Haddon Hall
Miami Beach, Florida

traffic study

prepared for:
Bercow Radell & Fernandez, P.A.

Traf Tech
ENGINEERING, INC.

January 2016

Traf Tech
ENGINEERING, INC.

January 19, 2016

Monika Entin, Esq.
Bercow Radell & Fernandez, P.A.
200 South Biscayne Boulevard, Suite 850
Miami, Florida 33131

Re: Haddon Hall (1500 Collins) –Traffic Study

Dear Monika:

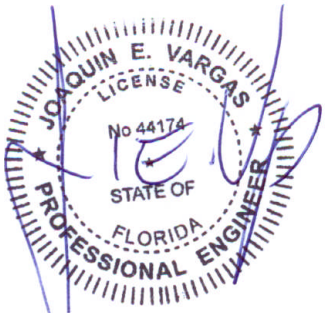
Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study undertaken for the proposed expansion of the existing Haddon Hall project located at 1500 Collins Avenue in Miami Beach, Florida. The study addresses the traffic impacts created by the proposed project to the surrounding street system.

It has been a pleasure working with you on this project.

Sincerely,

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer



January 19, 2016

8400 North University Drive, Suite 309, Tamarac, Florida 33321
Tel: (954) 582-0988 Fax: (954) 582-0989

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INTRODUCTION

Haddon Hall is an existing lodging facility located at 1500 Collins Avenue in the City of Miami Beach in Miami-Dade County, Florida. The subject hotel is planning to expand by adding restaurant seats. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. was retained by Bercow Radell & Fernandez to conduct a traffic study[1] in connection with the proposed project. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Impact Analysis
7. Conclusions and Recommendations

[1] The traffic methodology was discussed and agreed with the City of Miami Beach staff and is included in Appendix A
.

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PROJECT LOCATION MAP

FIGURE 1
Haddon Hall
Miami Beach, Florida

Existing Land Use

The 1500 Collins site currently has a lodging facility. The drop-off and pick-up area is located off of Collins Avenue for southbound traffic.

Proposed Land Uses and Access

The existing Haddon Hall is planning to expand its seating capacity as follows:

- 54 additional seats - Quality restaurant

No parking is provided on site. The existing drop-off and pick-up area off of Collins Avenue will remain. Appendix B contains a copy of the proposed site plan for the project site.

EXISTING CONDITIONS

This section addresses the existing roadway system located in the vicinity of the project site and nearby intersections.

Roadway System

The roadway system located near the project site includes Collins Avenue, Washington Avenue, 15th Street, Espanola Way, and 14th Street. Near the project site, Collins Avenue and Washington Avenue are four-lane facilities in the north and south directions. Similarly, 15th Street, Espanola Way, and 14th Street are two-lane facilities in the east and west directions near the project site.

Nearby Intersections

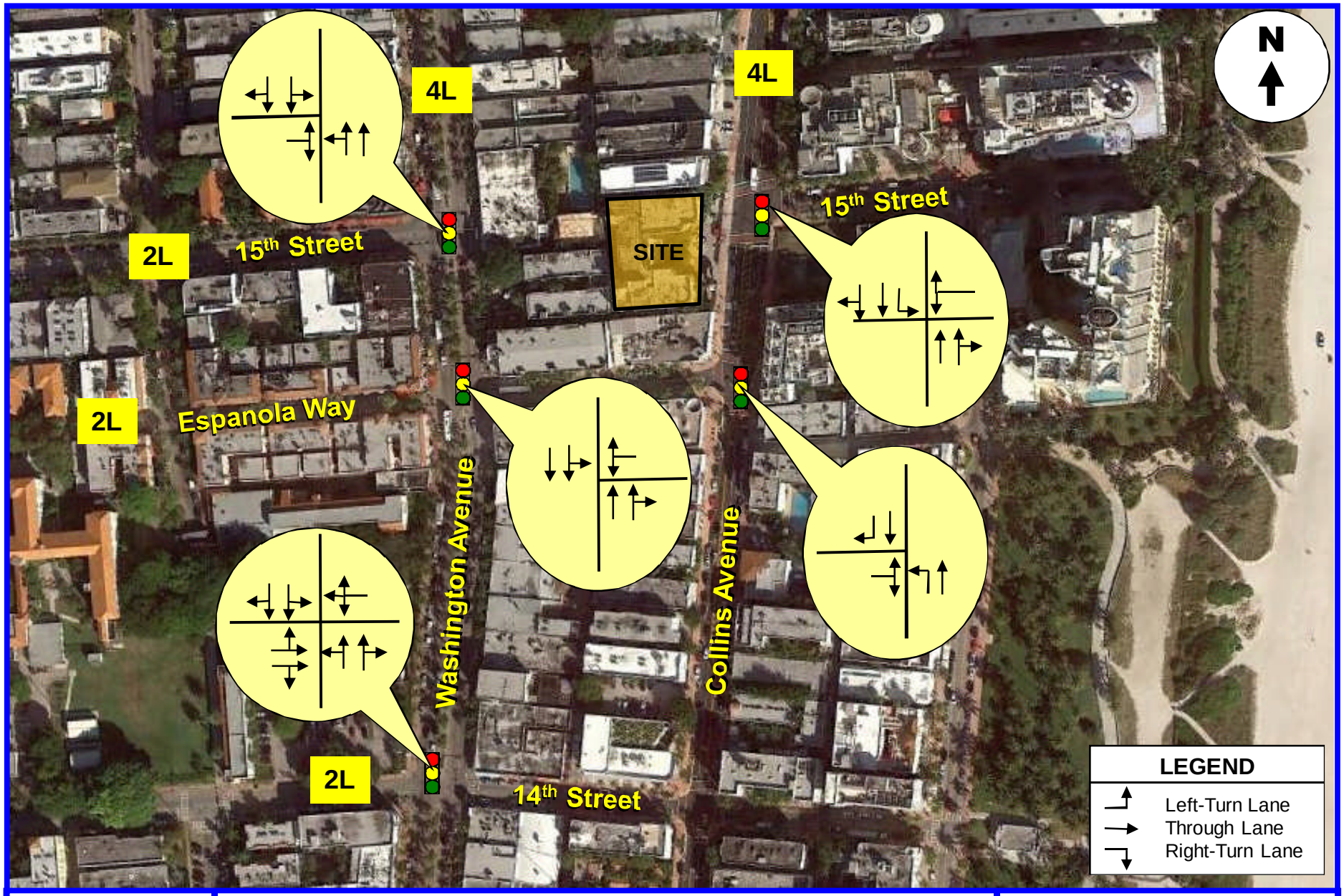
With the assistance of City of Miami Beach staff, five intersections were identified as the locations that will be impacted the most by the proposed project. These intersections include:

1. Collins Avenue and 15th Street (signalized)
2. Collins Avenue and Espanola Way (signalized)
3. Washington Avenue and 15th Street (signalized)
4. Washington Avenue and Espanola Way (signalized)
5. Washington Avenue and 14th Street (signalized)

Public Transportation and Bicycle Sharing and Rentals

Two Miami-Dade Transit routes operate along Collins Avenue (routes 120 and 150) and two along Washington Avenue (routes C and SB Local). Additionally, two Deco Bike Stations are located near the project site (159 and 161).

Figure 2 shows the existing lane geometry of the five intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in the figure.



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EXISTING LANE GEOMETRY

FIGURE 2
Haddon Hall
Miami Beach, Florida

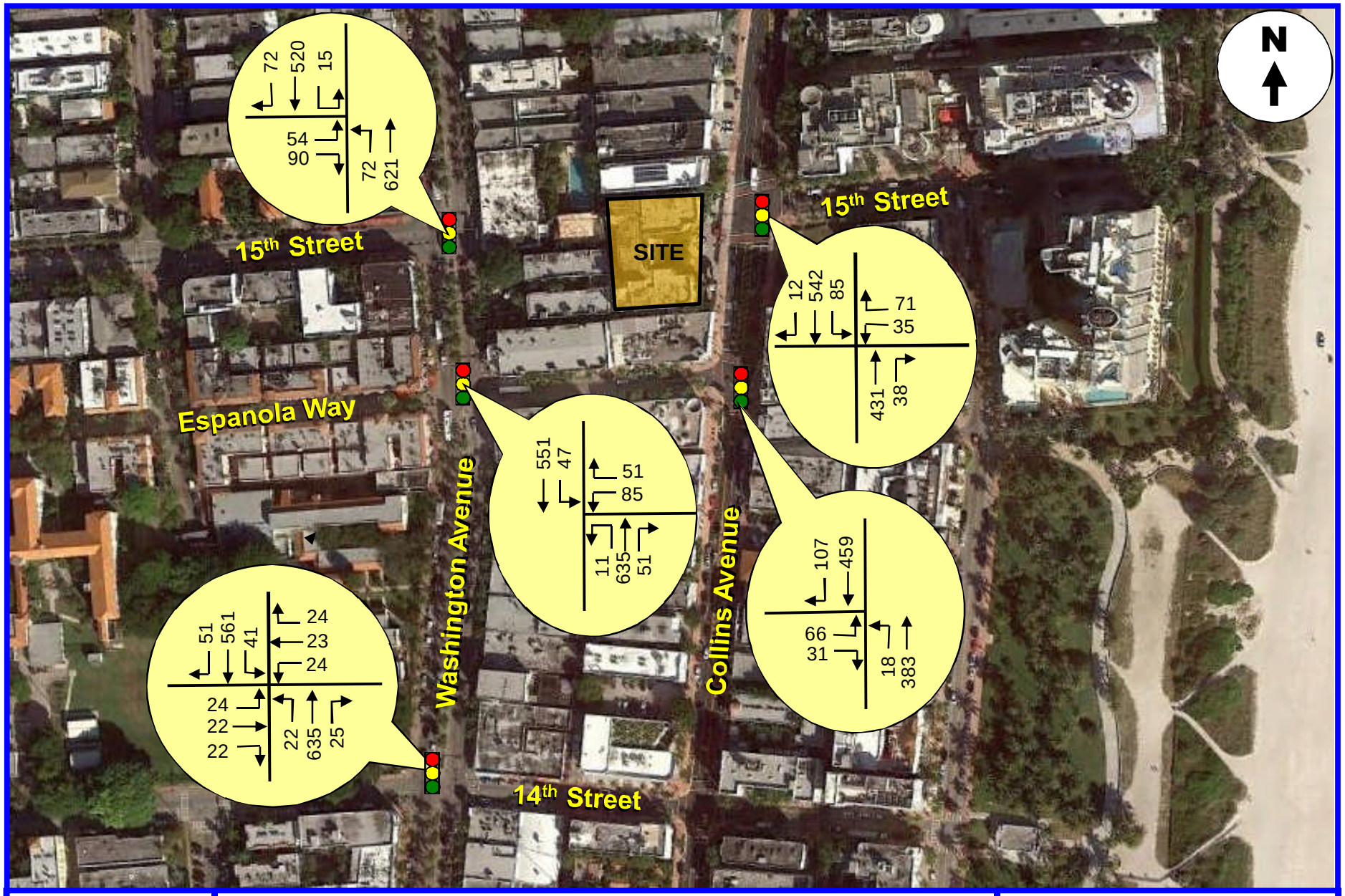
TRAFFIC COUNTS

Traf Tech Engineering, Inc., in association with Traffic Survey Specialists, Inc., collected traffic data at the following locations:

1. Collins Avenue and 15th Street (signalized)
2. Collins Avenue and Espanola Way (signalized)
3. Washington Avenue and 15th Street (signalized)
4. Washington Avenue and Espanola Way (signalized)
5. Washington Avenue and 14th Street (signalized)

The intersection turning movement counts performed by Traffic Survey Specialists, Inc.,were collected on Friday, January 15, 2016 during the PM peak period (5:00 PM to 7:00 PM).

Figure 3 summarizes the results of the intersection turning movement counts undertaken during the weekday peak hour. Appendix C contains the intersection turning movement counts, as collected in the field. The signal timing plans were obtained from the Miami-Dade County's web site and are also contained in Appendix C.



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EXISTING TRAFFIC COUNTS – Peak Hour
(January 15, 2016)

FIGURE 3
Haddon Hall
Miami Beach, Florida

TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (9th Edition). According to the subject ITE manual, the most appropriate "land use" category for the proposed land use includes Land Use 931 – Quality Restaurant. Table 1 summarizes the external trips associated with the proposed expansion of the Haddon Hall.

TABLE 1
Trip Generation Summary
Haddon Hall (Proposed Expansion)

Land Use	Size	Daily Trips	Weekday Peak Hour Trips		
			Inbound	Outbound	Total
PROPOSED USES					
Quality Restaurant	54 seats	154	9	7	16

Source: ITE Trip Generation Manual (9th Edition)

As indicated in Table 1, the external trips anticipated to be generated by the proposed Haddon Hall project consist of approximately 154 daily trips and approximately 16 trips during the weekday peak hour (9 inbound and 7 outbound), which is considered insignificant from a traffic-engineering standpoint. In order to assess impacts with a conservative approach, no deductions were made to account for trips associated with the existing land use (restaurant).

The trip generation rates used to determine the trips associated with the proposed use are presented below:

ITE Land Use 931 – Quality Restaurant

Weekday Daily Trip Generation
T = 2.86 (X)
Where T = number of weekday daily trips and
X = number of seats

Weekday Peak Hour of Generator
T = 0.30 (X) (59% inbound and 41% outbound)
Where T = number of weekday peak hour trips and
X = number of seats

TRIP DISTRUBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone 644, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

TABLE 2
Project Trip Distribution
Haddon Hall

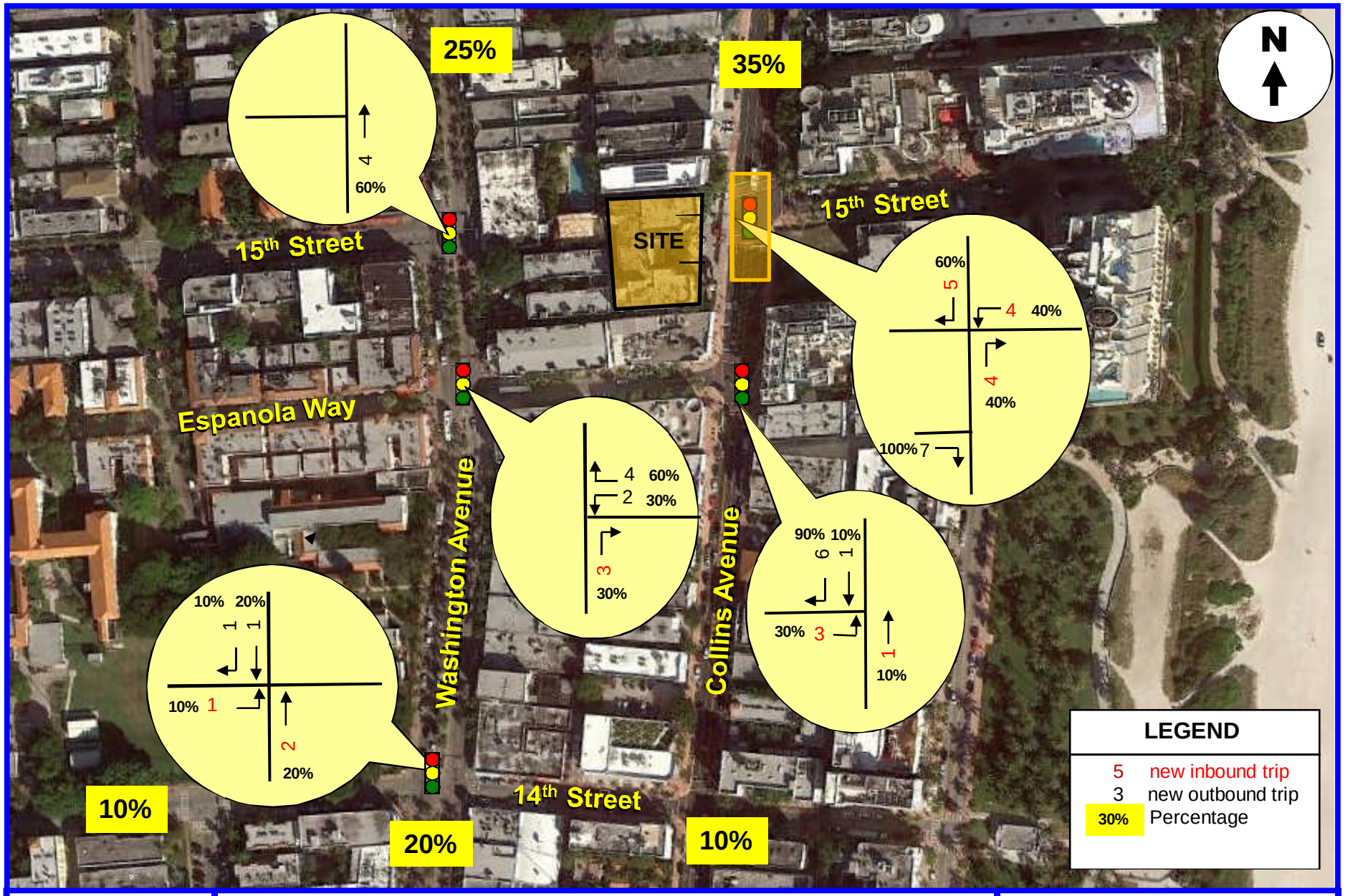
Direction		% of Total Trips
North:	Northwest	19.40
	Northeast	16.10
South:	Southwest	12.40
	Southeast	0.00
East:	Northeast	0.00
	Southeast	0.00
West:	Northwest	22.20
	Southwest	30.00
	Total	100.00%

Source: Miami-Dade County (2040 SERPM)

Based on the above, the following traffic assignment was assumed for the proposed Haddon Hall project:

- 35% to and from the north via Collins Avenue
- 10% to and from the south via Collins Avenue
- 25% to and from the north via Washington Avenue
- 20% to and from the south via Washington Avenue
- 10% to and from the west via 14th Street

The new peak hour traffic generated by the project was assigned to the nearby transportation network using the traffic assignment documented above. The new project traffic assignment is summarized in Figure 4.



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NEW PROJECT TRAFFIC ASSIGNMENT
(Weekday New Peak Hour Trips)

FIGURE 4
Haddon Hall
Miami Beach, Florida

TRAFFIC ANALYSIS

This section of the study is divided into four parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions. The third section addresses the projected operating conditions of the project's access driveways. The final section focusses on valet parking.

Future Conditions Traffic Volumes

Two sets of future traffic volumes were developed. The first set includes project buildout conditions without the proposed project and the second set adds the new trips anticipated to be generated by the project.

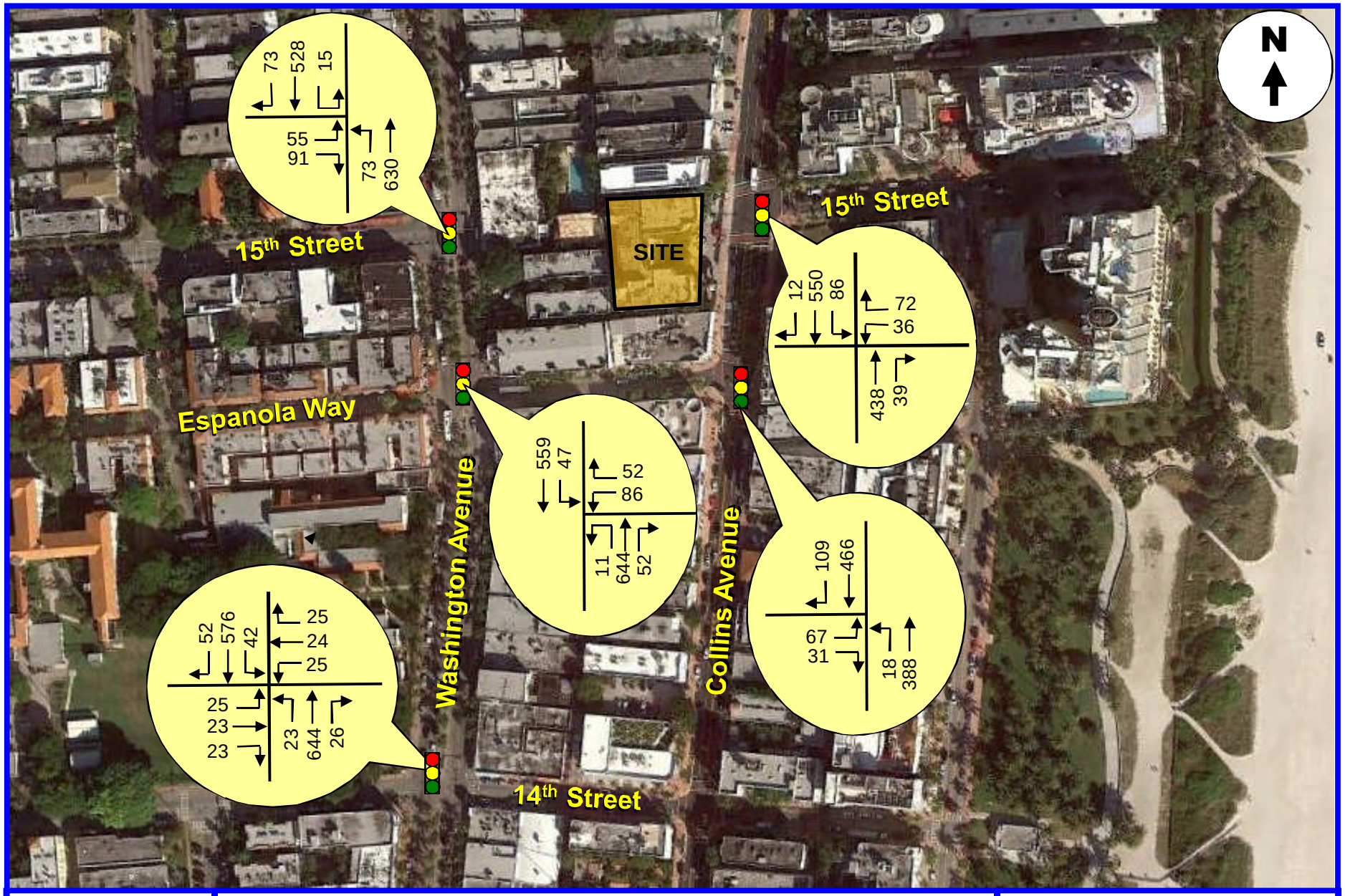
In order to develop year 2017 traffic volumes (project anticipated to be built and occupied by the year 2017), without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the month of January to average peak season conditions. Based on FDOT's Peak Season Factor Category report, a factor of 1.06 is required to convert traffic counts collected in third week of January to average peak season conditions (refer to Appendix D). The second analysis includes a growth factor to project 2016 peak season traffic volumes to the year 2017. Based on traffic growth data published by the FDOT for a nearby traffic count stations, minimal traffic growth has occurred during the past five years (refer to Appendix D). However, in order to assess impacts with a conservative approach, and to account for unforeseen approved project (committed trips) that may impact the study intersections, a 1.5% growth rate was used for purposes of this study.

The new trips generated by the Haddon Hall project (refer to Figure 4) were added to the 2017 background traffic in order to develop total traffic conditions.

The future traffic projections for the study intersections (peak season adjustments, growth rates and project traffic) are presented in tabular format in Appendix E. Figures 5 and 6 present the year 2017 future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the Haddon Hall expansion project.

Level of Service Analyses

Intersection capacity/level of service analyses were conducted for the five study intersections. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCS) using the SYNCHRO software. The results of the capacity analyses are summarized in Table 3. As indicated in Table 3, all study intersections are currently operating adequately and will continue to operate at a acceptable level of service in the year 2017 with the proposed project in place.



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BACKGROUND TRAFFIC – Year 2017
(Weekdays Peak Hour Trips)

FIGURE 5
Haddon Hall
Miami Beach, Florida

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TOTAL TRAFFIC with PROJECT – Year 2017
(Weekdays Peak Hour Trips)

FIGURE 6
Haddon Hall
Miami Beach, Florida

TABLE 3 Intersection Level of Service Haddon Hall			
		Future Traffic Conditions	
Intersection	2016 Existing	2017 w/o Project	2017 With Project
Collins Avenue & 15th Street	A	A	A
Collins Avenue & Espanola Way	A	A	A
Washington Avenue & 15th Street	A	A	A
Washington Avenue & Espanola Way	A	A	A
Washington Avenue & 14th Street	A	A	A

Source: Highway Capacity Manual

The computer printouts of the intersection capacity analyses are contained in Appendix F.

Valet Operation

The Haddon Hall project currently provides valet service to hotel/restaurant patrons. All vehicles stop at a valet station located on Collins Avenue in front of the project.

In order to determine the additional stacking requirements associated with the valet operation, a queuing analysis was undertaken for the new trips associated with the 54-seat restaurant. As indicated in Table 1, the maximum number of inbound vehicles associated with the 54-new restaurant seats, during a one-hour period, is approximately 9 vehicles.

A queuing analysis was conducted in order to ensure that the on-street stacking is sufficient to accommodate the maximum inbound vehicular demand anticipated at this facility.

The length of queue anticipated on Collins Avenue was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[2]. For this analysis, the following input variables were used:

- Service Rate: It was assumed that the average time to park/unpark a vehicle by a valet runner is approximately five minutes, or 12 vehicles per hour per valet runner. Assuming up to four (2) valet runners, the maximum service rate of the facility is 24 vehicles in a one-hour period.

- Demand Rate: As indicated above, a maximum of 9 vehicles will arrive during the highest hour.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum length of queue anticipated on Collins Avenue, at the 90% confidence level, is one (1) additional vehicle. The results of the ITE queuing procedure is contained in Appendix G.

[2] By Vergil G. Stover and Frank J. Koepke.

CONCLUSIONS AND RECOMMENDATIONS

Haddon Hall is an existing lodging facility located at 1500 Collins Avenue in the City of Miami Beach in Miami-Dade County, Florida. The subject hotel is planning to expand by adding restaurant seats. The existing hotel is planning to expand its seating capacity by an additional 54 restaurant seats.

Traf Tech Engineering, Inc. was retained by Bercow Radell & Fernandez to conduct a traffic study in connection with the proposed expansion of the Haddon Hall hotel. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. The conclusions and recommendations of the traffic study are presented below:

- The external trips anticipated to be generated by the proposed Haddon Hall project consist of approximately 154 daily trips and approximately 16 trips during the weekday peak hour (9 inbound and 7 outbound). Hence, the new trips associated with the proposed expansion project are considered insignificant from a traffic-engineering standpoint (one new vehicle trip every four minutes).

- All study intersections are currently operating adequately and will continue to operate at an acceptable level of service in the year 2017 with the proposed project in place.

- The valet station on Collins Avenue should provide parking for at least one (1) additional vehicle.

- Up to two (2) additional valet runners should be assigned to this facility during the anticipated peak periods.

APPENDIX A

Traffic Methodology

TO: 1500 Collins Avenue (Haddon Hall)

FROM: Joaquin Vargas

DATE: January 5, 2016

SUBJECT: Traffic Methodology for 1500 Collins

1750 Alton is a proposed 96-room hotel to be located where a 3,500+/- square foot restaurant with a drive-through lane exists. The existing restaurant (Boston Chicken) had 54 inside seats and up to 40 seats outside for a total of approximately 94 seats.

The proposed lodging facility will have a right-turn in-only driveway off of the southbound lanes of Alton Road and will have direct access from 17th Street via Alton Court (a north-south alley located on the west side of the hotel site). The following is our proposed methodology for the traffic study associated with this project:

- The trip generation for the existing and proposed facilities will be based on ITE's *Trip Generation Manual* (9th Edition). For the proposed restaurant seats, quality restaurant will be assumed (LUC 931).

- The traffic study will evaluate five (5) intersections in the immediate vicinity of the project. The analyses will be undertaken for the critical PM peak hour. These intersections are:
    - Collins Avenue and 15th Street (signalized)
    - Collins Avenue and Espanola Way (signalized)
    - Washington Avenue and 15th Street (signalized)
    - Washington Avenue and Espanola Way (signalized)
    - Washington Avenue and 14th Street (signalized)

- Traffic circulation will be evaluated in the traffic study, including its impact to the surrounding street system and adjacent driveways, if any.

- The drop-off and pick-up lane will be evaluated from a queuing standpoints.

- For purposes of the traffic study, the build-out year will be 2017. For purposes of traffic growth, FDOT historical traffic data will be used.

- Existing traffic signal timing data and traffic counts will be included in the appendix of the traffic study.

- The traffic study will address any anticipated / proposed impacts onto the existing on-street vehicular parking, if applicable. Any impacts to on-street

parking will be discussed with the City's Parking Department.

- Traffic figures will be prepared for the following trip generation scenarios for each of the intersections analyzed:

  1. Existing trips
  2. Proposed site trips distribution
  3. Existing + traffic growth
  4. Future or build-out + traffic growth + site trips

- The presence of transit and nearby routes will be discussed as will the provision and location of bicycle racks.

- Provide bicycle racks at the site to encourage other modes of transportation.

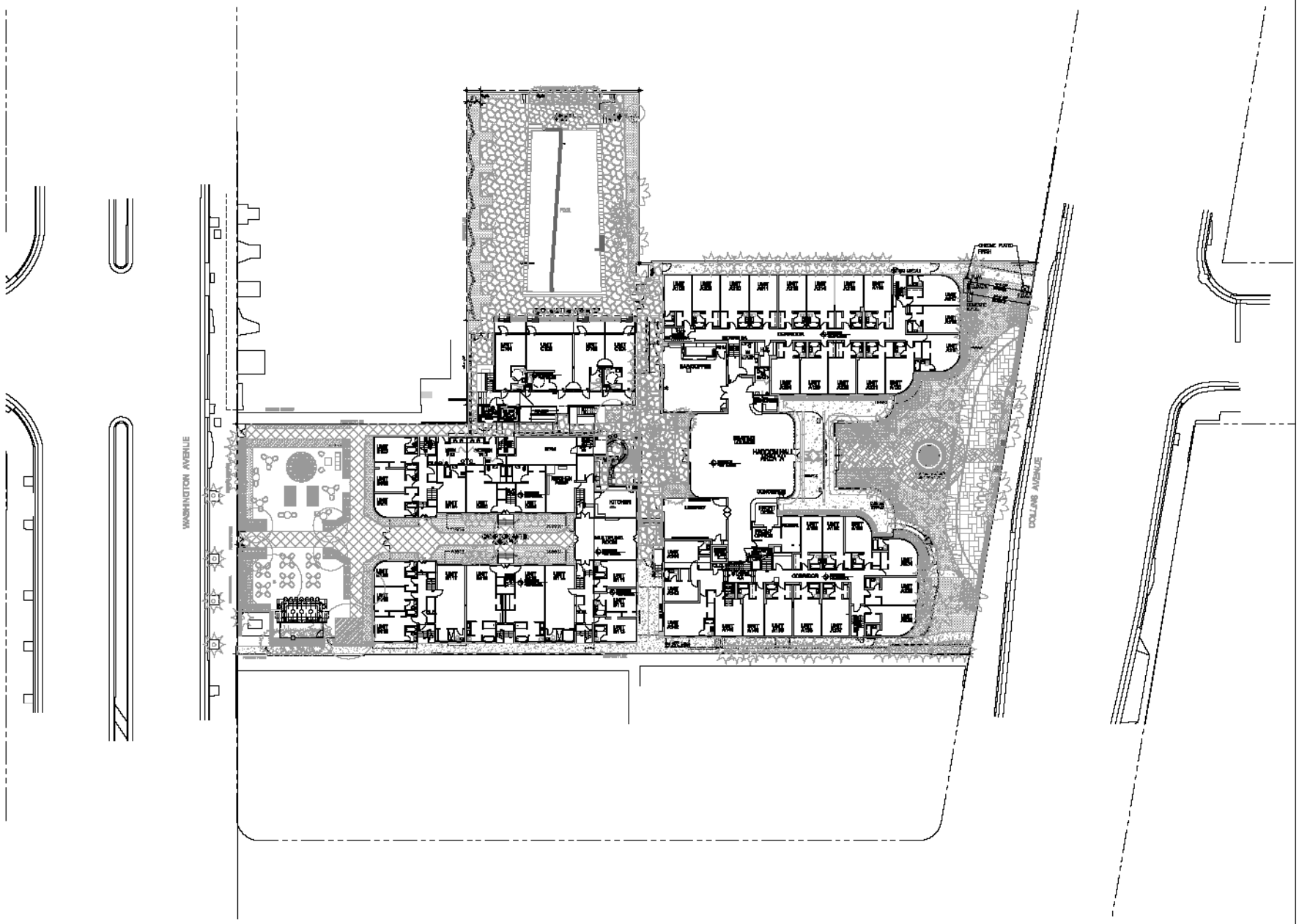
- The site plan will show the location of pick up/drop off for valet parking purposes.

- The site plan will also include the location of bicycle parking, garbage pick-up area and place designated for deliveries.

- The submittal of the study will include LOS calculations for review by the peer reviewer.

APPENDIX B

Site Plan - 1500 Collins



1 ARCHITECTURAL SITE PLAN
SCALE: 1/16" = 1'-0"

HADDON HALL
1500 COLLINS AVE
MIAMI BEACH, FL

KEYPLAN N.T.S.

REVISIONS

NO.	DESCRIPTION	ISSUE DATE

100% CONSTRUCTION DOCUMENT SET

NORTH SEAL

Jonathan Cardello
Lic. #AR93331

ADD Inc Architecture Interiors Planning

One Biscayne Tower
Suite 1670
Two South
Biscayne Boulevard
Miami, FL 33131
T. 305.442.8700
F. 305.442.8770
www.addinc.com
Lic. # AA26001307

Boston Miami

JOB NUMBER: 13036.00
CHECKED BY:
ISSUE DATE: FEBRUARY 18, 2014
SCALE: 1/16" = 1'-0"

SHEET TITLE

ARCHITECTURAL SITE PLAN

SHEET NUMBER

A001

APPENDIX C

Signal Timing Plan and Traffic Counts

TOD Schedule Report

for 2663: Collins Av&Espanola Way

Print Date: 1/12/2014

Print Time: 8:05 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2663	Collins Av&Espanola Way	DOW-1		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	NBT	-	EBT	-	SBT	-	-
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 NBT	7 - 7 - 7	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 40 - 40	4	2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 EBT	7 - 7 - 7	15 - 15 - 15	7 - 7 - 7	1 - 1 - 1	21 - 21 - 21	21 - 21 - 21	4	2
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 SBT	7 - 7 - 7	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	0 - 40 - 40	4	2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0

Last In Service Date: unknown

Permitted Phases

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

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 NBT	3 -	4 EBT	5 -	6 SBT	7 -	8 -	Ring Offset	Offset
	1	100	0	58	0	30	0	58	0	0	0	69
	2	95	0	53	0	30	0	53	0	0	0	32
	3	100	0	58	0	30	0	58	0	0	0	58
	4	90	0	48	0	30	0	48	0	0	0	19
	5	110	0	68	0	30	0	68	0	0	0	25
	6	120	0	78	0	30	0	78	0	0	0	118
	7	120	0	78	0	30	0	78	0	0	0	35
	8	150	0	98	0	40	0	98	0	0	0	58
	11	90	0	48	0	30	0	48	0	0	0	56
	12	90	0	48	0	30	0	48	0	0	0	51
	13	90	0	48	0	30	0	48	0	0	0	51
	14	120	0	69	0	39	0	69	0	0	0	74
	15	120	0	69	0	39	0	69	0	0	0	74
	16	90	0	48	0	30	0	48	0	0	0	55
	17	90	0	48	0	30	0	48	0	0	0	51
	21	90	0	48	0	30	0	48	0	0	0	56
	22	100	0	58	0	30	0	58	0	0	0	95
	23	100	0	58	0	30	0	58	0	0	0	66

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th
0000	7	F S
0300	1	F S
0300	22	M T W Th
0300	4	Su
0700	5	Su
0700	1	M T W Th F S
0930	2	M T W Th
0930	1	Su F S
1500	5	Su F S
1500	3	M T W Th
1800	1	M T W Th
1800	6	Su F S

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

TOD Schedule Report

for 2803: Washington Av&14 St

Print Date: 3/24/2014

Print Time: 8:06 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2803	Washington Av&14 St	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	NBT	-	EBT	-	SBT	-	WBT
0	0	0	0	0	0	0	0

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 NBT	7 - 7 - 7	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	31 - 31 - 31	0 - 31 - 31	4	0.2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 EBT	5 - 5 - 5	22 - 22 - 22	7 - 7 - 7	1 - 1 - 1	27 - 27 - 27	27 - 27 - 27	4	0.8
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 SBT	7 - 7 - 7	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	31 - 31 - 31	0 - 31 - 31	4	0.2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 WBT	5 - 5 - 5	22 - 22 - 22	7 - 7 - 7	1 - 1 - 1	27 - 27 - 27	27 - 27 - 27	4	0.8

Last In Service Date: 05/13/2010 14:54

Permitted Phases

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

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 NBT	3 -	4 EBT	5 -	6 SBT	7 -	8 WBT	Ring Offset	Offset
	1	70	0	33	0	28	0	33	0	28	0	19
	2	100	0	63	0	28	0	63	0	28	0	56
	3	80	0	43	0	28	0	43	0	28	0	38
	4	100	0	63	0	28	0	63	0	28	0	11
	5	100	0	63	0	28	0	63	0	28	0	3
	6	110	0	73	0	28	0	73	0	28	0	10
	7	90	0	53	0	28	0	53	0	28	0	48
	8	100	0	63	0	28	0	63	0	28	0	79
	9	80	0	43	0	28	0	43	0	28	0	16
	10	90	0	53	0	28	0	53	0	28	0	73
	11	100	0	63	0	28	0	63	0	28	0	18
	12	110	0	73	0	28	0	73	0	28	0	62
	13	80	0	43	0	28	0	43	0	28	0	56
	14	90	0	53	0	28	0	53	0	28	0	21
	15	110	0	73	0	28	0	73	0	28	0	44
	16	150	0	113	0	28	0	113	0	28	0	5
	18	90	0	53	0	28	0	53	0	28	0	11
	19	100	0	63	0	28	0	63	0	28	0	15
	20	110	0	73	0	28	0	73	0	28	0	15
	21	110	0	73	0	28	0	73	0	28	0	0
	22	70	0	33	0	28	0	33	0	28	0	11
	23	70	0	33	0	28	0	33	0	28	0	11

Local TOD Schedule

Time	Plan	DOW
0000	22	Su S
0000	10	M T W Th F
0100	23	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	8	M T W Th F
2000	10	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-------	SuM T W ThF S
0000	TOD OUTPUTS	--------	SuM T W ThF S
0000	TOD OUTPUTS	8-------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-------	SuM T W ThF S
0000	TOD OUTPUTS	--------	SuM T W ThF S
0000	TOD OUTPUTS	8-------	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

TOD Schedule Report

for 2804: Espanola Way&Washington Av

Print Date: 3/24/2014

Print Time: 8:06 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2804	Espanola Way&Washington Av	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	WBT	-	NBT	-	-
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
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	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	35 - 35 - 35	0 - 35 - 35	4	0.2
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	23 - 23 - 23	4 - 4 - 4	1 - 1 - 1	12 - 8 - 15	12 - 12 - 20	4	0.7
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	12 - 12 - 12	7 - 7 - 7	1 - 1 - 1	35 - 35 - 35	0 - 35 - 35	4	0.2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0

Last In Service Date: 05/13/2010 14:59

Permitted Phases

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

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 -	4 WBT	5 -	6 NBT	7 -	8 -	Ring Offset	Offset
	1	70	0	33	0	28	0	33	0	0	0	8
	2	100	0	63	0	28	0	63	0	0	0	0
	3	80	0	43	0	28	0	43	0	0	0	29
	4	100	0	63	0	28	0	63	0	0	0	14
	5	100	0	63	0	28	0	63	0	0	0	7
	6	110	0	73	0	28	0	73	0	0	0	60
	7	90	0	53	0	28	0	53	0	0	0	18
	8	100	0	63	0	28	0	63	0	0	0	25
	9	80	0	43	0	28	0	43	0	0	0	59
	10	90	0	53	0	28	0	53	0	0	0	80
	11	100	0	63	0	28	0	63	0	0	0	24
	12	110	0	73	0	28	0	73	0	0	0	41
	13	80	0	43	0	28	0	43	0	0	0	59
	14	90	0	53	0	28	0	53	0	0	0	24
	15	110	0	73	0	28	0	73	0	0	0	47
	16	150	0	113	0	28	0	113	0	0	0	143
	18	90	0	53	0	28	0	53	0	0	0	0
	19	100	0	63	0	28	0	63	0	0	0	20
	20	110	0	73	0	28	0	73	0	0	0	20
	21	110	0	73	0	28	0	73	0	0	0	0
	22	70	0	33	0	28	0	33	0	0	0	14
	23	70	0	33	0	28	0	33	0	0	0	14

Local TOD Schedule

Time	Plan	DOW
0000	22	Su S
0000	10	M T W Th F
0100	23	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	8	M T W Th F
2000	10	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-----2-	SuM T W ThF S
0200	TOD OUTPUTS	8------1	M T W Th S
0600	TOD OUTPUTS	8----3--	M T W ThF S
0700	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	----4---	M T W ThF
2000	TOD OUTPUTS	-----3--	M T W ThF
2300	TOD OUTPUTS	8-------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-----2-	SuM T W ThF S
0200	TOD OUTPUTS	8------1	M T W Th S
0600	TOD OUTPUTS	8----3--	M T W ThF S
0700	TOD OUTPUTS	------2-	Su
0700	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	----4---	M T W ThF
1000	TOD OUTPUTS	-----3--	Su S
2000	TOD OUTPUTS	-----3--	M T W ThF
2300	TOD OUTPUTS	8-------	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

TOD Schedule Report

for 2805: Washington Av&15 St

Print Date: 3/24/2014

Print Time: 8:06 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2805	Washington Av&15 St	HOLIDAY-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	-	-	NBT	-	EBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
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	16 - 16 - 16	7 - 7 - 7	1 - 1 - 1	35 - 30 - 30	0 - 30 - 30	4	0.2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
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	16 - 16 - 16	7 - 7 - 7	1 - 1 - 1	35 - 30 - 30	0 - 30 - 30	4	0.2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 EBT	5 - 5 - 5	24 - 24 - 24	5 - 5 - 5	1 - 1 - 1	12 - 15 - 12	31 - 30 - 30	4	0.7

Last In Service Date: 05/13/2010 13:24

Permitted Phases

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

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 -	4 -	5 -	6 NBT	7 -	8 EBT	Ring Offset	Offset
	1	70	0	31	0	0	0	31	0	30	0	3
	2	100	0	61	0	0	0	61	0	30	0	97
	3	80	0	41	0	0	0	41	0	30	0	22
	4	100	0	61	0	0	0	61	0	30	0	7
	5	100	0	61	0	0	0	61	0	30	0	2
	6	110	0	71	0	0	0	71	0	30	0	61
	7	90	0	51	0	0	0	51	0	30	0	4
	8	100	0	61	0	0	0	61	0	30	0	23
	9	80	0	41	0	0	0	41	0	30	0	42
	10	90	0	51	0	0	0	51	0	30	0	78
	11	100	0	61	0	0	0	61	0	30	0	46
	12	110	0	71	0	0	0	71	0	30	0	43
	13	80	0	41	0	0	0	41	0	30	0	58
	14	90	0	51	0	0	0	51	0	30	0	28
	15	110	0	71	0	0	0	71	0	30	0	46
	16	150	0	111	0	0	0	111	0	30	0	139
	18	90	0	51	0	0	0	51	0	30	0	85
	19	100	0	61	0	0	0	61	0	30	0	18
	20	110	0	71	0	0	0	71	0	30	0	18
	21	100	0	61	0	0	0	61	0	30	0	0
	22	70	0	31	0	0	0	31	0	30	0	13
	23	70	0	31	0	0	0	31	0	30	0	13

Local TOD Schedule

Time	Plan	DOW
0000	22	Su S
0000	10	M T W Th F
0100	23	M T W Th F
0530	1	Su S
0600	1	M T W Th F
0715	2	M T W Th F
0800	11	M T W Th F
0900	4	M T W Th F
1000	4	Su S
1330	12	M T W Th F
1530	6	M T W Th F
1800	8	M T W Th F
2000	10	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8------1	SuM T W ThF S
0100	TOD OUTPUTS	8----3--	SuM T W
0600	TOD OUTPUTS	8-------	M T W ThF
0700	PERMIT	--------	M T W ThF
0800	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	--------	M T W ThF
1330	TOD OUTPUTS	--------	M T W ThF
1530	CONDITIONAL SERVI	--------	M T ThF
2130	TOD OUTPUTS	8------1	SuM T W ThF S
2300	PERMIT	8-------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8------1	SuM T W ThF S
0100	TOD OUTPUTS	8----3--	SuM T W
0200	TOD OUTPUTS	8----3--	ThF S
0600	TOD OUTPUTS	8-------	M T W ThF
0700	TOD OUTPUTS	--------	Su S
0700	PERMIT	--------	M T W ThF
0800	TOD OUTPUTS	--------	M T W ThF
0900	TOD OUTPUTS	--------	M T W ThF
1330	TOD OUTPUTS	--------	M T W ThF
1430	TOD OUTPUTS	--------	W
1530	CONDITIONAL SERVICE	--------	M T ThF
2130	TOD OUTPUTS	8------1	SuM T W ThF S
2300	PERMIT	8-------	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

TOD Schedule Report
for 3888: Collins Av&15 St

Print Date: 1/12/2014

Print Time: 8:11 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
3888	Collins Av&15 St	DOW-1		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	NBT	-	-	-	SBT	-	WBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 NBT	7 - 7 - 7	10 - 10 - 10	7 - 7 - 7	1 - 1 - 1	30 - 30 - 30	0 - 40 - 40	4	2.3
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 SBT	7 - 7 - 7	10 - 10 - 10	7 - 7 - 7	1 - 1 - 1	30 - 30 - 30	0 - 40 - 40	4	2.3
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 WBT	7 - 7 - 7	16 - 16 - 16	7 - 7 - 7	1 - 1 - 1	23 - 23 - 23	30 - 30 - 30	4	2.2

Last In Service Date: unknown

Permitted Phases

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

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 NBT	3 -	4 -	5 -	6 SBT	7 -	8 WBT	Ring Offset	Offset
	1	100	0	63	0	0	0	63	0	25	0	71
	2	95	0	58	0	0	0	58	0	25	0	38
	3	100	0	63	0	0	0	63	0	25	0	60
	4	90	0	53	0	0	0	53	0	25	0	24
	5	110	0	73	0	0	0	73	0	25	0	27
	6	120	0	82	0	0	0	82	0	26	0	1
	7	120	0	82	0	0	0	82	0	26	0	41
	8	150	0	109	0	0	0	109	0	29	0	78
	11	90	0	53	0	0	0	53	0	25	0	61
	12	90	0	53	0	0	0	53	0	25	0	58
	13	90	0	53	0	0	0	53	0	25	0	60
	14	120	0	82	0	0	0	82	0	26	0	90
	15	120	0	82	0	0	0	82	0	26	0	94
	16	90	0	53	0	0	0	53	0	25	0	56
	17	90	0	53	0	0	0	53	0	25	0	52
	21	90	0	52	0	0	0	52	0	26	0	61
	22	100	0	58	0	0	0	58	0	30	0	0
	23	100	0	58	0	0	0	58	0	30	0	67

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th
0000	7	F S
0300	1	F S
0300	22	M T W Th
0300	4	Su
0700	5	Su
0700	1	M T W Th F S
0930	2	M T W Th
0930	1	Su F S
1500	5	Su F S
1500	3	M T W Th
1800	1	M T W Th
1800	6	Su F S

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

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

15TH STREET & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 15STRA1A

ALL VEHICLES

	COLLINS AVENUE/A1A From North				15TH STREET From East				COLLINS AVENUE/A1A From South				DRIVEWAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
17:00	1	14	93	1	0	5	0	21	0	4	116	4	0	0	0	0	259
17:15	0	24	109	1	0	5	0	15	0	0	81	11	0	0	0	0	246
17:30	0	19	118	0	0	4	0	13	0	3	89	11	0	0	0	0	257
17:45	0	21	146	1	0	12	0	25	0	0	81	10	0	0	0	0	296
Hr Total	1	78	466	3	0	26	0	74	0	7	367	36	0	0	0	0	1058
18:00	0	14	132	1	0	10	0	15	0	0	116	11	0	0	0	0	299
18:15	1	22	119	5	0	5	0	7	0	1	111	8	0	0	0	0	279
18:30	1	21	114	4	0	6	0	20	0	1	99	7	0	0	0	0	273
18:45	1	12	99	1	0	6	0	24	0	0	102	11	0	0	0	0	256
Hr Total	3	69	464	11	0	27	0	66	0	2	428	37	0	0	0	0	1107
TOTAL	4	147	930	14	0	53	0	140	0	9	795	73	0	0	0	0	2165

Traffic Survey Specialists, Inc.
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Delray Beach, Florida 33483
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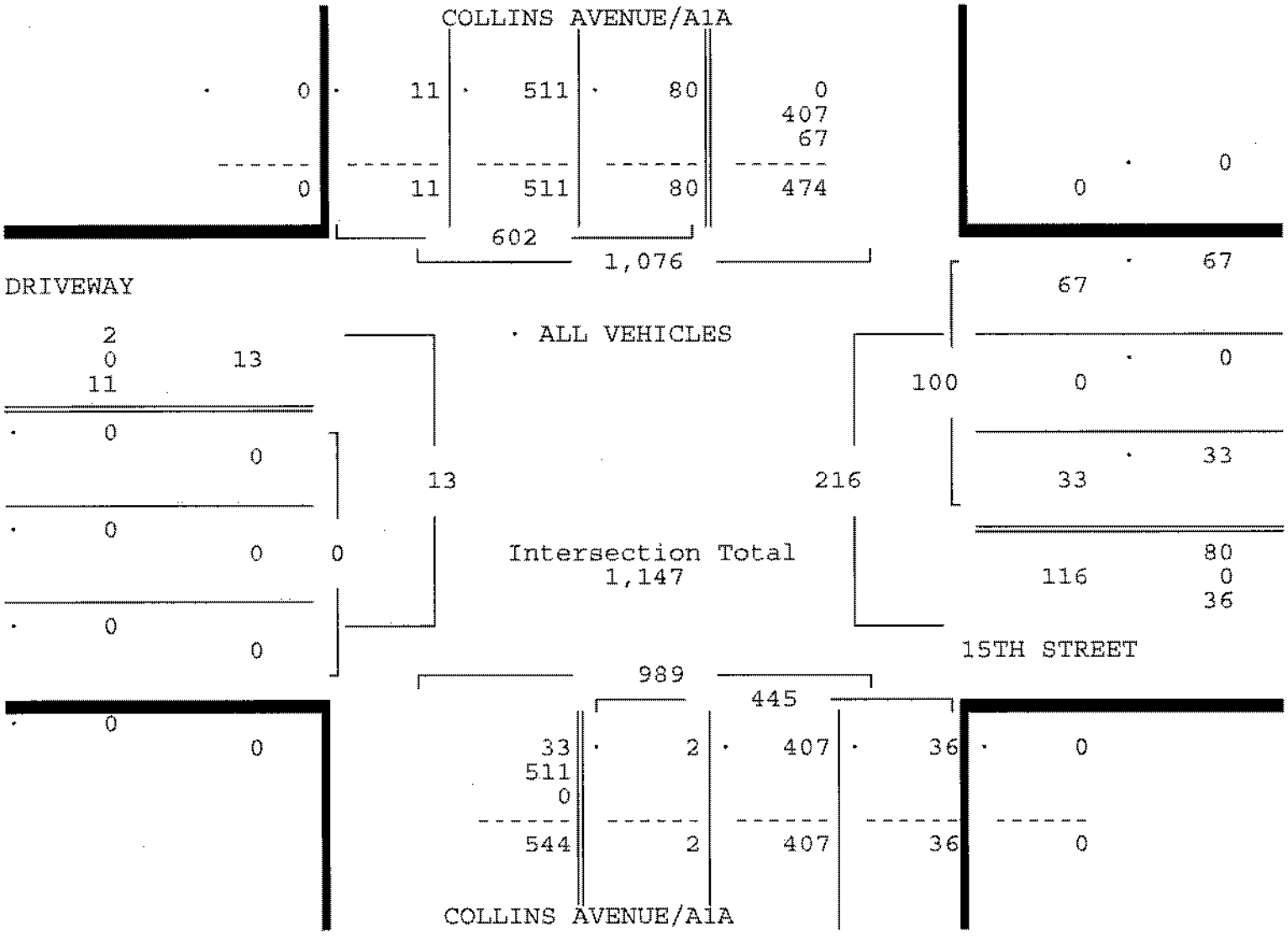
15TH STREET & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 15STRA1A

ALL VEHICLES

	COLLINS AVENUE/A1A From North				15TH STREET From East				COLLINS AVENUE/A1A From South				DRIVEWAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 01/15/16																	
Peak start	17:45				17:45				17:45				17:45				
Volume	2	78	511	11	0	33	0	67	0	2	407	36	0	0	0	0	
Percent	0%	13%	85%	2%	0%	33%	0%	67%	0%	0%	91%	8%	0%	0%	0%	0%	
Pk total	602				100				445				0				
Highest	17:45				17:45				18:00				17:00				
Volume	0	21	146	1	0	12	0	25	0	0	116	11	0	0	0	0	
Hi total	168				37				127				0				
PHF	.90				.68				.88				.0				



Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

15TH STREET & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 15STRA1A

PEDESTRIANS & BIKES

	COLLINS AVENUE/A1A From North				15TH STREET From East				COLLINS AVENUE/A1A From South				DRIVEWAY From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 01/15/16																	
17:00	0	0	0	11	0	1	0	36	0	0	0	1	0	2	0	54	105
17:15	0	0	0	27	0	2	0	53	0	0	0	17	0	3	0	92	194
17:30	0	2	0	17	0	2	0	65	0	0	0	21	0	7	0	94	208
17:45	0	0	0	30	0	10	0	75	0	0	0	29	0	1	0	131	276
Hr Total	0	2	0	85	0	15	0	229	0	0	0	68	0	13	0	371	783
18:00	0	0	0	41	0	4	0	75	0	0	0	39	0	5	0	107	271
18:15	0	0	0	49	0	8	0	91	0	0	0	23	0	0	0	114	285
18:30	0	0	0	38	0	0	0	119	0	1	0	42	0	2	0	126	328
18:45	0	0	0	30	0	1	0	90	0	0	0	28	0	1	0	109	259
Hr Total	0	0	0	158	0	13	0	375	0	1	0	132	0	8	0	456	1143
TOTAL	0	2	0	243	0	28	0	604	0	1	0	200	0	21	0	827	1926

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

ESPANOLA WAY & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: CRISTINA PALOMINO
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPA_A1A

ALL VEHICLES

	COLLINS AVENUE/A1A From North				----- From East				COLLINS AVENUE/A1A From South				ESPANOLA WAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
17:00	1	0	75	19	0	0	0	0	0	4	100	0	0	12	0	5	216
17:15	0	0	90	15	0	0	0	0	0	1	80	0	1	11	0	5	203
17:30	2	0	100	17	0	0	0	0	1	4	85	0	0	14	0	3	226
17:45	0	0	122	28	0	0	0	0	0	6	78	0	0	15	0	10	259
Hr Total	3	0	387	79	0	0	0	0	1	15	343	0	1	52	0	23	904
18:00	0	0	107	29	0	0	0	0	0	3	106	0	0	16	0	11	272
18:15	0	0	104	22	0	0	0	0	0	3	93	0	0	13	0	4	239
18:30	1	0	100	22	0	0	0	0	0	5	84	0	0	18	0	4	234
18:45	0	0	87	21	0	0	0	0	0	6	103	0	1	15	0	9	242
Hr Total	1	0	398	94	0	0	0	0	0	17	386	0	1	62	0	28	987
TOTAL	4	0	785	173	0	0	0	0	1	32	729	0	2	114	0	51	1891

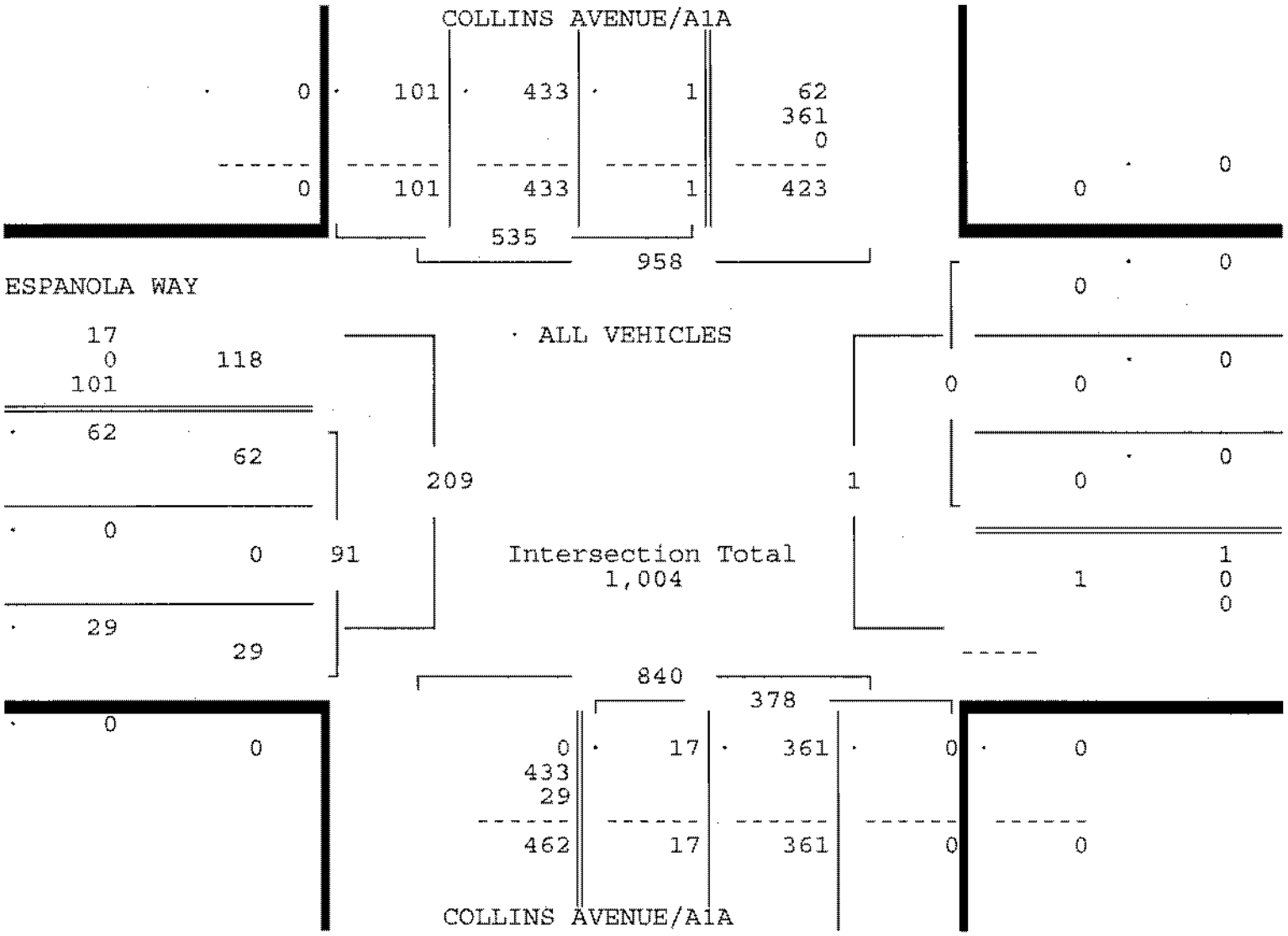
Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

ESPANOLA WAY & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: CRISTINA PALOMINO
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPA_A1A

ALL VEHICLES

	COLLINS AVENUE/A1A From North				----- From East				COLLINS AVENUE/A1A From South				ESPANOLA WAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 01/15/16																	
Peak start	17:45				17:45				17:45				17:45				
Volume	1	0	433	101	0	0	0	0	0	17	361	0	0	62	0	29	
Percent	0%	0%	81%	19%	0%	0%	0%	0%	0%	4%	96%	0%	0%	68%	0%	32%	
Pk total	535				0				378				91				
Highest	17:45				17:00				18:00				18:00				
Volume	0	0	122	28	0	0	0	0	0	3	106	0	0	16	0	11	
Hi total	150				0				109				27				
PHF	.89				.0				.87				.84				



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85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

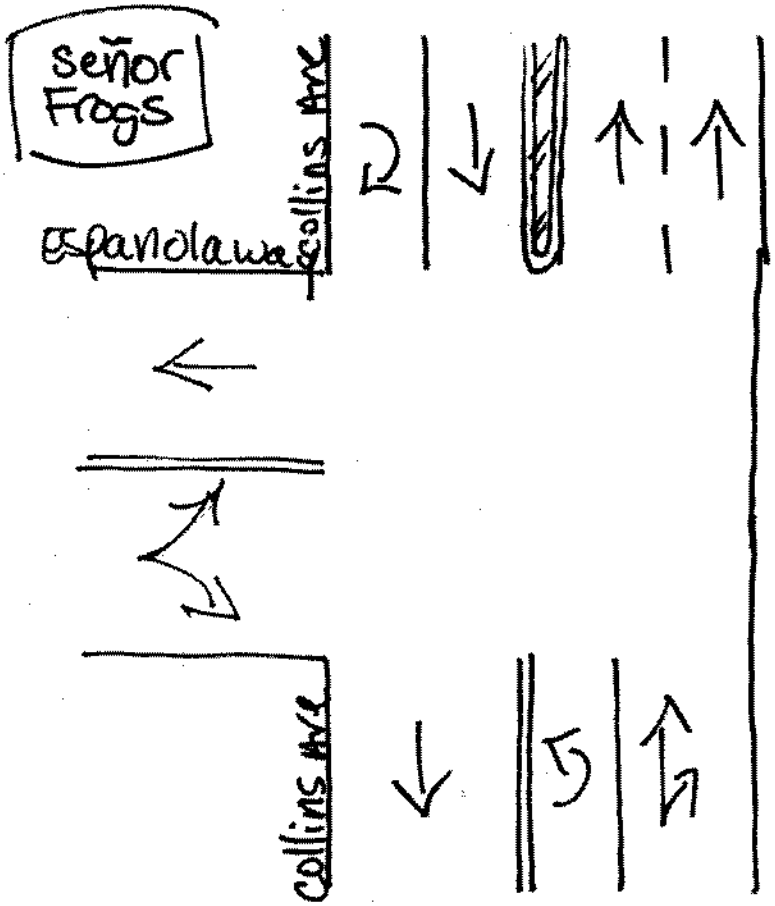
ESPANOLA WAY & COLLINS AVENUE/A1A
MIAMI BEACH, FLORIDA
COUNTED BY: CRISTINA PALOMINO
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPA_A1A
Page : 1

PEDESTRIANS & BIKES

	COLLINS AVENUE/A1A From North				----- From East				COLLINS AVENUE/A1A From South				ESPANOLA WAY From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 01/15/16																	
17:00	0	1	0	11	0	0	0	0	0	0	0	15	0	0	0	40	67
17:15	0	0	0	26	0	0	0	0	0	0	0	23	0	1	0	37	87
17:30	0	0	0	17	0	0	0	0	0	0	0	21	0	0	0	30	68
17:45	0	0	0	12	0	0	0	0	0	0	0	17	0	2	0	37	68
Hr Total	0	1	0	66	0	0	0	0	0	0	0	76	0	3	0	144	290
18:00	0	3	0	4	0	0	0	0	0	0	0	21	0	0	0	32	60
18:15	0	0	0	11	0	0	0	0	0	0	0	29	0	1	0	55	96
18:30	0	0	0	12	0	0	0	0	0	1	0	31	0	1	0	89	134
18:45	0	0	0	28	0	0	0	0	0	1	0	27	0	1	0	79	136
Hr Total	0	3	0	55	0	0	0	0	0	2	0	108	0	3	0	255	426
TOTAL	0	4	0	121	0	0	0	0	0	2	0	184	0	6	0	399	716

North



Miami Beach, Florida
January 15, 2016
drawn by: Luis Palomino
Signalized

Traffic Survey Specialists, Inc.

15TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

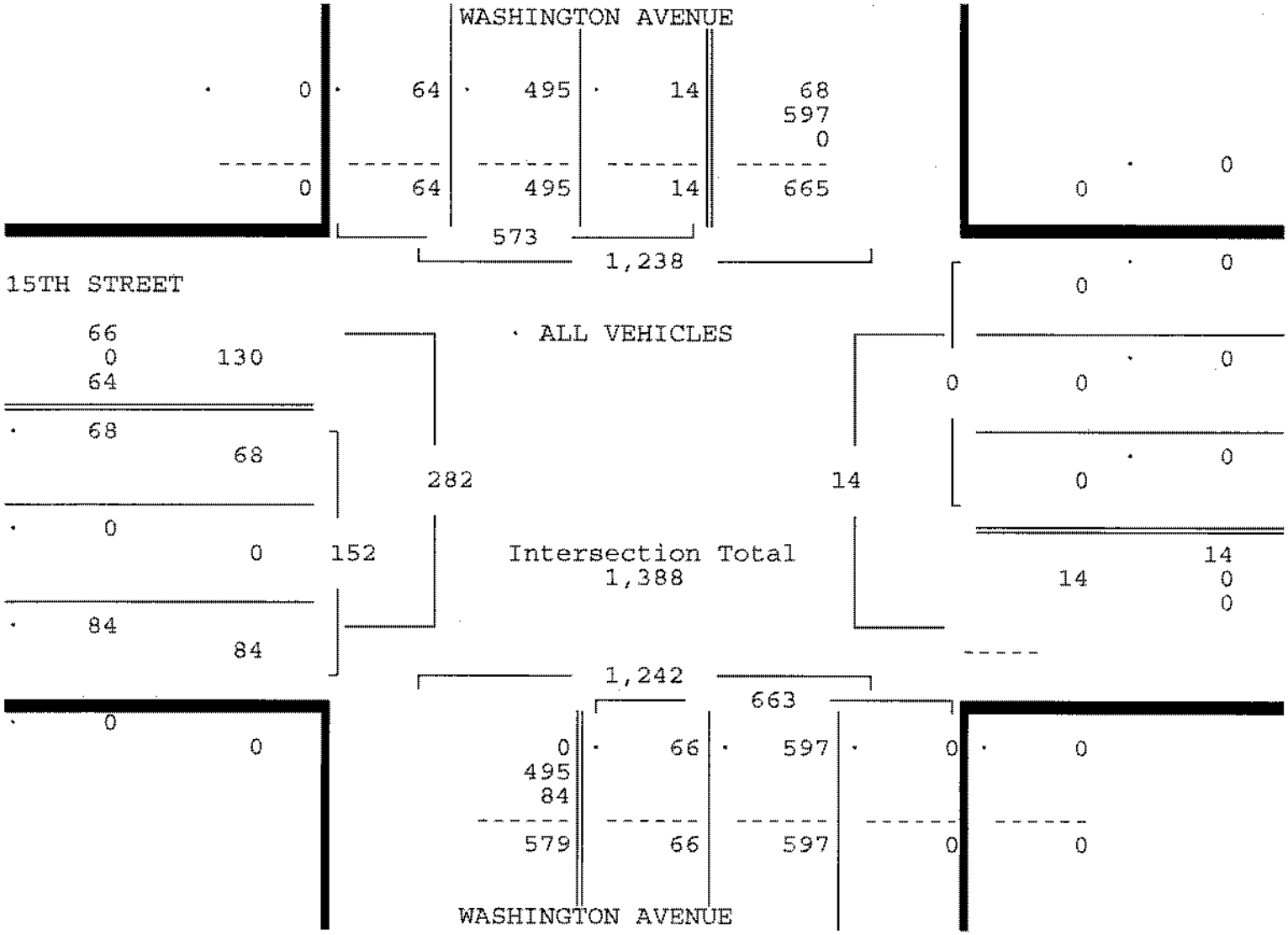
Site Code : 00160011
Start Date: 01/15/16
File I.D. : 15STWASH
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				----- From East				WASHINGTON AVENUE From South				15TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
17:00	2	0	133	11	0	0	0	0	1	13	150	0	0	17	0	25	352
17:15	1	0	111	21	0	0	0	0	3	16	174	0	0	19	0	24	369
17:30	7	0	130	14	0	0	0	0	1	17	117	0	1	17	0	15	319
17:45	4	0	121	18	0	0	0	0	1	14	156	0	1	13	0	20	348
Hr Total	14	0	495	64	0	0	0	0	6	60	597	0	2	66	0	84	1388
18:00	5	0	131	13	0	0	0	0	1	16	144	0	0	11	0	23	344
18:15	4	0	131	18	0	0	0	0	2	17	134	0	0	9	0	22	337
18:30	1	0	108	19	0	0	0	0	2	15	152	0	0	17	0	20	334
18:45	3	0	134	18	0	0	0	0	5	21	143	0	0	15	0	16	355
Hr Total	13	0	504	68	0	0	0	0	10	69	573	0	0	52	0	81	1370
TOTAL	27	0	999	132	0	0	0	0	16	129	1170	0	2	118	0	165	2758

ALL VEHICLES

	WASHINGTON AVENUE From North				From East				WASHINGTON AVENUE From South				15TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 01/15/16																	
Peak start	17:00				17:00				17:00				17:00				
Volume	14	0	495	64	0	0	0	0	6	60	597	0	2	66	0	84	
Percent	2%	0%	86%	11%	0%	0%	0%	0%	1%	9%	90%	0%	1%	43%	0%	55%	
Pk total	573				0				663				152				
Highest	17:30				17:00				17:15				17:15				
Volume	7	0	130	14	0	0	0	0	3	16	174	0	0	19	0	24	
Hi total	151				0				193				43				
PHF	.95				.0				.86				.88				



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85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

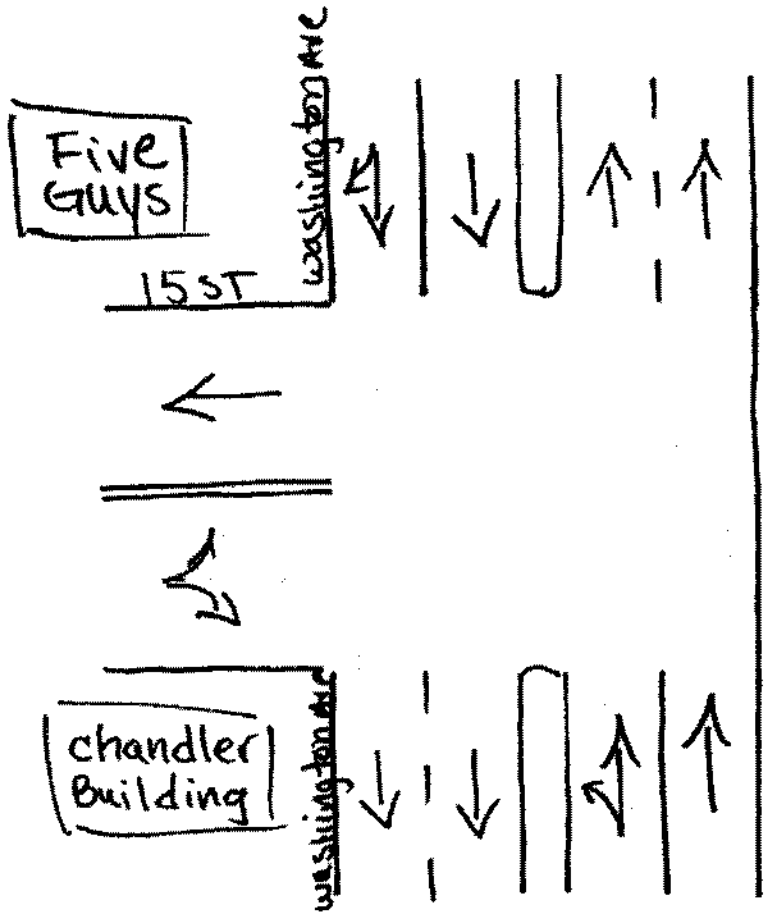
15TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 15STWASH

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				----- From East				WASHINGTON AVENUE From South				15TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 01/15/16																	
17:00	0	2	0	10	0	0	0	0	0	1	0	29	0	3	0	72	117
17:15	0	2	0	30	0	0	0	0	0	0	0	31	0	3	0	86	152
17:30	0	1	0	22	0	0	0	0	0	3	0	13	0	1	0	95	135
17:45	0	1	0	35	0	0	0	0	0	2	0	30	0	1	0	96	165
Hr Total	0	6	0	97	0	0	0	0	0	6	0	103	0	8	0	349	569
18:00	0	2	0	29	0	0	0	0	0	3	0	29	0	2	0	82	147
18:15	0	0	0	21	0	0	0	0	0	1	0	19	0	6	0	95	142
18:30	0	1	0	37	0	0	0	0	0	1	0	31	0	3	0	71	144
18:45	0	0	0	24	0	0	0	0	0	0	0	29	0	1	0	121	175
Hr Total	0	3	0	111	0	0	0	0	0	5	0	108	0	12	0	369	608
TOTAL	0	9	0	208	0	0	0	0	0	11	0	211	0	20	0	718	1177

North



Miami beach, Florida
JULY 21, 2014
drawn by: Luis Palomino
Signalized

ESPANOLA WAY & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALONINO
SIGNALIZED

Traffic Survey Specialists, Inc.
65 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPAWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				ESPANOLA WAY From East				WASHINGTON AVENUE From South				ESPANOLA WAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
17:00	3	6	148	0	0	10	0	16	1	0	158	11	0	0	0	0	353
17:15	2	5	131	0	0	10	0	13	0	0	182	12	0	0	0	0	355
17:30	6	7	128	0	1	16	0	6	0	0	133	12	0	0	0	0	309
17:45	3	9	121	0	0	23	0	12	3	0	152	16	0	0	0	0	339
Hr Total	14	27	528	0	1	59	0	47	4	0	625	51	0	0	0	0	1356
18:00	1	9	130	0	0	25	0	11	0	0	149	10	0	0	0	0	335
18:15	2	9	146	0	0	15	0	11	1	0	145	8	0	0	0	0	337
18:30	5	6	123	0	0	17	0	14	6	0	153	14	0	0	0	0	338
18:45	2	8	138	0	1	11	0	10	1	0	151	13	0	0	0	0	335
Hr Total	10	32	537	0	1	68	0	46	8	0	598	45	0	0	0	0	1345
TOTAL	24	59	1065	0	2	127	0	93	12	0	1223	96	0	0	0	0	2701

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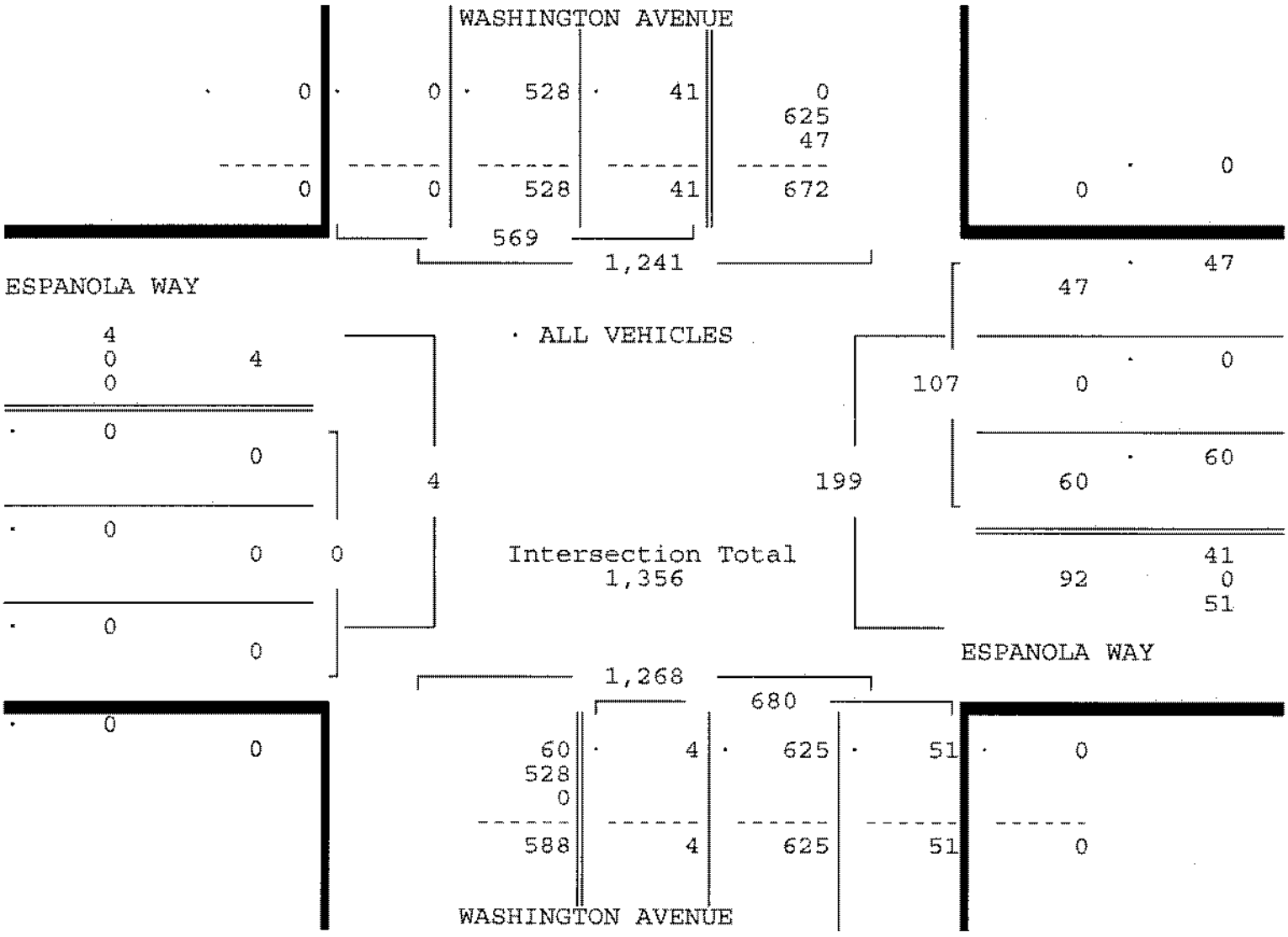
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

ESPANOLA WAY & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALONINO
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPAWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				ESPANOLA WAY From East				WASHINGTON AVENUE From South				ESPANOLA WAY From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 01/15/16																	
Peak start	17:00				17:00				17:00				17:00				
Volume	14	27	528	0	1	59	0	47	4	0	625	51	0	0	0	0	
Percent	2%	5%	93%	0%	1%	55%	0%	44%	1%	0%	92%	8%	0%	0%	0%	0%	
Pk total	569				107				680				0				
Higheat	17:00				17:45				17:15				17:00				
Volume	3	6	148	0	0	23	0	12	0	0	182	12	0	0	0	0	
Hi total	157				35				194				0				
PHF	.91				.76				.88				.0				



Traffic Survey Specialists, Inc.

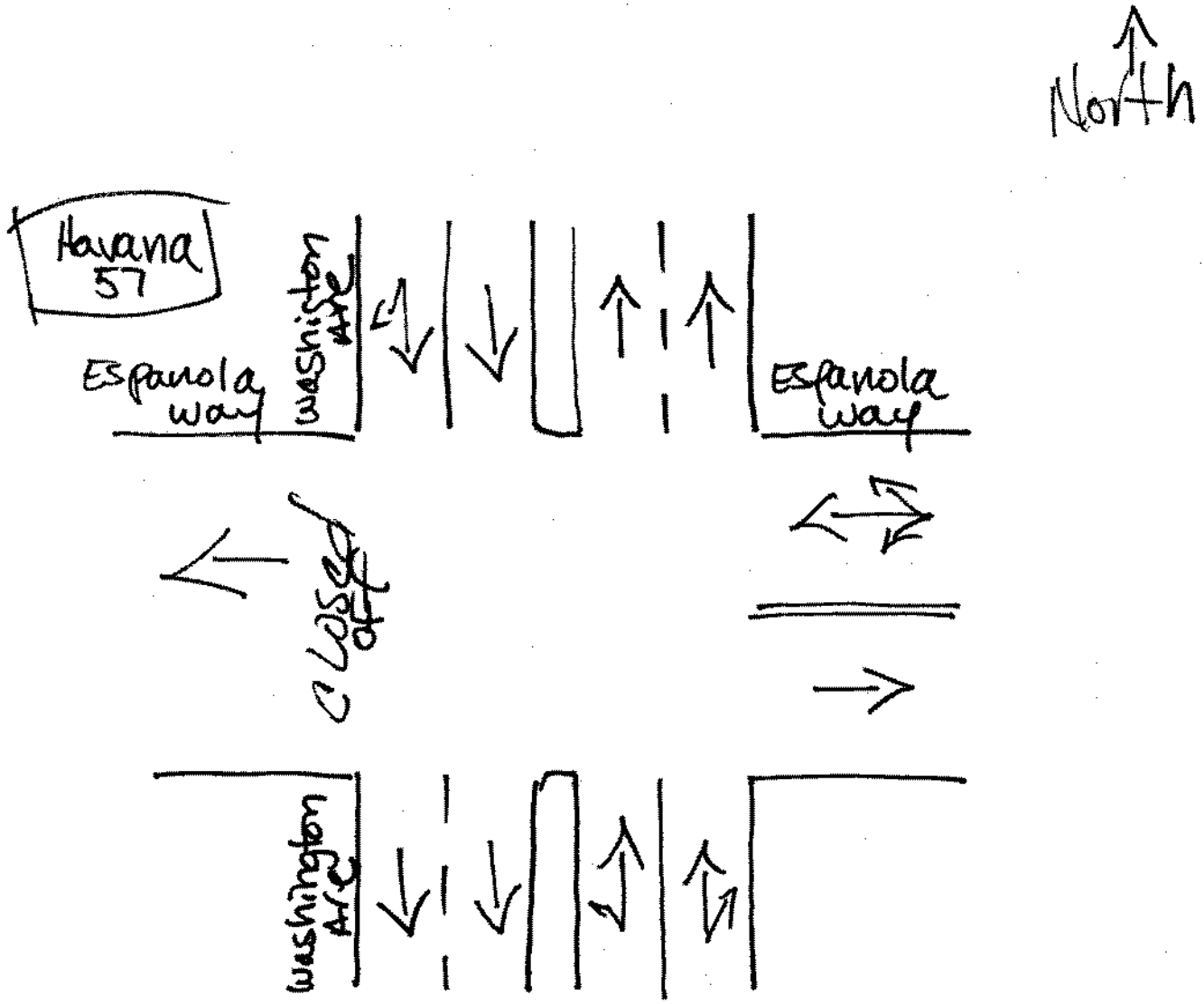
ESPANOLA WAY & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: AMBER PALONINO
SIGNALIZED

85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

Site Code : 00160011
Start Date: 01/15/16
File I.D. : ESPAWASH
Page : 1

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				ESPANOLA WAY From East				WASHINGTON AVENUE From South				ESPANOLA WAY From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 01/15/16																	
17:00	0	0	0	29	0	4	0	31	0	4	0	49	0	1	0	0	118
17:15	0	3	0	53	0	4	0	29	0	3	0	67	0	1	0	0	160
17:30	0	2	0	31	0	10	0	26	0	2	0	56	0	0	0	0	127
17:45	0	1	0	35	0	1	0	42	0	1	0	53	0	0	0	0	133
Hr Total	0	6	0	148	0	19	0	128	0	10	0	225	0	2	0	0	538
18:00	0	0	0	20	0	0	0	29	0	3	0	57	0	0	0	0	109
18:15	0	2	0	41	0	0	0	37	0	0	0	87	0	0	0	0	167
18:30	0	0	0	66	0	5	0	48	0	0	0	74	0	0	0	0	193
18:45	0	0	0	57	0	6	0	68	0	4	0	86	0	0	0	0	221
Hr Total	0	2	0	184	0	11	0	182	0	7	0	304	0	0	0	0	690
TOTAL	0	8	0	332	0	30	0	310	0	17	0	529	0	2	0	0	1228



Miami Bch, Florida
January 15, 2016
drawn by: Luis Palomino
signalized

Traffic Survey Specialists, Inc.
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Delray Beach, Florida 33483
Phone (561) 272-3255

14TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 14STWASH
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				14TH STREET From East				WASHINGTON AVENUE From South				14TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
17:00	6	12	129	14	0	11	6	10	6	2	156	7	0	3	8	5	375
17:15	3	7	136	5	0	6	8	5	2	1	173	5	0	8	7	3	369
17:30	4	3	114	8	0	14	5	6	3	3	134	14	0	7	5	1	321
17:45	7	8	117	8	0	7	5	9	4	6	152	9	0	8	6	5	351
Hr Total	20	30	496	35	0	38	24	30	15	12	615	35	0	26	26	14	1416
18:00	4	3	151	11	0	1	5	4	1	3	143	7	0	2	1	7	343
18:15	5	7	139	10	0	12	8	6	2	0	139	3	0	4	3	2	340
18:30	2	3	128	19	0	3	4	4	0	5	165	5	0	9	6	7	360
18:45	3	7	137	3	1	6	11	16	2	0	153	8	0	3	2	6	358
Hr Total	14	20	555	43	1	22	28	30	5	8	600	23	0	18	12	22	1401
TOTAL	34	50	1051	78	1	60	52	60	20	20	1215	58	0	44	38	36	2817

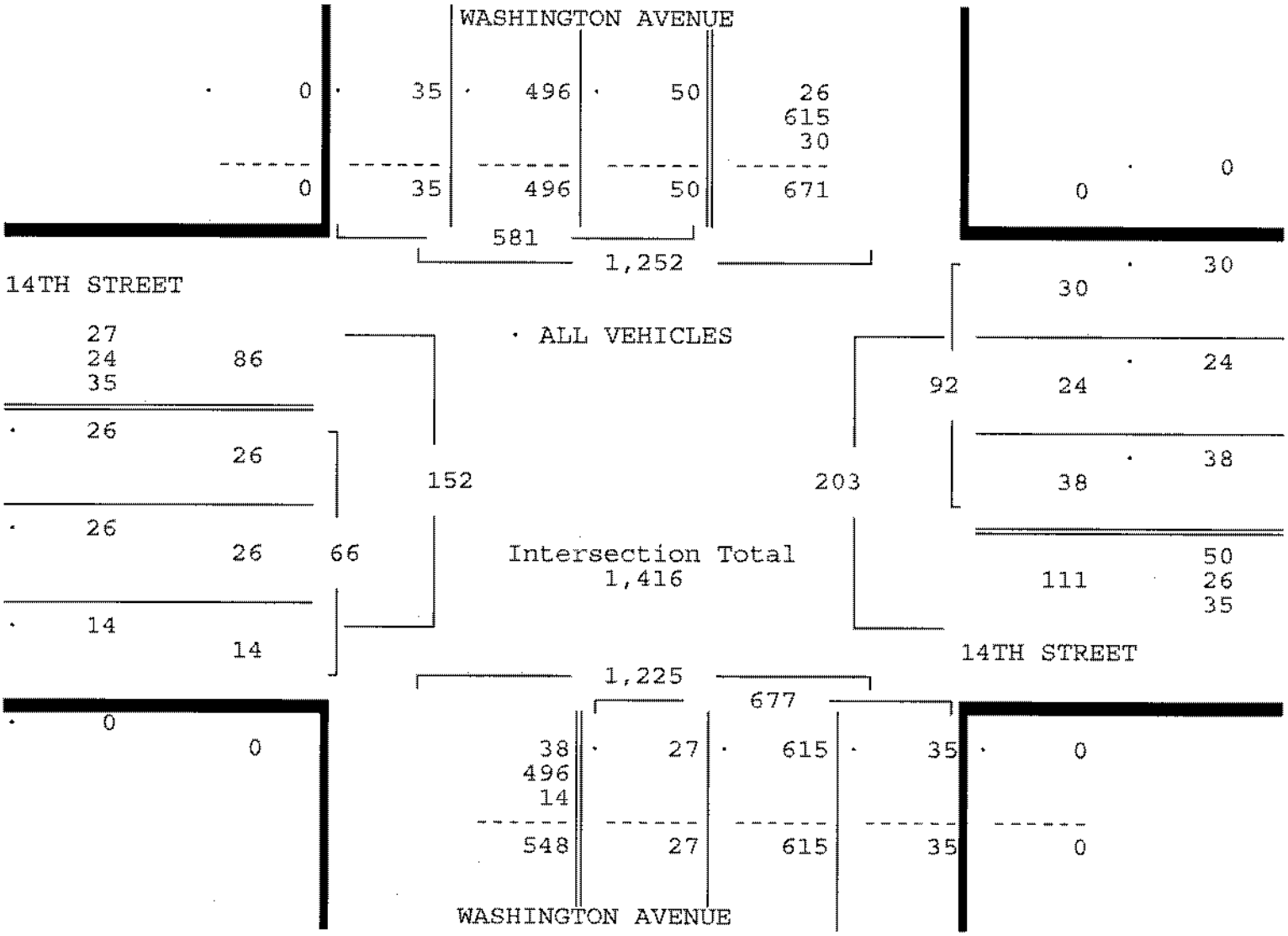
14TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 14STWASH

ALL VEHICLES

	WASHINGTON AVENUE From North				14TH STREET From East				WASHINGTON AVENUE From South				14TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 01/15/16																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 01/15/16																	
Peak start 17:00					17:00				17:00				17:00				
Volume	20	30	496	35	0	38	24	30	15	12	615	35	0	26	26	14	
Percent	3%	5%	85%	6%	0%	41%	26%	33%	2%	2%	91%	5%	0%	39%	39%	21%	
Pk total	581				92				677				66				
Highest	17:00				17:00				17:15				17:45				
Volume	6	12	129	14	0	11	6	10	2	1	173	5	0	8	6	5	
Hi total	161				27				181				19				
PHF	.90				.85				.94				.87				



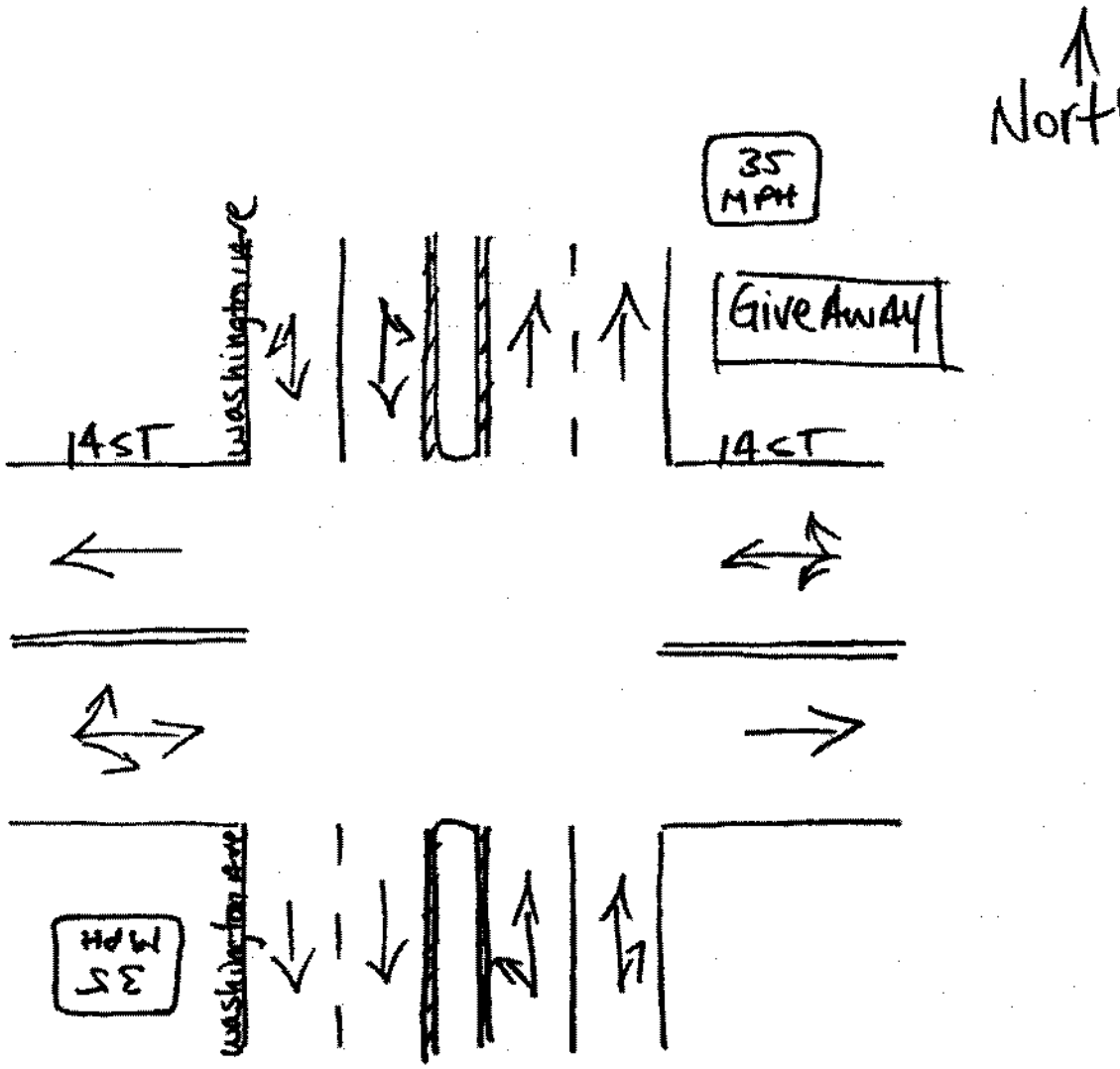
14TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
SIGNALIZED

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109
Delray Beach, Florida 33483
Phone (561) 272-3255

Site Code : 00160011
Start Date: 01/15/16
File I.D. : 14STWASH

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				14TH STREET From East				WASHINGTON AVENUE From South				14TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 01/15/16																	
17:00	0	3	0	18	0	6	0	79	0	1	0	21	0	1	0	39	168
17:15	0	1	0	12	0	7	0	41	0	0	0	8	0	4	0	9	82
17:30	0	1	0	26	0	9	0	36	0	2	0	14	0	2	0	12	102
17:45	0	0	0	19	0	7	0	26	0	1	0	11	0	0	0	11	75
Hr Total	0	5	0	75	0	29	0	182	0	4	0	54	0	7	0	71	427
18:00	0	2	0	19	0	5	0	49	0	1	0	9	0	0	0	10	95
18:15	0	0	0	13	0	7	0	67	0	1	0	12	0	3	0	35	138
18:30	0	2	0	22	0	8	0	56	0	1	0	19	0	5	0	38	151
18:45	0	2	0	26	0	5	0	56	0	3	0	4	0	3	0	46	145
Hr Total	0	6	0	80	0	25	0	228	0	6	0	44	0	11	0	129	529
TOTAL	0	11	0	155	0	54	0	410	0	10	0	98	0	18	0	200	956



Miami beach, Florida
JULY 21, 2014
drawn by: Luis Palomino
signalized

APPENDIX D

Peak Season Conversion Factors and Historical Traffic Data

2013 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8700 MIAMI-DADE NORTH

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2013 - 01/05/2013	1.03	1.06
2	01/06/2013 - 01/12/2013	1.03	1.06
3	01/13/2013 - 01/19/2013	1.03	1.06
4	01/20/2013 - 01/26/2013	1.01	1.04
5	01/27/2013 - 02/02/2013	1.00	1.03
6	02/03/2013 - 02/09/2013	0.99	1.02
* 7	02/10/2013 - 02/16/2013	0.97	1.00
* 8	02/17/2013 - 02/23/2013	0.96	0.99
* 9	02/24/2013 - 03/02/2013	0.96	0.99
*10	03/03/2013 - 03/09/2013	0.96	0.99
*11	03/10/2013 - 03/16/2013	0.96	0.99
*12	03/17/2013 - 03/23/2013	0.97	1.00
*13	03/24/2013 - 03/30/2013	0.97	1.00
*14	03/31/2013 - 04/06/2013	0.97	1.00
*15	04/07/2013 - 04/13/2013	0.98	1.01
*16	04/14/2013 - 04/20/2013	0.98	1.01
*17	04/21/2013 - 04/27/2013	0.98	1.01
*18	04/28/2013 - 05/04/2013	0.99	1.02
*19	05/05/2013 - 05/11/2013	0.99	1.02
20	05/12/2013 - 05/18/2013	1.00	1.03
21	05/19/2013 - 05/25/2013	1.00	1.03
22	05/26/2013 - 06/01/2013	1.00	1.03
23	06/02/2013 - 06/08/2013	1.01	1.04
24	06/09/2013 - 06/15/2013	1.01	1.04
25	06/16/2013 - 06/22/2013	1.02	1.05
26	06/23/2013 - 06/29/2013	1.02	1.05
27	06/30/2013 - 07/06/2013	1.03	1.06
28	07/07/2013 - 07/13/2013	1.04	1.07
29	07/14/2013 - 07/20/2013	1.05	1.08
30	07/21/2013 - 07/27/2013	1.04	1.07
31	07/28/2013 - 08/03/2013	1.03	1.06
32	08/04/2013 - 08/10/2013	1.03	1.06
33	08/11/2013 - 08/17/2013	1.02	1.05
34	08/18/2013 - 08/24/2013	1.02	1.05
35	08/25/2013 - 08/31/2013	1.02	1.05
36	09/01/2013 - 09/07/2013	1.02	1.05
37	09/08/2013 - 09/14/2013	1.02	1.05
38	09/15/2013 - 09/21/2013	1.02	1.05
39	09/22/2013 - 09/28/2013	1.02	1.05
40	09/29/2013 - 10/05/2013	1.01	1.04
41	10/06/2013 - 10/12/2013	1.01	1.04
42	10/13/2013 - 10/19/2013	1.01	1.04
43	10/20/2013 - 10/26/2013	1.01	1.04
44	10/27/2013 - 11/02/2013	1.01	1.04
45	11/03/2013 - 11/09/2013	1.01	1.04
46	11/10/2013 - 11/16/2013	1.01	1.04
47	11/17/2013 - 11/23/2013	1.02	1.05
48	11/24/2013 - 11/30/2013	1.02	1.05
49	12/01/2013 - 12/07/2013	1.02	1.05
50	12/08/2013 - 12/14/2013	1.02	1.05
51	12/15/2013 - 12/21/2013	1.03	1.06
52	12/22/2013 - 12/28/2013	1.03	1.06
53	12/29/2013 - 12/31/2013	1.03	1.06

* PEAK SEASON

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2014 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5159 - SR AIA/COLLINS AV, 200' N 5 ST(MIAMI BEACH)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	13400 C	N 6500	S 6900	9.00	54.50	5.10
2013	16400 C	N 7400	S 9000	9.00	52.40	6.10
2012	16700 C	N 7100	S 9600	9.00	55.70	8.40
2011	13600 C	N 6900	S 6700	9.00	55.10	7.50
2010	12900 C	N 6200	S 6700	8.98	54.08	8.80
2009	15300 C	N 7600	S 7700	8.99	53.24	8.40
2008	13600 C	N 6300	S 7300	9.09	55.75	5.30
2007	14300 C	N 6500	S 7800	8.01	54.34	4.90
2006	13100 C	N 5800	S 7300	7.97	54.22	2.20
2005	16100 C	N 7300	S 8800	8.80	53.80	5.50
2004	17400 C	N 8400	S 9000	9.00	53.30	8.20
2003	16200 C	N 7000	S 9200	8.80	53.40	4.90
2002	17000 C	N 8200	S 8800	9.80	52.30	2.60
2001	17600 C	N 8800	S 8800	8.20	53.50	3.00
2000	20100 C	N 8100	S 12000	8.20	53.10	3.50
1999	18600 C	N 9100	S 9500	9.10	52.70	3.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = 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
2014 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8414 - WASHINGTON AVE, 200 FT N OF 12 ST (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	21000 C	N 10000	S 11000	9.00	59.30	13.90
2013	18700 F	N 9200	S 9500	9.00	58.90	16.20
2012	18700 C	N 9200	S 9500	9.00	59.70	16.00

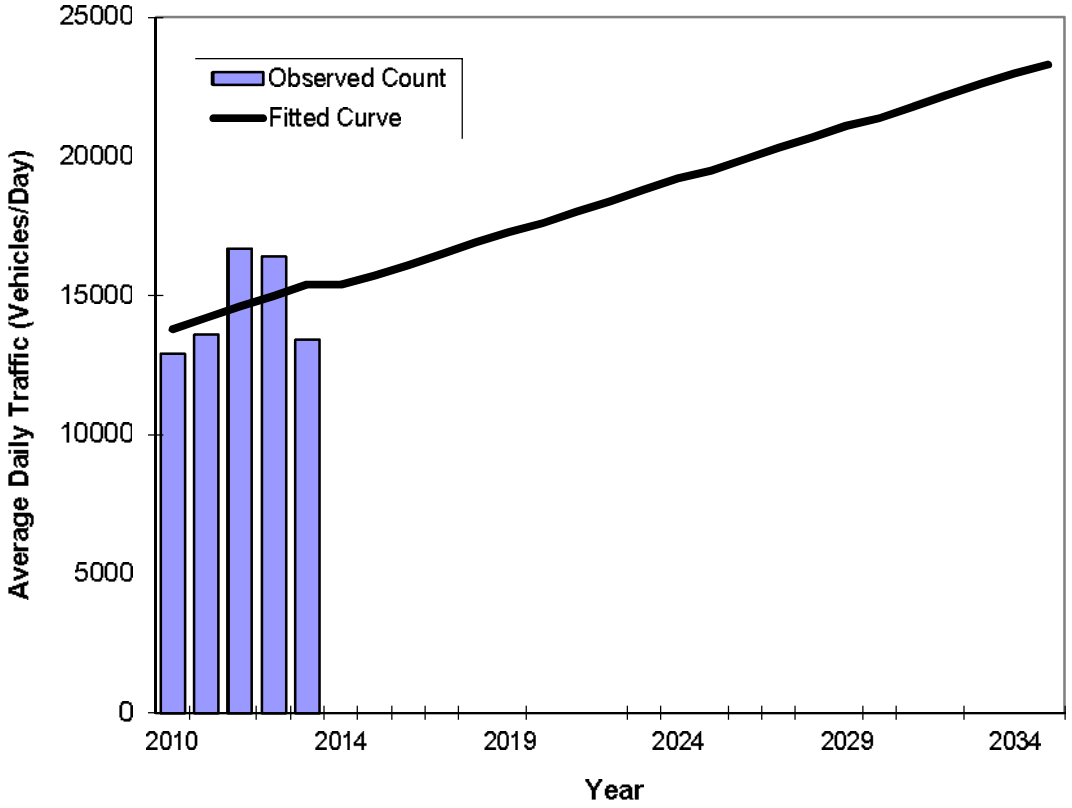
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

SR A1A/COLLINS AVE -- 200' N 5 ST

PIN#	0
Location	1

County:	Miami-Dade (87)
Station #:	875159
Highway:	SR A1A/COLLINS AVE



Year	Traffic (ADT/AADT) Count*	Trend**
2010	12900	13800
2011	13600	14200
2012	16700	14600
2013	16400	15000
2014	13400	15400
2016 Opening Year Trend		
2016	N/A	16100
2017 Mid-Year Trend		
2017	N/A	16500
2018 Design Year Trend		
2018	N/A	16900
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	380
Trend R-squared:	11.12%
Trend Annual Historic Growth Rate:	2.90%
Trend Growth Rate (2014 to Design Year):	2.44%
Printed:	18-Jan-16

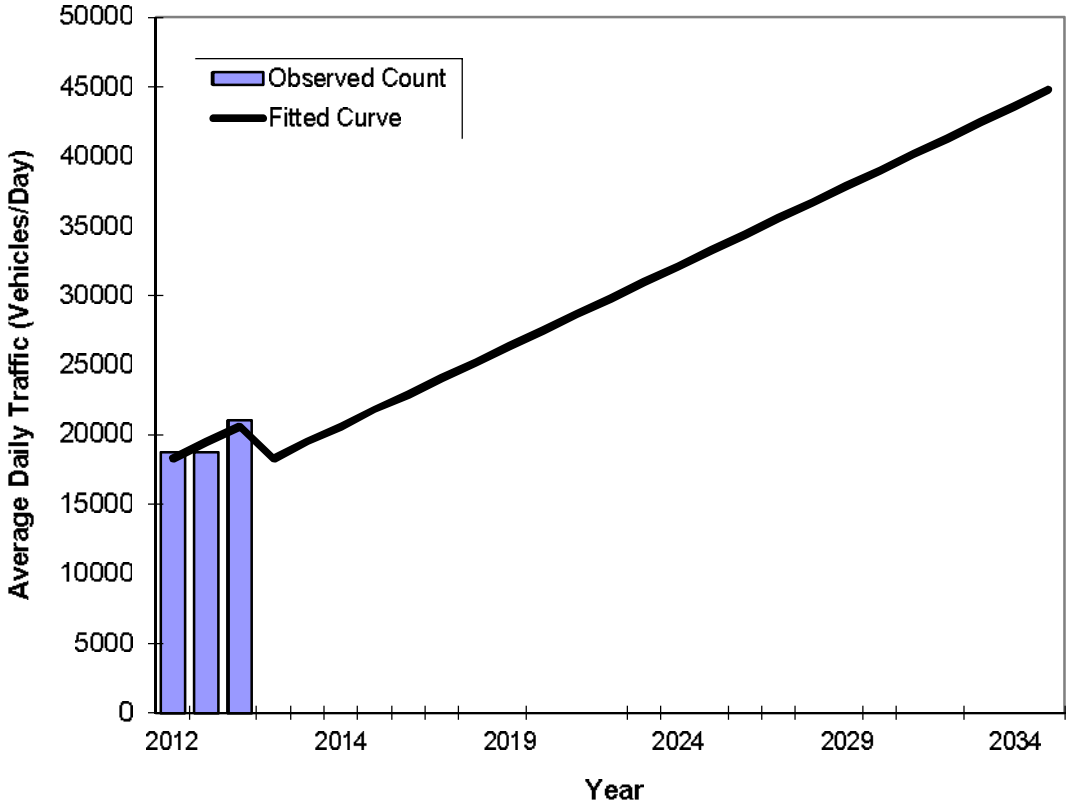
Straight Line Growth Option

Traffic Trends - V2.0

WASHINGTON AVE – 200' N 12 ST

PIN#	0
Location	1

County:	Miami-Dade (87)
Station #:	878414
Highway:	WASHINGTON AVE



Year	Traffic (ADT/AADT) Count*	Trend**
2012	18700	18300
2013	18700	19500
2014	21000	20600
2016 Opening Year Trend		
2016	N/A	22900
2017 Mid-Year Trend		
2017	N/A	24100
2018 Design Year Trend		
2018	N/A	25200
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	1,150
Trend R-squared:	75.00%
Trend Annual Historic Growth Rate:	6.28%
Trend Growth Rate (2014 to Design Year):	5.58%
Printed:	18-Jan-16

Straight Line Growth Option

*Axle-Adjusted

APPENDIX E

Future Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Avenue and 15th treet
PM Peak Hour (5:45 PM - 6:45 PM)

Description	Collins Avenue Northbound			Collins Avenue Southbound			Driveway Eastbound			15th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/15/2016)		407	36	80	511	11	0	0	0	33	0	67
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2016 Peak Season Traffic	0	431	38	85	542	12	0	0	0	35	0	71
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2017 Background Traffic	0	438	39	86	550	12	0	0	0	36	0	72
Haddon Hall Restaurant												
- Percentages (Ins/Out)			40%			60%				40%		
- Trips			4			5				4		
2017 Total Traffic	**0**	**438**	**42**	**86**	**550**	**17**	**0**	**0**	**0**	**39**	**0**	**72**

	PM Peak		
	INS	OUT	Total
New External Trips	**9**	**7**	**16**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Avenue and Espanola Way
PM Peak Hour (5:45 PM - 6:45 PM)

Description	Collins Avenue Northbound			Collins Avenue Southbound			Espanola Way Eastbound					
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/15/2016)	17	361	0	0	433	101	62	0	29	0	0	0
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2016 Peak Season Traffic	18	383	0	0	459	107	66	0	31	0	0	0
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2017 Background Traffic	18	388	0	0	466	109	67	0	31	0	0	0
Haddon Hall Restaurant												
- Percentages (Ins/Out)		10%			10%	90%	30%					
- Trips		1			1	6	3					
2017 Total Traffic	**18**	**389**	**0**	**0**	**467**	**115**	**69**	**0**	**31**	**0**	**0**	**0**

	PM Peak		
	INS	OUT	Total
New External Trips	**9**	**7**	**16**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 15th Street
PM Peak Hour (5:45 PM - 6:45 PM)

Description	Washington Avenue Northbound			Washington Avenue Southbound			15th Street Eastbound					
	Left	Through	Right	U-turn	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/15/2016)	68	586	0	14	491	68	51	0	85			
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2016 Peak Season Traffic	72	621	0	15	520	72	54	0	90	0	0	0
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2017 Background Traffic	73	630	0	15	528	73	55	0	91	0	0	0
Haddon Hall Restaurant												
- Percentages (Ins/Out)		60%										
- Trips		4										
2017 Total Traffic	**73**	**635**	**0**	**15**	**528**	**73**	**55**	**0**	**91**	**0**	**0**	**0**

	PM Peak		
	INS	OUT	Total
New External Trips	**9**	**7**	**16**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and Espanola Way
PM Peak Hour (5:45 PM - 6:45 PM)

Description	Washington Avenue Northbound			Washington Avenue Southbound						Espanola Way Westbound		
	U-turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/15/2016)	10	599	48	44	520	0				80	0	48
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2016 Peak Season Traffic	11	635	51	47	551	0	0	0	0	85	0	51
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2017 Background Traffic	11	644	52	47	559	0	0	0	0	86	0	52
Haddon Hall Restaurant												
- Percentages (Ins/Out)			30%							30%		60%
- Trips			3							2		4
2017 Total Traffic	**11**	**644**	**54**	**47**	**559**	**0**	**0**	**0**	**0**	**88**	**0**	**56**

	PM Peak		
	INS	OUT	Total
New External Trips	**9**	**7**	**16**

Traf Tech
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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 14th Street
PM Peak Hour (5:45 PM - 6:45 PM)

Description	Washington Avenue Northbound			Washington Avenue Southbound			14th Street Eastbound			14th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (1/15/2016)	21	599	24	39	535	48	23	21	21	23	22	23
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2016 Peak Season Traffic	22	635	25	41	567	51	24	22	22	24	23	24
Annual Growth Rate	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2017 Background Traffic	23	644	26	42	576	52	25	23	23	25	24	25
Haddon Hall Restaurant												
- Percentages (Ins/Out)		20%			20%	10%	10%					
- Trips		2			1	1	1					
2017 Total Traffic	**23**	**646**	**26**	**42**	**577**	**53**	**26**	**23**	**23**	**25**	**24**	**25**

	PM Peak		
	INS	OUT	Total
New External Trips	**9**	**7**	**16**

Traf Tech
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APPENDIX F

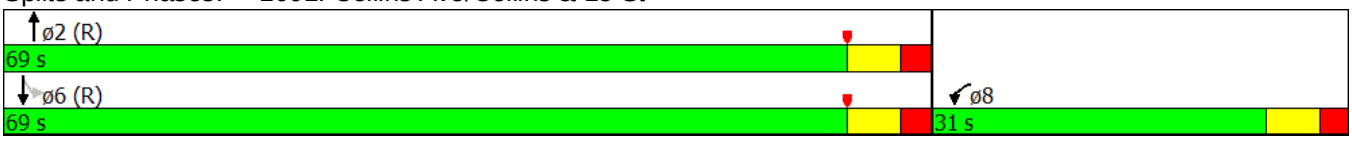
Intersection Capacity Analyses

Timings
1001: Collins Ave/Collins & 15 St

Lane Group	WBL	WBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	35	0	431	85	542
Future Volume (vph)	35	0	431	85	542
Turn Type	Prot		NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases				6	
Detector Phase	8		2	6	6
Switch Phase					
Minimum Initial (s)	4.0		4.0	4.0	4.0
Minimum Split (s)	24.2		24.3	24.3	24.3
Total Split (s)	31.0		69.0	69.0	69.0
Total Split (%)	31.0%		69.0%	69.0%	69.0%
Yellow Time (s)	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2		6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None		C-Min	C-Min	C-Min
Act Effct Green (s)	7.6	0.0	87.3	87.3	87.3
Actuated g/C Ratio	0.08	0.00	0.87	0.87	0.87
v/c Ratio	0.28	0.72	0.16	0.12	0.19
Control Delay	48.1	0.0	3.3	2.6	2.1
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	48.1	0.0	3.6	2.6	2.1
LOS	D	A	A	A	A
Approach Delay		15.9	3.6		2.1
Approach LOS		B	A		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 3.9	Intersection LOS: A
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1001: Collins Ave/Collins & 15 St

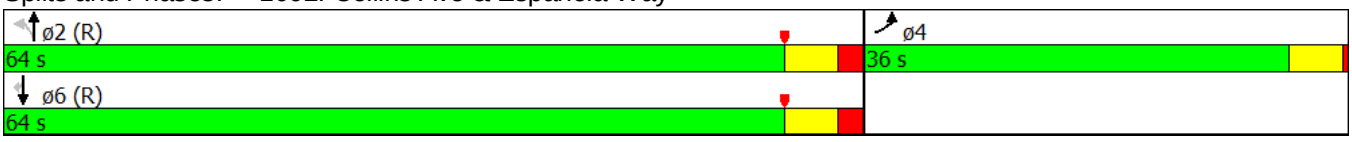


Timings
1002: Collins Ave & Espanola Way

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Configurations					
Traffic Volume (vph)	66	18	383	459	107
Future Volume (vph)	66	18	383	459	107
Turn Type	Prot	Perm	NA	NA	Perm
Protected Phases	4		2	6	
Permitted Phases		2			6
Detector Phase	4	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.5	25.0	25.0	25.0	25.0
Total Split (s)	36.0	64.0	64.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.5	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)	4.5	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.2	79.3	79.3	79.3	79.3
Actuated g/C Ratio	0.10	0.79	0.79	0.79	0.79
v/c Ratio	0.54	0.03	0.28	0.34	0.09
Control Delay	41.7	2.9	3.6	4.0	0.7
Queue Delay	0.0	0.0	0.0	0.9	0.9
Total Delay	41.7	2.9	3.7	4.9	1.6
LOS	D	A	A	A	A
Approach Delay	41.7		3.6	4.3	
Approach LOS	D		A	A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 58 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 38.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1002: Collins Ave & Espanola Way



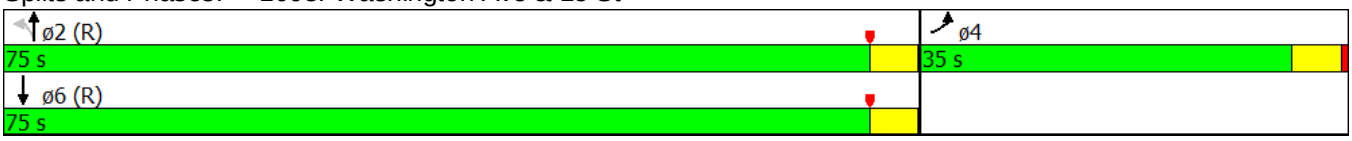
Timings
1003: Washington Ave & 15 St

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	54	72	621	520
Future Volume (vph)	54	72	621	520
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	27.5	27.5	27.5
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.8		90.3	90.3
Actuated g/C Ratio	0.10		0.82	0.82
v/c Ratio	0.66		0.31	2.81dr
Control Delay	37.4		1.6	5.5
Queue Delay	0.0		0.6	0.1
Total Delay	37.4		2.1	5.7
LOS	D		A	A
Approach Delay	37.4		2.1	5.7
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 21.8 (20%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

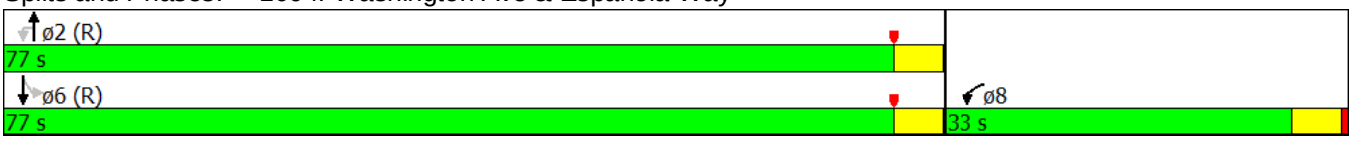
Splits and Phases: 1003: Washington Ave & 15 St



Lane Group	WBL	NBU	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	85	11	635	47	551
Future Volume (vph)	85	11	635	47	551
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		2		6	
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	33.0	27.0	27.0	37.5	37.5
Total Split (s)	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0
Total Lost Time (s)	4.7		4.2		4.2
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	12.9		88.2		88.2
Actuated g/C Ratio	0.12		0.80		0.80
v/c Ratio	0.64		0.28		0.26
Control Delay	49.5		3.1		4.4
Queue Delay	0.0		0.0		0.8
Total Delay	49.5		3.1		5.2
LOS	D		A		A
Approach Delay	49.5		3.1		5.2
Approach LOS	D		A		A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 60 (55%), Referenced to phase 2:NBTU and 6:SBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 54.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1004: Washington Ave & Espanola Way



Timings
1005: Washington Ave & 14 St

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	22	24	23	22	635	41	567
Future Volume (vph)	22	24	23	22	635	41	567
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.8	31.8	31.8	23.5	23.5	23.5	23.5
Total Split (s)	33.0	33.0	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.8	0.8	0.8	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0		0.0
Total Lost Time (s)	4.8		4.8		4.2		4.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.5		10.5		93.4		93.4
Actuated g/C Ratio	0.10		0.10		0.85		0.85
v/c Ratio	1.09dl		0.45		0.26		0.27
Control Delay	58.3		41.4		2.6		2.0
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	58.3		41.4		2.6		2.0
LOS	E		D		A		A
Approach Delay	58.3		41.4		2.6		2.0
Approach LOS	E		D		A		A

Intersection Summary		
Cycle Length: 110		
Actuated Cycle Length: 110		
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.64		
Intersection Signal Delay: 6.7	Intersection LOS: A	
Intersection Capacity Utilization 59.1%	ICU Level of Service B	
Analysis Period (min) 15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.		

Splits and Phases: 1005: Washington Ave & 14 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	35	0	71	0	431	38	85	542	12
Future Volume (vph)	0	0	0	35	0	71	0	431	38	85	542	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.2	4.0			6.3		6.3	6.3	
Lane Util. Factor				1.00	1.00			0.95		1.00	0.95	
Frt				1.00	0.86			0.99		1.00	1.00	
Flt Protected				0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)				1770	0			3496		1770	3527	
Flt Permitted				0.95	1.00			1.00		0.47	1.00	
Satd. Flow (perm)				1770	0			3496		878	3527	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	37	0	75	0	454	40	89	571	13
RTOR Reduction (vph)	0	0	0	0	75	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	0	0	37	0	0	0	491	0	89	583	0
Turn Type				Prot				NA		Perm	NA	
Protected Phases				8				2			6	
Permitted Phases										6		
Actuated Green, G (s)				5.2	0.0			82.3		82.3	82.3	
Effective Green, g (s)				5.2	0.0			82.3		82.3	82.3	
Actuated g/C Ratio				0.05	0.00			0.82		0.82	0.82	
Clearance Time (s)				6.2				6.3		6.3	6.3	
Vehicle Extension (s)				3.0				3.0		3.0	3.0	
Lane Grp Cap (vph)				92	0			2877		722	2902	
v/s Ratio Prot				c0.02				0.14			c0.17	
v/s Ratio Perm										0.10		
v/c Ratio				0.40	0.00			0.17		0.12	0.20	
Uniform Delay, d1				45.9	50.0			1.8		1.7	1.9	
Progression Factor				1.00	1.00			1.73		1.00	1.00	
Incremental Delay, d2				2.9	0.0			0.1		0.4	0.2	
Delay (s)				48.8	50.0			3.3		2.1	2.0	
Level of Service				D	D			A		A	A	
Approach Delay (s)		0.0			49.6			3.3			2.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	66	31	18	383	459	107
Future Volume (vph)	66	31	18	383	459	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1724		1770	1863	1863	1583
Flt Permitted	0.97		0.47	1.00	1.00	1.00
Satd. Flow (perm)	1724		873	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	34	20	416	499	116
RTOR Reduction (vph)	22	0	0	0	0	24
Lane Group Flow (vph)	84	0	20	416	499	92
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.2		79.3	79.3	79.3	79.3
Effective Green, g (s)	10.2		79.3	79.3	79.3	79.3
Actuated g/C Ratio	0.10		0.79	0.79	0.79	0.79
Clearance Time (s)	4.5		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175		692	1477	1477	1255
v/s Ratio Prot	c0.05			0.22	c0.27	
v/s Ratio Perm			0.02			0.06
v/c Ratio	0.48		0.03	0.28	0.34	0.07
Uniform Delay, d1	42.4		2.2	2.8	2.9	2.3
Progression Factor	1.00		1.00	1.00	1.00	0.82
Incremental Delay, d2	2.0		0.1	0.5	0.6	0.1
Delay (s)	44.4		2.3	3.2	3.5	2.0
Level of Service	D		A	A	A	A
Approach Delay (s)	44.4			3.2	3.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	54	90	72	621	15	520	72
Future Volume (vph)	54	90	72	621	15	520	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2		4.2	
Lane Util. Factor	1.00			0.95		0.95	
Frt	0.92			1.00		0.98	
Flt Protected	0.98			0.99		1.00	
Satd. Flow (prot)	1674			3521		3472	
Flt Permitted	0.98			0.81		0.93	
Satd. Flow (perm)	1674			2860		3237	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	95	76	654	16	547	76
RTOR Reduction (vph)	68	0	0	0	0	5	0
Lane Group Flow (vph)	84	0	0	730	0	634	0
Turn Type	Prot		Perm	NA		NA	
Protected Phases	4			2		6	
Permitted Phases			2				
Actuated Green, G (s)	10.8			90.3		90.3	
Effective Green, g (s)	10.8			90.3		90.3	
Actuated g/C Ratio	0.10			0.82		0.82	
Clearance Time (s)	4.7			4.2		4.2	
Vehicle Extension (s)	3.0			3.0		3.0	
Lane Grp Cap (vph)	164			2347		2657	
v/s Ratio Prot	c0.05						
v/s Ratio Perm				c0.26		0.20	
v/c Ratio	0.51			0.31		2.81dr	
Uniform Delay, d1	47.1			2.4		2.2	
Progression Factor	1.00			0.45		1.00	
Incremental Delay, d2	2.7			0.3		0.2	
Delay (s)	49.8			1.4		2.4	
Level of Service	D			A		A	
Approach Delay (s)	49.8			1.4		2.4	
Approach LOS	D			A		A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	85	51	11	635	51	47	551
Future Volume (vph)	85	51	11	635	51	47	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2			4.2
Lane Util. Factor	1.00			0.95			0.95
Frt	0.95			0.99			1.00
Flt Protected	0.97			1.00			1.00
Satd. Flow (prot)	1714			3497			3525
Flt Permitted	0.97			0.94			0.84
Satd. Flow (perm)	1714			3302			2982
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	89	54	12	668	54	49	580
RTOR Reduction (vph)	24	0	0	3	0	0	0
Lane Group Flow (vph)	119	0	0	731	0	0	629
Turn Type	Prot		Perm	NA		Perm	NA
Protected Phases	8			2			6
Permitted Phases			2			6	
Actuated Green, G (s)	12.9			88.2			88.2
Effective Green, g (s)	12.9			88.2			88.2
Actuated g/C Ratio	0.12			0.80			0.80
Clearance Time (s)	4.7			4.2			4.2
Vehicle Extension (s)	3.0			3.0			3.0
Lane Grp Cap (vph)	201			2647			2391
v/s Ratio Prot	c0.07						
v/s Ratio Perm				c0.22			0.21
v/c Ratio	0.59			0.28			0.26
Uniform Delay, d1	46.1			2.8			2.7
Progression Factor	1.00			0.94			1.34
Incremental Delay, d2	4.6			0.3			0.2
Delay (s)	50.7			2.9			3.9
Level of Service	D			A			A
Approach Delay (s)	50.7			2.9			3.9
Approach LOS	D			A			A

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1005: Washington Ave & 14 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	22	22	24	23	24	22	635	25	41	567	51
Future Volume (vph)	24	22	22	24	23	24	22	635	25	41	567	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8			4.8			4.2			4.2	
Lane Util. Factor		0.95			1.00			0.95			0.95	
Frt		0.95			0.95			0.99			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		3309			1748			3514			3487	
Flt Permitted		0.82			0.86			0.92			0.87	
Satd. Flow (perm)		2747			1526			3239			3036	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	23	23	25	24	25	23	668	26	43	597	54
RTOR Reduction (vph)	0	21	0	0	20	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	50	0	0	54	0	0	716	0	0	691	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		9.4			9.4			91.6			91.6	
Effective Green, g (s)		9.4			9.4			91.6			91.6	
Actuated g/C Ratio		0.09			0.09			0.83			0.83	
Clearance Time (s)		4.8			4.8			4.2			4.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		234			130			2697			2528	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.04			0.22			c0.23	
v/c Ratio		1.09dl			0.41			0.27			0.27	
Uniform Delay, d1		46.9			47.7			2.0			2.0	
Progression Factor		1.00			1.00			1.00			0.75	
Incremental Delay, d2		0.5			2.1			0.2			0.3	
Delay (s)		47.3			49.8			2.2			1.8	
Level of Service		D			D			A			A	
Approach Delay (s)		47.3			49.8			2.2			1.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

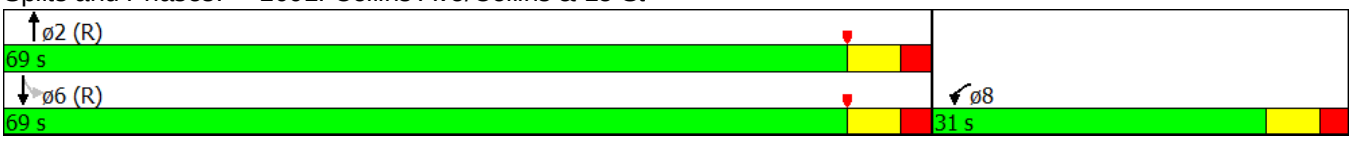
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Timings
1001: Collins Ave/Collins & 15 St

Lane Group	WBL	WBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	36	0	438	86	550
Future Volume (vph)	36	0	438	86	550
Turn Type	Prot		NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases				6	
Detector Phase	8		2	6	6
Switch Phase					
Minimum Initial (s)	4.0		4.0	4.0	4.0
Minimum Split (s)	24.2		24.3	24.3	24.3
Total Split (s)	31.0		69.0	69.0	69.0
Total Split (%)	31.0%		69.0%	69.0%	69.0%
Yellow Time (s)	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2		6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None		C-Min	C-Min	C-Min
Act Effct Green (s)	7.6	0.0	87.3	87.3	87.3
Actuated g/C Ratio	0.08	0.00	0.87	0.87	0.87
v/c Ratio	0.28	0.73	0.16	0.12	0.19
Control Delay	48.2	0.0	3.4	2.6	2.1
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	48.2	0.0	3.7	2.6	2.1
LOS	D	A	A	A	A
Approach Delay		16.1	3.7		2.2
Approach LOS		B	A		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1001: Collins Ave/Collins & 15 St

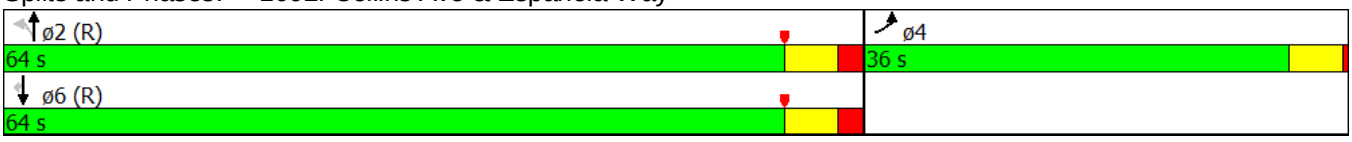


Timings
1002: Collins Ave & Espanola Way

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Configurations					
Traffic Volume (vph)	67	18	388	466	109
Future Volume (vph)	67	18	388	466	109
Turn Type	Prot	Perm	NA	NA	Perm
Protected Phases	4		2	6	
Permitted Phases		2			6
Detector Phase	4	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.5	25.0	25.0	25.0	25.0
Total Split (s)	36.0	64.0	64.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.5	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)	4.5	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.2	79.3	79.3	79.3	79.3
Actuated g/C Ratio	0.10	0.79	0.79	0.79	0.79
v/c Ratio	0.54	0.03	0.29	0.34	0.09
Control Delay	42.3	3.0	3.7	4.0	0.7
Queue Delay	0.0	0.0	0.0	0.9	0.9
Total Delay	42.3	3.0	3.7	5.0	1.6
LOS	D	A	A	A	A
Approach Delay	42.3		3.7	4.3	
Approach LOS	D		A	A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 58 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 38.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1002: Collins Ave & Espanola Way



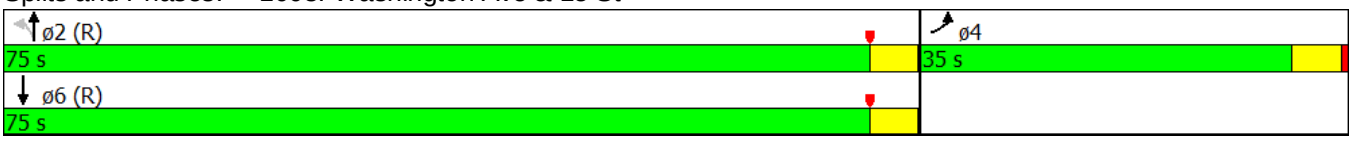
Timings
1003: Washington Ave & 15 St

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	55	73	630	528
Future Volume (vph)	55	73	630	528
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	27.5	27.5	27.5
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.0		90.1	90.1
Actuated g/C Ratio	0.10		0.82	0.82
v/c Ratio	0.66		0.32	2.85dr
Control Delay	37.6		1.6	5.7
Queue Delay	0.0		0.6	0.1
Total Delay	37.6		2.2	5.9
LOS	D		A	A
Approach Delay	37.6		2.2	5.9
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 21.8 (20%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.3	Intersection LOS: A
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 1003: Washington Ave & 15 St

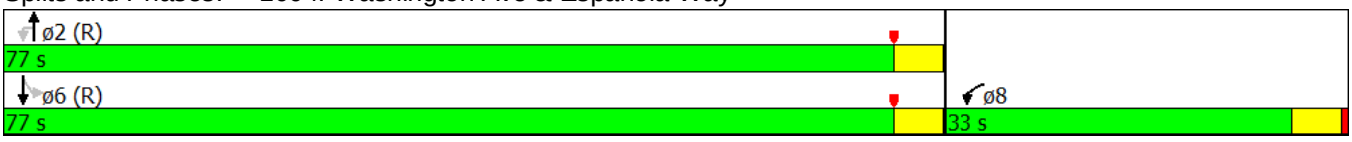


Timings
1004: Washington Ave & Espanola Way

Lane Group	WBL	NBU	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	86	11	644	47	559
Future Volume (vph)	86	11	644	47	559
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		2		6	
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	33.0	27.0	27.0	37.5	37.5
Total Split (s)	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0
Total Lost Time (s)	4.7		4.2		4.2
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.1		88.0		88.0
Actuated g/C Ratio	0.12		0.80		0.80
v/c Ratio	0.64		0.28		0.27
Control Delay	49.7		3.2		4.5
Queue Delay	0.0		0.0		0.8
Total Delay	49.7		3.2		5.4
LOS	D		A		A
Approach Delay	49.7		3.2		5.4
Approach LOS	D		A		A

Intersection Summary		
Cycle Length: 110		
Actuated Cycle Length: 110		
Offset: 60 (55%), Referenced to phase 2:NBTU and 6:SBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.64		
Intersection Signal Delay: 8.5	Intersection LOS: A	
Intersection Capacity Utilization 55.5%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 1004: Washington Ave & Espanola Way



Timings
1005: Washington Ave & 14 St

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	23	25	24	23	644	42	576
Future Volume (vph)	23	25	24	23	644	42	576
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.8	31.8	31.8	23.5	23.5	23.5	23.5
Total Split (s)	33.0	33.0	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.8	0.8	0.8	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0		0.0
Total Lost Time (s)	4.8		4.8		4.2		4.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.7		10.7		93.2		93.2
Actuated g/C Ratio	0.10		0.10		0.85		0.85
v/c Ratio	1.08dl		0.46		0.27		0.27
Control Delay	60.2		41.8		2.7		2.1
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	60.2		41.8		2.7		2.1
LOS	E		D		A		A
Approach Delay	60.2		41.8		2.7		2.1
Approach LOS	E		D		A		A

Intersection Summary		
Cycle Length: 110		
Actuated Cycle Length: 110		
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.67		
Intersection Signal Delay: 7.0	Intersection LOS: A	
Intersection Capacity Utilization 59.9%	ICU Level of Service B	
Analysis Period (min) 15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.		

Splits and Phases: 1005: Washington Ave & 14 St

HCM Signalized Intersection Capacity Analysis
1001: Collins Ave/Collins & 15 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	36	0	72	0	438	39	86	550	12
Future Volume (vph)	0	0	0	36	0	72	0	438	39	86	550	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.2	4.0			6.3		6.3	6.3	
Lane Util. Factor				1.00	1.00			0.95		1.00	0.95	
Frt				1.00	0.86			0.99		1.00	1.00	
Flt Protected				0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)				1770	0			3496		1770	3528	
Flt Permitted				0.95	1.00			1.00		0.47	1.00	
Satd. Flow (perm)				1770	0			3496		871	3528	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	38	0	76	0	461	41	91	579	13
RTOR Reduction (vph)	0	0	0	0	76	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	0	0	38	0	0	0	499	0	91	591	0
Turn Type				Prot				NA		Perm	NA	
Protected Phases				8				2			6	
Permitted Phases										6		
Actuated Green, G (s)				5.2	0.0			82.3		82.3	82.3	
Effective Green, g (s)				5.2	0.0			82.3		82.3	82.3	
Actuated g/C Ratio				0.05	0.00			0.82		0.82	0.82	
Clearance Time (s)				6.2				6.3		6.3	6.3	
Vehicle Extension (s)				3.0				3.0		3.0	3.0	
Lane Grp Cap (vph)				92	0			2877		716	2903	
v/s Ratio Prot				c0.02				0.14			c0.17	
v/s Ratio Perm										0.10		
v/c Ratio				0.41	0.00			0.17		0.13	0.20	
Uniform Delay, d1				45.9	50.0			1.8		1.7	1.9	
Progression Factor				1.00	1.00			1.76		1.00	1.00	
Incremental Delay, d2				3.0	0.0			0.1		0.4	0.2	
Delay (s)				48.9	50.0			3.3		2.1	2.0	
Level of Service				D	D			A		A	A	
Approach Delay (s)		0.0			49.6			3.3			2.1	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1002: Collins Ave & Espanola Way

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	67	31	18	388	466	109
Future Volume (vph)	67	31	18	388	466	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1724		1770	1863	1863	1583
Flt Permitted	0.97		0.46	1.00	1.00	1.00
Satd. Flow (perm)	1724		865	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	34	20	422	507	118
RTOR Reduction (vph)	22	0	0	0	0	24
Lane Group Flow (vph)	85	0	20	422	507	94
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.2		79.3	79.3	79.3	79.3
Effective Green, g (s)	10.2		79.3	79.3	79.3	79.3
Actuated g/C Ratio	0.10		0.79	0.79	0.79	0.79
Clearance Time (s)	4.5		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	175		685	1477	1477	1255
v/s Ratio Prot	c0.05			0.23	c0.27	
v/s Ratio Perm			0.02			0.06
v/c Ratio	0.49		0.03	0.29	0.34	0.07
Uniform Delay, d1	42.4		2.2	2.8	2.9	2.3
Progression Factor	1.00		1.00	1.00	0.99	0.83
Incremental Delay, d2	2.1		0.1	0.5	0.6	0.1
Delay (s)	44.6		2.3	3.3	3.6	2.0
Level of Service	D		A	A	A	A
Approach Delay (s)	44.6			3.2	3.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	55	91	73	630	15	528	73
Future Volume (vph)	55	91	73	630	15	528	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2		4.2	
Lane Util. Factor	1.00			0.95		0.95	
Frt	0.92			1.00		0.98	
Flt Protected	0.98			0.99		1.00	
Satd. Flow (prot)	1674			3521		3472	
Flt Permitted	0.98			0.81		0.93	
Satd. Flow (perm)	1674			2851		3237	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	96	77	663	16	556	77
RTOR Reduction (vph)	68	0	0	0	0	5	0
Lane Group Flow (vph)	87	0	0	740	0	644	0
Turn Type	Prot		Perm	NA		NA	
Protected Phases	4			2		6	
Permitted Phases			2				
Actuated Green, G (s)	11.0			90.1		90.1	
Effective Green, g (s)	11.0			90.1		90.1	
Actuated g/C Ratio	0.10			0.82		0.82	
Clearance Time (s)	4.7			4.2		4.2	
Vehicle Extension (s)	3.0			3.0		3.0	
Lane Grp Cap (vph)	167			2335		2651	
v/s Ratio Prot	c0.05						
v/s Ratio Perm				c0.26		0.20	
v/c Ratio	0.52			0.32		2.85dr	
Uniform Delay, d1	47.0			2.4		2.2	
Progression Factor	1.00			0.44		1.00	
Incremental Delay, d2	2.7			0.3		0.2	
Delay (s)	49.7			1.4		2.5	
Level of Service	D			A		A	
Approach Delay (s)	49.7			1.4		2.5	
Approach LOS	D			A		A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	86	52	11	644	52	47	559
Future Volume (vph)	86	52	11	644	52	47	559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2			4.2
Lane Util. Factor	1.00			0.95			0.95
Frt	0.95			0.99			1.00
Flt Protected	0.97			1.00			1.00
Satd. Flow (prot)	1715			3497			3526
Flt Permitted	0.97			0.94			0.84
Satd. Flow (perm)	1715			3302			2980
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	55	12	678	55	49	588
RTOR Reduction (vph)	24	0	0	3	0	0	0
Lane Group Flow (vph)	122	0	0	742	0	0	637
Turn Type	Prot		Perm	NA		Perm	NA
Protected Phases	8			2			6
Permitted Phases			2			6	
Actuated Green, G (s)	13.1			88.0			88.0
Effective Green, g (s)	13.1			88.0			88.0
Actuated g/C Ratio	0.12			0.80			0.80
Clearance Time (s)	4.7			4.2			4.2
Vehicle Extension (s)	3.0			3.0			3.0
Lane Grp Cap (vph)	204			2641			2384
v/s Ratio Prot	c0.07						
v/s Ratio Perm				c0.22			0.21
v/c Ratio	0.60			0.28			0.27
Uniform Delay, d1	46.0			2.8			2.8
Progression Factor	1.00			0.94			1.35
Incremental Delay, d2	4.7			0.3			0.2
Delay (s)	50.6			2.9			4.0
Level of Service	D			A			A
Approach Delay (s)	50.6			2.9			4.0
Approach LOS	D			A			A

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1005: Washington Ave & 14 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	23	23	25	24	25	23	644	26	42	576	52
Future Volume (vph)	25	23	23	25	24	25	23	644	26	42	576	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8			4.8			4.2			4.2	
Lane Util. Factor		0.95			1.00			0.95			0.95	
Frt		0.95			0.95			0.99			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		3309			1748			3514			3487	
Flt Permitted		0.81			0.86			0.92			0.86	
Satd. Flow (perm)		2724			1523			3231			3026	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	24	24	26	25	26	24	678	27	44	606	55
RTOR Reduction (vph)	0	22	0	0	20	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	52	0	0	57	0	0	728	0	0	702	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		9.6			9.6			91.4			91.4	
Effective Green, g (s)		9.6			9.6			91.4			91.4	
Actuated g/C Ratio		0.09			0.09			0.83			0.83	
Clearance Time (s)		4.8			4.8			4.2			4.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		237			132			2684			2514	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.04			0.23			c0.23	
v/c Ratio		1.08dl			0.43			0.27			0.28	
Uniform Delay, d1		46.7			47.6			2.0			2.0	
Progression Factor		1.00			1.00			1.00			0.75	
Incremental Delay, d2		0.5			2.3			0.2			0.3	
Delay (s)		47.2			49.9			2.3			1.8	
Level of Service		D			D			A			A	
Approach Delay (s)		47.2			49.9			2.3			1.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

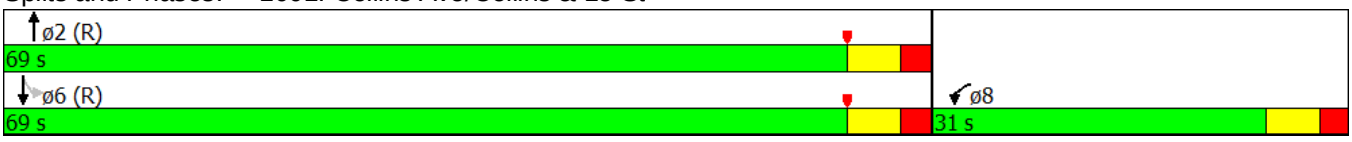
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Timings
1001: Collins Ave/Collins & 15 St

Lane Group	WBL	WBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	39	0	438	86	550
Future Volume (vph)	39	0	438	86	550
Turn Type	Prot		NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases				6	
Detector Phase	8		2	6	6
Switch Phase					
Minimum Initial (s)	4.0		4.0	4.0	4.0
Minimum Split (s)	24.2		24.3	24.3	24.3
Total Split (s)	31.0		69.0	69.0	69.0
Total Split (%)	31.0%		69.0%	69.0%	69.0%
Yellow Time (s)	4.0		4.0	4.0	4.0
All-Red Time (s)	2.2		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2		6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None		C-Min	C-Min	C-Min
Act Effct Green (s)	7.8	0.0	87.1	87.1	87.1
Actuated g/C Ratio	0.08	0.00	0.87	0.87	0.87
v/c Ratio	0.30	0.73	0.17	0.12	0.19
Control Delay	48.4	0.0	3.4	2.6	2.1
Queue Delay	0.0	0.0	0.3	0.0	0.0
Total Delay	48.4	0.0	3.7	2.6	2.1
LOS	D	A	A	A	A
Approach Delay		17.0	3.7		2.2
Approach LOS		B	A		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow, Master Intersection	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 4.1	Intersection LOS: A
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1001: Collins Ave/Collins & 15 St

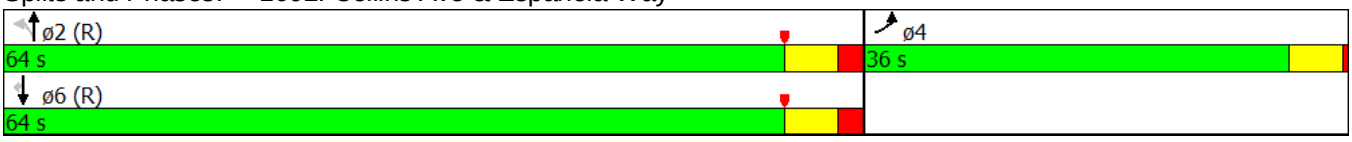


Timings
1002: Collins Ave & Espanola Way

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Configurations					
Traffic Volume (vph)	69	18	389	467	115
Future Volume (vph)	69	18	389	467	115
Turn Type	Prot	Perm	NA	NA	Perm
Protected Phases	4		2	6	
Permitted Phases		2			6
Detector Phase	4	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.5	25.0	25.0	25.0	25.0
Total Split (s)	36.0	64.0	64.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.5	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)	4.5	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.4	79.1	79.1	79.1	79.1
Actuated g/C Ratio	0.10	0.79	0.79	0.79	0.79
v/c Ratio	0.55	0.03	0.29	0.34	0.10
Control Delay	42.4	3.0	3.7	4.0	0.7
Queue Delay	0.0	0.0	0.0	1.0	0.9
Total Delay	42.4	3.0	3.7	5.0	1.6
LOS	D	A	A	A	A
Approach Delay	42.4		3.7	4.3	
Approach LOS	D		A	A	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 58 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.55		
Intersection Signal Delay: 7.6	Intersection LOS: A	
Intersection Capacity Utilization 39.0%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 1002: Collins Ave & Espanola Way



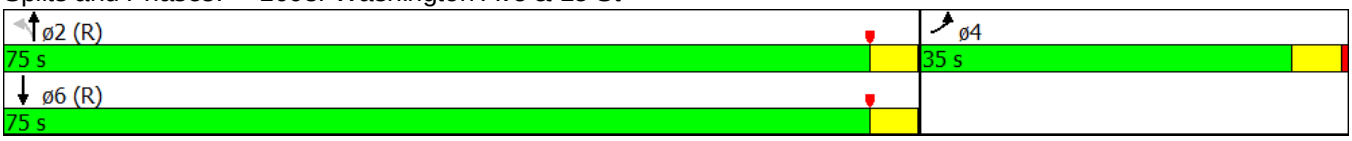
Timings
1003: Washington Ave & 15 St

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	55	73	635	528
Future Volume (vph)	55	73	635	528
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	35.0	27.5	27.5	27.5
Total Split (s)	35.0	75.0	75.0	75.0
Total Split (%)	31.8%	68.2%	68.2%	68.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.7		4.2	4.2
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.0		90.1	90.1
Actuated g/C Ratio	0.10		0.82	0.82
v/c Ratio	0.66		0.32	2.85dr
Control Delay	37.6		1.6	5.7
Queue Delay	0.0		0.6	0.1
Total Delay	37.6		2.1	5.9
LOS	D		A	A
Approach Delay	37.6		2.1	5.9
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 21.8 (20%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 56.6%	ICU Level of Service B
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

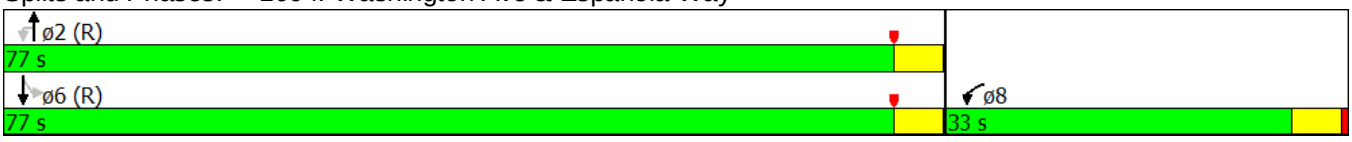
Splits and Phases: 1003: Washington Ave & 15 St



Lane Group	WBL	NBU	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	88	11	644	47	559
Future Volume (vph)	88	11	644	47	559
Turn Type	Prot	Perm	NA	Perm	NA
Protected Phases	8		2		6
Permitted Phases		2		6	
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	33.0	27.0	27.0	37.5	37.5
Total Split (s)	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.7	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0
Total Lost Time (s)	4.7		4.2		4.2
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.4		87.7		87.7
Actuated g/C Ratio	0.12		0.80		0.80
v/c Ratio	0.65		0.28		0.27
Control Delay	49.9		3.3		4.6
Queue Delay	0.0		0.0		0.8
Total Delay	49.9		3.3		5.5
LOS	D		A		A
Approach Delay	49.9		3.3		5.5
Approach LOS	D		A		A

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 60 (55%), Referenced to phase 2:NBTU and 6:SBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 8.8	Intersection LOS: A
Intersection Capacity Utilization 55.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1004: Washington Ave & Espanola Way



Timings
1005: Washington Ave & 14 St

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	23	25	24	23	646	42	577
Future Volume (vph)	23	25	24	23	646	42	577
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.8	31.8	31.8	23.5	23.5	23.5	23.5
Total Split (s)	33.0	33.0	33.0	77.0	77.0	77.0	77.0
Total Split (%)	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.8	0.8	0.8	0.2	0.2	0.2	0.2
Lost Time Adjust (s)	0.0		0.0		0.0		0.0
Total Lost Time (s)	4.8		4.8		4.2		4.2
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.9		10.9		93.0		93.0
Actuated g/C Ratio	0.10		0.10		0.85		0.85
v/c Ratio	1.12dl		0.45		0.27		0.28
Control Delay	60.4		41.4		2.7		2.1
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	60.4		41.4		2.7		2.1
LOS	E		D		A		A
Approach Delay	60.4		41.4		2.7		2.1
Approach LOS	E		D		A		A

Intersection Summary		
Cycle Length: 110		
Actuated Cycle Length: 110		
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.67		
Intersection Signal Delay: 7.0	Intersection LOS: A	
Intersection Capacity Utilization 60.0%	ICU Level of Service B	
Analysis Period (min) 15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.		
dr Defacto Right Lane. Recode with 1 though lane as a right lane.		

Splits and Phases: 1005: Washington Ave & 14 St

HCM Signalized Intersection Capacity Analysis
1001: Collins Ave/Collins & 15 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	39	0	72	0	438	42	86	550	17
Future Volume (vph)	0	0	0	39	0	72	0	438	42	86	550	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.2	4.0			6.3		6.3	6.3	
Lane Util. Factor				1.00	1.00			0.95		1.00	0.95	
Frt				1.00	0.86			0.99		1.00	1.00	
Flt Protected				0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)				1770	0			3493		1770	3523	
Flt Permitted				0.95	1.00			1.00		0.47	1.00	
Satd. Flow (perm)				1770	0			3493		869	3523	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	41	0	76	0	461	44	91	579	18
RTOR Reduction (vph)	0	0	0	0	76	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	0	0	41	0	0	0	502	0	91	596	0
Turn Type				Prot				NA		Perm	NA	
Protected Phases				8				2			6	
Permitted Phases										6		
Actuated Green, G (s)				5.4	0.0			82.1		82.1	82.1	
Effective Green, g (s)				5.4	0.0			82.1		82.1	82.1	
Actuated g/C Ratio				0.05	0.00			0.82		0.82	0.82	
Clearance Time (s)				6.2				6.3		6.3	6.3	
Vehicle Extension (s)				3.0				3.0		3.0	3.0	
Lane Grp Cap (vph)				95	0			2867		713	2892	
v/s Ratio Prot				c0.02				0.14			c0.17	
v/s Ratio Perm										0.10		
v/c Ratio				0.43	0.00			0.17		0.13	0.21	
Uniform Delay, d1				45.8	50.0			1.9		1.8	1.9	
Progression Factor				1.00	1.00			1.75		1.00	1.00	
Incremental Delay, d2				3.1	0.0			0.1		0.4	0.2	
Delay (s)				48.9	50.0			3.4		2.2	2.1	
Level of Service				D	D			A		A	A	
Approach Delay (s)		0.0			49.6			3.4			2.1	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	69	31	18	389	467	115
Future Volume (vph)	69	31	18	389	467	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1725		1770	1863	1863	1583
Flt Permitted	0.97		0.46	1.00	1.00	1.00
Satd. Flow (perm)	1725		863	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	34	20	423	508	125
RTOR Reduction (vph)	22	0	0	0	0	26
Lane Group Flow (vph)	87	0	20	423	508	99
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Actuated Green, G (s)	10.4		79.1	79.1	79.1	79.1
Effective Green, g (s)	10.4		79.1	79.1	79.1	79.1
Actuated g/C Ratio	0.10		0.79	0.79	0.79	0.79
Clearance Time (s)	4.5		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	179		682	1473	1473	1252
v/s Ratio Prot	c0.05			0.23	c0.27	
v/s Ratio Perm			0.02			0.06
v/c Ratio	0.49		0.03	0.29	0.34	0.08
Uniform Delay, d1	42.3		2.2	2.8	3.0	2.3
Progression Factor	1.00		1.00	1.00	0.99	0.80
Incremental Delay, d2	2.1		0.1	0.5	0.6	0.1
Delay (s)	44.4		2.3	3.3	3.6	2.0
Level of Service	D		A	A	A	A
Approach Delay (s)	44.4			3.3	3.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	55	91	73	635	15	528	73
Future Volume (vph)	55	91	73	635	15	528	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2		4.2	
Lane Util. Factor	1.00			0.95		0.95	
Frt	0.92			1.00		0.98	
Flt Protected	0.98			0.99		1.00	
Satd. Flow (prot)	1674			3521		3472	
Flt Permitted	0.98			0.81		0.93	
Satd. Flow (perm)	1674			2853		3236	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	96	77	668	16	556	77
RTOR Reduction (vph)	68	0	0	0	0	5	0
Lane Group Flow (vph)	87	0	0	745	0	644	0
Turn Type	Prot		Perm	NA		NA	
Protected Phases	4			2		6	
Permitted Phases			2				
Actuated Green, G (s)	11.0			90.1		90.1	
Effective Green, g (s)	11.0			90.1		90.1	
Actuated g/C Ratio	0.10			0.82		0.82	
Clearance Time (s)	4.7			4.2		4.2	
Vehicle Extension (s)	3.0			3.0		3.0	
Lane Grp Cap (vph)	167			2336		2650	
v/s Ratio Prot	c0.05						
v/s Ratio Perm				c0.26		0.20	
v/c Ratio	0.52			0.32		2.85dr	
Uniform Delay, d1	47.0			2.4		2.2	
Progression Factor	1.00			0.44		1.00	
Incremental Delay, d2	2.7			0.4		0.2	
Delay (s)	49.7			1.4		2.5	
Level of Service	D			A		A	
Approach Delay (s)	49.7			1.4		2.5	
Approach LOS	D			A		A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	88	56	11	644	55	47	559
Future Volume (vph)	88	56	11	644	55	47	559
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7			4.2			4.2
Lane Util. Factor	1.00			0.95			0.95
Frt	0.95			0.99			1.00
Flt Protected	0.97			1.00			1.00
Satd. Flow (prot)	1713			3495			3526
Flt Permitted	0.97			0.94			0.84
Satd. Flow (perm)	1713			3300			2978
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	59	12	678	58	49	588
RTOR Reduction (vph)	25	0	0	3	0	0	0
Lane Group Flow (vph)	127	0	0	745	0	0	637
Turn Type	Prot		Perm	NA		Perm	NA
Protected Phases	8			2			6
Permitted Phases			2			6	
Actuated Green, G (s)	13.4			87.7			87.7
Effective Green, g (s)	13.4			87.7			87.7
Actuated g/C Ratio	0.12			0.80			0.80
Clearance Time (s)	4.7			4.2			4.2
Vehicle Extension (s)	3.0			3.0			3.0
Lane Grp Cap (vph)	208			2631			2374
v/s Ratio Prot	c0.07						
v/s Ratio Perm				c0.23			0.21
v/c Ratio	0.61			0.28			0.27
Uniform Delay, d1	45.8			2.9			2.9
Progression Factor	1.00			0.93			1.35
Incremental Delay, d2	5.3			0.3			0.2
Delay (s)	51.1			3.0			4.1
Level of Service	D			A			A
Approach Delay (s)	51.1			3.0			4.1
Approach LOS	D			A			A

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.9
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1005: Washington Ave & 14 St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	23	23	25	24	25	23	646	26	42	577	53
Future Volume (vph)	26	23	23	25	24	25	23	646	26	42	577	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8			4.8			4.2			4.2	
Lane Util. Factor		0.95			1.00			0.95			0.95	
Frt		0.95			0.95			0.99			0.99	
Flt Protected		0.98			0.98			1.00			1.00	
Satd. Flow (prot)		3310			1748			3514			3486	
Flt Permitted		0.81			0.86			0.92			0.86	
Satd. Flow (perm)		2719			1523			3231			3025	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	24	24	26	25	26	24	680	27	44	607	56
RTOR Reduction (vph)	0	22	0	0	20	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	53	0	0	57	0	0	730	0	0	704	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		9.8			9.8			91.2			91.2	
Effective Green, g (s)		9.8			9.8			91.2			91.2	
Actuated g/C Ratio		0.09			0.09			0.83			0.83	
Clearance Time (s)		4.8			4.8			4.2			4.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		242			135			2678			2508	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.04			0.23			c0.23	
v/c Ratio		1.12dl			0.42			0.27			0.28	
Uniform Delay, d1		46.5			47.4			2.1			2.1	
Progression Factor		1.00			1.00			1.00			0.74	
Incremental Delay, d2		0.5			2.1			0.3			0.3	
Delay (s)		47.0			49.5			2.3			1.8	
Level of Service		D			D			A			A	
Approach Delay (s)		47.0			49.5			2.3			1.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

APPENDIX G

Queuing Analyses

Queuing Analysis based on ITE Procedures

q = 9 veh/hr (demand rate)

Q = 12 veh/hr (service rate)

$$p = \frac{q}{NQ} = 0.375 \text{ (N = 2 valet runners)}$$

$$Q_M = 0.375$$

Using Acceptable Probability of 10% (90% Confidence Level)

$$M = \left(\frac{Ln\ (x > M) - Ln\ (Q_M)}{Ln\ (p)} \right) - 1$$

$$M = \left(\frac{Ln\ (0.10) - Ln\ (0.375)}{Ln\ (0.375)} \right) - 1$$

$$M = \left(\frac{-2.3026 - (-0.9808)}{-0.9808} \right) - 1$$

M = 1.3 – 1 = 0.3, say 1 vehicle

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