381	44	410	427
Grp Sat Flow(s),veh/h/ln	1333	1870	1585	1418	0	0	1781	1777	1792	708	1777	1852
Q Serve(g_s), s	0.0	0.6	6.3	13.7	0.0	0.0	1.5	0.0	0.0	2.8	12.5	12.5
Cycle Q Clear(g_c), s	3.0	0.6	6.3	14.3	0.0	0.0	1.5	0.0	0.0	2.8	12.5	12.5
Prop In Lane	1.00		1.00	0.61		0.34	1.00		0.24	1.00		0.06
Lane Grp Cap(c), veh/h	230	267	227	251	0	0	517	1345	1357	522	1160	1209
V/C Ratio(X)	0.14	0.04	0.40	0.69	0.00	0.00	0.15	0.28	0.28	0.08	0.35	0.35
Avail Cap(c_a), veh/h	418	530	449	448	0	0	554	1345	1357	522	1160	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	44.3	46.8	50.1	0.0	0.0	5.4	0.0	0.0	7.7	9.4	9.4
Incr Delay (d2), s/veh	0.3	0.1	1.1	3.4	0.0	0.0	0.1	0.5	0.5	0.3	0.8	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	0.9	0.3	2.6	5.3	0.0	0.0	0.5	0.2	0.2	0.5	4.9	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	44.4	47.9	53.5	0.0	0.0	5.6	0.5	0.5	8.0	10.2	10.2
LnGrp LOS	D	D	D	D	A	A	A	A	A	A	B	B
Approach Vol, veh/h		134			173			836			881	
Approach Delay, s/veh		47.1			53.5			1.0			10.1	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.5	84.3		23.2		96.8		23.2				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	9.0	59.0		34.0		74.0		34.0				
Max Q Clear Time (g_c+I1), s	3.5	14.5		16.3		2.0		8.3				
Green Ext Time (p_c), s	0.1	6.8		0.9		5.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Driveways

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	600	23	0	844
Future Vol, veh/h	0	23	600	23	0	844
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	652	25	0	917

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	339	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	561	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	561	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	561	-
HCM Lane V/C Ratio	-	-	0.045	-
HCM Control Delay (s)	-	-	11.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	41	602	41	0	898
Future Vol, veh/h	0	41	602	41	0	898
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	45	654	45	0	976

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	350	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	552	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	552	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	552	-
HCM Lane V/C Ratio	-	-	0.081	-
HCM Control Delay (s)	-	-	12.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.3	-

Appendix E
Trip Generation Data

Medical-Dental Office Building
(720)

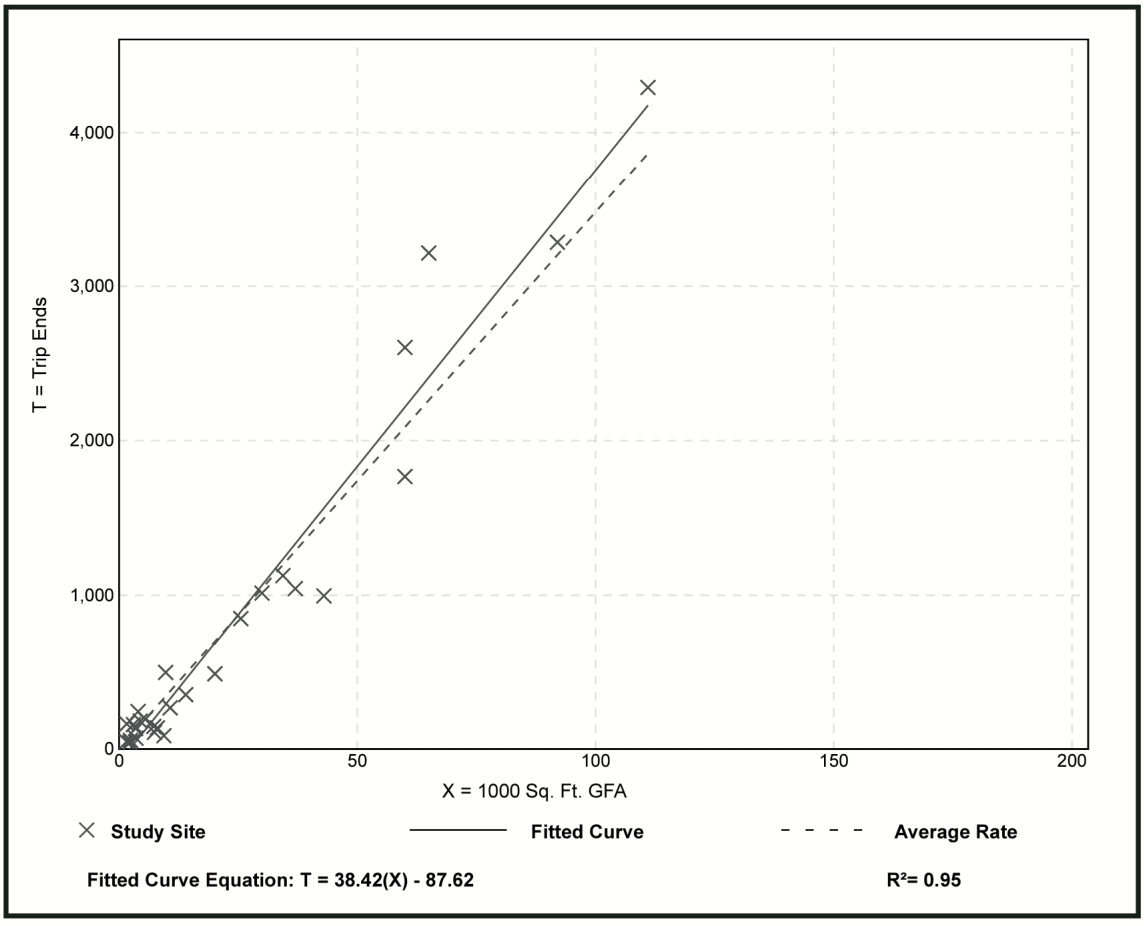
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 28
1000 Sq. Ft. GFA: 24
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
34.80	9.14 - 100.75	9.79

Data Plot and Equation



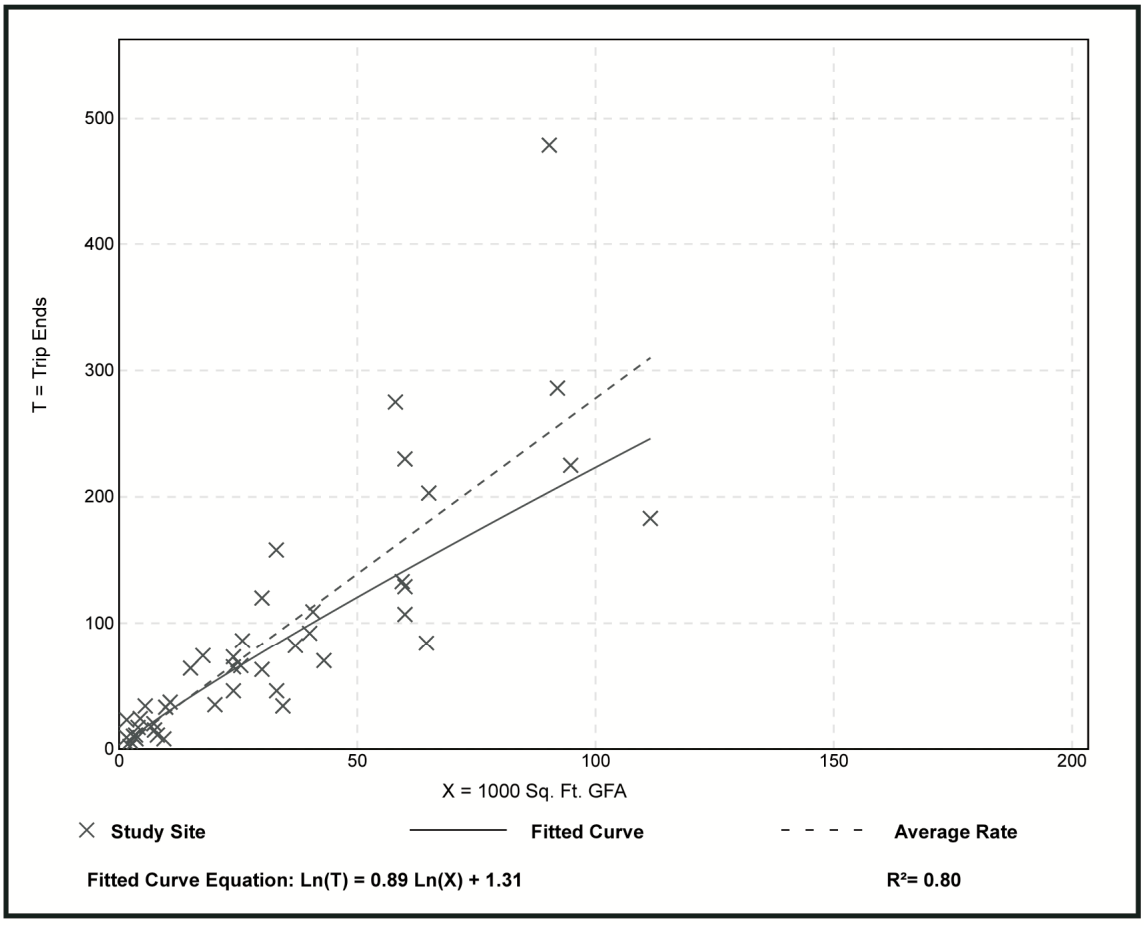
Medical-Dental Office Building
(720)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 44
1000 Sq. Ft. GFA: 32
Directional Distribution: 78% entering, 22% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.78	0.85 - 14.30	1.28

Data Plot and Equation



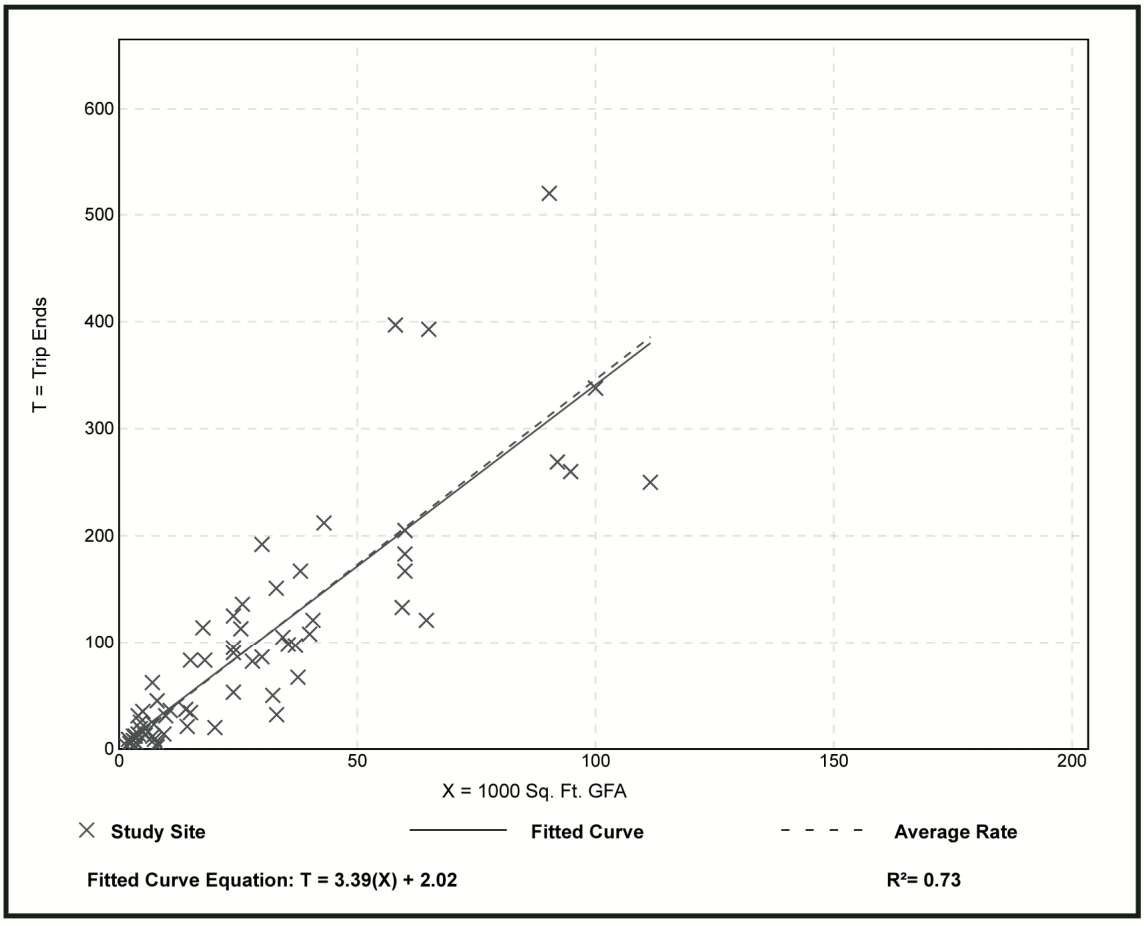
Medical-Dental Office Building
(720)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 65
1000 Sq. Ft. GFA: 28
Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.46	0.25 - 8.86	1.58

Data Plot and Equation



Marijuana Dispensary
(882)

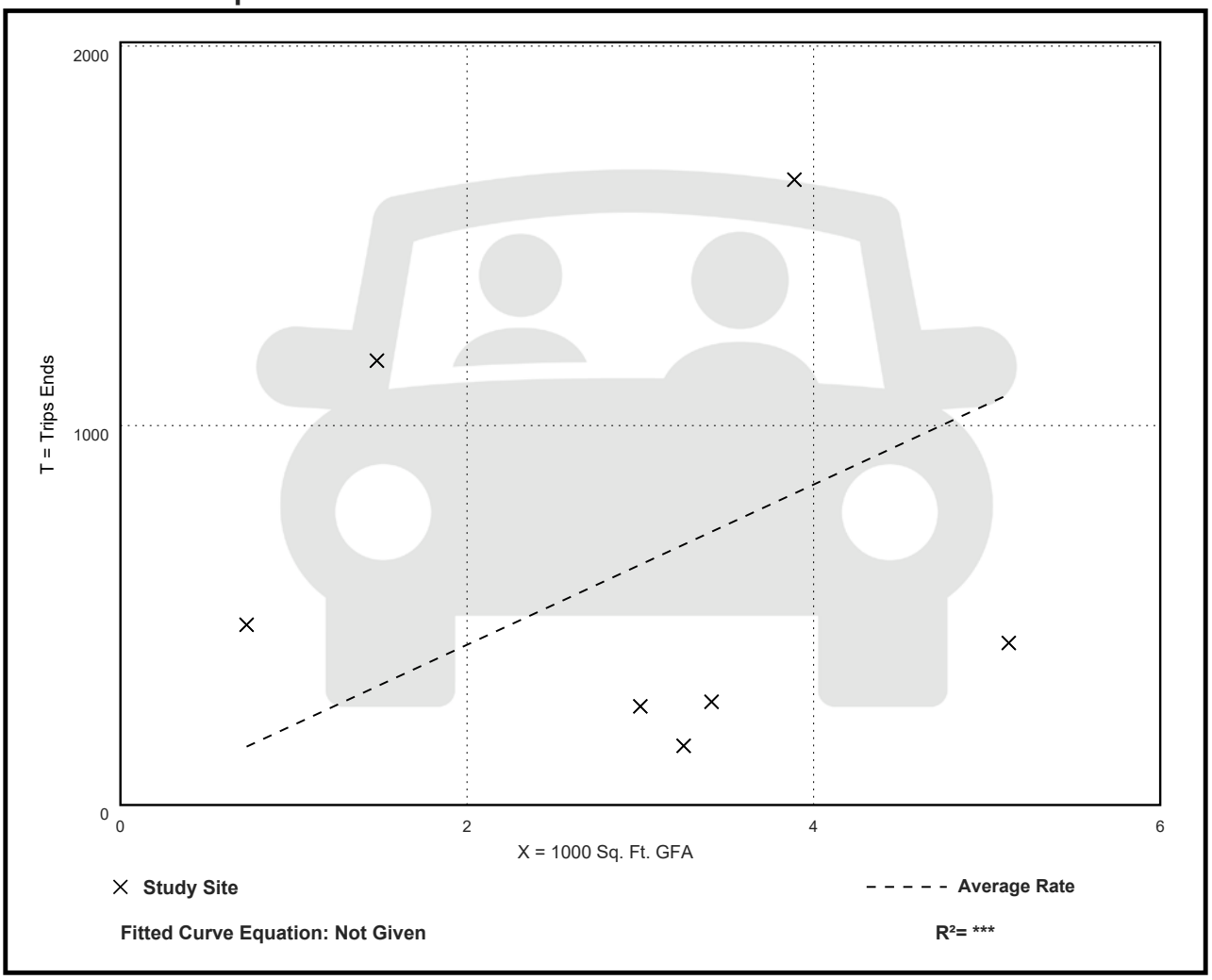
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
211.12	48.00 - 791.22	246.90

Data Plot and Equation



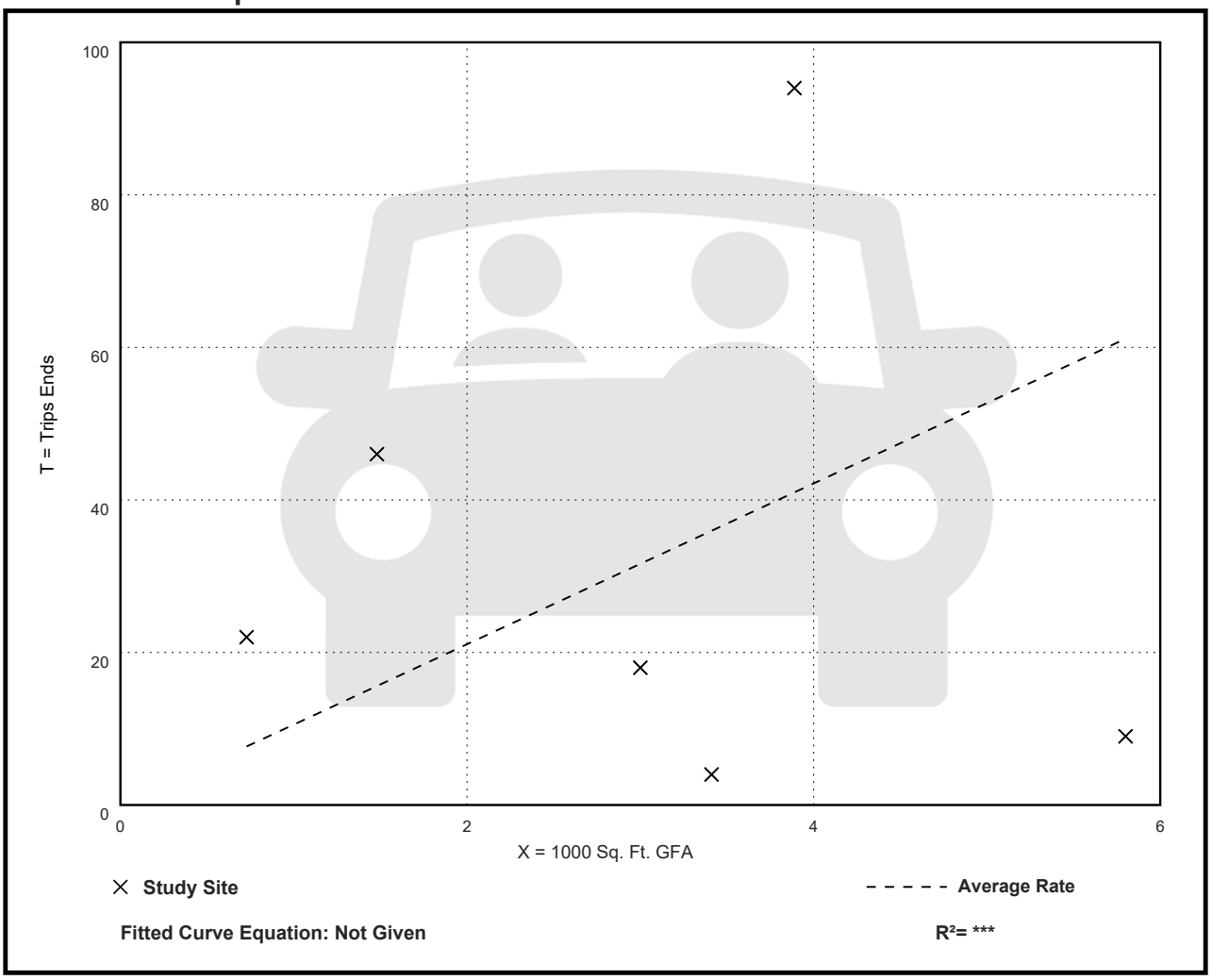
Marijuana Dispensary
(882)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.54	1.17 - 31.08	12.69

Data Plot and Equation



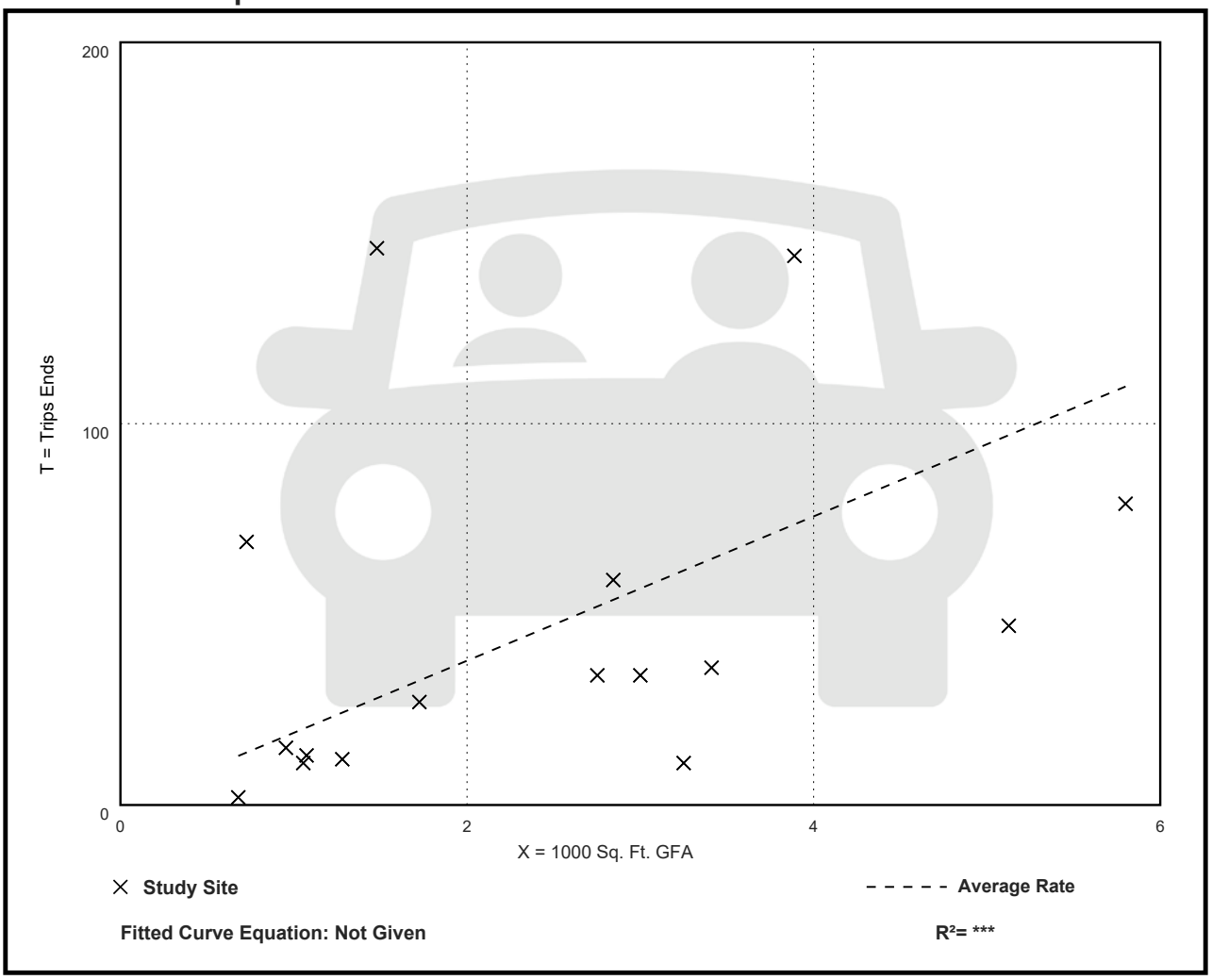
Marijuana Dispensary
(882)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
18.92	2.94 - 98.65	21.73

Data Plot and Equation



Appendix F
Stacking Exhibit

Stacking Exhibit

16635 NE 19 Avenue

(approximated from site survey)